

TRAVERSE CITY DOWNTOWN DEVELOPMENT AUTHORITY

**UNIFIED PLAN OF THE LOWER
BOARDMAN RIVER**

SMITHGROUP

FOREWARD

The design and intent of this document was to build upon previous planning efforts and develop a single unified plan that would clarify what people want to see when they thoughtfully “turn their attention to the river” and that would help catalyze discussions, decisions and actions that will bring into being a shared vision of a healthy river at the heart of a healthy community and city.

The Unified Plan has grown out of extensive attempts to find out what people actually see, want to see, and don’t want to see when they interact and experience the downtown reaches of the Lower Boardman-Ottaway River. The underlying methodology of the planning process was to ask people what they saw as desirable and undesirable about the different reaches, sites, and characteristics of the river. We asked how people thought the different sites and reaches of the river should best be connected physically and how the lower river as a whole should connect to the city’s perceived “character” and to its aspirations. We asked people how they wanted to engage with and protect the river, how multiple and competing uses of the river should be balanced, and how degraded sites and habitats along the reaches of the river might be restored or regenerated. We were especially keen to hear what people had to say about how the river in a systemic sense connects to the city’s current and future value as a healthy habitat for human and non-human life.

We heard many innovative and inspiring ideas and have tried to capture them in the pages that follow. What we did not hear, from anyone, was indifference or shallow concerns expressing narrow interests of intent. We heard loudly and clearly that people love the city, the region, and the river that weaves them together. Everything we heard affirmed a deep, broad, strong commitment to doing a better job of ensuring the long term cultural, ecological, and economic value of the river.

We all live downstream from deliberations, decisions, and actions that occurred before our time. We all inherit the treasures and the messes that come to us from the past. But we are also upstream actors. We

are all trustees of the resources that those who come after us will inherit. Those downstream from us will be impacted by decisions we make about what we define as “progress,” about what we allow to be done to our land and water in the name of progress, about whether or not we honor and protect our most precious natural resources as living beings and as public treasures. In that sense, this Unified Plan is predicated on an explicit recognition of our generational responsibility to those who come after us and it is a principled plan of action intended to help us be responsible stewards and good ancestors.

The planning team was explicitly not interested in just “making a plan” that the city could affirm as a plan. The goal of the unified planning process has been to develop an overarching framework for guiding deliberations and fostering decisions by multiple actors in the public and private sectors that will protect, restore, and enhance the Lower Boardman-Ottaway River for the benefit of future generations while honoring the generations of original stewards of the river—the Aanishinaabek—who have shared inspiring memory of what was here long before modern civilization left its legacy of designs to use the river rather than live with the river as a caregiver and fundamental source of life.

No plan has power without commitment to its principles, expressed in actions. The Unified Plan isn’t a cookbook of recipes for success. The success of the plan will rest on it being a predicate for ongoing, inclusive, open minded conversations about how best to protect the river and reconcile competing uses of the river as the city grows and develops. The unified planning process has, we hope, helped to extend and focus those ongoing conversations.

ACKNOWLEDGMENTS

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We would like to acknowledge the hundreds of local citizens that participated in the planning process and helped shape this plan.

LAND ACKNOWLEDGMENT

Please take a moment to simply acknowledge the lands we are working on behalf of are lands once occupied by the Original People of the Great Lakes; the Aanishinaabek Odawa, Ojibwe, and Bodewadmi nations known widely as the Three Fires Confederacy. Who for countless generations lived intimately connected to, and held reverent care for this place prior to European settlement and dominion over its abundant resources. In this way, it is important that we ground our work with utmost respect and care for land and water as sacred, as if caring for another being, a relative. And remember that this land and water has cared for us unconditionally through time just as a family member would. Without judgment, without resentment or avarice, only to seek balance among all connections, all beings, for all time. Thank you.

ADOPTION

Downtown Development Authority Board: December 14, 2021

Planning Commission: January 19, 2022

Parks and Recreation Commission: February 4, 2022

City Commission: February 7, 2022

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CHAPTER 1

ESTABLISHING A VISION

STATEMENT OF PURPOSE

The river is one of our most valuable assets from an ecologic, economic, recreational, and cultural perspective, and is a significant contributor to the sense of place in downtown Traverse City. Recognizing the value of the river, the Traverse City Downtown Development Authority (DDA) put into motion the process for developing a UNIFIED PLAN for the Lower Boardman River. The UNIFIED PLAN includes our collective vision for the Lower Boardman River and describes the land use policy recommendations, best practices for development, and physical improvements for achieving this vision.

The UNIFIED PLAN is based on the premise that the environmental value of the river corridor is central to the community; this value should be reflected and reinforced through the management of change in downtown. When the community considers all beneficiaries to the river (including nature) in the design process for future downtown and riverfront projects, then the Lower Boardman River will reflect the value placed on water, land, nature, health, and wellness.



The “water centric” values, best practices, and development guidelines integrated into this plan will translate, over time, into better designs for public places, such as streetscapes, public park spaces, pathways, and transportation facilities, and will ensure that new development creates a better interface between the urban fabric and the river.

In a key initial step, the DDA established the Lower Boardman River Leadership Team (Leadership Team) as an ad hoc committee of the DDA to lead the development of the UNIFIED PLAN. The Leadership Team members volunteered their time and expertise, and included individuals with backgrounds in real estate, urban planning, natural resources, land conservation and stewardship, and park management, as well as city commission members, DDA staff, and community stakeholders. Throughout the process, the Leadership Team was responsible for conducting open

public meetings, organizing public input sessions, establishing direction for the content and focus of the plan, and evaluating and proposing concepts and ideas.

Through the guidance of the Leadership Team the UNIFIED PLAN endeavors to protect, preserve, and appropriately develop the downtown section of the Boardman River (approximately 1.6 miles of river), connecting the northern end of Boardman Lake with Grand Traverse Bay.

This plan was developed with the engagement of all interested parties to take advantage of expertise and input. Just as the plan may identify priorities for recreational, educational, and interpretive initiatives, so should it identify projects involving land/water management policies and projects to address stormwater management and control, and habitat protection and enhancement.



VISION & VALUES

The Leadership Team developed a set of Core Values for the project prior to the formal planning process to frame the community's basic goals for the river corridor. These Core Values were discussed and tested through an open public process. During the planning process, the community reaffirmed the Core Values and provided a set of diverse and substantial ideas that are consistent with the Core Values.

The Core Values of the UNIFIED PLAN include:

- Reflect the city's commitment to the river as a public resource and asset to be passed to residents and visitors in perpetuity.
- Contain public goals for the river and city, in keeping with the community's visions about what the river is and can become as a centerpiece for downtown identity and ethos.
- Use the natural and cultural values of the river as a guide for decisions about the commercial, economic, or utilitarian values to be leveraged for the public good.
- Be explicit to the commitment to improve, restore, and protect the health and integrity of the riparian ecosystem of the lower river.
- Provide that the recommended initiatives contained in the plan will account for the impact of those initiatives on residents, habitats, and the ecological status of the river.
- Serve to foster and sustain partnerships with shared responsibilities among public and private stakeholders who share the value that the river is a "common resource" that connects everyone.
- Identify/prioritize opportunities for multi-modal access to the river.
- Enhance ecological and aesthetic river conditions, take advantage of, and integrate iconic structures and identify new sites and structures that serve as destination or centers of programming to attract year-round access.
- Integrate existing riverwalks and pathways with new connections between sites and destinations that link the river to the city in ways that are physical, visual, aesthetic, and psychological.
- Be consistent with best riparian and aquatic science, best water and land management practices and must be harmonious with the river.
- Make nature-based stormwater best management practices (BMPs) a priority.
- Help ensure that new or rehabilitated developments along the river are compatible with the city's renewable energy goals.
- Establish that development sites, destinations and structures must protect the health, aesthetics, accessibility, and health of the relationship between the river and residents/visitors.
- Manage invasive vegetation, protect and retain existing native vegetation, and add native vegetation where possible.

- Prohibit further hardening of the shorelines that are inconsistent with the plan.
- Ensure that the natural flow of the river is enhanced and not curtailed or impeded by any element of the plan.



EXISTING PLANS FOR IMPROVEMENT & RESTORATION

For over ten years, Traverse City has been part of a initiative that has garnered national and international attention to restore the Boardman River, including the removal or modification of four dams on the river. The fruits of this initiative will all come to bear in the downtown vicinity.

There have been several interconnected initiatives designed and employed to develop concepts for use and protection of the river and watershed as it unites through Traverse City, including:

BOARDMAN RIVER WATERSHED PROSPERITY PLAN

This plan was completed in 2016. Prepared by Public Sector Consultants, The Watershed Center Grand Traverse Bay, Beckett & Raeder, and the Lawton Gallagher Group.

PURPOSE OF THE PLAN

The Boardman River Watershed Prosperity Plan (Prosperity Plan) is a vision and a roadmap for the future management of one of Michigan's most beautiful watersheds. The Prosperity Plan tells us to think large, recognizing that the value of, and threats to, the resources of the river need to be addressed at the local and regional scale. The Prosperity Plan defines prosperity for the watershed as achieving economic well-being for its residents, protecting and maintaining a high-quality environment (water, land, and air resources), supporting health lifestyles, helping people connect and engage with the environment and with each other, and offering a diverse range of social and cultural opportunities.

FRAMEWORK

The Prosperity Plan deals with the entire Boardman River watershed; not all goals and recommendations apply equally to the Lower Boardman River. Goals are as follows:

- Protect, restore, and enhance the high-quality water and other natural resources that are the backbone of social and economic prosperity in the watershed.
- Grow a sustainable economy that benefits and strengthens all the watershed communities.
- Improve the quality of life and advance greater social equity throughout the watershed to retain and attract businesses, a talented workforce, and student and retiree residents.
- Provide managed expansion and improvement of recreation opportunities in the watershed to attract a talented workforce, student and retiree residents, and visitors from around the world.
- Create community ownership of the Boardman River Watershed Prosperity Plan (through education and engagement efforts) and community capacity that will assure implementation of recommended actions and achievements of the goals and objectives.

FISHPASS PROJECT

PURPOSE OF THE PROJECT

The mission of FishPass is to provide up- and down-stream passage of desirable fishes, while simultaneously blocking and/or removing undesirable fishes. To achieve this mission, FishPass has three overarching objectives:

- Develop and implement selective bi-directional fish guidance, sorting, and passage techniques and technologies.
- Determine protocols for implementing selective passage solutions within the Boardman River and throughout the Great Lakes basin.
- Set solutions in a global context so the approach can be exported.

FRAMEWORK

The project goals were articulated to reflect the values of the community and serve as guiding principles for the design, construction, and operation of FishPass as follows:

- Provide a naturalized landscape consistent with public input.
- Protect water quality standards and maintain stable water levels in Boardman Lake.
- No sea lamprey production requiring treatment in the Boardman River above the project site.
- Increase the fishery production in the Boardman River to a level comparable to other tributaries/ streams.



- Provide enhanced, sustainable business opportunities.
- Provide abundant, diverse, and high-quality outdoor recreation amenities.
- Enhance access and use of the site for education, wayfinding, fishing, boating, and biking.
- Integrate the river into the fabric of the city by aligning the project with the city master plan.
- Improve public understanding of the threat from invasive species.
- Inform the public on the role of human landscape alterations on fisheries and communities.
- Promote engagement regarding broad objectives for the Boardman River, ecosystem management, and city planning.

The FishPass project team has completed the final construction documents and regulatory permits. Construction was set to begin in the fall of 2020; however, resolution of litigation is pending which has delayed the project.

BOARDMAN WATER TRAIL DEVELOPMENT PLAN

Completed in 2016. Prepared by the LIAA.

PURPOSE OF THE PLAN

The Boardman Water Trail Development Plan outlines the activities, process, and framework to establish a water trail along the Boardman River. The resulting efforts of this plan will seek to improve public access to the Boardman River, complement ongoing conservation and environmental initiatives along the river, raise awareness of the unique and valuable natural resources within the river corridor, and provide for a safe and responsible recreational water trail.

FRAMEWORK

These assumptions summarize the specific goals and expectations for the water trail and ultimately establish the benchmark for success of the water trail:

- The water trail should balance safe recreation with ongoing conservation and restoration efforts.

- The river supports paddling, fishing, boating, and swimming.
- The water trail complements and is integrated with surrounding land-based trails.
- The public has points of access to the river.
- The river and the ways it is used will continue to evolve.
- Downtown Traverse City should have better connections to the river.
- The river will continue to be managed and maintained through inter-jurisdictional public, private, and non-profit partnerships.
- Paddlers will respect private property along the water trail.

BOARDMAN RIVER PLAN

Completed in 2013. Prepared by the University of Michigan.

PURPOSE OF THE PLAN

The Boardman River Plan seeks to integrate the river into the fabric of Traverse City, revitalizing it into one of the defining elements of the dynamic urban area. Heavily influenced by extensive site analysis, this plan provides a coherent, interconnected conceptual vision for the future of this historically vital waterway. The plan recognizes the importance of both social and environmental factors, working to improve the riverfront in a contextually appropriate way that integrates the needs of the community with the functionality of a healthy river system.

FRAMEWORK

Strategies/reoccurring themes:

- Vegetation as a driver for ecological health
- Public gathering spaces
- Iconic urban destinations
- Urban recreation
- Enhanced riparian habitat
- Linkages

BOARDMAN RIVER FISHERIES REPORT

Completed in 2009. Prepared by Environmental Consulting & Technology, Inc.

PURPOSE OF THE REPORT

The Boardman River Fisheries Report collected, cataloged, summarized, and discussed existing data on Boardman River fisheries in the context of its adequacy in evaluating alternatives for the fates of the Boardman River dams.

FRAMEWORK

For purposes of disseminating the existing data in a framework useful for identifying gaps in essential data and evaluating alternative fates of the Boardman River dams, in this report the Boardman River was divided into ten segments, including three segments that fall within the Lower Boardman River UNIFIED PLAN project area.

- From Union Street Dam downstream to Lake Michigan, and Hospital (Kids) Creek.
- Union Street Dam impoundments, also known as Boardman Lake.
- From Sabin Dam downstream to Union Street Dam impoundments, or Boardman Lake.

YOUR BAY, YOUR SAY

Completed in 2007. Prepared by SmithGroup and Wade Trim.

PURPOSE OF THE PLAN

The plan made several recommendations to improve pedestrian access and connectivity, including a public pier at the mouth of the Boardman River.

FRAMEWORK

The plan includes the following key recommendations:

- Connect the downtown and neighborhoods to the waterfront.
- Create a new Central Park, a town square on the water.
- Promote mixed-use infill to reinforce the edges of the park.
- Provide a variety of activities and public spaces along the waterfront.
- Respect the natural beauty and ecological integrity of the bay and Boardman River.

BOARDMAN RIVER WALL STABILIZATION PROJECT

Completed in 2020. Prepared by SmithGroup, Limnotech, Wade Trim, and SME.

PURPOSE OF THE PROJECT

The plan evaluated the soil stability issues adjacent to the retaining wall located along the river on the 100 and 200 blocks of downtown Traverse City, including a topographic survey, geotechnical borings, hydraulic model of the river, and engineering assessment of the wall and sewer, and provided recommendations for repair and stabilization.

FRAMEWORK

During the spring of 2020, depressions formed in the landscape areas, paving showed signs of failure, and signposts began falling over, all of which indicated that soil stability issues exist adjacent to the wall.

The soil subsidence has posed risks to the public infrastructure, including the wall and a major sanitary sewer, and those who use the sidewalks, parking, and alley. The study concluded that the amount of annual subsidence has increased over the past decade, and that this trend is unlikely to slow.

The analysis and assessment determined that the most prudent solution to these issues is to treat the two blocks uniquely and respond to the site conditions and constraints of each. For the 100 block, the study recommended removing the existing retaining wall and relocating the sanitary sewer, allowing for a natural shoreline and restoration of habitat along the riverfront.

For the 200 block, the study recommended preservation of the concrete wall and installation of a sheet pile wall on the river side of the wall.

CURRENT REGULATORY & POLICY GUIDANCE

COMMUNITY MASTER PLAN

State of Michigan statutes provide each community with the right and responsibility to regulate the development of private land and public infrastructure. A comprehensive planning document, commonly referred to as the Community Master Plan, establishes goals, strategies, and priorities to guide land use, transportation infrastructure, downtown development, neighborhood preservation, non-motorized transportation, land development guidelines (such as setbacks and character), and similar subjects.

The current City of Traverse City Master Plan was developed in 2009 and amended in 2017. The city is considering the timing and focus of the next master plan update, providing an opportunity to integrate the findings of the UNIFIED PLAN into the chapters which focus on downtown.

ZONING

Zoning ordinances are the regulatory application of the goals established by the Community Master Plan. Zoning ordinances establish development standards that are applied to a given parcel of land when that site is either developed, or significantly redeveloped.

Each parcel of land in the community is designated into a specific zone which has its own set of standards. The project area includes properties which are zoned for:

- 10S - Open Space (typically publicly owned land)
- R-3 - Multiple Family Dwelling
- C-3 - Community Center

- C-4 - Regional Center
- D-1 - Ironworks Development
- D-2 - Depot Development
- GP - Government/Public

The zoning District C-4 is the core area of downtown, and is further divided into sub-categories, a, b, and c, which vary in allowed building heights. This zoning district includes the most shoreline of the Boardman River in the project area, followed by Open Space.

Each zoning district includes a set of requirements that guide new development's building height, property line and river setbacks, density, and allowed land uses.

Relative to the development of river frontage are several key zoning ordinances including:

- Chapter 1368 - Size and Area Requirements

COMMUNITY PARKS AND RECREATION PLAN

The Community Parks and Recreation Plan is updated every five years and includes an assessment of the conditions of public parks, public engagement, and a set of recommendations for park improvements. An up-to-date plan is required to access state funding of parks through the Michigan Natural Resources Trust Fund.

Though not specifically a plan that has regulatory authority to manage development in the river corridor, the parks and recreation plan and the UNIFIED PLAN are companion pieces that provide guidance in the decision-making process for future design efforts, and therefore, should be coordinated as the Community Parks and Recreation Plan is updated.

PUBLIC ENGAGEMENT & PLANNING PROCESS

Just as the Lower Boardman River has a personality that takes on many forms and shapes depending upon the season, its flow, and location, the UNIFIED PLAN for the Lower Boardman River will reflect differing values, perspectives, and uses of the river. What is essential is that this process, much like the process to determine the fate of the Boardman River Dams, must include and welcome through civic engagement of all of the many interested parties to develop a plan that is truly unifying and has the backing and consensus to be implemented.

OUTREACH METHODS

In the summer of 2019 (Round One) and 2021 (Round Two) the Leadership Team lead a variety of civic engagement approaches to gather public input for the plan. Round One was conducted as the study was beginning to gain an understanding of the key issues and concerns the community held about the Lower Boardman River. Round Two presented a series of recommendations and alternative ideas for addressing those issues and engaged the community in expressing preferences and support for these ideas.

For each of these two outreach efforts, the following methodologies were used:

WEBSITE

The DDA maintained a website throughout the planning process that provided project updates, notifications on engagement opportunities, and posting of ideas and master plan concepts under consideration.

LEADERSHIP TEAM MEETINGS

The Leadership Team met over two dozen times during the process, and all meetings were public. The agendas and results of those meetings were published on the DDA website.

ONLINE SURVEYS

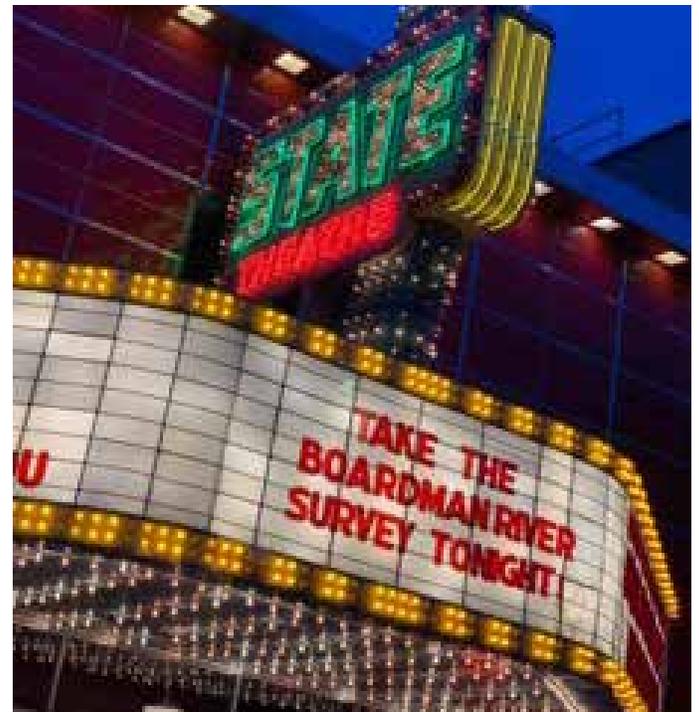
An online survey was conducted for both outreach efforts and provided the community and interested parties an opportunity to provide input. Together the two rounds of surveys had over 700 participants.

E-MAIL DISTRIBUTION

Interested individuals were asked to sign up to receive e-mails regarding upcoming events, updates and calls for assistance, and to volunteer to help.

NEWS RELEASES

News releases were issued to promote the kick-off meeting in June 2019 and throughout the planning process to provide information to the public on the status of the project and announce future public meetings.



SOCIAL MEDIA

Social media was utilized as an important outreach tool throughout the process:

- Facebook: @DowntownTCOfficial
- Twitter: @DowntownTC
- Instagram: downtown_tc

POP-UP MEETINGS

To meet people where they are, volunteers from the community participated in “Pop-Up” events, reaching out to the community at the Downtown Farmers Market and other public venues through the spring and summer of 2019 and 2021.

PUBLIC MEETINGS

The Leadership Team utilized public meetings of elected and appointed officials (DDA, City Planning Commission, City Parks and Recreation Commission, and City Commission) to invite discussions, update the community, and advertise upcoming engagement events.



PUBLIC WORKSHOPS

Open public workshops were conducted to provide interactive engagement with the Leadership Team, DDA staff, and planning consultants during both rounds of engagement, with over 100 people that actively participated.

FOCUS GROUP MEETINGS

For both rounds of engagement, a series of smaller focus group meetings was conducted, reaching approximately 100 participants. The smaller, more intimate format of Focus Group Meetings were intended to allow for more in-depth discussion of the project and the community’s needs and desires for the river corridor. The workshops were not intended to be formal presentations, but an opportunity to get feedback from generally well informed and active citizens.

The meetings had an intended focus; however, the public was welcomed to attend each and any of the meetings as they wished. The focus of each meeting was as follows:

- Meeting #1: Recreation Groups
- Meeting #2: Community Development, Business Focused Organizations and Other Groups
- Meeting #3: Business and Property Owners
- Meeting #4: Sustainability Groups



PUBLIC ENGAGEMENT ROUND ONE RESULTS

WORKSHOPS AND FOCUS GROUPS

In June of 2019 a public open house style workshop was conducted in the Sara Hardy Downtown Farmers Market in downtown Traverse City, under a large tent and during inclement weather. Despite the rain and outdoor location, over 100 people attended the workshop and provided a great deal of input on the project.

The workshop was conducted early in the planning process before specific plans, strategies, and approaches were developed. The DDA started the workshop with a brief presentation that outlined the purpose of, and background to the study, discussed how past efforts to study the area would be used as building blocks for this new effort, and introduced the Leadership Team of the DDA.



After the presentation, participants were invited to meet with the Leadership Team and planning consultants at a set of six topical stations, including:

- Engagement and Past Planning
- Vision and Values
- History and Culture
- River Conditions and Habitat
- Access, Open Space, and Recreation
- Planning, Land Use, and Development

Participants were asked to record their concerns, ideas, knowledge on sticky notes at each station, which were then recorded and summarized on a spreadsheet report.

The discussions focused on answering the following questions:

- How do you value the Lower Boardman River?
- How you use or would like to use the river?
- How do we protect or restore the river and river corridor?
- How do we provide access for all people?
- How we celebrate the cultural and historic values of the river?
- How should policies and rules be developed, or modified?

A series of four Focus Group Meetings were conducted near the end of July 2019 in downtown Traverse City. The purpose of the meetings was to provide the public with an understanding of the project and solicit input

into the direction of the project early in the planning process.

Participants were led through a similar opportunity to provide input at the public workshop and could also review and comment on the input previously received. Feedback from these sessions were reasonably consistent with the results from the June 2019 public workshop, and the focus group setting allowed for more discussion and dialogue about the key issues and concerns.

From the kick-off workshop and the Focus Group Meetings of Round One in 2019 the following priorities from the public rose to the top of the list:

Projects

- Provide public access (e.g. boardwalks) along the river; assume the need for universal access.
- Monitor and repair places where high water and currents are undermining the shoreline-return to soft shores wherever possible.
- Encourage native fish species, limit invasive species and add aquatic habitat.
- Create additional/improve access and portage for kayaks.
- Soften shore treatment/restore natural edge.
- Add interpretive learning places and opportunities.
- Increase and Improve Open Space on river corridor.

Policies

- Limit/manage additional development along the river corridor.
- Remove/limit parking from riverbanks.
- Increase building setbacks.
- Limit/manage the use of kayaks and tubes on the river to ensure opportunities for all users and quiet enjoyment of the river for downtown residents.
- No additional hardened edge should be allowed.

Best Practices

- Support the use of native plants and habitat creation to control erosion.
- Utilize best practices to manage stormwater and other means of improving water quality.
- Ensure that the river corridor receives necessary maintenance and management, both in the short- and long-term.

Values/Other

- Continue to engage the public throughout the planning process.
- Shift the balance towards habitat and nature over human recreation and economic development.
- Limit facilities for gathering or events along the river-focus should be on downtown/bay.
- Restore Ottaway as name of river.
- Keep river corridor natural and passive.

ONLINE SURVEY

A public online survey was conducted from June until early September 2019. Like the initial public input sessions, the survey was conducted prior to establishing any specific plans, policies, or strategies. Over 500 individuals participated in the survey, which is a significant response when measured as a percentage of the total population of the city and region.

The survey included seven questions (six shown below), almost all of which were open ended questions that allowed participants to provide both brief and expansive responses. The responses were recorded and summarized and include:

- 1** **What is your favorite activity related to the Lower Boardman River?** Top answers (in order of priority cited) include walking, enjoying nature, watching wildlife, kayaking/canoing, sitting/picnicking, and fishing.
- 2** **Where is your favorite place along the Lower Boardman River?** The overwhelming majority of the specific locations cited are within three of the six reaches of the study area, including (in order of responses) Reach Five/Six: N. Union Street to the bay, Reach Three: S. Union to Front Street, and Reach One: Boardman Lake to Cass Street.
- 3** **What is your favorite memory of the Lower Boardman River?** Top answers (in order of priority cited) include kayak/canoe trips, wildlife watching, social activity and quiet enjoyment, and fishing.
- 5** **What do you think are the top priorities for improving and protecting the natural environment along the Lower Boardman River?** Top priorities noted (in order of priority cited) include water quality (especially related to non-point source pollution), managing stormwater and flooding, shoreline stabilization and eliminating hard edges, maintenance and removal of invasives, habitat protection and creation, and managing development, parking, and expansion of boardwalks.
- 6** **What do you think are the top priorities to improve the built environment along the Lower Boardman River?** Top priorities noted (in order of priority cited) include manage/restrict new development, ensure access along private land, provide more/better access, facilities, places, connections, protect/enhance natural environment and character (find balance), and make the waterfront universally accessible.
- 7** **What is the most important thing to keep in mind as we develop a UNIFIED PLAN for the Lower Boardman River?** Top priorities noted (in order of priority cited) include protect and enhance natural environment, water quality, health, implement a realistic plan with transparency, accountability/oversight, limit development and influence of economic interests, and use values-based plan to influence government policy

The detailed results of Round One of Public Engagement, including the public workshop, focus group meetings, and on-line survey can be found in Appendix 1.

The Public Engagement Round Two events and outreach were focused on the alternative plan concepts and policy recommendations that were built from the input received during Round One. The results of Round Two will be discussed in Chapter Four: ILLUSTRATED PLAN

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CHAPTER 2

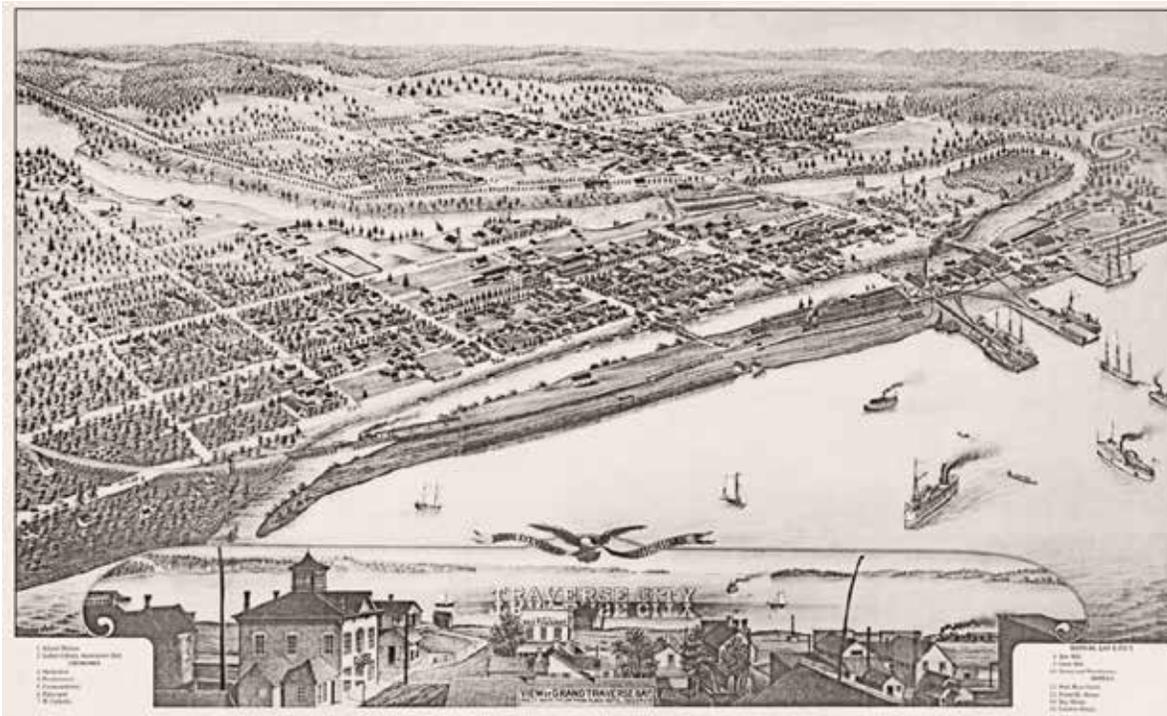
UNDERSTANDING THE LOWER BOARDMAN

HISTORIC & CULTURAL CONTEXT

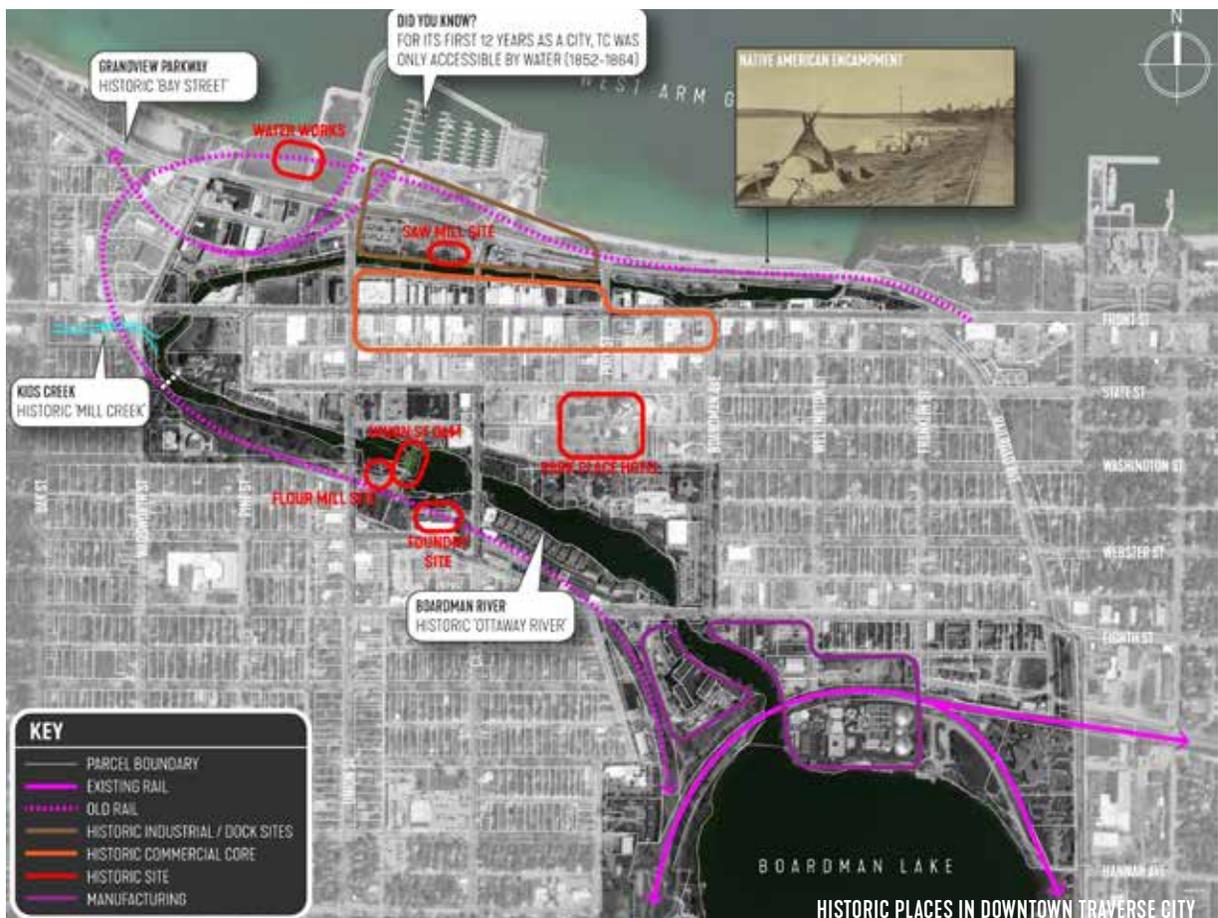
Much has been written and documented about the history of the region from the Aanishinaabek original inhabitants through the initial settlement of Europeans, development of logging enterprises, and industrial growth and use of the river.

A detailed chronology of indigenous occupation of the Grand Traverse Region is presented by Helen Hornbeck Tanner (2009) which focuses on the history of cartography in Michigan and the Great Lakes. This work draws upon the accounts of Peter Dougherty that reveal the origins of the Grand Traverse Band stemming from the intermixing of Ojibwe (Chippewa) villages on the East Bay and Odawa (Ottawa) villages on the Leelanau Peninsula where it forms the west shore of Grand Traverse Bay. Tanner’s work carries on to explain how this intermixing of tribal communities here and abroad occurred both as a result of and subsequent to a complex and fateful series of events beginning with the negotiation of the 1836 Treaty of Washington which led to the establishment of Michigan statehood in 1837 and culminated with the detailed surveying and mapping of the region in the period of 1838 to 1852 when European settlement of the Grand Traverse Region began.

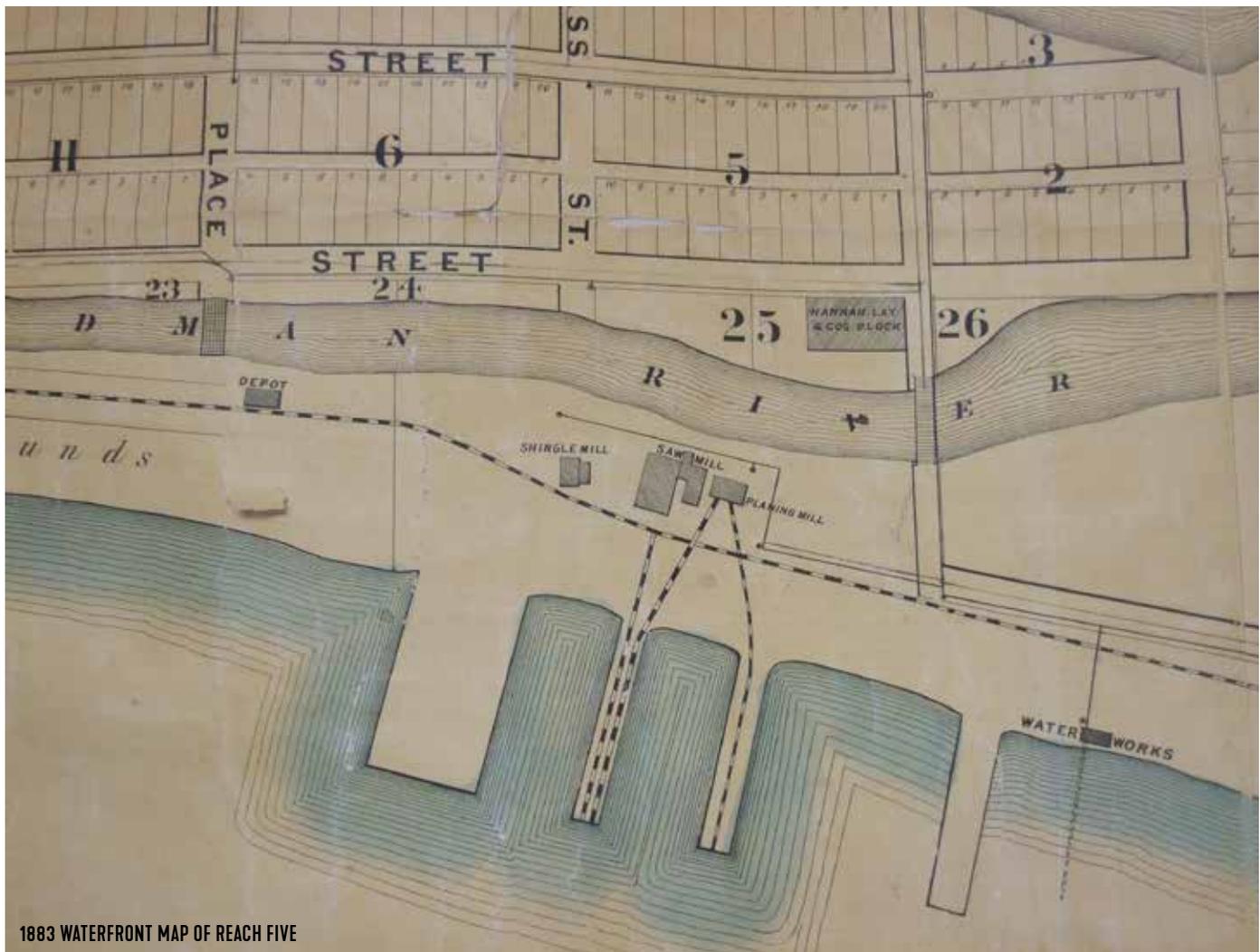
A historical synopsis of the Ottaway-Boardman River At Traverse City was prepared by the Conservation Resource Alliance in 2018, providing an excellent summary of the pre-settlement and early settlement time periods, documenting known use of the Lower Boardman-Ottaway by the Aanishinaabek people. The study also traces the European settlement of the area, the early logging and lumber processing activities, and the industrial development and damming of the river for power.



Based on early maps developed before the region was systematically surveyed and mapped in the late 1830's to early 1850's the Boardman River's name was described as the Ottawa, presumably based on pre-settlement contact with the Odawa (Ottawa) and Ojibwa (Chippewa) peoples at the time. In its earliest form, the segment of the river that we refer to as the Lower Boardman would have been a more sinuous and dynamic element of the natural landscape, winding through the sandy outwash landform and shifting location over time based on vegetative cover, storm events, water levels, and hydraulic flow characteristics.



Based on the climate, soils, and geomorphology of the region, it has been documented that the area of the Lower Boardman was a White Pine-Red Pine Forest. This forest type was often found in areas of sandy and gravelly soils associated with glacial outwash plains. These lacustrine sand and gravel deposits are deposited sediments from the adjacent moraines that lie south of the project area and running east-west through the county. Evidence of this forest type is still visible in the larger white pines in the sandy upland areas adjacent to wetlands and shorelines of the Grand Traverse area. White Pine-Red Pine forests were highly sought after sources of timber in the late 19th century.



The industrialization of the region altered the natural features of the river, its corridor, and its historic consideration as a sacred place. Key changes to the river include:

- Channelization of the river into a more limited space to expand the land available for commerce.
- Damming of the river to create power.
- Stabilizing the banks of the river to limit the lateral movement of the river to protect the investments made in the built environment.
- Construction of stormwater management systems to direct water from local streets, parking lots, and built areas into the river.



BEFORE: ARTIST'S ILLUSTRATION OF PRE-SETTLEMENT RIVER CONDITIONS



AFTER: DOWNTOWN DEVELOPMENT

As a result of these changes, habitat and water quality were reduced due to the loss of filtering wetlands, untreated stormwater, sedimentation, the deposition of often contaminated soils to fill wetlands, and industrial use of the adjacent land and the river.

While the community has prospered due in part to the scenic beauty and natural resources of the region, the river has been impacted in terms of its environmental function. Much of these impacts cannot be undone; however, there are measures that can be taken to improve or recapture some of these important functions, while continuing to build on the economic value of the community.

The combination of a local commitment to environmental values, recent successes within the Boardman River watershed to restore environmental function, and the availability of federal, state, and philanthropic funding for such purposes have created momentum for further idea generation and implementation of improvements.

CURRENT USERS

AQUATIC AND RIPARIAN WILDLIFE

While the river corridor's environmental value has been compromised by the settlement and development of downtown Traverse City, there remains considerable diversity in the plant, mammalian, avian, and fish communities. This study does not include an assessment of existing populations, but observations and experiences from similar and analogous urban environments would indicate both existing habitat value, and the potential for significant enhancement of habitat in the corridor.

PEDESTRIANS AND NON-MOTORIZED TRAVELERS

The existing boardwalk and path system was established decades ago and has successfully created waterfront access for the public and was the first step in recognizing the post-industrial value that waterfronts can bring to a community. The boardwalk system has continued to expand and undergo maintenance and rehabilitation. The path and boardwalk system is not continuous from end to end of the Lower Boardman, and the system is not particularly clear for the new visitor to the community.



WATER- BASED RECREATORS

Water-based recreators include small power boats (south of the Union Street dam) and non-motorized watercraft that come in a variety of forms—kayaks, canoes, paddle boards and similar (throughout the corridor). With the removal of dams upstream, there has been a growing interest in non-motorized boating of the Boardman River, and several private rental providers have developed a business model that includes paddling through the Lower Boardman River out to Grand Traverse Bay. This increase in use has come with issues often cited by local residents, including noise, public drunkenness, and other poor behaviors.

STORMWATER

The land area of downtown has always drained into the Boardman River. The development of downtown sealed much of the surface so that today a higher percentage of the stormwater goes directly to the river (rather than absorbing into the landscape and groundwater), and at an accelerated speed. This accelerated rate of conveyance increases the potential for erosion, but more importantly to this segment of the river is the impact of the pollutants and sediments carried from parking lots and streets directly into the river and out into the bay, impacting water quality and connections to the Great Lakes and beyond. The city has adopted and implemented pollution control best practices in the community and on downtown streets and parking lots as they are improved but impacts to the river continue.



EXISTING CONDITIONS BY REACH

For purposes of characterizing the river, describing existing conditions and considering physical improvements, the UNIFIED PLAN categorized the river into six distinct segments, referred to as reaches. Each reach has a set of common elements in terms of river conditions, adjacent land uses, and bank conditions that make it unique from the other segments of the river.

The planning consultants mapped characteristics of each reach downtown that influence the water quality of the river and groundwater, including storm sewer outfalls, locations of parking lots, land uses, quality and location of existing buffers, steep slopes, and land ownership patterns.

The assessment of existing conditions is categorized into three key topics: River Conditions and Habitat; Access, Open Space and Recreation; and, Land Use and Development Systems.

A series of maps that illustrate the existing conditions of the river and adjacent land are provided in Appendix 2 of this report.



RIVER CONDITIONS AND HABITAT

The study of River Conditions and Habitat includes river depth and velocity, bank conditions, floodplain characteristics, topography, land cover, fish species present, storm sewer outfalls, and vegetation. Three maps were prepared to summarize river and bank conditions and pollution threats, including Parking Lots and Sealed Surfaces, Lawns, and Steep Banks.

A detailed table and spreadsheet of conditions was prepared to summarize the conditions found in each reach (see Appendices). Also in the Appendices are detailed maps of each reach which illustrate the existing conditions of the corridor both for river conditions and habitat and non-motorized circulation and connectivity.

It is important to recognize that the banks of the Lower Boardman River were stabilized during the development of the community to provide for predictable behavior from the river and protect the economic investment of buildings and street infrastructure. As part of this process, the edges of the river were filled with a mix of soils, construction debris, and materials of unknown origin that were covered in vegetation over time, masking the manipulation of the shoreline. Today, these shorelines appear “natural” but are likely filled with materials that may be environmentally suspect. That said, many such shorelines across the state have been effectively rehabilitated to create valuable habitat and recreational access.



REACH ONE

This reach is located at the northern end of Boardman Lake, as the water body transitions into the Lower Boardman River. This reach is heavily influenced by the Union Street Dam and is essentially a slow-moving impoundment that is wider and deeper than other reaches, averaging a water depth of 7.1 feet. The riverbanks are low banks that include trees and shrubs that protect the banks of the river. Adjacent to the back is commercial and residential development that supports open lawns and parking lots, increasing the risk of pollution and sediments being contributed to the river.

Within this reach is land that is a public park, currently used for a non-motorized trail and informal park activities.

REACH TWO

Reach Two is similar in river conditions to Reach One but is more intensively developed. Nearly half of this reach has vertical walls at or near the waters edge, that inhibits the movement of mammals and reptiles from the water to the riparian lands. About one-quarter of the shoreline is characterized by a steep and high bank that is over 10-feet in height. Most likely much of this high bank is the result of fill materials placed to increase the buildable land near the shore. There are a number of lawn areas and parking lots that drain to the river in this reach.

Conditions within the river include fallen trees near and adjacent to the shoreline that are frequently used as basking logs by turtles and are likely cover for fish.

Reach Two includes the Union Street Dam, the area of which has been studied thoroughly as part of the FishPass project.



REACH TWO VIEW OF THE GOVERNMENT CENTER

REACH THREE

Reach Three includes Hannah Park and the western bend of the river just south of Front Street. It is located down stream of the Union Street Dam and consequently, the velocity of the river picks up considerably while the depth of the river drops to an average of 3.1-feet. Kids Creek drains into this reach on the west bank of the river via a culvert that has been designed to exclude the passing of sea lamprey into the creek.

The river edges of Reach Three are the most topographically diverse containing extended floodplain zones, low and high vegetated banks, and vertical walls. The floodplain extends beyond the top of the bank in

over 35% of the total linear shoreline of this reach. The northern banks of this reach are highly developed with several parking lots and eight street and parking lot outfalls into the river. The adjacent land of this reach is nearly 50% publicly owned land with naturalized edges buffering the river from adjacent lawns.

There is great opportunity for habitat creation at the park, particularly on the west end. The park could maintain its “English Park” character on the eastern half and have more intensity improved habitat on the western half. Fish tend to stage near the Kids Creek outfall structure and this area is a popular place to fish.

HISTORIC PHOTO OF HANNAH PARK



REACH FOUR

Reach Four marks a transition into the flatter land heading toward the mouth of the river, and the dominant edge characteristic is low vegetated banks, followed by floodplain edge. That said, about 20% of the bank in this reach is vertical wall. The velocity of the river in this area is the highest of the Lower Boardman River averaging 1.72-feet per second, while the river depth is at its shallowest at an average of 2.9 feet.

The land adjacent to the river in Reach Four is densely developed, and is nearly all sealed surfaces including development, proposed development, and parking lots.

Even with the density of development, there is river frontage behind the Traverse City Light and Power site that could offer opportunities for habitat improvement. A narrow strip of public land on the north side of the river provides opportunities for habitat enhancement and enhanced access.

This reach of the river is known as a good place to fish. The river structure, currents, and fish weir result in fish tending to stage in this area as they move upriver. Many anglers and observers congregate near the fish weir in the fall during the salmon run and in the spring for steelhead (rainbow trout). Increasing fish access in this reach is important.



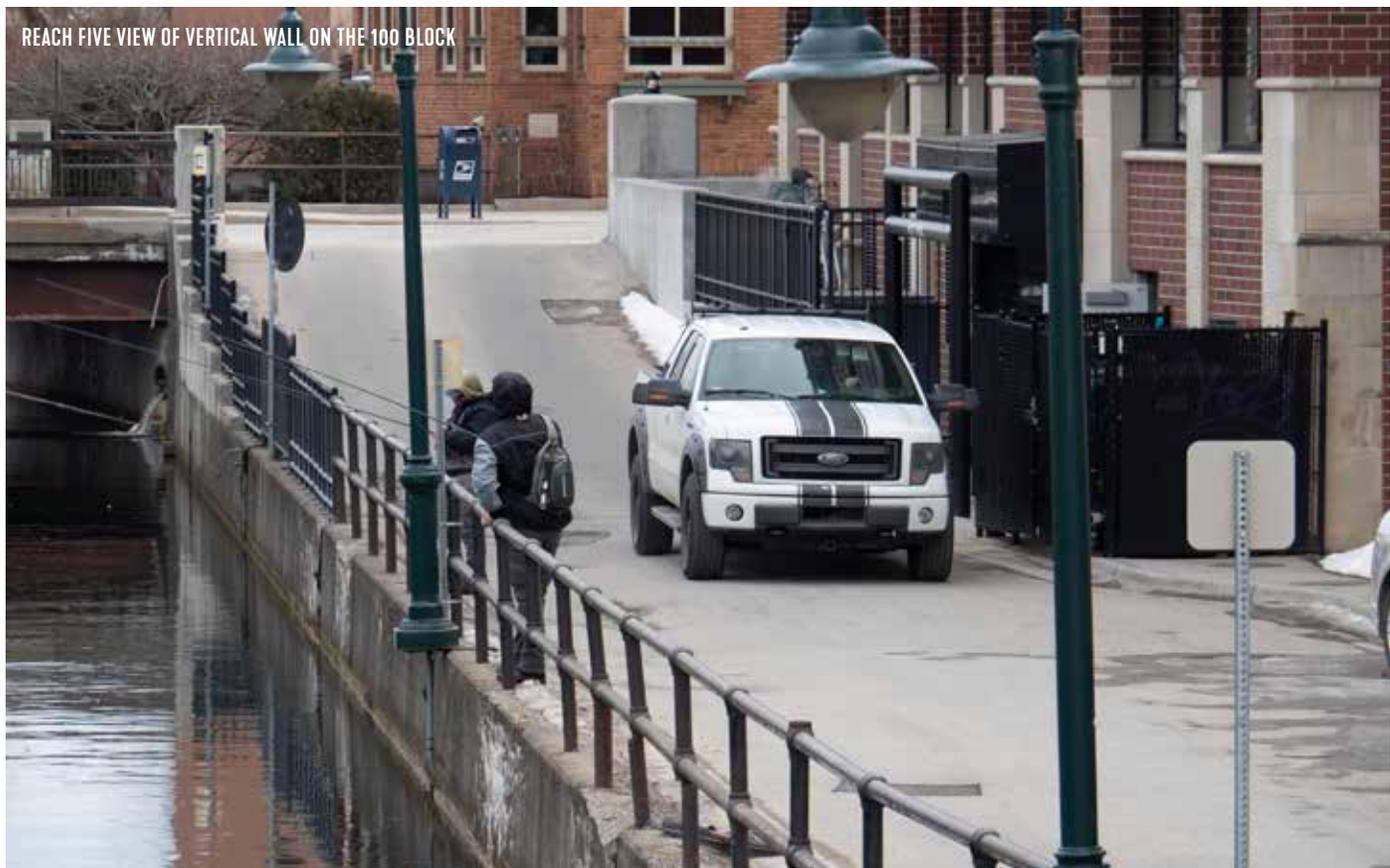
REACH FIVE

Reach Five is the place where the river passes through the core of downtown and is the narrowest stretch of river in the Lower Boardman. 55% of the banks are vertical walls, while the remaining edges are either low vegetated banks or floodplain edge. The river velocity is slowing from Reach Four to an average rate of 1.13-feet per second, and the depth of the river averages 4-feet.

The south bank of the river is continuously developed with alleys and parking, while the north bank of the

river is all publicly owned, being used for parking, the Chamber of Commerce, and farmers market. Reach Five (and Six) includes the most storm sewer outfalls at around 35 (per city records). While many of these outfalls are roof drains and do not contribute a great deal of pollution, many are from adjacent street and parking lots.

The public ownership of half of the riverbank creates an opportunity for habitat development in an area of high pedestrian activity.



REACH SIX

The river continues slowing in velocity and widens slightly as it nears the mouth into Grand Traverse Bay. While the north bank of the river is fronted by parking lots, these lots have been improved in the last decade to include stormwater pollution control mechanisms. Approximately 65% of the riverbank is vertical wall, most of which is on the south bank to support adjacent commercial development.

The public land on the north side of Front Street near the end of Boardman Avenue has a stable bank; however, the public land near the end of Wellington Street is eroding under the existing docks. The existing coastal wetland at the mouth of the river is an excellent opportunity for habitat protection, enhancement, and learning.

The improvements to the area could include helping to manage water quality from the Grandview Parkway (MDOT).

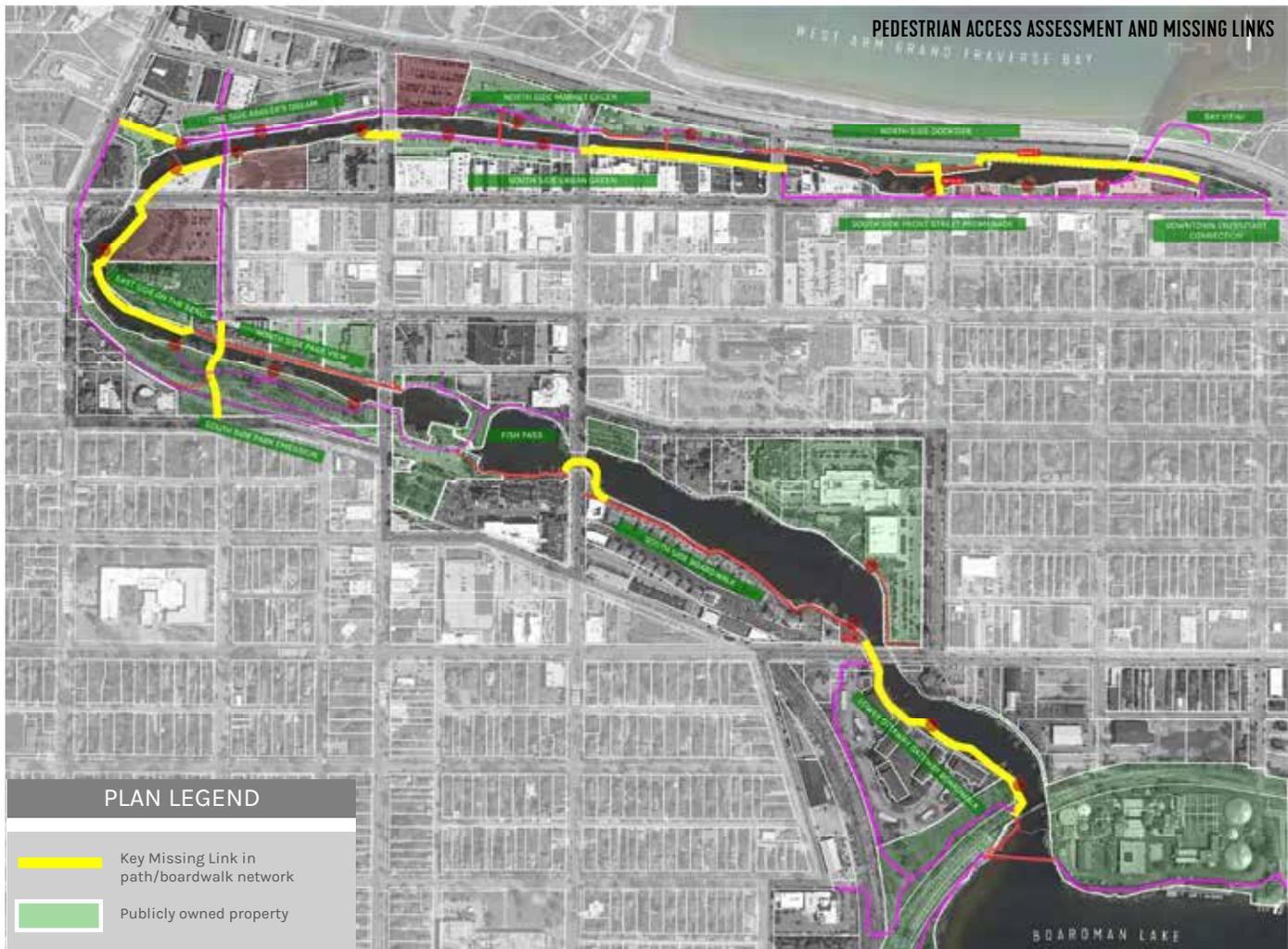


REACH SIX VIEW OF MURCHIE BRIDGE

ACCESS, OPEN SPACE AND RECREATION

The study of Access, Open Space and Recreation includes the presence of paths and boardwalks; connections to other walks, paths, neighborhoods, and downtown; known favorable fishing places; existing parks and related recreational amenities; boat launches and access points; pedestrian bridges and connections to vehicular bridges; gaps in pedestrian connectivity; and, conflict points between pedestrians and vehicles.

A map of the project area was prepared to identify the existing conditions, and to note where gaps in recreation access occur along the corridor. Below is a brief description of each reach relative to access, open space and recreation.



REACH ONE

The western side of Reach One includes a non-motorized trail that links downtown to a trail network that extends along the shores of Boardman Lake. This trail is not however, along the river, but on the west side of the Riverine Apartment complex just south of Eighth Street. There is a public access easement along the riverbank on the east side of the apartments, but a trail was never built in the easement.

A trail through the public park land south of the apartments links users back to the river near the rail viaduct. The parkland near the rail bridge could be upgraded and thought of as a gateway to downtown Traverse City. The Boardman Lake trails on either side of the lake meet at this point.

The design of the Eighth Street bridge allows for the construction of a path on the western side of the bridge, which would then link to a boardwalk and trail to the north.

There is a very narrow piece of city owned land on the east side of the river extending from the MDOT rail corridor north toward Eighth Street. This land does not connect to Eighth Street, so use of this strip would include challenges to connect at Eighth Street on the north, and to connect through the rail right-of-way on the south.



REACH ONE VIEW UNDER EIGHTH STREET BRIDGE

REACH TWO

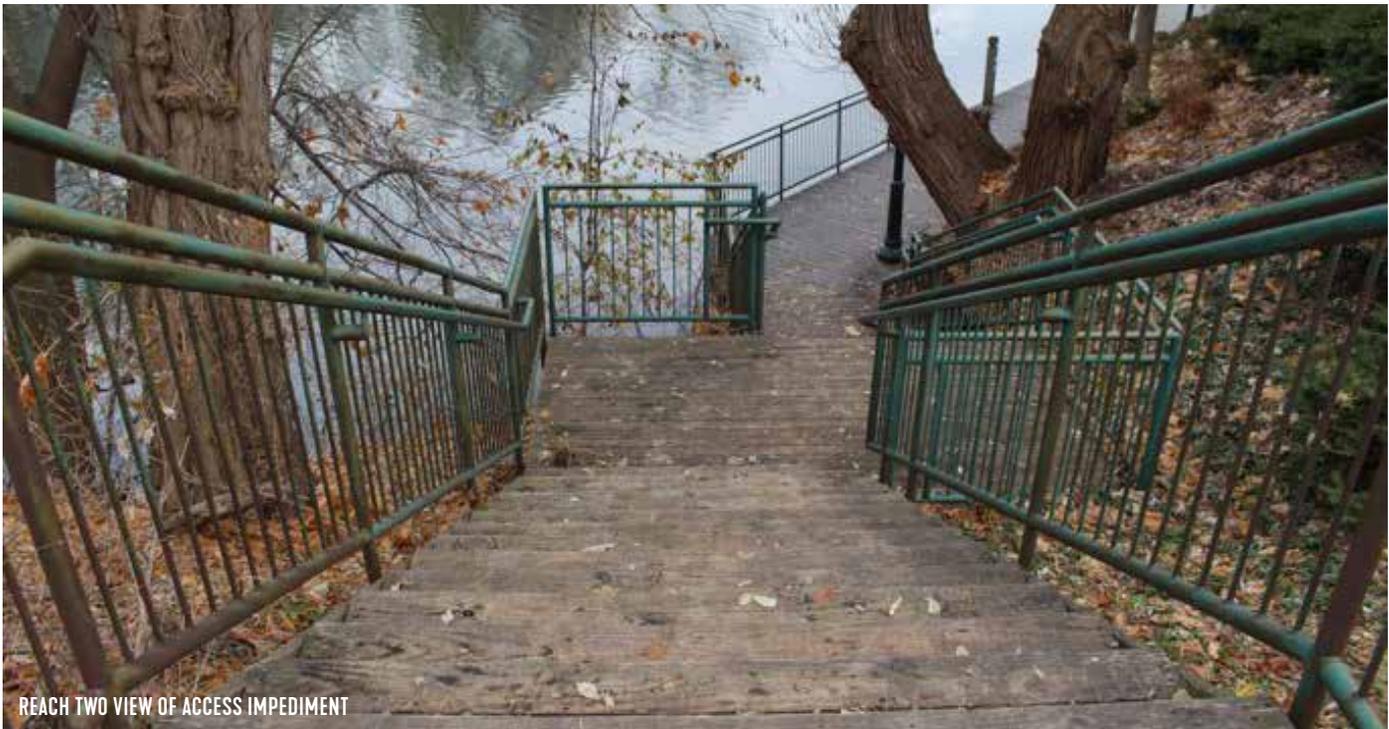
There is a boardwalk on the east side of the river at the government center that, while being a dead end or cul-de-sac, does provide a quiet place to enjoy the river. Grand Traverse County is considering improvements at the government center which include barrier free access to the existing boardwalk area.

On the southwestern bank of the river there is a continuous boardwalk connecting Eighth Street to Cass Street. The boardwalk does not provide universal access up to Cass Street or under the bridge to the boardwalk west of Cass Street. Dealing with the grade change at the Cass Street bridge is a challenge due to the design of the historic bridge. Options should be explored that may include a tunnel under the road, boardwalk out into the middle of the river, and/or extensive ramping.

The southwestern boardwalk is not well used, which may be in part due to the perception that it is private property. Signage and wayfinding are needed throughout the corridor, and this could help with the private property perception noted above.

On the north bank, just east of Cass Street, is the American Legion Park. While public input indicated that this park should remain passive in nature, the plan should consider long-term uses and goals for the American Legion Park, even if in the short-term the park is going to be more active due to a potential temporary kayak launch related to the FishPass project.

The noise and energy from kayakers are especially felt in this reach due to the concentration of residents living along the waterfront.



REACH THREE

This reach includes Hannah Park, which provides an unpaved path along the high bank to the southern edge of the park to connect Union Street to Wadsworth Street. The trail through the park, a former rail bed, is an official city trail. There are several overlook decks along the river in Hannah Park, but these decks are not universally accessible. Residents like the low intensity use of Hannah Park and green space character of the park. It is the most intact natural bank of the river in the project area. The park does get used throughout the year, being a great place to sled in the winter. The park is not used for a lot of community-wide events.

While there are paths that are in the park and on the north side of the river, there are a large number of dead ends in the trail, as well as several missed opportunities to connect the trail pieces together to create a clear, user-friendly system.

For example, while the new boardwalk on the north side of the river (near the Uptown development) provides universal access to an area that previously did not offer it, to the west of the new ramp the path is a dead end. Current plans for improving the Front Street bridge include an underpass on the east side of the river, which could become an important link in the overall pedestrian system if the new underpass can be connected to the dead end near Uptown.

Further, the public noted that a non-motorized connection over the river, connecting the two legs of Pine Street, would fit well within existing cycling and walking use patterns in this area.

The public parking lot on State Street is designated park land, but parking may not be the best use for this property.

REACH FOUR

On the southern bank of the river there is very little that is accessible by the public. In the north and western banks access is limited due to lack of public property and past efforts to remediate environmental concerns which created a cap that should not be disturbed. The northern shoreline has an existing path that connects from Union Street to the Michigan Department of Natural Resources (DNR) fish weir, but then leaves visitors in a parking lot without clear direction of how to stay engaged with the river.

The community is very happy with the Pine Street pedestrian bridge - it is both attractive and useful, as it helps connect the path on the northern bank and the warehouse district to Front Street. There have been discussions related to the benefits and costs of pursuing public access on both banks of the river in this reach, and this question was posed to the participants in the second round of public engagement.

This reach of the river is very popular for anglers, and adequate access for this activity should be provided.

For river recreational boating users the fish weir poses issues getting through the weir, especially in times of high water.

REACH FIVE

The pedestrian paths and boardwalks through this reach provide some level of connectivity on the north side of the river, but do not provide universal access, and the boardwalk on the 200 block was recently underwater due to high water levels.

On the south side of the river a sidewalk directly adjacent to the 100 block parking lot/alley is provided, but it is narrow and subject to degradation related to the undermining of the retaining wall. On the 200 block there is limited room for both service and pedestrians; however, the alley is used by both.

The pedestrian bridges connecting the south side of the river to the north on both blocks are a function and visual feature. On the 100 block the bridge connects

from the parking lots/farmers market to a pedestrian alley leading to Front Street. On the 200 block pedestrians are left in the alley, which does not give the sense that pedestrians are welcome there.

The issues with the wall and sewer undermining provide an opportunity to rethink this area to better serve both pedestrians and service vehicles. The 100 block along the river is the greatest opportunity for positive change, such as removing the wall, increasing landscape and habitat, and reducing parking directly adjacent to the river.

A memorandum report on the condition of the wall and recommendations for repair is included in Appendix 3 of this report.



REACH FIVE VIEW OF THE 200 BLOCK OF FRONT STREET

REACH SIX

Access in this reach of the water is limited to a boardwalk that connects Park Street to the boat launch and a pocket park and walk near the end of Wellington Street. This path connects to the bay and the TART trail via an underpass beneath the Murchie Bridge, which is limited in use during periods of high water. The boardwalk on the north shore doubles in use as seasonal boating slips.

On the south side of the river, Front Street acts as the river path, and there are four places where publicly owned lands give visual access to the river.

The public land near the real estate office tends to be underutilized due to the noise from traffic on Front Street and the Grandview Parkway. MDOT

improvements to the Grandview Parkway are expected in 2023, and the design of the Front Street intersection includes some traffic calming measures.

The boat launch on the north side of the river is well used, though periodic high water levels inhibit some boat traffic getting out to the bay under the Murchie Bridge. The launch is often used by kayakers, especially when the waves on the bay are high. The launch parking lot was recently improved; some hazardous fill material may exist under the lot, so the asphalt is serving to seal the surface.

Overall, this area could benefit from greater connection to the waterfront along the bay, the TART trail, and from the north side of the river to the south side.



PEDESTRIAN BOARDWALK-BOAT SLIPS IN REACH SIX

REACH ONE

Land use in this reach is distinctly different depending on the side of the river you are referencing. To the west is the Riverine Apartment complex, built on land zoned R-3 Multiple Family Dwelling. This development is 2- to 3-story buildings set in a park like setting, with a 25-foot setback from the ordinary high water mark. Between the apartments and the railroad is a narrow public park.

On the east side of the river is a property developed for commercial and office uses, zoned D-2 Depot Development with a 25-foot river setback. This is more densely developed than the west shore, but the river acts as an effective buffer so that the two uses and scale do not appear incongruous. The Depot Development is still experiencing new investment as buildings are under construction as of the date of this report.

Significant changes to the land use and density are not anticipated in this reach.

REACH ONE VIEW SOUTH FROM EIGHTH STREET



REACH TWO

The south side of the river is home to a reasonably recent residential development that sets back 25-feet from the river and has an appealing visual character, though one that creates a solid wall of architecture along the riverbank. The north side is an eclectic mix of uses, with the local government center, a church, low scale residential development, and a small park. The buildings for the government center and church are not overtly oriented to the water, and the growth of trees and steep banks screen the parking and access drives from view. Each of these uses has a 25-foot river setback.

The wide nature of the river in this reach creates a passive ambiance. Significant changes to the land use and density are not anticipated in this reach.

REACH THREE

The southern and western shoreline of the river is primarily publicly owned property, with this largest parcel being Hannah Park. This shoreline is the most natural in character and least manipulated by the growth of the community.

The northern and eastern shore is a mix of uses, including the U.S. Post Office, public parking, the recent Uptown mixed-use development, Riverview Terrace residential high rise, and vacant land in the process of being developed. The privately held land on this side of the river is zoned C-4c Regional Center, a district within which buildings up to 100-foot in height could be allowed with a Special Land Use permit and voter approval. The C-4a district requires a 10-foot river setback.

The view of the post office from the river is dominated by a high concrete wall. Uptown, though architecturally attractive, is strongly visually present on the river. The

9-story Riverview Terrace tower is set back from the river amidst a park like setting. Together these uses and structures provide a great deal of visual variety along the river—appealing in places, but not well unified.

Preliminary site plans for the new development indicate a 25-foot setback from the river, and a potential pedestrian path along the river.

REACH FOUR

The southern shoreline of this reach is the western edge of downtown proper. Buildings include the Lake Michigan Credit Union (a contemporary 4-story building), the 1-story J and S Hamburg restaurant, the 1-story Traverse City Record Eagle, and the 4-story historic structure home to 5/3 Bank. This stretch of Front Street also includes a large vacant parcel of land (124 West Front Street) that is in the process of development approvals. These properties are all zoned C-4b Regional Center, a district within which buildings up to 68-foot in height could be allowed with a Special Land Use permit and voter approval). The C-4b district requires a 10-foot river setback.

The north shoreline includes a range of use, including the 1-story TraverseVision, the DNR fish weir, parking lots, and the new Breakwater development. The properties are zoned C-4a and C-4b Regional Center and require a 10-foot setback. A long, narrow stretch of property rests between Breakwater and the river, effectively creating a 25-to 35-foot setback.

Significant changes to the land use and density are anticipated in this reach in the near-term as vacant land is developed.

REACH FIVE

The northern shoreline of this reach is publicly owned land; however, the parcel on Union Street is not designated park land and could potentially be sold by the city for private development. This parcel is zoned C-4a Regional Center which allows a 45-foot building height and a 10-foot river setback.

With the exception of a single parcel of land on the 100 block, all of the southern shoreline in this reach is publicly owned land and is currently used for building

and business serving and for parking. The 100 and 200 block of Front Street is located in the core of downtown, and the privately held land fronting the alley and parking are a mix of 1- to 4-story buildings, many of which have a distinctly historic character. Given development market conditions in downtown, it would not be surprising if a number of the 1-story buildings were redeveloped in a denser fashion, and many of the lots are currently open land, providing opportunities for economic redevelopment.



REACH SIX

The northern shoreline is public property, including the parking lot and boat launch on the western half and MDOT right-of-way for Grandview Parkway on the eastern half. Land development on the Front Street frontage is squeezed between the street and river on very shallow lots. The land is zoned C-4a Regional Center which allows a 45-foot building height and a 10-foot setback.

The quaint, low key, coastal village character of the development along the river gives this reach a unique character among other areas of downtown, almost “Fishtown” like. Recent construction of a larger scaled commercial office building indicates that although there are lot constrictions, the potential for redevelopment is strong on the east end of Front Street.



REACH SIX EXAMPLE OF DIVERSE CHARACTER

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CHAPTER 3

ACTION PLAN

INTRO

The Action Plan outlined in this report is based on the extensive public input gathered during the outreach efforts, the professional recommendations from the planning consultants, and the guidance of the Leadership Team. The Action Plan should be utilized to solicit further input from the community, key stakeholder organizations, and the governmental agencies that will ultimately be responsible for the plan's implementation.

As evident by the content of the public input gathered, the community is moving toward a “water centric” perspective of the river and downtown. The values expressed by the public have been integrated into this Action Plan. The plan provides for both the human use of the river and the potential for preserving and enhancing the natural habitat.

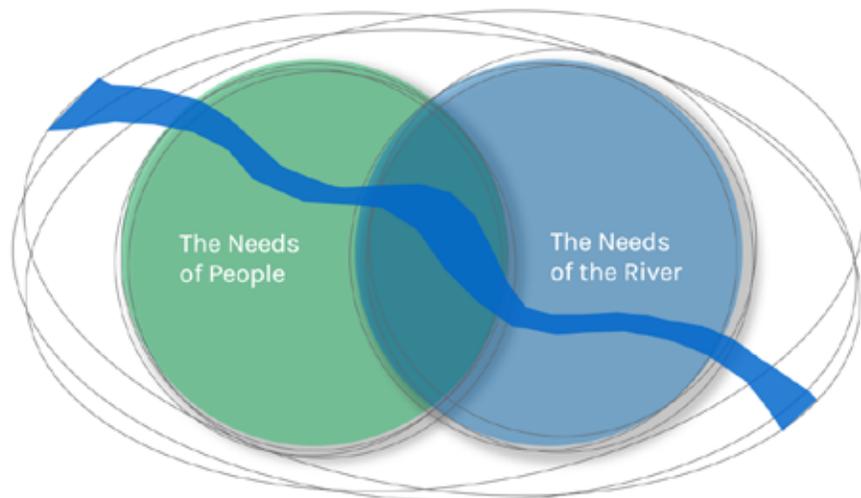
The Action Plan is based on the premise that the environmental value of the river corridor is central to the community; this value should be reflected and reinforced through the management of change in downtown. When the community considers all beneficiaries to the river (including nature) in the design process for future downtown and riverfront projects, then the Lower Boardman will reflect the value placed on water, land, nature, health, and wellness.

The “water centric” values, best practices, and development guidelines integrated into this plan will translate, over time, into better designs for public places, such as streetscapes, public park spaces, pathways, and transportation facilities, ensuring that new development creates a better interface between the urban fabric and the river.

Evolution of River

- Life Sustaining for culture, food, water, and navigation.
- Support for industry to transport logs and goods, convey storm water, and provide power.
- Recreational resource for boating, walking, and viewing, and a powerful economic draw.
- Re-centering the river as an ecological system

▪ Finding the Balance in the Urban Environment



RIVER CONDITIONS & HABITAT

The river conditions in the project area have been assessed as to their overall condition and relative habitat value. The project area includes the urban core of Traverse City where historic development patterns did not fully capitalize on the river’s potential for recreation and access or recognize its environmental value. The impact of development has left a large percentage of the corridor with vertical walls and hardened, steep slopes but has also created some interesting urban places that the community values, such as the boardwalk, coffee shops, and restaurants that overlook the river.

The river corridor in the project area also includes some areas of natural beauty and value. Some of these areas have been impacted by community development in limited ways, while other seemingly natural areas are urban fill masked over by trees and vegetative growth.

Community feedback from online surveys and at public workshops has strongly supported the idea of “greening” the riverbanks through downtown to create riparian habitat and improve water quality of the river. While human access and use, and preserving and creating habitat are not mutually exclusive, most residents who have participated in the planning process are in support of habitat as a priority over public access. This bias has several contributing factors—environmental stewardship values, the desire to maintain a passive and quiet setting along the river, and relative beauty of trees and landscape over walls and paving (to name a few).

The section below outlines the basic direction for preserving and creating natural habitat in the project area.

CORE VALUES

The following Core Values, established at the outset of the planning process, most align with the preservation and restoration of the environmental assets of the river:

- Be consistent with best riparian and aquatic science, best water and land management practices, and be harmonious with the river.
- Be explicit to the commitment to improve, restore, and protect the health and integrity of the riparian ecosystem of the lower river.
- Manage invasive vegetation, protect and retain existing native vegetation, and add native vegetation where possible.
- Ensure that the natural flow of the river is enhanced and not curtailed or impeded by any element of the plan.

PROJECTS

The UNIFIED PLAN includes a physical illustrated plan that outlines public improvement projects within the project area, including both habitat and access/open space enhancements (this plan is described further in Chapter Four: The Illustrated Plan). Below is a summary of the broad categories of ideas recommended in the UNIFIED PLAN.

- Improve degraded and hardened riverbanks on public property with green solutions and enhanced riparian habitat.

The illustration below identifies key opportunities along the corridor for habitat improvement based on slopes, bank conditions, flow and depth characteristics of the river, adjacent land uses, public activity along the river, and the general condition of the plant communities.



As noted above, much of the existing riverbank, though covered in vegetation, is compromised in its value for habitat. Degraded banks of the river should be restored with bioengineering solutions where possible, and include consciously placed habitat structures, such as bird houses and hibernacula.

Other reaches, including existing floodplains and low slope banks, provide opportunities to create a diverse mix of habitat types (including wetlands).

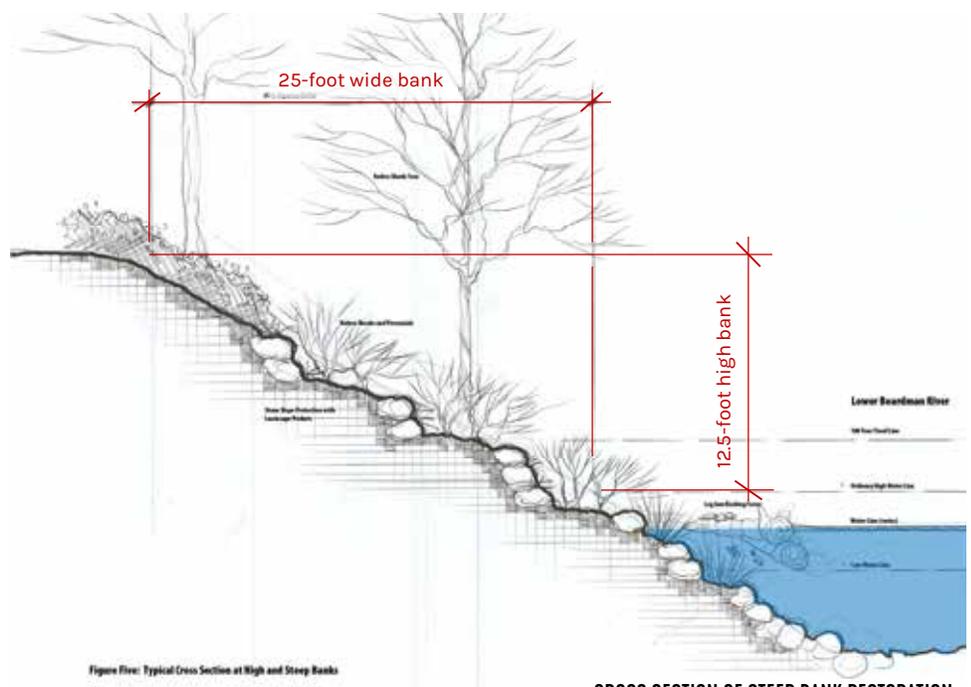
Vertical retaining walls are located throughout the project area, typically where space is limited or where past need for land uses (such as parking) were considered very important. In some places these walls are necessary to support existing buildings and are in good condition. In other

locations the walls are in poor condition and are being undermined by the river. Finally, in some areas walls were installed to create more land (or for convenience) but are not particularly necessary. In each case, vertical walls (as designed) offer no real habitat benefit.

The ongoing assessment of the walls between Union and Park Streets should be expanded in the future to assess the condition and purpose of other existing vertical walls on public property in the project area.

The UNIFIED PLAN advocates for the removal of vertical walls, where feasible, replacing the walls with bioengineered riparian edges. In places where vertical walls are required, but must be replaced, there are innovative wall design techniques that retain soil while offering some habitat value.

- Holds soils in place with roots
- Stabilizes toe of slope to reduce scours and undercutting



CROSS SECTION OF STEEP BANK RESTORATION

- Create more green space with enhanced habitat and sustainable landscapes where public land exists along the river corridor.

The public strongly believes that surface parking is not as valuable along the river corridor as green space. While the need for parking to support the downtown and the bayfront amenities is clear, the existing parking lot sites are an excellent opportunity to create more natural riparian and wetland habitat.

To implement a change in parking along the river, the DDA will need to collaborate with the city, local stakeholders, and the farmers market to consider the best and highest use for the land where parking lots exist along the river, emphasizing the value of creating habitat and protecting water quality. Further, the community should consider new parking facilities (not adjacent to the river) that could allow the development of more green space along the river.

In the near-term, interim sustainable improvements to parking lots could be implemented to manage impacts of stormwater, such as enhanced landscape buffers.

For all publicly owned river edges, the UNIFIED PLAN recommends habitat improvements including ideas for improving fisheries and aquatic resources, riparian bank improvements for birds, mammals and reptiles, and the potential for creating floodplain and wetland types likely present in pre-settlement times.

- Coordinate habitat enhancements with the FishPass (assuming implementation).

The development of the FishPass project, assuming it is implemented, offers an opportunity to enhance aquatic species habitat within the river, up- and down-stream from the dam. These improvements should focus on the needs of the target fish species and contribute to the scientific research conducted by the FishPass. There is also an opportunity to improve riparian habitat between the Union Street and Cass Street bridges to balance any additional hardened edges built as part of the FishPass.

The DDA and city should continue to coordinate efforts with the FishPass project team.

- Encourage private development to protect and create habitat.
- Provide for in-stream habitat improvements. Although the edges of the river are reasonably fixed compared to pre-settlement conditions, the river remains an ever changing environment based on changing water levels, flood events, falling trees, and other influences. With each riparian bank and recreational access project implemented, the projects should also consider and include in-stream habitat improvements such as rock vanes, managed log cover/basking structures, stone treatments of vertical wall bases, spawning beds, and related techniques to increase the desired populations of fish, reptiles, and macroinvertebrates.

GUIDELINES

- Use native landscape plants and habitat enhancement structures on new public projects.
 - Develop a plant palette of desired native plants, based on slope stabilization characteristics, urban conditions compatibility, aesthetic and cultural values, and habitat value (e.g. for pollinators).
 - Develop a list of target fisheries, aviary, mammal and reptile species and habitat structure types to be incorporated into the corridor (e.g., osprey nesting).
 - Incorporate native plants and habitat structures (where appropriate) into each project.
- Develop design and maintenance guidelines for riparian landscape for use in maintaining public sites and guiding private landowners.
 - Benchmark other communities' efforts to promote native landscape in the public and private realms.
 - Develop guidelines for design and maintenance based on UNIFIED PLAN and input from stakeholders.
 - Promote use of native landscape and guidelines through local advocacy organizations, garden clubs, and related organizations.



EXAMPLE OF PRIVATE DEVELOPMENT WITH NATIVE LANDSCAPE

ACCESS, OPEN SPACE & THE BUILT ENVIRONMENT

There is a need to expand facilities on the river corridor to accommodate access, movement along the riverbank, and on-river recreation. However, actions to meet this need must be tempered within the larger desires to maintain a natural character of the river corridor (where it exists).

CORE VALUES

The following Core Values, established at the outset of the planning efforts, most align with providing public access and open space along the river:

- Identify/prioritize opportunities for multi-modal access to the river.
- Integrate existing riverwalks and pathways with new connections between sites and destinations that link the river to the city in ways that are physical, visual, aesthetic, and psychological.
- Enhance ecological and aesthetic river conditions, take advantage of, and integrate iconic structures, and identify new sites and structures that serve as destination or centers of programming to attract year-round access.
- Make nature-based stormwater BMPs a priority.

PROJECTS

The UNIFIED PLAN includes a physical illustrated plan that outlines public improvement projects within the project area, including access and open space enhancements. Several broad categories of projects evolved out of community input, including:

- Provide a clear, legible connected path system that allows users to find their way along the corridor, while providing for moments of discovery that feel unique.

Currently there are gaps in the river trail system that dead end or leave the visitor confused as to how to continue their exploration of the river and community.

The DDA has established a wayfinding/water-trail signage plan that provides the visitor guidance, as well as information about the community and its history.

While wayfinding systems are an important component to a linear greenway, the path itself must be legible and clear, offering visual/physical clues that direct people to continue their exploration. The community is very clear in their desire to maintain contiguous stretches of the river that are not developed with paths but focus on natural habitat with limited human intervention. Having paths on both sides of the river would make the system very clear, but not as friendly to non-human species. In addition, such an approach would leave the river corridor looking excessively urban, which is not a community goal.

The challenge is to develop a path system that allows some continuity along the river but may move from one side of the river to the other in an adjacent segment. Such a system should also provide some diversity in experience where a path is provided, allowing for areas that are boardwalk over the river, walks along the top of the bank, and places where the public street is integrated.

When designing a particular path segment, the UNIFIED PLAN considers the least impactful locations for new paths relative to riparian and aquatic habitat. This allows for the diversity of path experience noted above and honors the community's goal of providing meaningful natural habitat.

- Connect the river path system to adjacent neighborhoods, downtown, bayfront, TART trail, and BATA stops.

The UNIFIED PLAN identifies key connection points along the river corridor that should be integral with a linear path system and develop strategies to improve connectivity to these community assets.

As each segment of the river is improved for public access, the UNIFIED PLAN must provide physical/universal access to the river corridor from community linkage points (e.g. the TART trail) as part of each improvement project.

The alley, service and parking area on the south side of the Boardman at the 100 and 200 block of Front Street is a critical segment where there is a need for vehicle use, as well as large volumes of pedestrians that desire access along the river and connection to Front Street. A creative solution that manages this blend of users, develops an interesting civic space and “greens” the banks of the river for habitat is required.

- Consider a range of open space nodes and amenities along the river corridors of varying sizes, purposes, and characters, including:
 - Water use amenities identified by the Boardman River Water Trail Study, such as accessible kayak launches, kayak racks (as needed), portage points (e.g., at Fish Weir) and marketing materials.

- Site furnishings such as trash and recycling stations, lighting, drinking water and water bottle filling stations, bicycle parking and signs to provide a safe and clean environment.
- Public restroom facilities along the corridor, and/or better wayfinding to publicly available restrooms at places like the Government Center and the Traverse City Visitor Center.
- Fishing access points located at known places of angler activity. These places typically function the best when segregated from pedestrian movement along the linear path.
- Resting and viewing places, spaced at key points of natural or architectural beauty, and where people watching is likely.
- Small scale community gathering places where groups can gather for photos, lunches, small performances, etc.
- Art installations at bridges and other key public areas along the river.
- Improve streets and bridges to create a more pedestrian friendly downtown and improve access to the river.

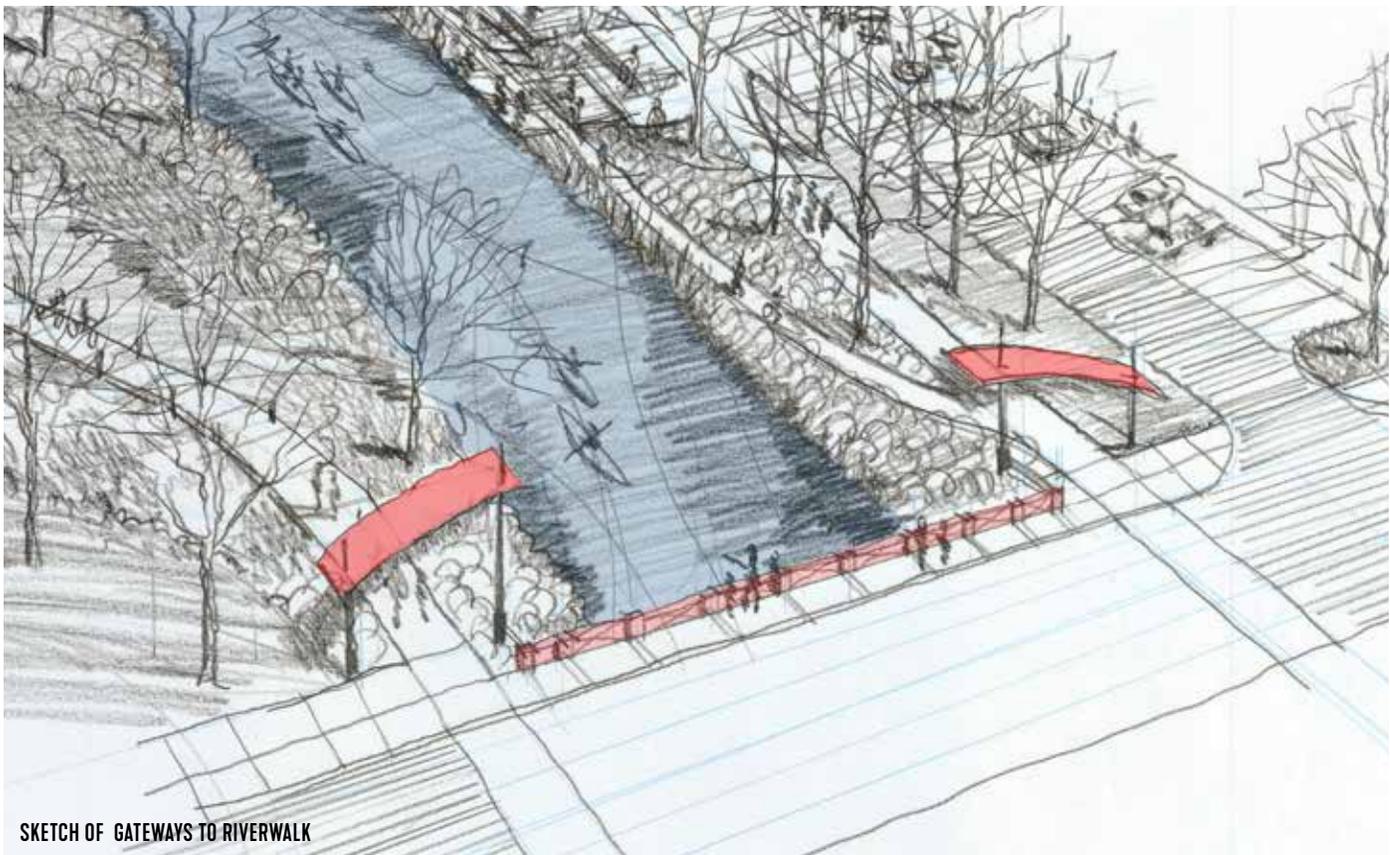
The DDA has coordinated with the City Engineering Department to review and collaborate on planned bridge improvement projects, and the projects have considered the need for pedestrian access. For example, the proposed bridge at Front Street will include a pedestrian underpass on the east side of the river, and the Eighth Street bridge will have an underpass connection on the west side of the river.

The downtown bridges that cross the river north of Front Street are limited in their ability to provide consistent underpass access due to the low bridge and road grades, which cannot be amended due to existing buildings and related constraints.

As the planned bridge improvements are made, the city and DDA should consider pedestrian access improvements in the area of the bridges as a priority to gain efficiencies in construction and phasing and enhance connections at-grade with the street and the available underpasses. This coordination should occur during the Capital Improvement Plan

(CIP) planning process to ensure adequate funding is allocated.

The design of the streetscape at the bridges could use best practices such as a speed tables and other traffic calming devices to enhance pedestrian safety and call attention to the presence of the river and the available recreation access. In addition, the city and DDA should consider the potential for creating sculptural gateways at the bridges to highlight the presence of the river and the removal of parking on bridges to increase pedestrian space. The sculptural gateways would not need to be directly attached to the bridge to be effective.



The planned reconstruction of the Grand View Parkway by MDOT provides a great opportunity to work with MDOT to make pedestrian safety, access, and crossing the corridor prominent features of the project.

GUIDELINES

- Ensure universal access and consciously designed experiences for a range of abilities and aptitudes. Universal access to facilities and experiences on the river is a baseline assumption.

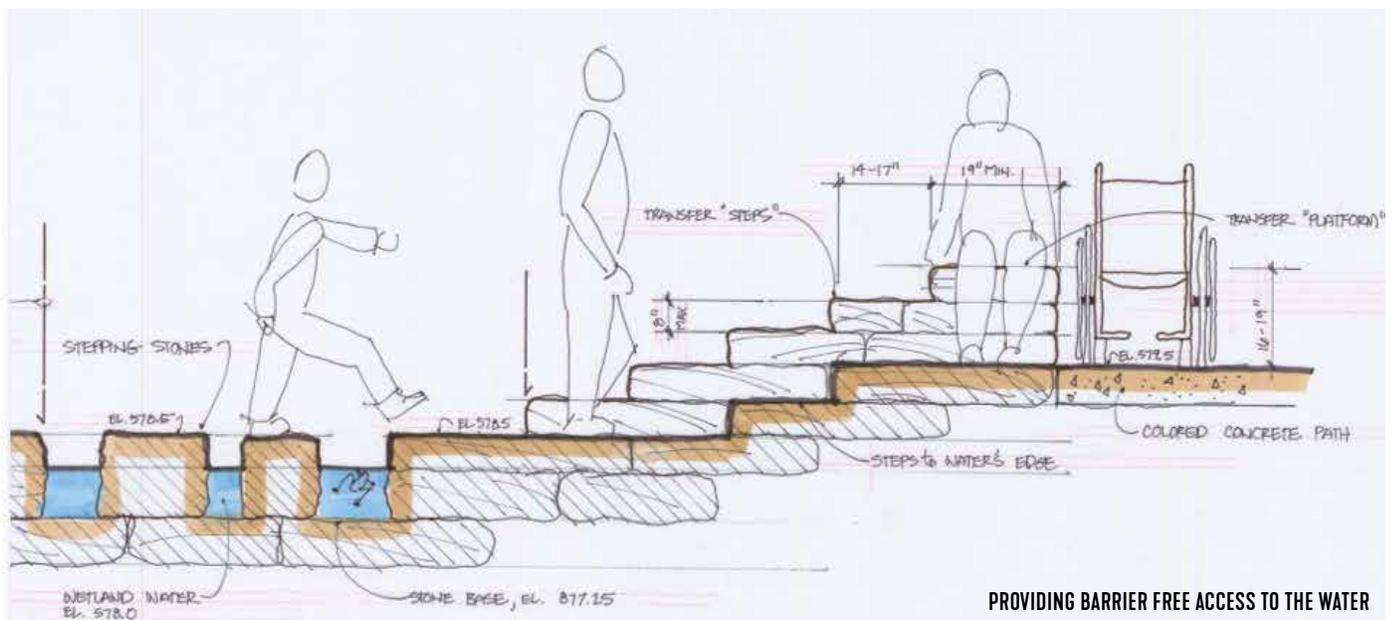
Several facilities which offer access to the riverbank do not meet current guidelines for universal access, some of which is due to the significant constraints of land area and grades. As new (universal access conforming) facilities are put online, attention must also be paid to retrofitting existing paths, bridges, access points and overlooks.

Projects must consider universal access needs at all stages of the work, from the beginning of design to the final installation of railings. Even before design work is starting, the cost implications of universal

access must be included in establishing project budgets.

In addition, the goal of universal access goes beyond providing safe and easy access but includes providing facilities that engage all users and abilities.

- Establish design guidelines for public path facilities. The linear path and public spaces along the river corridor currently include segments that are asphalt path, concrete walks, unit pavers, gravel, and wood boardwalks. Further, several different light fixtures and site furnishing styles exist along the river. The intent of the UNIFIED PLAN is not to impose strict conformity over the use of materials; however, some basic standardization is important to create enough



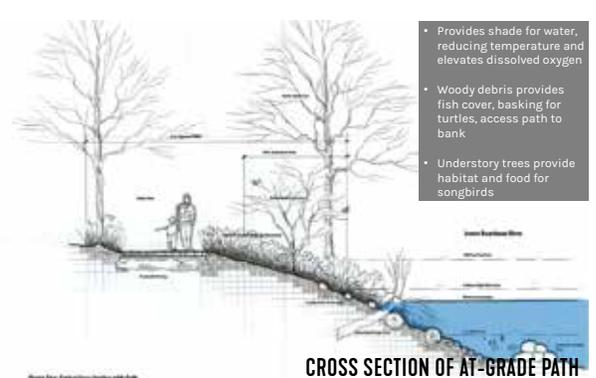
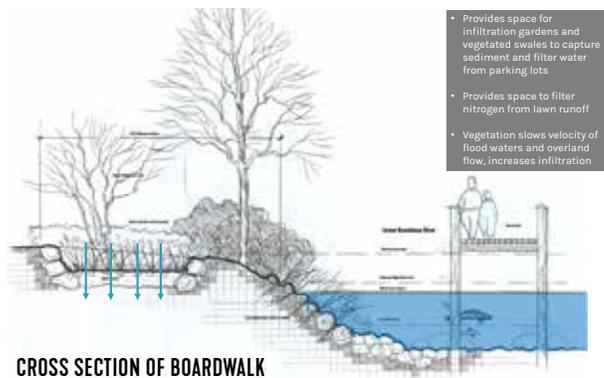
consistency to provide visitors with the visual clues necessary to follow the corridor.

- Establish pavement material standards and width requirements. Pavements within 25-feet of the original high water mark should be pervious or installed with specific measures to treat stormwater (such as vegetated swales). With the goal of minimizing paved space, we recommend using a range of path widths (6- to 10-feet) that respond to the site condition and anticipated volume of users. Please refer to Riparian Buffer Ordinance description in this chapter for additional details.
- Identify typical locations where safety railings should be assumed, such as stairs, ramps, high volume walks along the water, intersections of paths, where fall potential exists over 30 inches.
- Consider the potential impacts of climate change and water level fluctuation in the design of new facilities. Examine the feasibility of floating docks, where possible, to provide flexible access and connections. Design walks and related facilities that are at a fixed elevation to include additional design freeboard than typically has been considered.

- Incorporate public launch/portage facilities that accommodate contemporary forms of non-motorized watercraft.
- Incorporate night sky lighting best practices into public and private improvement projects. The UNIFIED PLAN recommends that the city and DDA consult with lighting designers to create guidelines for required light levels for both private and public improvements in the river corridor and identify fixture types for typical locations.
- Consider value of trees and leafy vegetation to reduce heat island effect and in carbon sequestration and provide for human comfort.

■ Coordinate efforts to contribute to the Boardman River Water Trail system.

The Boardman River Water Trail Development Plan (2016) outlines strategies for creating a river recreation trail that encompasses the entire Boardman River, from Union Township to the Grand Traverse Bay. The plan outlined operational recommendations, site specific improvements, and water trail identity and development guidelines. The Lower Boardman River should be considered as one element or segment of the larger plan and refer to the recommendations of this plan to ensure continuity of the river improvements.



POLLUTION CONTROL BEST PRACTICES

The city and DDA should continue to manage stormwater volumes and point source pollution on new projects consistent with current best practices to protect the water quality of the river and the bay. There are two key documents that currently regulated and/or guide stormwater pollution, including:

- The Traverse City Ground-Water Protection and Stormwater Control Ordinance currently requires a range of best practices to control point and non-point source pollution, manage the runoff of stormwater volumes, and protect stormwater and groundwater quality including:
 - Retention ponds and detention basins
 - Infiltration trenches, and basins, such as rain gardens
 - Stormwater quality treatment chambers
 - Vegetated swales and filter strips
 - Wet basins and drainage wells
 - Soil erosion and sedimentation controls
 - Hazardous substance storage and containment controls
 - Underground stormwater storage
 - Street sweeping
 - Dumpster covers
 - Permeable paving
- The TIF 97 Stormwater Management Plan was recently developed for the DDA and recommends improvements to the management of stormwater and pollutants in the primary downtown district. The study examined a range of potential pollution sources, including roofs, streets, parking lots, outdoor dining, dumpsters, and expanded the current list of best practices to include:
 - Green roofs
 - Tree and planter boxes
 - Bioswales
 - Cisterns



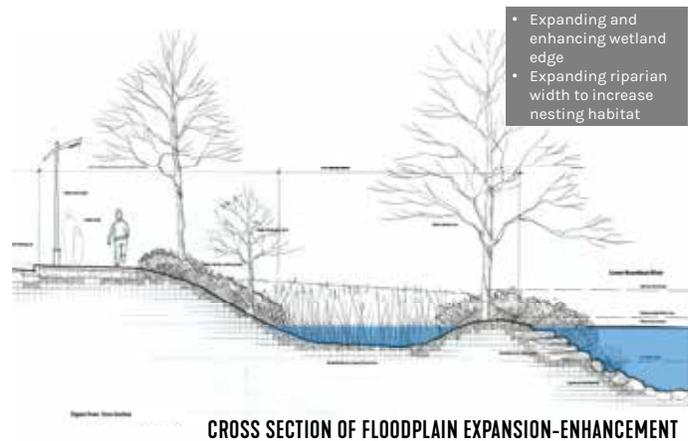
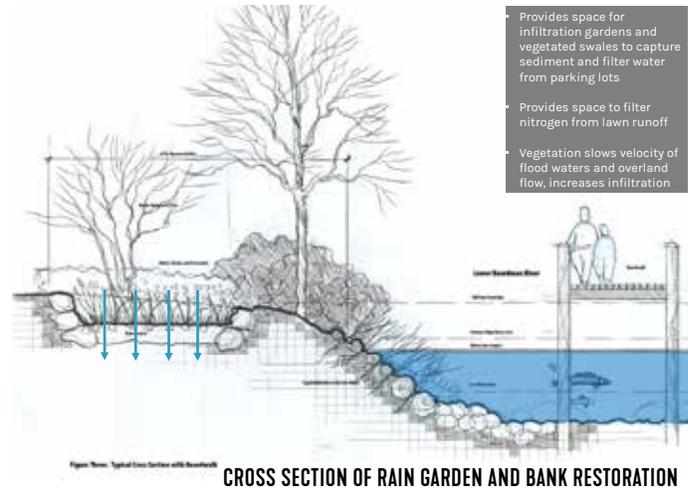
The UNIFIED PLAN embraces these concepts as a means of improving water quality within the river and bay and provides for specific applications of best practices along the river corridor as illustrated below.

- In the limited space of a riparian buffer there remain opportunities to improve stormwater quality prior to its release into the river, including rain gardens and infiltration beds
- Use of native plants that are left unmown
- Vegetated swales
- Pervious paving

Where a wider area is available, based on the public ownership of land, there are additional opportunities to expand pollution control measures and habitat creation.

Simply put, all private and public developments should be designed to eliminate direct stormwater flow into the river and be required to use best practices to cleanse and filter stormwater such as rain gardens, stormwater treatment structures, pervious pavements, and landscape buffers.

A key element to achieving this directive is to follow the guidelines in the *TIF 97 Stormwater Management Plan* for all projects within downtown.



For public improvement projects, the standard should be higher than “do not increase impervious surfaces and stormwater volume;” public projects should include best practices to avoid, where possible, point source contributions to the river, in favor of groundwater infiltration and filtered overland flow to improve water quality and reduce the velocity and volume of water released to the river.

As public projects reconstruct the riverbanks and adjacent areas, existing roof drain outfalls into the river should be intercepted and treated. Projects should also consider the potential for storage and reuse of stormwater for irrigation.



HISTORY, CULTURE & LEARNING

The development of a cohesive path system and improved habitat along the river is an incredible opportunity to engage the community and visitors in history, culture, and learning, focused on the downtown and the Lower Boardman River. The potential for learning and highlighting the uniqueness of the community should be integral into the early design stages for each reach of the river, so that the historic, cultural, and natural assets drive the location of the improvements made, when appropriate.

These efforts need to go beyond typical interpretive signage approaches and include thoughtful displays and landscapes that engage the visitor in an active way and create a more exciting place to experience.

CORE VALUES

The following Core Values, established at the outset of the planning efforts, most align with recognizing the history and culture of the region and encouraging education about the river’s natural and cultural resources:

- Reflect the city’s commitment to the river as a public resource and asset to be passed to residents and visitors in perpetuity.
- Use the natural and cultural values of the river as a guide for decisions about the commercial, economic, or utilitarian values to be leveraged for the public good.
- Serve to foster and sustain partnerships with shared responsibilities among public and private stakeholders who share the value that the Boardman is a “common resource” that connects everyone.

PROJECTS

As the UNIFIED PLAN is implemented the projects described below are recommended:

- Honor the Aanishinaabek (First People) heritage and cultural legacy through meaningful interpretive experiences throughout the project area. The first effort is to build on the existing knowledge base about the the unique relationship the

Aanishinaabek share with the air, land, water and the vastly complex and irreplaceable interconnections all living beings share with their environment—exemplified here along the Lower Boardman River. Current sources of data should be reviewed, as well as developing an inventory of existing sites where the history and culture of the Aanishinaabek has been recognized. Cultural resource specialists can assist in identifying additional sites of significance within the project area, and further defining the historic use of the area.



HISTORIC PHOTO OF NATIVE AMERICAN ENCAMPMENT

Once the study and data gathering are complete, the city and DDA should create a thematically linked interpretive system, consistent with the recent water trail signage plan, located at sites of cultural significance.

A more ambitious goal to celebrate the presence of the Aanishinaabek in the Traverse City area is to create a Tribal Cultural Center within the project area. The UNIFIED PLAN identifies a potential location for a cultural center; however, the actual site selection will require further consideration by tribal and local officials.

The city and DDA should coordinate with local tribal groups to develop the architectural, educational, and funding program for the center, and locate and obtain an appropriate site.

- Note and interpret key sites of European settlement, and the role of the river for industry and transportation.
Maps and related historic resources tell us much about the community through the early years of European settlement and industrial growth. As part of a comprehensive interpretive learning program, the city and DDA should coordinate with local historians to identify high priority sites for learning

and interpretive messaging.

- Provide interpretive theme about geology, the formation of the river, and the connection to lake levels.

As noted elsewhere in this UNIFIED PLAN, one of the key steps moving forward is the full assessment of the current conditions related to aquatic and riparian habitat. For purposes of developing an interpretive learning program, this natural features inventory would provide data on specific locations of rare and endangered species, and habitats of notable interest.

Knowledge of existing conditions will help guide future habitat goals and plans and assist in the development of design ideas for displaying information and encouraging hands-on learning.

Other key goals in the learning program are to integrate water literacy into the public education outreach and provide interpretive themes about water stewardship and the impact of water quality on human and environmental health. In addition to discussing the Boardman River's impact on safe and accessible drinking water, the interpretive education program can highlight measures the city has taken to promote water quality, e.g., the Wastewater Treatment Plants' membrane system.

GUIDELINES

- Include cultural resource investigations into each publicly funded construction project.
A Cultural Resources Assessment should be prepared as a baseline understanding of the potential sites where it is likely that encampment areas and places of cultural significance to the Aanishinaabek exist. This study will be helpful in developing the interpretive learning program previously discussed, and it can be used to flag key areas of concern along the river where historic artifacts may be uncovered by projects that involve excavation of soils.

During the design and planning for projects being built, future project teams can identify potential construction impacts on historic cultural artifacts, determine where further investigation is required prior to construction, and monitor construction for potential discovery of cultural resources.

- Continue to integrate the provision of art along the river corridor as it is improved.
During project planning, future design teams should consider art in suitable locations based on the attributes of the project area.

Efforts to place art should be coordinated with the Traverse City Arts Commission.

- Engage the local learning community in using the Lower Boardman River and FishPass for research and learning.
Given the great opportunity to use the Lower Boardman River as a source of learning, the city and DDA should create an outreach campaign to local educational institutions that encourages visits to the river and collaboration on learning objectives and curricula. Outreach partnerships could also include research, cultural resource investigations, and habitat monitoring that could be performed by, or with, local learning institutions.
- Actively manage the interpretive system of the district to reflect new information and special programs and meet the needs of all users.
Interpretive learning systems are most effective when they are flexible and change over time to reflect new data and understanding of the subject matter. We recommend a regular assessment of the efficacy of interpretive displays and facilities, and the use of interpretive learning systems that can be modified or adapted to new learning objectives and curricula, in addition to more permanent displays.

COMMUNITY & DEVELOPMENT POLICIES

Recognizing an explicit commitment to the principles of public trust in the protection of the river as a community commons, regulatory policies that guide building and development in the downtown area should be amended to reflect the vision and values of the Lower Boardman River UNIFIED PLAN.

Modifying public policy will impact private land development, as these are the regulations and guiding documents that shape the use of the land in the community. However, the intent in modifying these regulations and guiding documents is also to establish standards by which public improvements must abide.

Specific language is proposed as part of this chapter to provide a guideline in modifying existing and proposed ordinances; however, each of these amendments will need additional effort and conversation with the city planner and planning commission prior to adoption.

CORE VALUES

The following Core Values, established at the outset of the planning efforts, most align with the management of private and public development along the river:

- Ensure that new or rehabilitated developments along the river are compatible with the city's renewable energy goals.
- Establish that development sites, destinations, and structures must protect the health, aesthetics, accessibility, and health of the relationship between the river and residents/visitors.
- Use the natural and cultural values of the river as a guide for decisions about the commercial, economic, or utilitarian values to be leveraged for the public good.
- Prohibit further hardening of the shorelines that are inconsistent with the UNIFIED PLAN.

RIPARIAN BUFFER ORDINANCE

The Traverse City Planning Commission has proposed a new Riparian Buffer Ordinance to help manage the use, development, and maintenance of the edges of Grand Traverse Bay, Boardman Lake, the Boardman River, and Kids Creek. The Leadership Team is proposing changes to the draft ordinance to address specific conditions of the Lower Boardman segment of the river.

The importance of the Riparian Buffer Ordinance to fulfilling the goals and value of the UNIFIED PLAN and addressing the primary concerns expressed by the public cannot be overstated. The ordinance should be aspirational in its charge and supported by the community.

The intent of the draft ordinance is to:

- Conserve, protect, and restore natural riparian resources through scientifically supported processes.
- Preserve and enhance areas that intercept and filter surface water runoff and improve water quality.

- Protect shoreline and floodplain areas critical for flood attenuation and soil loss.
- Conserve near-shore aquatic habitat for fish and invertebrates and shoreline and stream bank habitat crucial for birds, insects, and mammals.
- Provide community scenic, cultural, and recreational values of watercourses and water bodies.
- Preserve natural deep-rooted vegetation critical for stable shorelines and stream banks.

- Provide for the establishment of natural vegetation buffers on all sites adjacent to water bodies to promote public health and safety and protect land values.

The proposed ordinance is an opportunity to promote a “river first” approach in the protection and enhancement of the river consistent with the values expressed in this UNIFIED PLAN and through the public input and engagement. The UNIFIED PLAN recommends adoption of the Riparian Buffer Ordinance, and the



Leadership Team has proposed a series of amendments to the current draft, which are described in detail in Appendix 4. In broad terms these amendments include:

- Establish a 10-Foot riparian buffer for properties east of Park Street (matching current setback) and a 25-foot riparian buffer for commercial properties west of Park Street (10-foot water's edge setback currently required). In the C-4 Regional Center district, there are six properties that the recommended ordinance proposes to have a 25-foot buffer, which is larger than the current 10-foot requirement. Of these six sites, three are likely to be re-developed in the coming decade, and these sites are noted as A, B, and C (see Parcels in Riparian Buffer Change map on page 74). Of these three sites that could be impacted in the short-term, developers of two of the parcels have agreed to 25-foot water's edge setbacks to accommodate utilities and stormwater, and the other site is currently owned by the city. All other properties in downtown will retain their existing water's edge setbacks, which are 25-feet per current ordinances
- Add guidance on tree preservation, landscape maintenance, new landscaping, and bank and slope protection. The draft ordinance proposes to restrict manicured lawns and tree removal, while requiring the use of native plant for erosion control and habitat value. The proposed language also encourages the use of plantings that have specific function and meaning to the Anishinaabek culture.
- Regulate vertical wall construction as shoreline stabilization treatment. While the proposed ordinance contains language to address this concern, the Leadership Team has offered clarifying language and additional detail on acceptable approaches to shoreline stabilization.
- Restrict the development of parking lots in the water's edge setback and the direct flow of adjacent parking lots from entering the river untreated, in concert with existing stormwater regulations the city has adopted and uses.

OTHER ZONING ORDINANCE CHANGES

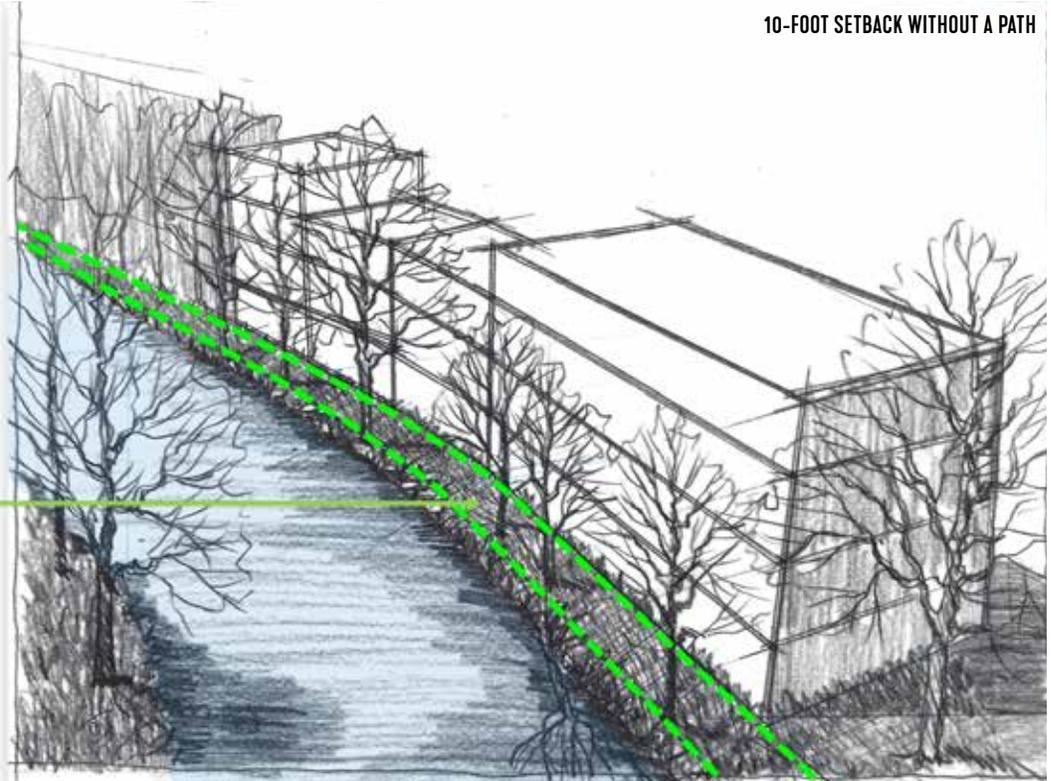
The UNIFIED PLAN supports the modification of zoning ordinances to manage the scale, placement, and site improvements of new development consistent with the Core Values of the UNIFIED PLAN. These proposed changes to existing ordinances are, for the most part, intended to support and further codify the proposed Riparian Buffer Ordinance.

Amendments may be made to the applicable zoning district including OS Open Space, R-3 Multiple Family Dwelling, C-3 Community Center District, C-4 Regional Center District, and Development Districts D-1 Ironworks and D-2 Depot. To the greatest extent possible, all new approvals shall be administrative or departmental reviewed unless already part of a planning commission review process in accordance with Redevelopment Ready Communities (RRC) Best Practices.

- 10 FT. RIPARIAN BUFFER
- Matches current setback
- Applies EAST of PARK STREET, on south side of river (25 ft on north side)

10-FOOT SETBACK WITHOUT A PATH

Critical Riparian Protection Area



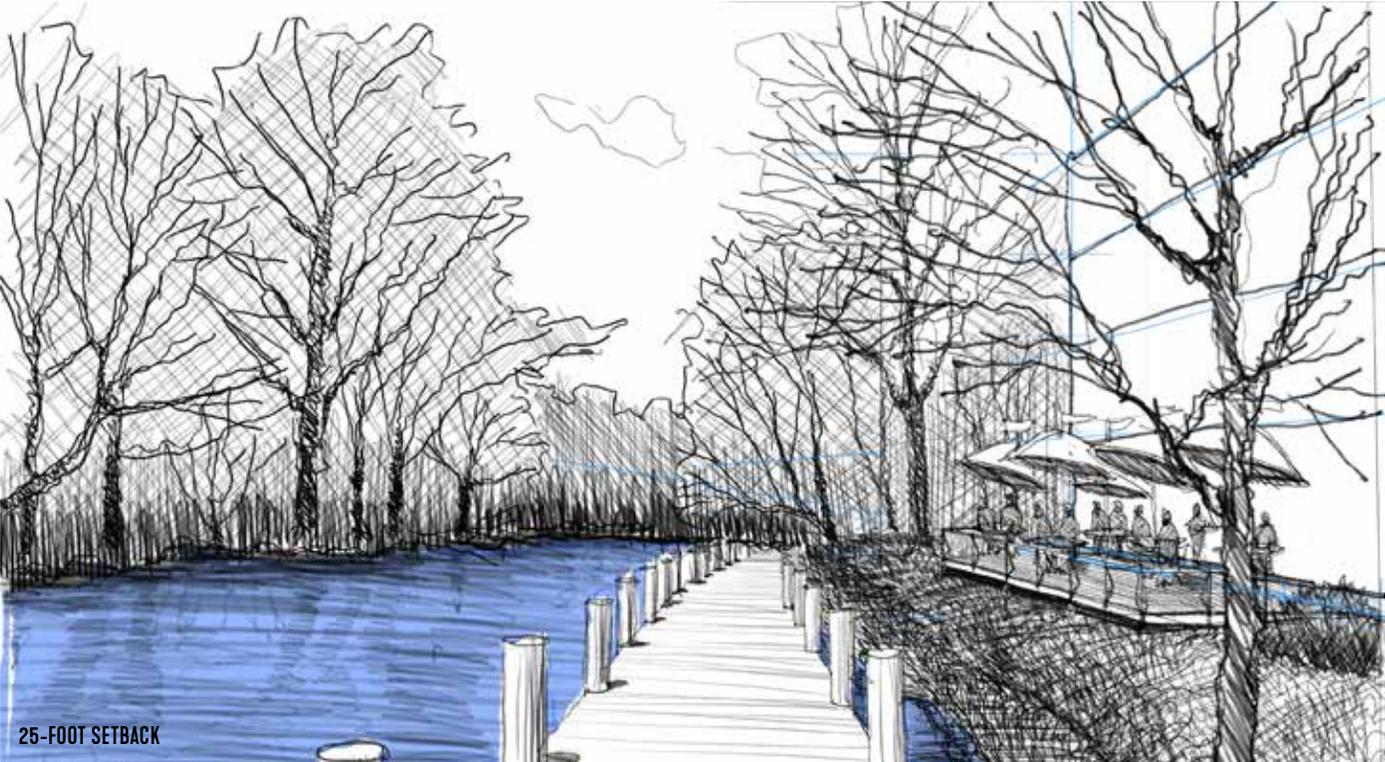
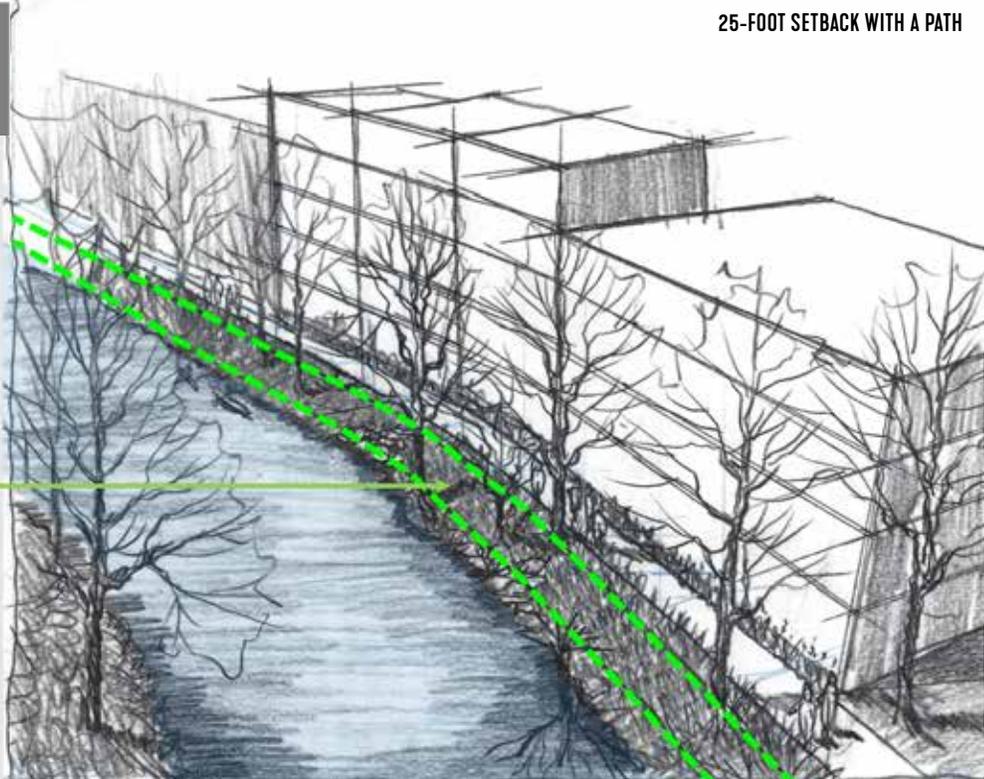
10-FOOT SETBACK



- 25 FT. RIPARIAN BUFFER
- ALL OTHER LOWER BOARDMAN/OTTAWAY REACHES

25-FOOT SETBACK WITH A PATH

Critical Riparian Protection Area



- Create additional setback for parking from the original high water mark.
 - Adopt the Riparian Buffer Ordinance, which says “No development, permanent structures (including fences) or parking area(s) shall be allowed within the riparian buffer zone.”
 - Amend ordinance 1374.03 Motor Vehicle Parking, subsection (c) Location of parking areas, as follows: “(6.) Parking is not allowed within the Riparian Buffer, pursuant to the Riparian Buffer Ordinance.”
 - Amend Ordinance 1346.04 C-4 District, subsection Setbacks, as follows: (g) Parking is not allowed within the Riparian Buffer, pursuant to the Riparian Buffer Ordinance.”
- Restrict the creation of public and private parking within the river corridor.

Parking is not required in C-4 Districts, which is most of downtown. Ordinance 1364 C-4 Districts states “No parking is required in this district, however, if parking is provided, it must meet the standards contained in Chapter 1374, circulation and parking and restrictions of this chapter.”

PHOTO OF PARKING ADJACENT TO RIVER



This ordinance is, coupled with the proposed changes to the ordinances noted above, effective at discouraging and managing the design of private parking in downtown, and restricting all parking from locating directly adjacent to the river.

- Establish and maintain appropriate building setbacks for development along the river in response to public input.
 - Amend Ordinance 1346.04 C-4 District, Setbacks, subsection (e) Water Setbacks.
 - C-4a: 10-foot setback from ordinary high water mark per current ordinance
 - C-4b and C-4c: 25-foot setback from ordinary high water mark
 - Amend Ordinance 1368.02 Size and Area Requirements, subsection (b) Setbacks Required with same language.
 - For C-4a sites, strongly encourage a larger buffer; consider incentives to increasing buffer to 25-feet, including transfer of development rights, and rezoning of public lands.
 - Maintain current water setback of 25-feet in zoning districts OS-Open Space, R-e Multiple Family Dwelling, D-1 Ironworks Development, D-2 Depot Development, and GP Government Building.
 - Establish a 25-foot building setback and riparian buffer in all zoning districts where property is adjacent to Kids Creek
- Adopt incentives to encourage the use of sustainable building materials, energy efficiency and production, habitat creation, bird safe windows, creation of public access, and reuse of building water. Increasing building height and development density

is often used as an incentive to induce developers to create public benefits such as green building techniques. Based on current laws, development over 60-feet in height is discouraged due to the need for a public vote; however, sites in the R-3 and C-4a districts could still benefit from height incentives since the current ordinances in these districts limit building height to 40 and 45 feet, respectively. Other incentives that could be considered include allowing administrative review of site plans, and/or adopting a broader green building requirement for downtown construction.

- Integrate lighting guidelines into the appropriate sections of the city zoning and regulatory ordinances. No immediate action is required, as Chapter 1375 Outdoor Lighting ordinance has clear guidelines to encourage dark sky compliance. All new public projects should conform to ordinance when improving downtown and riverfront public spaces.
- Encourage businesses that have both a street frontage and a river frontage to activate the waterfront side of their business. Chapter 1346, C-4 Districts includes “Buildings along Boardman River should be designed to integrate with both the sidewalk and riverwalk systems.” To strengthen this intent section 1346.09 (1) of this ordinance should be amended as follows:

“The predominant building wall and entryway shall face the public or private street. Where adjacent to the Boardman River, or to public land that is adjacent to the river, the building shall have a public entrance and architectural features denoting a public entrance facing the river.”

AMEND REGULATORY ORDINANCES

A great deal of the public input gathered during the planning process supported ideas that are best implemented through changes to the Codified Ordinances of Traverse City. These ordinances are considered “regulatory,” since they are local laws enacted to regulate activity or set standards for the use and development of public facilities such as streets. These ordinances are adopted by the City Commission and are outside of Zoning Ordinances which are focused on regulating the use of land.

Recommended regulatory ordinance modifications for consideration include:

- Integrate lighting guidelines into the appropriate sections of the Codified Ordinances of Traverse City, under Part 10-Streets, Utilities and Public Services, and Part 14-Building and Housing Code.
- Consult with City Attorney, Clerk, and Manager on the alternative approaches to regulating river use. Propose and conduct a fair and open process, working in cooperation with licensees. Propose and adopt changes to the Codified Codes of Traverse City, Part Ten Streets, Utilities and Public Services Code, Chapter 1064 Parks, and related codes. Code changes could include volume limitations placed on licensees, Quiet Zones along the corridor, limitation on the use of alcohol, hours of operations, and disorderly conduct.

AMEND THE COMMUNITY MASTER PLAN

When adopting or modifying new ordinances, it is critical that the Community Master Plan supports the values and guidelines that are reflected in the new ordinances and the UNIFIED PLAN. This can be accomplished in one of the following ways:

- Adopt the UNIFIED PLAN as a “Sub Area Master Plan” as provided by the Michigan Planning Enabling Act, Act 33 of 2008.
- Integrate key findings of the UNIFIED PLAN into the next update of the Traverse City Comprehensive Plan, and incorporate the UNIFIED PLAN by reference.
- Create a new Downtown Plan as a Sub Area Master Plan, integrating the UNIFIED PLAN.

AMEND THE COMMUNITY RECREATION PLAN

Funding grants through the DNR are available for many of the projects outlined in the UNIFIED PLAN. To be fully eligible for these potential grants, the planned projects should be reflected in the Recreation Plan for Traverse City. Per DNR guidelines, the Recreation Plan is updated every five years, which in Traverse City's case would be in 2021.

The Recreation Plan should include the UNIFIED PLAN recommendations to improve public parks in the project area and proposed trail connections. The city and DDA will need to coordinate Recreation Plan changes with the Parks and Recreation Commission.



PUBLIC INPUT

The policy changes reflected in the Riparian Buffer Ordinance and other ordinance changes were included in the second round of public engagement (described in more detail in Chapter Four: The Illustrated Plan).

In both the public workshops and online survey, participants were given the opportunity to indicate support for policies and best practices. The two groups of participants demonstrated strong support for the policy ideas and proposals presented for including:

- **RIPARIAN BUFFER** and **GREEN RIVERBANKS**, including the removal of vertical walls where appropriate and increasing building setbacks in key zoning districts west of Park Street.
- Amendments to the **REGULATORY ORDINANCES** of the community to manage behavior of recreational river users.
- Land development **BEST PRACTICES** for managing stormwater and pollution of the river.
- Many commentors from both the workshops and online survey indicated that they supported the removal of **PARKING** along the river shoreline, but that the replacement of this parking needed to be implemented in conjunction with the removal.

This input was consistent with that gathered from the first round of community engagement, and the direction preferred by the Leadership Team.

IMPLEMENTATION & MANAGEMENT

The city and DDA should establish a strategic plan to pursue the implementation of the UNIFIED PLAN, manage development of the public river corridor, monitor river conditions and development, and maintain the river corridor.

CORE VALUES

The Core Values established at the outset of the planning efforts that most align with the implementation and management of the UNIFIED PLAN include:

- Foster and sustain partnerships with shared responsibilities among public and private stakeholders who share the value that the Boardman River is a “common resource” that connects everyone.
- Provide that the recommended initiatives contained in the UNIFIED PLAN will account for the impact of those initiatives on residents, habitats, and the ecological status of the river.

ASSIGNMENT OF RESPONSIBILITIES

One of the most important set of decisions to be made in the planning process is the assignment of responsibilities for the future development, management, and maintenance of the Lower Boardman River district.

The city and DDA will need to collaboratively review the anticipated needs of the district and designate which government entity or sub-entity will provide management and maintenance oversight and assist in the funding of projects and maintenance. Considerations include:

- Who will define issues and establish criteria for managing and adapting the plan going forward?
- Who will “own” the plan and the responsibility for its implementation, adaptation, and success?
- How will decision-making responsibilities be distributed and coordinated?
- How will enduring and adaptive structures for stakeholder involvement be established and ensured?

As a starting point for discussion, we should consider the existing governmental structures in place to complete this work, as follows:

- DDA
 - Parking
 - Farmers Market Advisory Board
 - Traverse City Arts Commission
 - Lower Boardman River Leadership Team (or its potential successor)
- City Planning
 - Zoning and Development Regulations, guiding land use, building and site development, and parking
 - Economic Development
- Department of Municipal Utilities
 - Storm Sewers
 - Water
 - Sanitary Sewers and plant
- Traverse City Light and Power

- Department of Public Services (management and maintenance)
 - Parks and Recreation
 - Streets
 - Sidewalks
- City Engineering (Design and Construction)
 - Street, Parking, and Bridge Design and Implementation
 - Parks Implementation Administration
 - Traffic and Multi-jurisdictional outreach
- City Police-public safety and emergency response
- City Fire-public safety and emergency response

ESTABLISHING A GUIDING ORGANIZATION

From the start of the public engagement process the community has expressed concern that the river corridor be effectively managed and maintained. As the UNIFIED PLAN has developed, the Leadership Team explored this topic and recommend that the DDA and the city collaborate in the establishment of a governing and management structure for the Lower Boardman River. The purpose of this structure is to advocate for the river in the development of downtown and riverfront, to guide decisions and set priorities for the river corridor, and lead in the implementation of the UNIFIED PLAN.

There are a number of ways to organize the management of an open space and the implementation of plans and policies, including:

- Utilizing the Existing Structure: The existing governmental units listed above can continue to

each take a part in the Lower Boardman as noted. This decentralized model may adequately manage the various aspects of implementing this plan, but it leaves a leadership gap in advocating for new improvements and policies, and would likely result in much slower and ineffective progress.

- Create an Advocacy Group: In this model a “Friends of the Lower Boardman River” could be formed of interested community volunteers that would act independently to advise the city and the DDA in each of the topical areas on an ad hoc basis. The “Friends” group could be a focal point for community input, and could play a substantive role in organizing events that benefit the river corridor, including regular clean-up activities, community based fund raising, and social gatherings that celebrate the river. These groups can be effective, but without any decision making authority can be less effective than other models. Also, the reliance on volunteers and lack of specific charge from a governmental agency can make it more difficult to sustain interest and long term impact.
- Form an Advisory Board: An Advisory Board could be established that is chartered by the city and/ or the DDA. This approach establishes some level of authority in the making of decisions and management of priorities. An Advisory Board becomes the first stop in advising the city and DDA on matters of interest for the river corridor, and would report directly to the City Commission and/ or the DDA board. This group could be (at least partially) funded by the city or DDA, maintain a small staff, and have a role in the Capital Improvements Plan (CIP) process, such that projects can be given a voice at the funding table. This assumes that

the such local governmental funding would not completely support ongoing projects and initiatives, but could be relied upon to develop matching funds for grants and other outside funding. In this model, actual projects and initiatives would, for the most part, remain the responsibility of city and DDA staff. Locally, there are two organizations that fit this model (with some variations), including the Hickory Hills Advisory Committee (along with Preserve Hickory) and the Brown Bridge Advisory Committee.

- **Establish a Riverfront Conservancy:** A conservancy could “take ownership” of the river corridor (through the authority granted them by the city and DDA) and act as the recognized authority that directly manages the maintenance of the public assets, organizes and promotes events and capital improvement projects, and play a meaningful role in guiding policy changes. This type of group is often supported by philanthropic funding, and is capable of managing grants and implementation of projects. The Detroit Riverfront Conservancy is a great model of this type of organization, and has effectively transformed the riverfront along the Detroit River, a public asset that is regularly named the best river walk in the United States.

Whichever guiding organizational structure is put into place, there are a number of roles which need to be filled to successfully implement the UNIFIED PLAN. The sections below outline these roles and responsibilities.

FUNDING AND MANAGEMENT OF IMPROVEMENTS

The guiding organization will need to engage sources for funding the construction and maintenance of improvements to implement the UNIFIED PLAN. There are three important tracks for this pursuit.

Track One. The guiding organization will need to monitor potential grant sources and the related criteria for selection and applicability to proposed projects, and then match these potential grant sources to the priority projects for implementation. Sources of grants may be non-profits, federal and state programs, community donations, or philanthropic individuals and organizations. To successfully implement the projects outlined in the UNIFIED PLAN, there will be a need for multiple grant sources and to manage the application for, and use of, the grants on an ongoing basis. Refer to Chapter Four: The Illustrated Plan for a more thorough discussion of potential funding sources.

Track Two. Following the adoption of the UNIFIED PLAN, the guiding organization will need to determine how the Lower Boardman River project will move forward in terms of financial and management responsibilities, as noted elsewhere in this report. As part of this process, the DDA will need to consider how TIF funding can be used to fund improvements and management.

Track Three. Each year the Planning and City Commissions develop a CIP which outlines anticipated budgetary spending for Traverse City. Some of the projects may be funded, at least in part, through the city, and so there needs to be effort invested to coordinate as the CIP is prepared each year.

MAINTENANCE

The community is concerned about how the river corridor facilities and landscape will be maintained, citing two concurrent ideas—not wanting to burden government services and taxpayers, while also ensuring a safe, clean, healthy, and welcoming Lower Boardman River. Recommendations for maintenance include:

- Provide for regular and timely maintenance to manage waste and cleanliness. Significant interest exists for the development of an “Adopt a River Reach” program to encourage public and private partnerships to keep the riparian district clear of trash and otherwise well maintained. Organizations like this have been implemented in many communities to reduce the impact on city services, while creating a civic presence of active citizens on the riverfront.

Even with the assistance of active volunteers, the guiding organization may remain responsible for maintaining general trash, waste management stations, and bathrooms; the cost of providing these services needs to be considered.

To assist in managing trash in the corridor, the guiding organization should consider public outreach to promote responsible visitor behavior and take measures such as the prohibition on the use of plastic bottles within the Lower Boardman River district.

- Maintain landscape plantings to provide shade, thriving plant communities, invasive control, recreation use, and views of the water. The community is ready to accept a native

landscape along the river, (in lieu of manicured lawns.) and this approach shifts (albeit reduces) maintenance means and methods. The guiding organization should develop maintenance procedures and protocols consistent with community expectations and determine who will be responsible for this work. In some communities, maintenance of native landscapes is completed through volunteer organizations as discussed above, in other communities the work is completed through merchant associations by trained professionals.

Trees blocking access through the river corridor for kayaks and related craft can be an issue, particularly in the spring. In collaboration with kayak licensees, the guiding organization should set basic parameters which can guide tree maintenance to allow recreational use of the river without losing the value of shaded water and downed snags that enhance aquatic habitat.

Whether the landscape is maintained in partnership with volunteer organizations or managed by the city and/or DDA, we recommend that the services of a trained arborist be retained to provide emergency services, as well as regular tree assessment, trimming, and maintenance.

- Maintain the condition of boardwalks and related facilities on a regular basis and ensure ADA compliance. Like trash, cleaning, and landscape maintenance, the city and DDA must establish or assign an entity to be responsible for facility maintenance and should consider partnerships with private and non-profit community focused organizations.

The goal is to develop maintenance procedures and protocols so that repairs are completed on a timely basis and facilities remain universally accessible.

Other communities have established a long-term, reliable, and consistent funding stream for maintenance, based on steady governmental funding or endowments, or through a combination of sources.

- Implement snow and ice maintenance plans which limit the impacts on water quality and habitat. Visitors and community members are expected to use the walks and facilities along the river on a year-round basis. The city and DDA should identify current practices for maintaining walks and streets in downtown and along the river, review the efficacy of current practices, and establish priorities for the future. As part of this assessment, the city and DDA should consider and test alternative means of snow maintenance, alternative locations for snow storage, and logical limits for winter maintenance on paths and boardwalks.

Priorities for establishing future snow practices include pedestrian and user safety and the impact to water quality and the river environment. Consideration of planned maintenance practices should be considered and integrated into each improvement project for the river corridor.

ENCOURAGING POLICY CHANGE

Within the Action Plan (outlined earlier in this chapter) there are a number of key land use, maintenance, best practices, and river use policy amendments and guidelines discussed which are critical to ensuring the protection and enjoyment of all beneficiaries to the river. The guiding organization will need to be responsible for monitoring and guiding changes to policy, and initiating policy amendments where appropriate.

EXTENDING PUBLIC OUTREACH

Community members have been actively engaged in the planning process and continue to guide the outcomes of the UNIFIED PLAN. As the plan is implemented, each key project and milestone should be completed with the expectation that community engagement is a critical part of a successful project and community.

Community engagement should include an invitation to participate in the planning and design of future improvements; however, a public engagement strategy can go beyond involvement in specific projects, as outlined below.

The guiding organization can collaborate with existing education efforts in the local community in terms of best practices (e.g., not dumping fall leaves and

parking lot snow in river, adopt a catch basin program.)

In a similar educational vein, a website for the Lower Boardman River should be maintained to promote open communication and information sharing with the public. The website should be utilized to regularly post technical data from the monitoring of habitat and water quality efforts on the river.

Successful urban places often focus on encouraging community engagement with their waterfront through the programming of civic activity. Program activities along the river corridor can encourage appropriate use of the river, offer educational instruction, entertain visitors in creative ways, and promote the civic value of the space. A good first step is to establish a policy for events and activities along the river, bearing in mind the community value of the river as a quiet respite.

Moving forward the guiding organization could collaborate with existing event organizations to further integrate the river corridor into the events. Also, the guiding organization that assists with activities and programming for the river should be explored, further expanding the role a volunteer organization could play.

Finally, the guiding organization should consider the use of enforcement officers or river guardians to help visitors orient to the community and manage inappropriate behavior.

CHAPTER 4

THE ILLUSTRATED PLAN

THE PLANNING PROCESS & PLAN DEVELOPMENT

The UNIFIED PLAN is broad in scope, covering public policy, physical improvements, and implementation strategies. Broad master plans by definition and typical practice do not represent specific designs that can be implemented literally, but rather they point out areas where existing conditions should be improved and establish key objectives that such improvements should strive to address.

The site-specific designs presented in this plan are intended to catalyze the discussion around how different elements of the Lower Boardman River can be improved; they are not the result of a focused design process which culminates with the construction of a built project. Rather, they are intended to illustrate potential improvements that could enrich and enliven downtown.

Once the UNIFIED PLAN is adopted, the DDA and city can determine which of the site-specific recommendations ought to be pursued in the short-term and/or long-term. Once an idea becomes a priority, a funding strategy for the project can be identified and final design plans should be developed within a process that further engages the community.

PUBLIC ENGAGEMENT ROUND TWO

A second round of public engagement was conducted in the summer of 2021. Specific focus during this round of engagement was on gaining input regarding ideas and options for physical improvements in the public corridor and for the draft recommendations in public policy, especially the proposed Riparian Buffer Ordinance.

In July and August the public outreach and engagement included:

- Project Updates for Elected and Appointed Officials and Staff
 - Downtown Development Authority
 - Planning Commission
 - Parks and Recreation Commission
 - City Commission
- Stakeholder outreach within the 100 and 200 Block DDA staff met with individuals owning businesses and property in the 100 and 200 blocks of Front Street to update them on the status of the project and the findings of the wall and sewer stabilization study.

■ Online Mechanism to Provide Feedback

A project website was created and maintained to provide an update on the project and outline specific recommendations and plan alternatives. An online survey was created to allow people to participate in the second round of engagement who were not comfortable with a face-to-face meeting or otherwise found the online method more workable.

The online survey reached more than 200 people, who were given the opportunity to participate in parts or all of the engagement. The online survey was paired with a website that provided reasonable detailed descriptions of the policy ideas and project alternatives being discussed. Just under two thirds of the survey participants were residents or business owners in the city, and the remaining participants were typically residents of the region interested in the Boardman River and/or downtown.

Positive support for the project was a clear takeaway from the overall engagement including:

- Based on the public on-line survey, the lowest amount of support for one the projects or ideas presented was 70%, which is to say, the key elements of the UNIFIED PLAN are highly supported by the community.
- The majority of input was consistent with the results of the initial public engagement in the summer of 2019, including support for restoration of the river, reasonable regulation of development along the river, increased (and more continuous and accessible) access to the river for the public, and better maintenance and management of recreational river users.
- **Focus Group Sessions: In-Person at City Opera House**
Attendees and organizations were specifically invited, but each meeting was open to the public. The focus groups were organized into four meetings as follows (consistent with the 2019 sessions):
 - Meeting #1: Recreation Groups, Community Event organizers
 - Meeting #2: Sustainability, Fisheries, and Natural Resource Focused Organizations
 - Meeting #3: Business and Property Owners
 - Meeting #4: Community and Economic Development, Business Focused Organizations
- **Open Public Work Sessions**
With a similar approach and agenda as the Stakeholder meetings, a series of three open public sessions were held on a single day in July. The morning session and evening session were facilitated by the planning consultants, while the mid-day session was structured like an open house where people provided feedback on boards displayed around the room.
- **Open House**
The SmithGroup team summarized the results of the engagement sessions and conducted an open house style meeting where participants met face-to-face with the team to review the results of the engagement to-date and identify priority projects that they support.
- **Pop-Up Workshops**
In July, a series of Pop-Up workshops were organized and attended by DDA staff and the Leadership Team in downtown.

ALTERNATIVE IDEAS

Both the workshops and online survey participants were given the opportunity to indicate support for policies and projects (or lack thereof). The two groups of participants reached consensus for the policy ideas and alternative projects presented for most of the project areas, as described below.

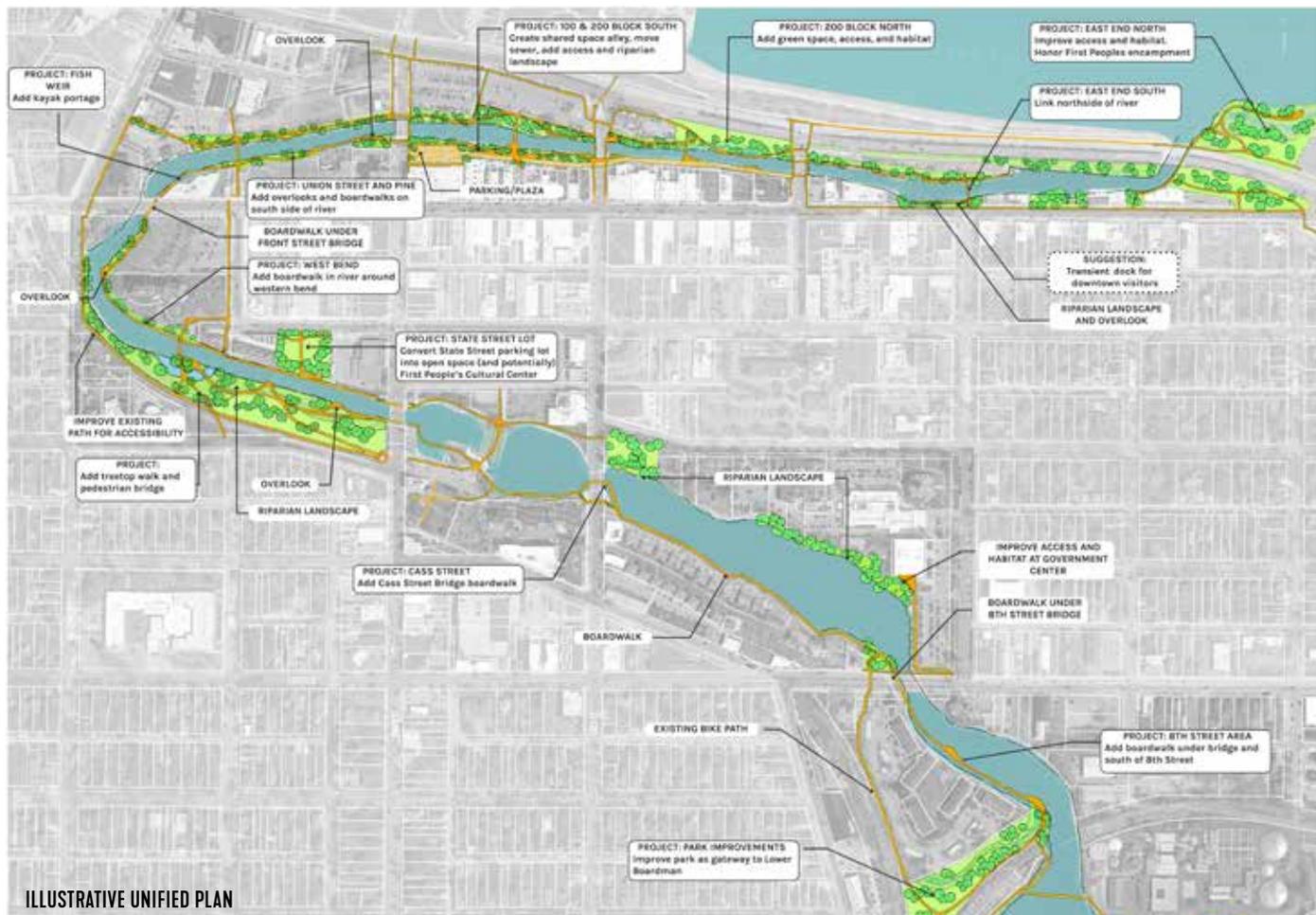
The illustrations from the workshops and survey offered a series of alternative ideas to improve access and connectivity along the river. The purpose of the second round of public engagement was to gauge the community's preferences and general support for the ideas, as well as to gather new thoughts and concepts. A summary of the results from the second round of public engagement can be found in Appendix 5.

The following paragraphs describe the illustrated UNIFIED PLAN reach by reach and the public input that shaped the plan components.

THE UNIFIED PLAN

The primary themes of the UNIFIED PLAN for physical improvements are **CULTURE**, **CONNECTIVITY**, and **HABITAT**.

- **CULTURE** focused learning and art to educate and inspire people about the Anishinaabek and their history in the region.
- **CONNECTIVITY** for people to recreate along, celebrate the value of, and learn about the Boardman River.
- **HABITAT** preservation and creation for aquatic, riparian, and avian communities to increase native species diversity and improve water quality.



Please note that a copy of this map file is provided in Appendix 6.

REACH ONE

EIGHTH STREET BRIDGE

Build a pedestrian underpass on the west side of the Eighth Street bridge to connect the boardwalk to the

north along the Midtown development to the proposed boardwalk south of the bridge. The design of the bridge allows for such a walk along an existing sheet pile wall.



BOARDWALK SOUTH OF EIGHTH STREET

There is an existing easement that allows for pedestrian connection south of Eighth Street along the river's edge, but using the easement would mean the removal of a number of trees, putting the path very close to the residences. The concept shown builds a boardwalk in the river to address these issues and preserve the bank. This concept would also create a continuous waterfront connection to Boardman Lake, Hull Park, and other recreation trails.

The design of the boardwalk should include widened areas to accommodate seating and fishing. In conjunction with the boardwalk construction, there are opportunities to enhance the fisheries habitat with cover and spawning areas, as well as enhancing the riparian bank with plants that support songbirds, butterflies, and riparian mammals and help filter runoff from adjacent lawns.

This boardwalk idea was included in the Public Engagement Round Two and received strong support.

SKETCH OF BOARDWALK SOUTH OF EIGHTH STREET



LOWER BOARDMAN GATEWAY PARK

The existing park land should be enhanced to create a wetland or wet meadow habitat to enhance the aesthetic and environmental value of the land. The parcel is one of the few in the river corridor that have the depth and location in which more significant

habitat benefits could connect from the river into the neighborhood. The park could also become an excellent setting for public art, with a special focus on creating a gateway feature as river users transition from Boardman Lake into the Lower Boardman River and downtown.

REACH TWO

NORTH SHORE LANDSCAPE ENHANCEMENTS

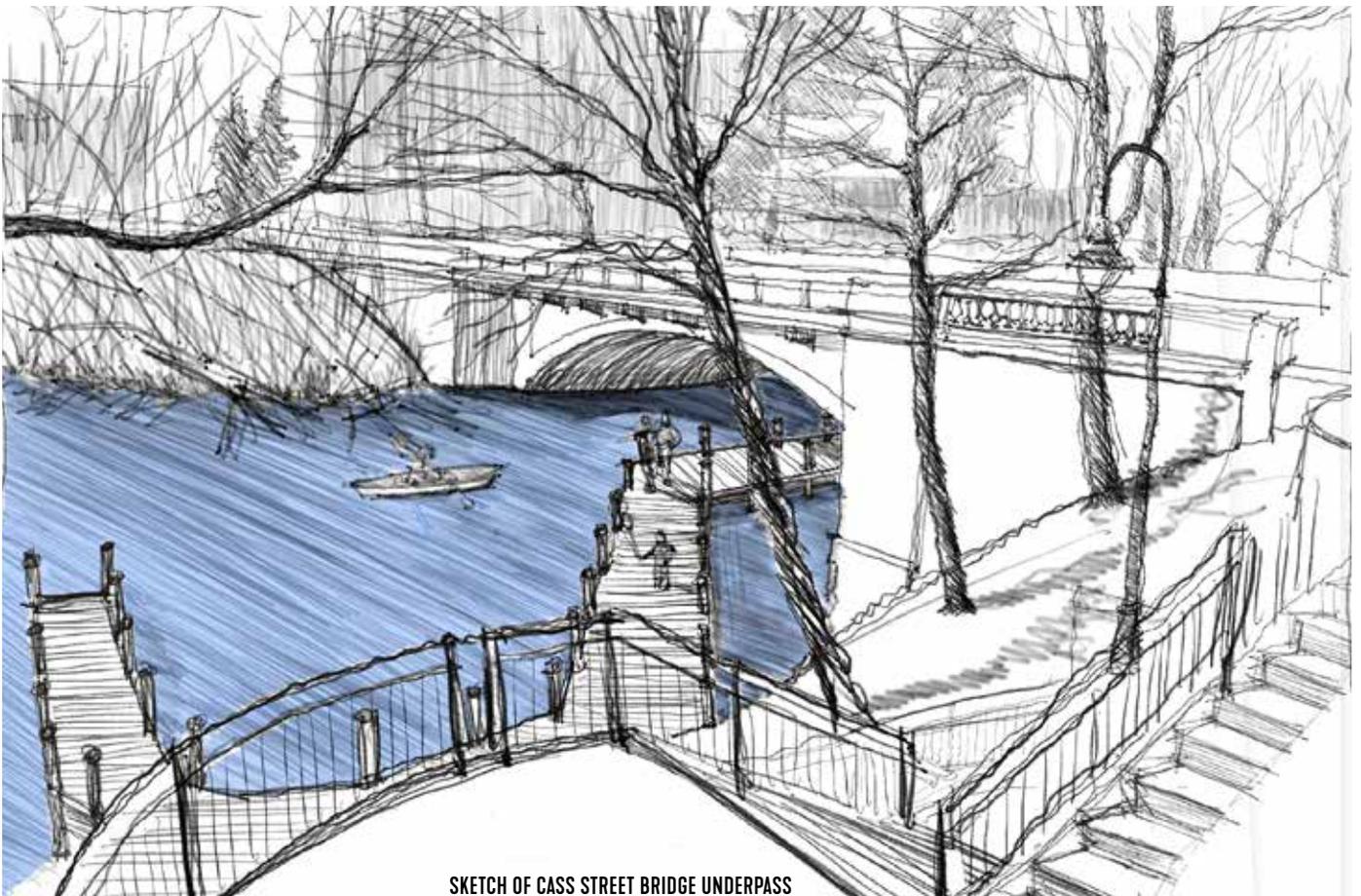
Much of the north shore in this reach is publicly owned which provides opportunities to enhance the fisheries habitat with cover and spawning areas, as well as enhancing the riparian bank with plants that support songbirds, butterflies, and riparian mammals and help filter runoff from adjacent lawns. The county has developed a plan for enhancing the boardwalk adjacent to the government center and improve the connection from Eighth Street to the boardwalk with a universally accessible path. The DDA has coordinated with the county to ensure that the improvements limit manicured landscape adjacent to the water.



CASS STREET BRIDGE BOARDWALK

The South Cass Street bridge design poses some difficulty in making a universally accessible connection from the existing boardwalk to the dam area. Alternatives considered during Public Engagement Round Two include a floating boardwalk or a semi-submerged walk.

Public engagement participants indicated a preference for the floating boardwalk, which is the less expensive alternative.



SKETCH OF CASS STREET BRIDGE UNDERPASS

FISHPASS

The FishPass project proposes, among other things, significant upgrades in river-based amenities, learning opportunities, habitat, and accessibility and connectivity of riverfront walks between Union and Cass Streets. Further, the plan included the replacement of the Union Street Dam (which has significant issues related to its condition and longevity) and new technology and design approaches to managing the movement of invasive species in the river system. Specific program elements of the project include:

- Pedestrian access connecting Union Street to Cass Street on the north side of the river.
- New universally accessible paths on the south side of the river.
- Future access potential under the Union Street bridge on the south side of the river linking FishPass to Hannah Park.
- A pedestrian bridge connecting the north and south sides of the river.
- Interpretive overlooks and an outdoor classroom.
- Kayak portage around FishPass and universally accessible launches.
- Stream habitat improvements to riparian bank and riverbed.
- Rain gardens for stormwater treatment.
- Removal and replacement of the dam with new structures to improve fish management.
- Landscaping, seating, lighting, and related park amenities.

While FishPass is the subject of ongoing litigation, it is important to consider how the goals of universally accessible pedestrian connectivity, habitat improvement, kayak access, fish access management, and dam stabilization could be addressed should the FishPass project not be implemented. Given the high cost of addressing the dam stabilization issue, it is clear the city will need to pursue outside finding sources and partnerships to support this effort. The DDA could become one of those partners in the planning, design, and construction of the improvements as an element of the overall plan for the Lower Boardman River.

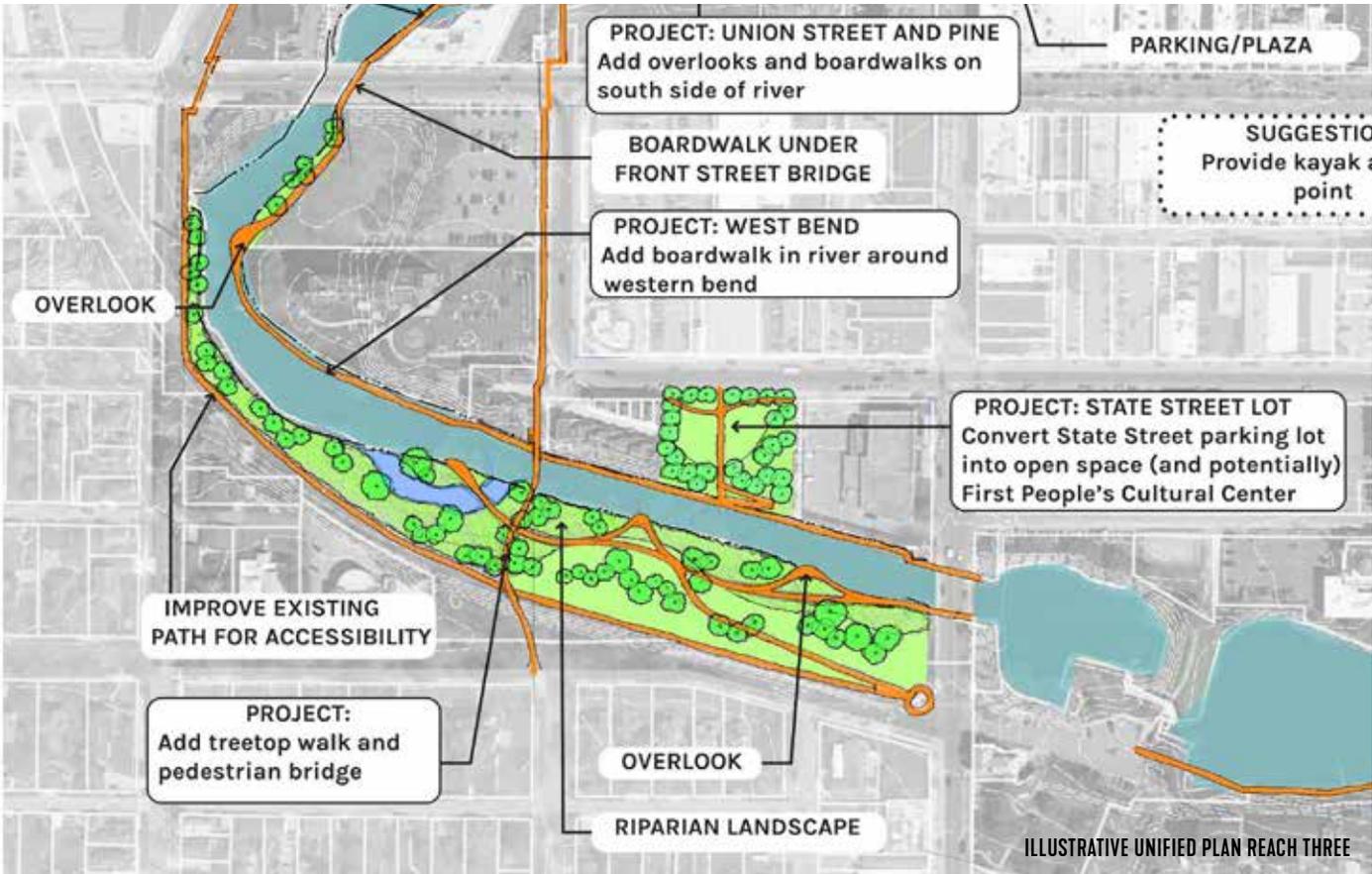
REACH THREE

HANNAH PARK

First and foremost, Hannah Park should retain its pastoral character. To improve accessibility, the existing path along the former railroad should be paved and improved and a second trail installed parallel to the riverfront providing a link to some riverfront overlooks, while connecting under the Union Street bridge to the FishPass site. The landscape treatment between this second trail can build on recent work to plant native materials and create habitat in the east half of the park. There is considerable depth of open

space in the park to create a wide range of habitat enhancements and link the river, floodplain edge and upland together.

The western half of the park offers great potential to enhance the floodplain and create some open water as a small oxbow, enhancing fish nursery spawning areas as well as habitat for reptiles and amphibians. A path/boardwalk could provide access to this area in a way that does not inhibit the environmental connectivity to the river channel.



TREE TOP CANOPY WALK/PINE STREET PEDESTRIAN BRIDGE

The idea of an elevated tree top walk provides for a unique perspective of the river and a great place to observe and learn about river shaping processes, habitats and wildlife (especially birds). This idea could be incorporated into a proposed pedestrian bridge from the railroad grade to the easement adjacent to the

Uptown development, connecting the two segments of Pine Street.

The tree top canopy walk idea was included in the Public Engagement Round Two and received strong support.



STATE STREET PARKING LOT

Parking Lot E on State Street provides an opportunity to create an enhanced connection to the Lower Boardman River and create more urban open space amidst a part of downtown experiencing development and change. Alternatives considered by the public range from:

- **Alternative A** creating a new urban park on the river.
- **Alternative B** enhancing the parking lot to connect the existing boardwalk to State Street.
- **Alternative C** creating park space with a Aanishinaabek’s Education Center.

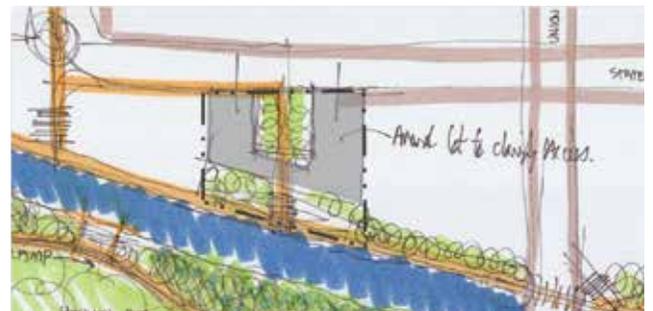
Participants from the workshops and the online survey did not support the same alternative, with workshop voters preferring Alternative C, while survey voters preferring Alternative A. The UNIFIED PLAN recommends that both approaches be considered as this project moves forward, and that the public engagement specific to the future design process establish a direction.

A



Create Passive Urban Park and Demonstration Gardens

B



Recognize parking to Improve Pedestrian Circulation

C



Partially Develop Lot and Access Improvements

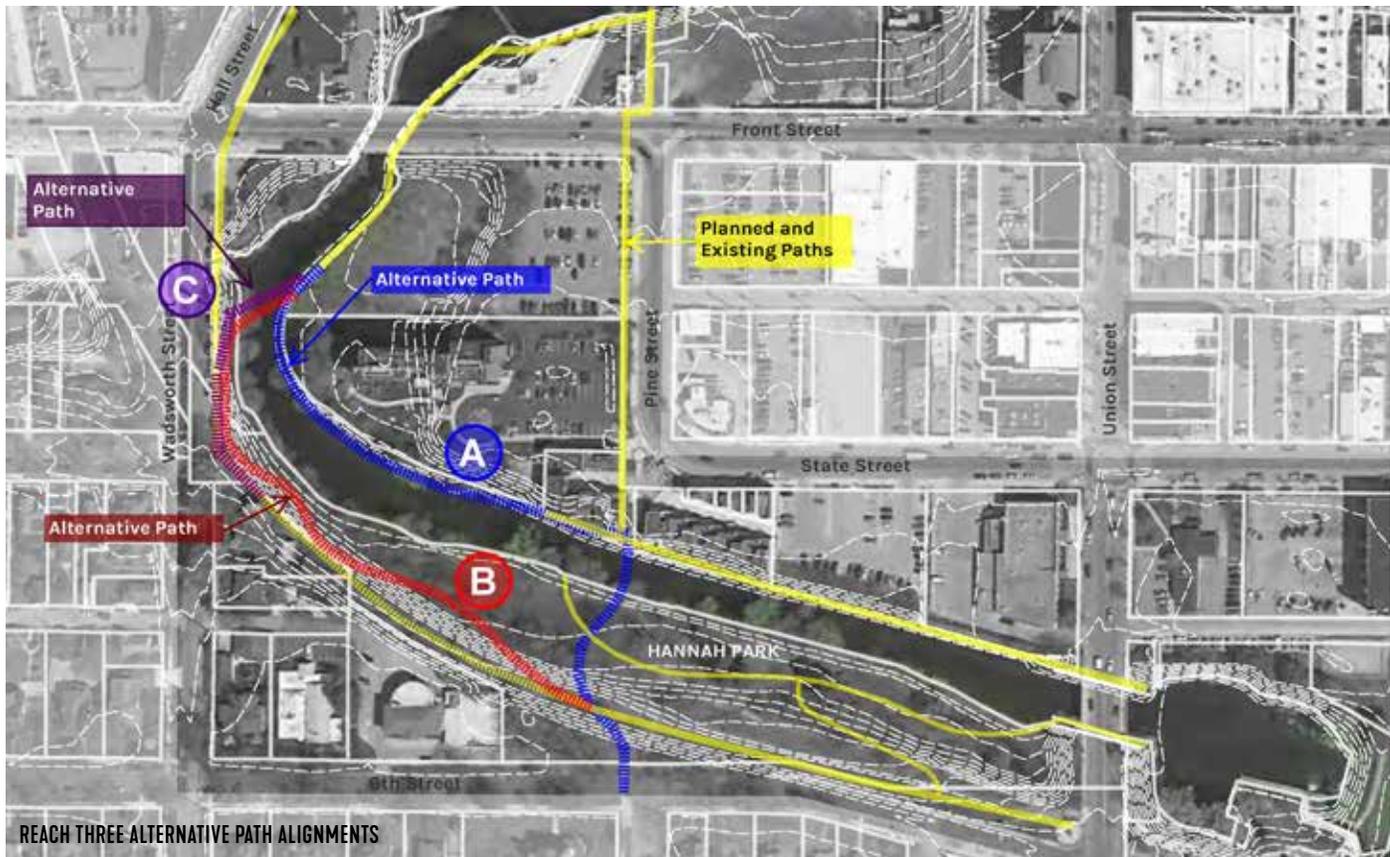
STATE STREET PARKING LOT ALTERNATIVE CONCEPTS

WEST BEND

The western bend of the river near Hall/Wadsworth Streets is one of the more challenging sections of the river to provide access. The area includes a mix of housing types and the highly valued Hannah Park. Previous public input suggested a pedestrian river crossing in the western bend of the river and connections to the proposed pedestrian underpass at Front Street. The goal of access improvements in this area is to connect the north and south banks of the river, take advantage of the proposed underpass under Front Street, protect the privacy of residents, and preserve the character of Hannah Park.

Alternatives considered during Public Engagement Round Two include:

- **Alternative A** creates an elevated bridge across the river near Pine Street and a boardwalk in the river on the eastern bank.
- **Alternative B** connects along the former railroad line but swings the path out over the bank with an elevated treetop boardwalk. Crossing the river occurs just south of Kids Creek Park.
- **Alternative C** follows directly along the former railroad line and then crosses the river just south of Kids Creek.



Public engagement participants indicated strong preference for Alternative A.

Development of this boardwalk would need to be sensitive to the desire of the residents of Riverview Terrace for privacy. The development of this walk should also consider the popularity of the area near the Kids Creek Park outfall for fishing and include an overlook for such purposes.

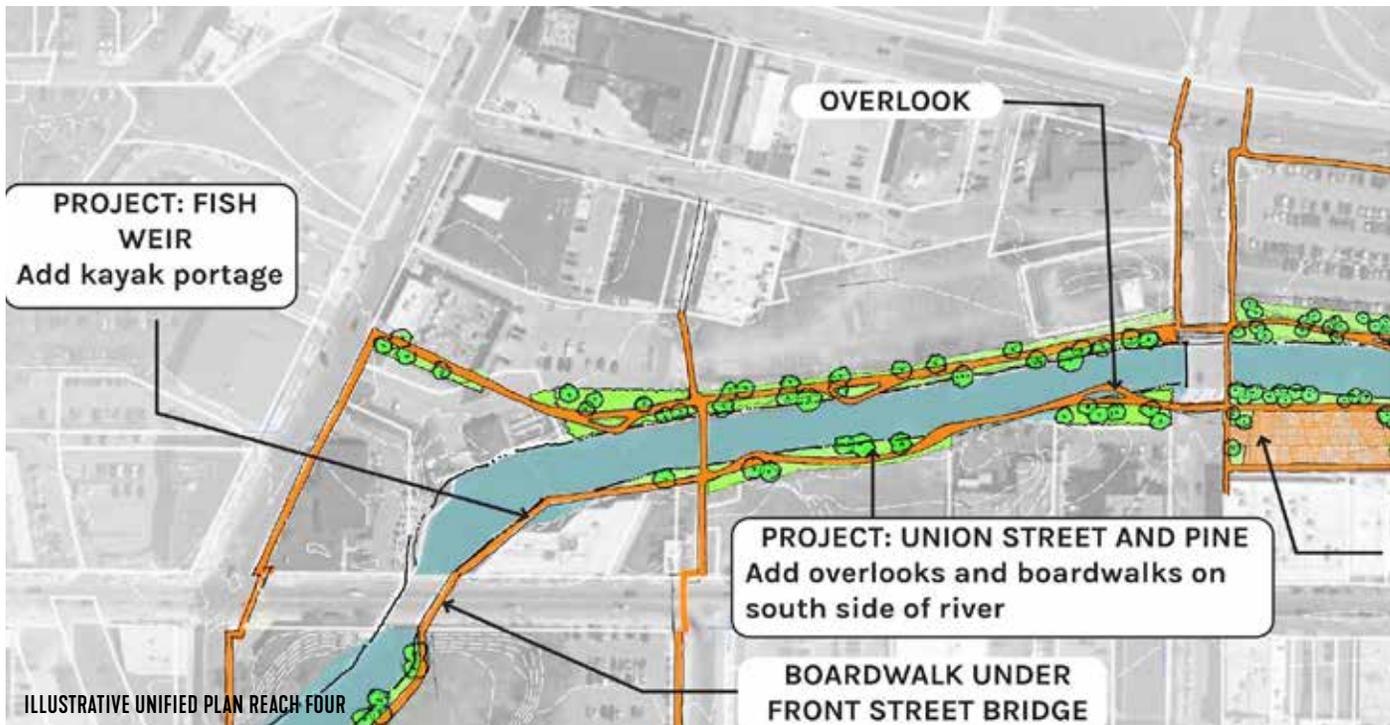
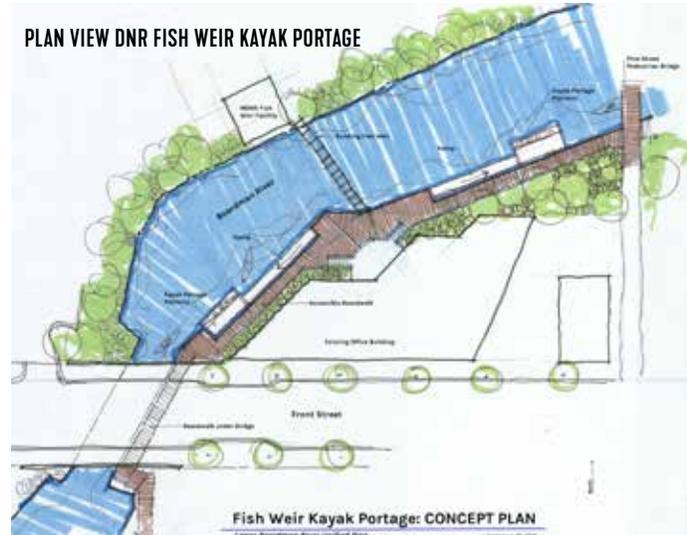
On the western side of the river the sidewalk along Wadsworth should be “branded” through lighting, signage, paving, and other materials to clearly indicate that this walk is part of the riverwalk system. This type of branding could also connect visitors to the walk along Kids Creek Park near the fire station on Front Street, west of Oak Street. The high bank of fill along Wadsworth is covered in large slabs of concrete rubble that have partially hidden by vegetation. This bank should be rehabilitated to offer a greener solution with more habitat value.

REACH FOUR

FISH WEIR KAYAK PORTAGE

The variability of water levels has led to difficulty traversing the fish weir. One idea that has been considered and illustrated is the installation of ramps that allow kayakers and others to portage around the weir along the south side of the river.

The kayak portage idea was included in the Public Engagement Round Two and received strong support.



UNION STREET OVERLOOK AND CONNECTING WALK

This small parcel of land east of Union Street offers an opportunity for a river overlook and for businesses to take advantage of river views.

- **Alternative A** offers a modest overlook of the river. The plan also illustrates the potential for redevelopment of the adjacent private property.
- **Alternative B** features a larger deck suitable for small performances or gatherings and space for a food truck vendor.
- **Alternative C** provides for a curving walk that widens into an overlook.

The community supports the opportunity to create access and connectivity on both sides of the river between Union Street and the Pine Street pedestrian bridge. As this stretch of river is quite popular for anglers, the illustrated plan shows a number of overlooks for fishing and visual access to the river

Public engagement participants indicated preference for Alternative C, and strong support for a path on the southern bank of the river between Union Street and the Pine Street pedestrian bridge.



CONNECTING THE WEST SIDE

Currently the path on the north bank of Reach four dead ends at the DNR fish weir. The plan recommends that a sidewalk be created to link the fish weir to Hall Street through the public parking lot. This walk, as well as Hall Street sidewalk (going south to Front Street), should be branded as part of the riverwalk as discussed above regarding Wadsworth Street.

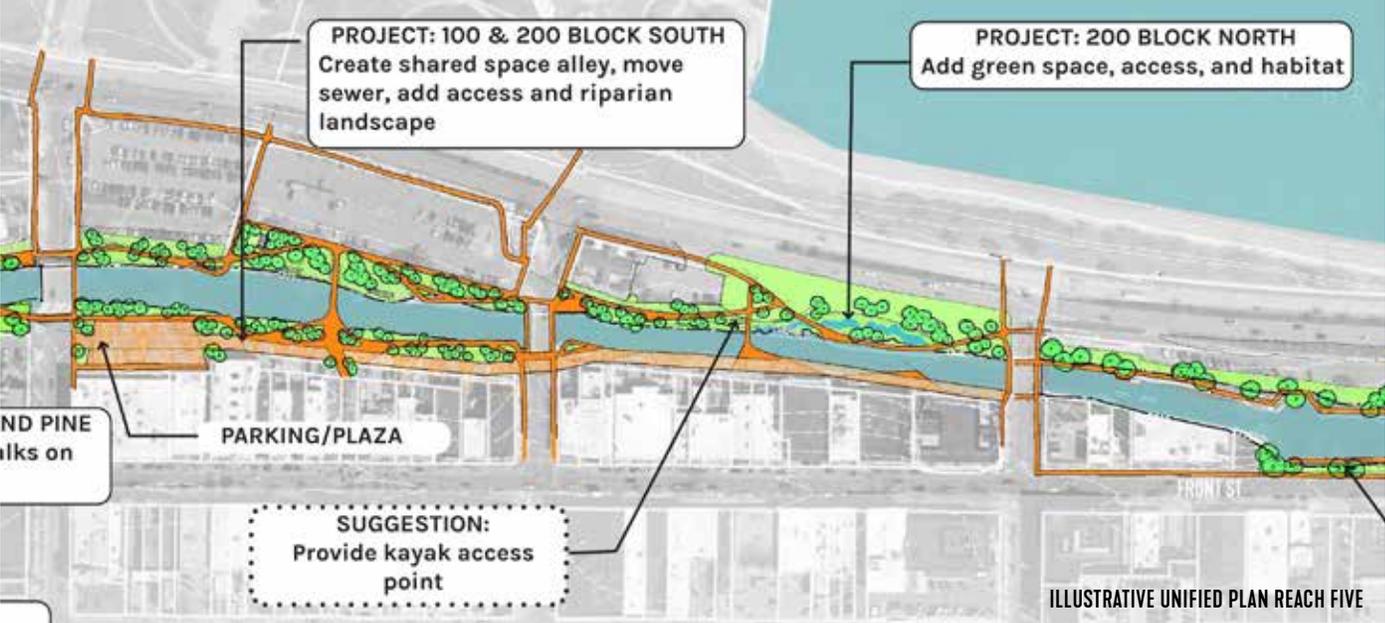
REACH FIVE

100 BLOCK OF FRONT STREET

The area between the 100 block of Front Street and the river is public land, and there are infrastructure issues with the stability of the sewer, pavement, and the river wall. Fixing these issues offers an opportunity to “green” the bank of the river and create a space shared by service, parking, and public recreation.

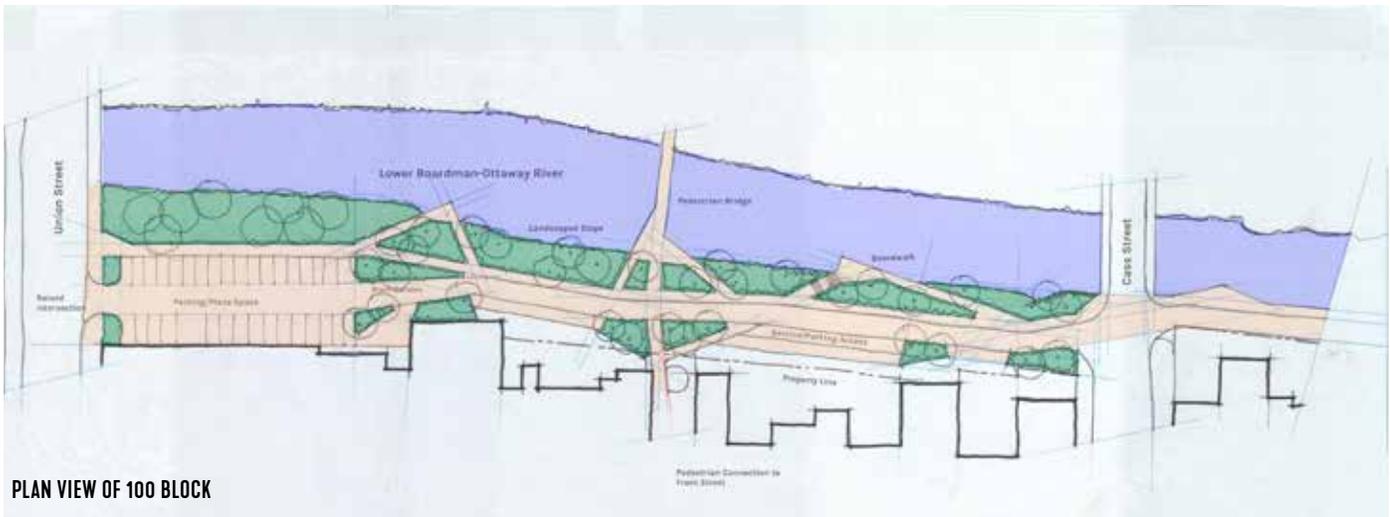
This series of alternative concepts range in their intensity of public access to the river, and in the amount of space that is open to flexible use during

events and gatherings. Each assumes that part of the parking along the river would be removed to facilitate stabilization of the sewer and increase pedestrian and green space. The alley would remain open for service and deliveries and access to private (and public) parking. The alley would be designed to be pedestrian friendly through lighting, paving, traffic calming, and landscape improvements.

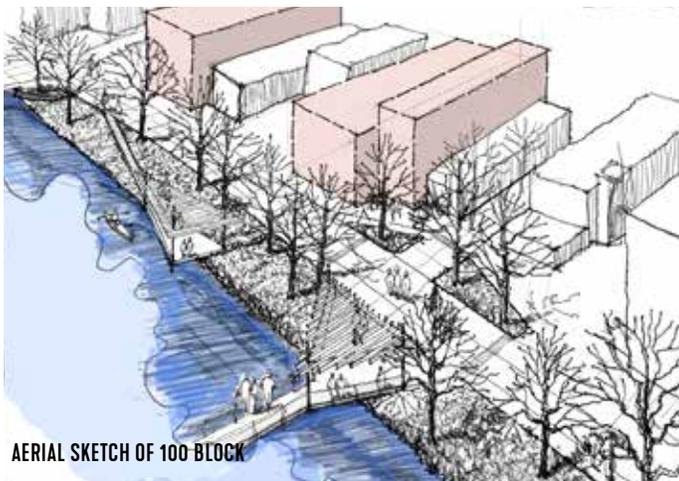


Alternative A proposes a series of overlooks on the river that connect back to the primary walkway/alley. This approach leaves more of the shoreline “green” for habitat and water quality filtering. The sketch

illustrations of this alternative also highlight the potential for redevelopment of sites on Front Street to increase density.



PLAN VIEW OF 100 BLOCK



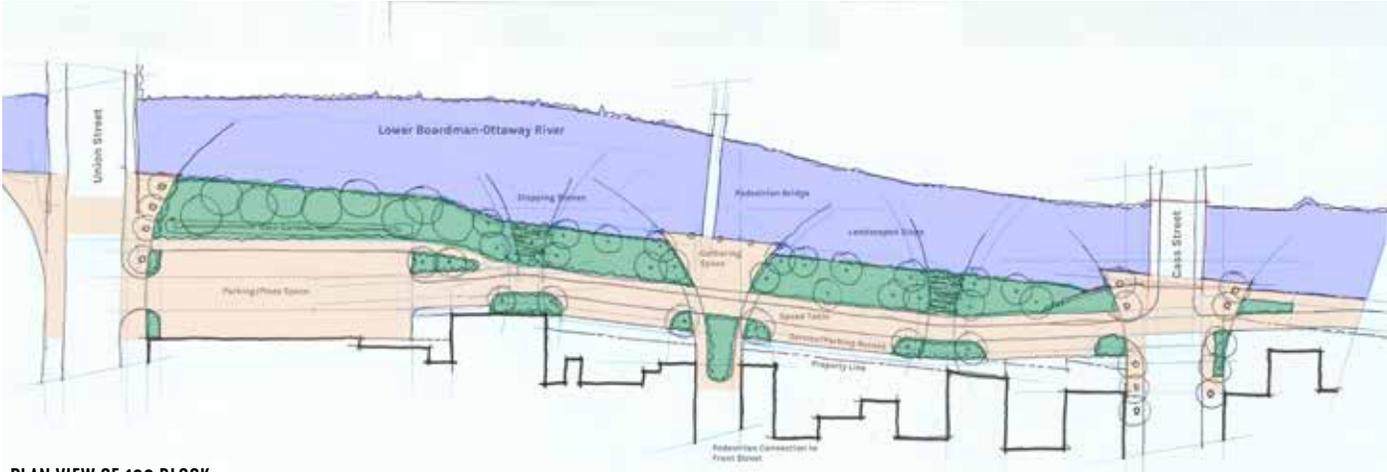
AERIAL SKETCH OF 100 BLOCK



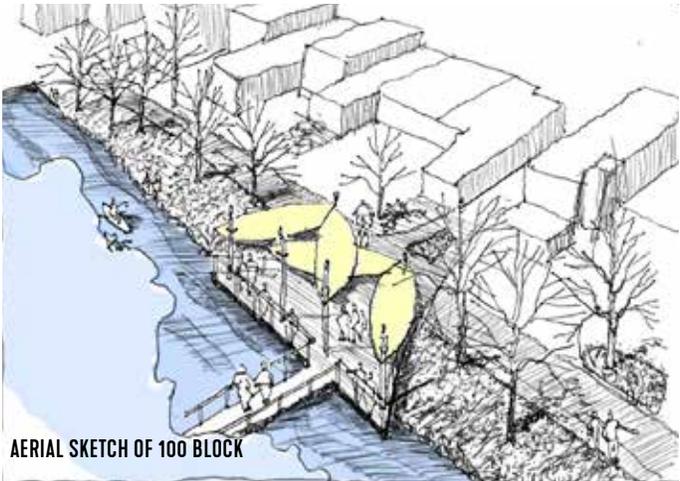
EYE LEVEL SKETCH OF 100 BLOCK

Alternative B celebrates the bridge crossing the river with larger overlooks and gathering areas. Between these overlooks are two stepped stone access points

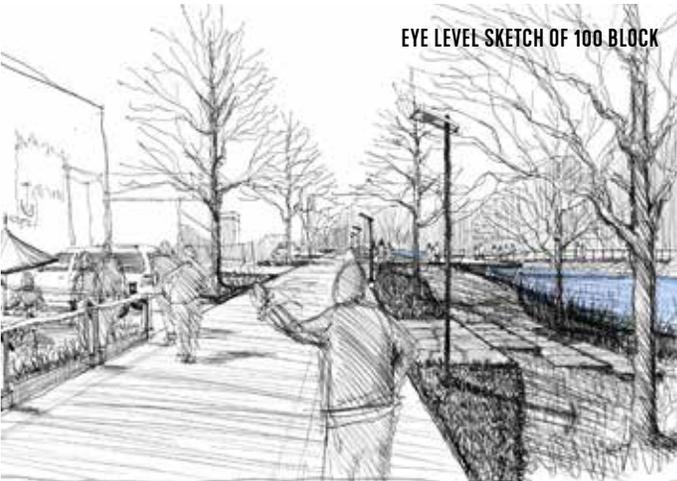
allowing anglers and others more immediate access to the water.



PLAN VIEW OF 100 BLOCK



AERIAL SKETCH OF 100 BLOCK



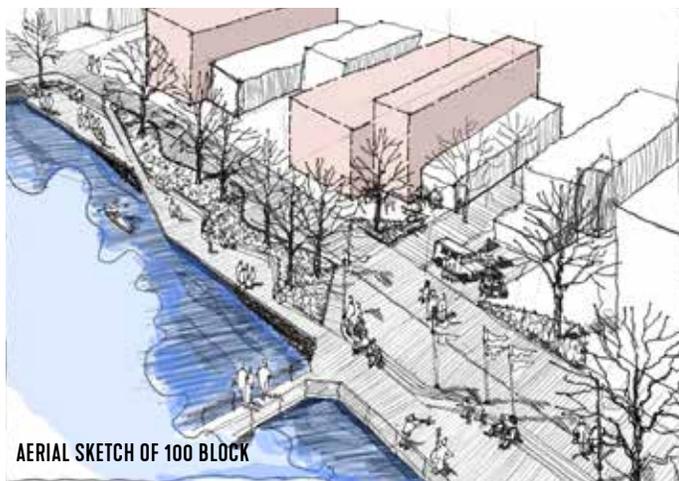
EYE LEVEL SKETCH OF 100 BLOCK

Alternative C provides more continuous boardwalk along the river's edge, several areas for seating and socializing, and two plaza spaces for small performances and events. The sketch illustrations

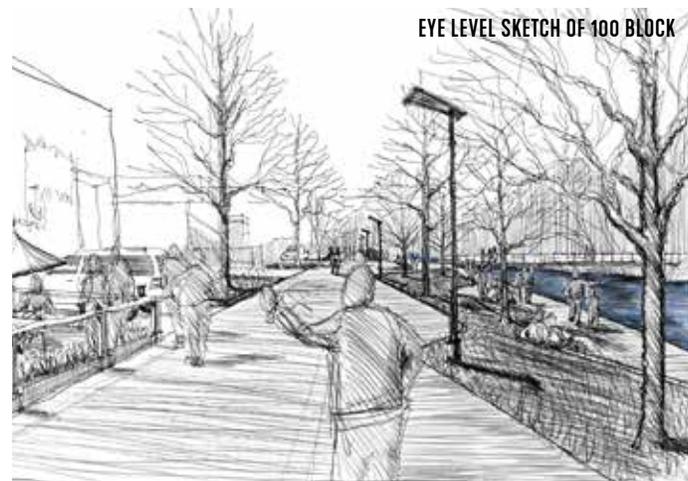
of this alternative also highlight the potential for redevelopment of sites on Front Street to increase density.



PLAN VIEW OF 100 BLOCK



AERIAL SKETCH OF 100 BLOCK



EYE LEVEL SKETCH OF 100 BLOCK

Participants from the workshops and the online survey did not support the same alternative, with workshop voters preferring Alternative C, while survey voters preferring Alternative A. We recommend that both approaches be considered as this project moves forward, and that the public engagement specific to the future design process set a direction. The illustrated UNIFIED PLAN shows a hybrid between these two potential scenarios.

200 BLOCK OF FRONT STREET

The 200 block of Front Street has a thinner band of property along the river than the 100 block, but there are still opportunities to create a more engaging pedestrian friendly space. The illustration also shows

reconstructing the northern bank of the river to reduce parking and create recreation space, habitat that filters stormwater pollution, and public access to the river. On the south bank of the river the sketch shows overlooks,

SKETCH OF 200 BLOCK OF FRONT STREET



a new pedestrian bridge, new lighting, and decorative paving, all of which will help create a more pedestrian friendly, shared space character. The sketch also shows the potential for redevelopment of private property to increase density and take advantage of the riverfront.

The ideas described above for the 200 block were included in the Public Engagement Round Two and received strong support.

Some concern was expressed during the public engagement that the proposed changes to this area may impact the use of the area for the Boats on the Boardwalk event, a classic wooden boat show, and this should be taken into consideration as plans for this area move forward.

This part of the reach is a good location for a kayak portage point on the north side of the river, so that recreational river users could disembark and visit downtown.

CONNECTING ACROSS GRANDVIEW PARKWAY

Currently the pedestrian walks along Grandview Parkway on the downtown side of the road are discontinuous through this reach, and the UNIFIED PLAN illustrates one approach to connecting from Union to Park Streets. With the ongoing efforts by MDOT to redesign the parkway the city and DDA should advocate for these walks, as well as for improved pedestrian crossings at Union and Park Streets to better connect downtown to the waterfront.

REACH SIX

EAST END OF FRONT STREET (SOUTH OF GRANDVIEW PARKWAY)

The east end of the river corridor has a unique character and value. Unfortunately, from a pedestrian use perspective, the existing condition creates a pedestrian dead end that limits access and connections to the bay and East Front Street. This stretch of the river is home to boat slips, so any new crossing of the river will need to accommodate boat traffic.

The ideas shown below test different approaches to creating a looped system for the path.

- **Alternative A** connects to the TART trail where Front Street meets Grandview Parkway, providing a new

pedestrian bridge over the river and a boardwalk along the north side of the river.

- **Alternative B** connects across the river at the base of Boardman Avenue, and then ramps down to the existing boardwalks.
- **Alternative C** bridges the river near the boat launch.

Public engagement participants indicated strong preference for Alternative A. After a review of the technical challenges, potential costs, and potential pedestrian conflicts with the boat launch, the Leadership Team determined that Alternative B is more feasible and desirable, and safer.



EAST FRONT STREET

Four points exist along East Front Street where public property includes river frontage. These parcels provide visual access to the river and large trees that shade the river and sidewalk. As with many stretches of the riverfront downtown, the banks are stabilized by concrete rubble, and should be rehabilitated where feasible using green solutions that increase habitat value.

The westernmost of these three parcels is at a point where the river widens. This location could be home to a transient boat dock that encourages visitors to downtown. While this idea is recommended for further consideration, there are a number of logistical issues that require further study, including how the dock will be managed and policed, if there is adequate space in the river to allow for safe navigation, how a ramp could be used to allow access to the dock, and if the loss of turning space for boats in the river would be detrimental.

The parcel at the base of Wellington Street was improved decades ago as a pocket park and access to a walk along the river. This facility is showing signs of wear on the decking, rust on the metal railings and

light poles, and is being undermined by high water. The plan recommends reconstructing this pocket park to provide clearer visual access to the water and universal access to the walk along the river.

EAST END OF FRONT STREET (NORTH OF GRANDVIEW PARKWAY)

The experience of the Lower Boardman River culminates with arrival at Grand Traverse Bay. The publicly owned land on the east side of the river mouth provides scenic views of the bay, a complex natural system, and a rich history of use by the local tribes as an encampment. The UNIFIED PLAN illustrates enhanced habitat and boardwalks to provide access to the bay and connections to the TART trail.

CONNECTING ACROSS GRANDVIEW PARKWAY

The reconstruction of Grandview Parkway is a fortuitous chance to make the pedestrian crossing between downtown and the bay safer and more convenient. The city and DDA should continue to advocate for intersection improvements at Front Street. One idea that came out of the second round of public engagement (and worth further consideration) is to provide a mid-block crossing between Park Street and Front Street near the boat launch.



PLAN IMPLEMENTATION

ANTICIPATED INVESTMENT AND PROJECT PHASING

The UNIFIED PLAN outlines an ambitious program for improving recreation access, pollution control, environmental restoration, learning, and habitat creation along the Lower Boardman River. Large scale plans such as this are rarely, if ever, accomplished as a single project, but are implemented over time in multiple phases as priorities and potential funding become clear.

This study assessed (in a general way) the potential costs associated with constructing the plans on a reach-by-reach basis. Construction costs of a project can vary significantly based on the assumptions made relative to the level of improvements. For instance, lighting can be designed to provide pools of light at key turns of a boardwalk, stairs, and gathering places, or it could illuminate the entire path system consistently. The cost difference between these two approaches can be 100% higher for the more consistent lighting. Similarly, assumptions about path materials can be dramatically different; for instance, a raised wooden boardwalk is significantly more costly than an at-grade paved path.

At this level of planning, we are estimating at the "order of magnitude" level of detail given that the design is not finalized, detailed site topographic and utility surveys have not been performed, and it is uncertain what year the project(s) will be built and what the prevailing costs will be at the time. What cost estimates at this level of planning do is provide an overall sense of relative costs between reaches, and some guidance for the preparation of future budgets and CIP projections.

The estimate is summarized by reach below:

Reach One	\$2,600,000
Reach Two	\$1,400,000
Reach Three	\$6,600,000
Reach Four	\$2,900,000
Reach Five	\$9,500,000
Reach Six	<u>\$4,200,000</u>
TOTAL PROJECT	\$27,200,000

Basic assumptions made in the estimate are as follows:

- The estimate is based on 2021 construction costs, without escalation for future years.
- The construction costs are based upon the pre-design conceptual ideas and as such reflects the current level of design detail.
- The estimate includes construction costs, and a 20% contingency that would include a 10% contingency for minor items discovered during the design process and 10% for construction period additions to the work. The estimate does not include soft costs associated with a construction project (i.e. items such as construction inspections, construction management, agency review/permitting, testing, general administration costs, and design/engineering fees). Together these soft costs are typically valued between 25 to 40% of the estimated construction cost.
- The estimate includes site preparation, grading, known utility work (for the 100 block), storm sewers, bank restoration, lighting, site furnishings and amenities, paths, boardwalks, railings, landscaping, habitat structures, and erosion control.

- The costs for utility improvements are included for known project specific improvements only. Additional utility modifications and improvements may be required. The completion of a utility survey may identify additional utilities.
- The costs associated with land acquisition, easement/lease procurement, and other land rights have not been included.
- The removal of contaminated/hazardous soils and materials, underground obstructions, and other unknown conditions may exist within the project limits and as such are not included.

As referenced above, projects like those recommended in the UNIFIED PLAN are typically implemented in a number of phases. As part of Public Engagement Round Two the online survey inquired as to the public's sense of which projects to prioritize. Participants of the August 17, 2021 public workshop were asked to prioritize projects as well. Finally, the Leadership Team reviewed the public input and themselves weighed in on project priorities, taking into account the need to address immediate health and safety concerns as well as the established project values.

HIGHEST PRIORITY PROJECTS

- The south bank of Reach Five (100 and 200 blocks of Front Street) is clearly the highest priority project from all groups, given the health and safety concerns related to the existing retaining wall and sewer.
- In Reach Three, upgrade the existing gravel path through Hannah Park along the former rail road bed, and extend the existing boardwalk on the north and east sides of the river to, and under, Front Street.

MODERATE PRIORITY PROJECTS

- In Reach One, construction of a boardwalk on the west side of the river and improvements to the existing public space south of Riverine Apartments.
- In Reach Three, improvements for habitat and access in Hannah Park and along Wadsworth Street.
- In Reach Four, installation of a boardwalk and kayak portage around the fish weir.
- In Reach Five, habitat and access improvements on the north side of the river.
- In Reach Six, landscape and access improvements in existing pocket parks and boardwalks.

LOWER PRIORITY PROJECTS

- In Reach Two, landscape and habitat improvements on the north side of the river, plus the addition of a boardwalk under Cass Street.
- In Reach Three, construction of a new pedestrian bridge and tree top walk over the river.
- In Reach Three, improvements to the State Street parking lot.
- In Reach Four, landscape and access improvements along the river, and along Hall Street.
- In Reach Six, habitat and access improvements to the public land along the shore of the bay.

This list of priorities should be used as a guideline for future discussions by the city and DDA to plan future project and funding pursuits.

There are a number of small but visible improvements along the river corridor that could be completed by volunteers or small contractors. These "low hanging fruit" type projects do not necessarily rise to the top of the project priority list above; however, they can

have a big impact on the public perception of the river and create momentum for change. These projects could include creating small rain gardens, hosting river cleanup days, management of invasive trees and shrubs, planting of native trees and flowers, adding benches and resting places, and basic repair of existing pedestrian boardwalks and related assets to "spruce-up" the riverfront.

POTENTIAL FUNDING SOURCES

Below is a list of potential grant sources for funding the implementation of the Lower Boardman River UNIFIED PLAN. The primary focus of these grants is to encourage recreation/fishing access to waterways, enhance water quality, or enhance and create wetland and fisheries habitat. All these elements are needed in the proposed project area. Our experience is that projects typically need to rely on multiple sources for grants. This is not an exhaustive list, and we need to evaluate each of these to determine the specific applicability to the project, timing of the grant cycle, and where you can get the most return for the effort to pursue.

DNR GRANTS

- The Fisheries Habitat Grant supports a variety of activities to benefit fisheries, aquatic resources, and the public, including fish habitat conservation, dam removal and repair, and access to recreation.
- Recreation Passport Grants provide funding to local units for the development of public recreation facilities. This includes the development of new facilities and the renovation of old facilities.
- The Michigan Natural Resources Trust Fund (MNRTF) provides for natural resource protection and outdoor recreation. (e.g., trails, regional significance, public access to lakes and rivers, wildlife habitat, hunting access).

EGLE GRANTS

- Nonpoint Source Pollution Control Grants: Federal Clean Water Act Section 319 provides funding to implement nonpoint source activities identified in EGLE-approved watershed management plans. Implementation activities must address specific sources of nonpoint source pollution identified by Michigan's Nonpoint Source Program Plan. The goal of these grants is to restore waters impaired by nonpoint source pollution and protect high quality waters from degradation. This funding source provides for the implementation of physical improvements as well as information/education strategies, land use planning, the installation of easements, and related activities.
- Nonpoint Source Pollution Control Grants: Clean Michigan Initiative provides funding to implement the physical improvements in approved watershed management plans intended to restore impaired waters and protect high quality waters. Practices must address specific sources of nonpoint source pollution identified by Michigan's Nonpoint Source Program Plan. Physical improvements are structural and vegetative BMPs. The goal of these grants is to restore waters impaired by nonpoint source pollution and protect high quality waters from degradation.
- Coastal Management Planning and Construction Grants assist in the protection, preservation, restoration, and enhancement of the nation's longest freshwater coastline, the Michigan Coastal Management (MCM) Program provides grant funds to promote vibrant and resilient coastal communities.

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

- Sustain Our Great Lakes (SOGL): Green Infrastructure; Aquatic connectivity; Shoreline habitat; Wetland habitat; Stream & riparian habitat, Invasive Species.
- Coastal Resilience Fund: Living shorelines community protection and habitat.
- Five Star and Urban Waters Restoration Grant Program: Wetland, riparian, in-stream, and coastal wetland habitat restoration.

THE GREAT LAKES FISHERY TRUST (GLFT)

Provides funding to non-profit organizations, educational institutions, and government agencies to enhance, protect, and rehabilitate Great Lakes fishery resources.

The GLFT pursues its mission and vision through investments in three broad categories:

- Access to the Great Lakes Fishery
- Ecosystem Health and Sustainable Fish Populations
- Great Lakes Stewardship

ECONOMIC RECOVERY/INFRASTRUCTURE

Recent and anticipated bills from the federal government are aimed at providing local relief from the Covid-19 epidemic, offering an opportunity for financial support to offset economic and health impacts, as well as for projects that build community resiliency. This effort is ongoing and should be monitored closely to determine if there is an application of these funds for the projects and initiatives outlined in the UNIFIED PLAN.

CONGRESSIONAL BUDGETING

The U.S. Congress has amended their practices for budgeting to allow for the annual budget to include project specific funding for each congressional district and state. This practice now includes provisions to make such funding more transparent and each congressperson and senator is required to publicly indicate the projects they support are included in the annual budget.

This practice is well suited to funding projects like those included in the UNIFIED PLAN, which do not fit into a specific category of existing funding sources but which also meet an important public need for local communities.

MOVING FORWARD

Moving forward will necessitate the development of key partnerships within local government agencies, non-profits, advocacy groups, other key public stakeholders, and the greater Traverse City community. The DDA and the Leadership Team (or their successors) will continue to build partnerships through an open and transparent public planning process, and ongoing connections with stakeholders of all types. The planning process will continue to engage the community and take direction from their input and guidance.

At the conclusion of this initial study the Leadership Team and DDA will lead the charge in the adoption of the UNIFIED PLAN and the practices and values it promotes. As the plan moves into the implementation phase, the DDA and its partners will continue the process of measuring needs, identifying new opportunities, and establishing priorities for moving forward. Given the strong participation by the community in the UNIFIED PLAN, the community will be pleased when all new projects on the river reflect these values and considers the value of natural habitat, as well as human use!

Ultimately, this process is about implementing a unifying plan for the Lower Boardman River. With the engagement and unity of all interests, the city and DDA will be in a sound position to achieve implementation and celebrate the results together.

The work does not end with the completion of the plan. The DDA and Leadership Team recognize that a willing and supportive community is critical to the implementation of the UNIFIED PLAN.

APPENDICES

Lower Boardman River Unified Plan

Analysis of Input from the Public Kick-off Meeting
(Held on June 12, 2019)

August 8, 2019

During the public workshop held on June 12, 2019 the public was asked to comment on a range of topics related to the Lower Boardman River. In addition, community focus group meetings were conducted on July 24 and July 25, which allowed additional community members to provide input. One of the common forms of input was to write comments on flip charts and sticky notes. Following the meetings all of the comments were documented. This summary attempts to group comments that have a common theme, and measure the number of times a comment consistent with that theme was

TOPICS	SUPPORTING COMMENTS						Specific Area of Focus Noted
	1-5	6-10	11-15	16-20	21-25	26+	
PROJECTS							
Soften shore treatment/restore natural edge						31	200 block, reach 5, Hannah Park, pollinators, concern over rip rap junk
Fix/improve undermining of walls on river	6	6					green wall solutions?
Link to Downtown, TART, Bayfront, neighborhoods, BATA	6	6					Cyclists need N/S route at Pine St
Create additional/improve access and portage for kayaks					24		Union St (North side of dam), follow Water Trail Plan, DNR weir, new forms of canoes, etc.
Add interpretive learning places and opportunities						26	evolution of human use, native encampment, river movements, education, council circle, mural, cultural center
Improve bridges for aesthetics and access		10					Eighth, N. Cass
Add/improve access paths along and across river, promote universal access						35	Cass St, Union St to Fish Pass, cross river at Hannah and Pine St, Hannah to Pine St., add rails at Uptown, Reach 2, makes stairs more manageable, improve what we have
Increase and Improve Open Space on river corridor				16			Pop-up parks on river adjacent parking lots, rotary park, expand Farmer's Market, make alleys into plazas
Remove/Limit parking from river banks			13				
Provide art installations	5						tribal focus, interpretive
Improve access for anglers	4						Reach 1
Concern over river use during FishPass construction	5						If Kayakers portage at Am Legion Park, there's no facilities
Concern about FishPass working as intended, or being too urban, or questions on maintenance		10					
Encourage native fish species/limit invasives; add aquatic habitat				17			e.g. brook trout, sturgeon, create river meander?
Maintain the shoreline and facilities					25		Invasive management, existing and proposed vegetation, education, trash, logs in river, leaf dumping by neighbors, costs and responsibilities, arborist req'd, rangers
POLICY							
Protect the Health of the river			11				Monitor water quality, provide education to boaters and anglers, control erosion
Manage use of river by boats/floating devices						53	Drinking, volume, behavior, hours, no wake, enforcement, limit boats/kayaks on river at one time, no whitewater, limit power boats at south end
Limit new development				18			Potential and need for moratorium?
Add development along river, especially in empty lots and parking areas	4						
Increase setbacks from river					22		for parking and buildings; also, manage lot coverage
Keep river corridor natural and passive				19			Hannah Park, don't need boardwalk everywhere!
Restore Ottaway as name of river			15				
Recognize, Respect, and Protect Native American heritage		9					Education
Prohibit additional shore hardening		6					
Include homeless population into process and policies		7					
BEST PRACTICES							
Understand climate change impacts/flooding and manage development accordingly		9					potential for floating docks?
Promote sustainable building practices		7					Septic fields, green building practices, guidelines for home landscapers
Utilize storm water management practices	5						disconnecting storm and sanitary, limit impervious paving
Incorporate night sky practices/limit lighting	3						
Continue to engage the public		9					social media use, periodic town halls, TART, Native people, alerts before decisions
Concerns over safety and security	5						

Other notes posted include:

Manage delivery and service to businesses	Engage private kayak/canoe rental vendors in the planning
Concern about urban feel of FishPass	Not all users at meetings-rive is important to all
Design for human use, not just otters	Pilot projects and pop-ups could help test ideas
Safety and security	What are positive economic benefits to project?
Provide space for children	Consider the potential locations of west parking deck, Farmer's Market, and civic square
Move waste water treatment plant	Lower Boardman is not rural river, but isn't all urban either- consider a mix of character
Manage deliveries and service to businesses	Wildlife needs to be considered as well as fish
Access for dogs	High water causing issues with getting under bridges
Keep boardwalk out of river to improve maximize river use	River Terrace property doesn't need a boardwalk
Waterfront could be more attractive	Balance visual access to river with need for plants on banks
No portage downstream from Union Street dam	Public land improvements need to meet same standards that we set for private land
Casual concerts in the park, not full out concerts	Concern about bank erosion near Wadsworth
Whitewater park at Union dam	FishPass is an improvement over what we have now
More respect for those that work and live on river	Include Prosperity Plan improvements between Cass, 9th and north shore
Need more space for cars	Use Restoration, Regeneration, and Regenerative Design in lieu of Sustainability and Preservation
All of Traverse City is not for guests	FishPass is a great example of stormwater management
Manage people going from public access onto private property	Support Public Pier at river mouth
Use zoning to ensure public access	Use ground penetrating radar when investigating history of site
Ensure that investment of public money is a reasonable investment relative to the potential benefit	Has presence/absence of industrial toxins in sediment been assessed?

PROJECT	Lower Boardman River Unifying Plan	MEETING NO.	1
PROJECT NO.	11510.000	MEETING DATE	6/12/2019
PROJECT LOCATION	Traverse City, Michigan	MEETING TIME	6 pm
SUBJECT	Public Engagement Workshop	MEETING LOCATION	Farmer's Market
PREPARED BY	Doyle/McFarland		

ATTENDEES**COMPANY**

Traverse City DDA

LBR Leadership Team

SmithGroup/Limnotech Team

Community Members

The purpose of the public engagement workshop was to provide the public with an understanding of the project and to solicit input into the direction of the project early in the planning process.

The meeting began with a brief presentation that described the project intent, how this planning effort relates to past work on the Boardman River, the community's shared values for the river, the history and potential for the river, how the community can guide the future of the river corridor, and how everyone can be involved in creating a new vision for the river.

After the presentation, workshop participants visited six stations where information was available related to learn, and provide input about, the specific topics being addressed by the study. The station topics included:

- A. Public Engagement Process and Existing Plans
- B. Visions and Values
- C. River Conditions and Habitat
- D. Access, Open Space and Recreation
- E. History and Culture
- F. Planning, Land Use, and Development

Members of the Lower Boardman River Leadership Team (Leadership Team) were available at each station to review the materials provided on the boards, and to solicit input from community members on the topic. For most stations, the input was provided through the recording of comments and discussions by the Leadership Team, and through direct comments recorded by participants on sticky notes.

The comments have been organized for each of the six stations into several categories, including

1. Project-specific ideas for improvements
2. Policy-ideas related to the land development and use policies which guide change along the river
3. Best Practice- Ideas related to the engineering, planning and design best practices that are known or anticipated to improve the river.
4. Value/Other-guiding themes for the river corridor.

Specific comments and input recorded at the public engagement workshop include:

- A. Public Engagement Process and Existing Plans
This station focused on gaining input on how the public would like to be involved in the LBR study as the project moves forward. Also included at this station was a series of images related to planning

studies completed in the last several years which provide excellent background into the river corridor and ideas for improvements.

Comments regarding Engagement include:

- Engage Boardman Collaborative
- Present to schools
- This event is too overwhelming. Would be nice to arrange for more intimate, smaller groups. In homes or similar to the tree event at the library
- No charrettes
- Have we engaged the homeless population along the river?

Since this was the first station many visited, and number of the comments received here are relevant to the overall project as well as topics of the other stations.

1. Project

- Remove the fallen tree and big one just south of 8th St. bridge one west side logs fallen
- Landscaped walkways
- Temporary pop-up civic park in one of the parking lots between the buildings and river
- Too much in the space. Pick XXX and spread it out
- Not enough bridges for people on foot
- Too many pedestrian bridges
- More public art, like the river guardian sculpture
- We need more safe places for pedestrians to cross between the river and West Bay. More traffic calming measures too
- Boardwalk walking trail along river that go under the bridges
- 8th St. underpass needs maintaining and drainage and lights
- Add railing to north side of boardwalk at uptown
- Get those hideous cement blocks on riverbank near Wadsworth in Hannah park
- New foot bridge across river at Hannah park. We of CAN don't want that
- Stop all alcohol on Boardman – parties are obnoxious, litter too much
- Interactive art along river
- Too much in small space with proposed fish pass
- Pedestrian bridge, please
- No hardening of river shoreline

2. Policy

- More building setbacks
- Control over usage i.e. kayaks, trash, overgrown vegetation
- No more “uptowns”
- Need large setbacks along Boardman River
- Restrict pints and paddles
- No building on floodplain
- No booze on the river
- Remove invasive planting and protect the river
- Parking “D” boat launch to Boardman remove the seasonal, blue kite – there 4 or 5 miles – remove and “red flag” put up. Remove and put beach in the area
- No more development on the river
- Don't let staff (planning) rewrite the public input like they did on 8th St., the tree ordinance, etc.
- No more development, walkways, etc.
- Incorporate night sky friendly lighting, where needed
- Glass on the rivers is an issue. Drinking is okay

3. Best Practice

- Model of how river mouth changed over the years
- No “hardening”

- Increase riparian buffer zones
- 4. Value/Other
 - What's the ROI for municipality with these investments?
 - Please keep a natural feel to the links
 - Instagram stories for updates
 - Involve residents as well as businesses
 - Alerts about key decisions BEFORE they are made
 - Guided kayak tour
 - Public comment sessions
 - We should ask the homeless what they need to access affordable housing in order to move off the river bank
 - Social media updates more
 - Events targeted towards the younger generation
 - Hold periodic "town halls" to inform public on process and solicit input/feedback

B. Visions and Values

At this station the participants were asked to review the list of guiding values established by the Leadership Team and indicate their preferences for the values they supported, or did not support. The Guiding Values, and the number of preference votes they received, are as follows, in descending order of supporting votes received:

- *Reflect the City's commitment to the River as a public resource and asset to be passed to residents and visitors in perpetuity. (14 positive votes)*
- *Make nature-based stormwater best management practices (BMP's) a priority. (12 positive votes)*
- *Foster the restoration of native fisheries, herpetological and ornithological resources, and landscape to be consistent with best riparian and aquatic science and water and land management practices and be harmonious with the River. (10 positive votes)*
- *Prohibit further hardening of the shorelines that are inconsistent with the Plan. (10 positive votes)*
- *Integrate existing river walks and pathways with new connections between sites and destinations that link the River to the city in ways that are physical, visual, aesthetic and psychological. (8 positive votes).*
- *Be explicit to the commitment to improve, restore and protect the health and integrity of the Riparian ecosystem of the lower River. (6 positive votes)*
- *Manage invasive vegetation and protect and retain existing native vegetation and add native vegetation where possible. (6 positive votes)*
- *Ensure that the natural flow of the River is enhanced and not curtailed or impeded by any element of the Plan. (6 positive, 1 negative)*
- *Use the natural and cultural values of the River as a guide for decisions about the commercial, economic or utilitarian values to be leveraged for the public good. (3 positive votes)*
- *Serve to foster and sustain partnerships with shared responsibilities among public and private stakeholders who share the value that the Boardman is a "common resource" that connects everyone. (3 positive votes)*
- *Identify/prioritize opportunities for multi-modal access to the River. (3 positive votes)*
- *Help ensure that new or rehabilitated developments along the River are compatible with the City's renewable energy goals. (2 positive votes)*
- *Provide that the recommended initiatives contained in the Plan will account for the impact of those initiatives on residents, habitats and the ecological status of the River. (1 positive vote)*
- *Enhance ecological and aesthetic River conditions, take advantage of and integrate iconic structures and identify new sites and structures that serve as destination or centers of programming to attract year-round access. (1 positive vote)*
- *Establish that development sites, destinations and structures must protect the health, aesthetics, accessibility and health of the relationship between the river and residents/visitors. (1 positive vote)*

- *Contain public goals for the River and City, in keeping with the community's visions about what the River is and can become as a centerpiece for downtown identity and ethos. (0 votes)*

The public was also asked to rate the following topics in answer to the question "What do you value the most about the Lower Boardman?" In descending order, the public supported the following:

- Habitat (13 positive)
- Water (13 positive, 1 negative)
- Nature (11 positive)
- Special Places (6 positive, 1 negative)
- Health (4 positive)
- History, and Culture (3 positive each)
- Recreation (5 positive, 3 negative)
- Identity (2 positive, 1 negative)
- Traditions (1 positive)
- Economic Vitality (1 positive, 3 negative)
- Events (3 negative)

The remaining comments observed at this station can be summarized as follows:

1. Project
 - Connecting Riverwalk Union St. to fish pass reach 3 and 4
2. Policy
 - No more development. Let some of the river remain nature. Recent development is too close to the river
 - I like the access for my dogs
 - Keep open spaces along parkway open
 - Clean river, both water and banks
 - Policy to balance use/user groups/use types of envirohealth leading
 - Require 25' setback from the river (share or by two water math) for buildings
3. Best Practice
 - Define vegetation – limit "weedy" shrubs that can't be maintained-especially in Hannah Park. Keep easy access to viewing
 - Protect the health of the river and banks
4. Value/Other
 - Let the Ottoway speak for itself
 - I don't like homeless displaced from the riverbank without getting into housing. We can partner to connect homeless to housing opportunities
 - The Boardman is the original "main street" of the town. Its future design should reflect that
 - More green space
 - Please allow the Boardman River to "speak for itself." No more development, no more "hard" concrete, please border barriers
 - Like the natural banks and foliage

C. River Conditions and Habitat

1. Project
 - Maintain blue ribbon trout stream
 - Keep out the invasive fish, including the salmonids (Pacific)
 - Fishing line and hook receptacle
 - No invasive species (2)
 - No sturgeon chinook coho
 - No "experiment" which might fail and allow unwanted species up stream
 - Protect Brooke Trout and species alike at all costs

- More prevention against invasive species, especially the round goby because they're predators of almost all our native species
- Native species
- Improve habitat for sturgeon including stocking
- Do not introduce non-native species to the river
- Do not pass salmon and steelhead (2)
- Keep the river as natural as possible
- Focus on native species and habitat
- Establish setback for developments to help decrease shoreline hardening
- Eliminate boat docking on river
- Less concrete, more river rock, native vegetation (all reaches)
- Keep Hannah Park riverside NATURAL. Allow the wild animals to still have a home (reach 3,B)
- Native shoreline (reach 5,D)
- Allow as much vegetated bank as possible, wherever possible
- River banks vegetation overgrown, unsightly and unsafe
- Clean water, less trash
- Terraced south shore instead of parking
- Stabilize the banks as much as possible with natural vegetation and, if necessary, riprap, no sheet piling
- Classy bridges
- Protect shoreline from kayak access overuse, July/august 200 kayak/week (reach 1)
- Promote natural buffer everywhere
- Native species only
- Impress upon anglers, paddlers and floaters that they have a responsibility to care for the river
- Carry limits. We are being exploited by commercial ventures, kayaking, etc.
- People living in housing, rather than the riverbank, under bridges, etc.
- Keep the water clean
- Keep the flora and fauna healthy and thriving
- No more develop along river. Allow some of it to have natural edges
- No more tight, to the river development. Allow some of the river to be natural
- No wake on Boardman River
- No building in flood plain (Pine St. XXXXX)
- Improve riverbed when bridge is renovated – current design has 9at times) strong currents, contribute to downstream erosion on downstream (outside) bank
- Neighbors rake leaves into the river
- Remove all connections between storm and sanitary sewers
- Remove all surface parking in-between river and parkway and replace with deck. Concert surface parking to parkland
- Soften banks and improve in-stream habitat
- Make “living walks” on concrete channel walks and integrate bird habitat (reach 6)
- A better riparian buffer with native plants (reach 3)
- Cars parked on the river. Lets lose that (reach 5)
- No more development on river or at least not so close, need buffer (reach 5)
- Boats on boardwalk, preserve this use (reach 5)
- Improve access for fishing and pedestrian nature walk (reach 5)
- River is undermining alley which is a key thoroughfare (reach 5)
- Soften shoreline where possible (reach 5)
- Nor more development along river. All some of the rive to have natural edges (reach 5)
- Build classy bridges (reach 4)
- Maintain bird/bee flower/green environment on all walks
- No building on rive (reach 1)
- Provide improved access for fishing native species (2) (reach 1)

- Need plan for boardwalks (reach 3)
- 2. Policy
 -
- 3. Best Practice
 - Work with land owners for landscape practices that are water friendly
 - Have a septic system monitoring program all along waterways
 - A complete list of the species of fish currently in the lower Boardman
 - Frequently check water clarity clearness
 - Stay up to date and be active on shoreline stabilization and protection
 - Ensure stormwater management best practices fir new and existing infrastructure
- 4. Value/Other
 -

D. Access, Open Space and Recreation

1. Project
 - Make the bridge at fish pass at least 6' for sup poolers
 - No whitewater rapids, kayaking
 - Easy portages to local businesses
 - Walking access along the river
 - Paddle and pints dragging boats over vegetation is not good. Need more access
 - Connected pedestrian networks along river, important
 - Boardwalk out of river to maximize river use
 - Improve portage for canoes/kayaks
 - More take-out points for canoes/kayaks as another access to downtown
 - Bussed boaters ok, rowdy damage problem
 - No portage going downstream at Union St. dam
 - Integrate access ramps into existing river channel walls
 - Convert parking lots to pike-like plazas with some food/beverage amenities/concessions
 - Integrate defined bike paths and pedestrian trails
 - Open space and gathering places
 - Canoe/kayak launches
 - Not comfortable with fish pass and being guinea pig for project
 - Current portage on Union dam is not good
 - Temp access at American Legion park during fish pass in 2020-2021
 - No river access at Hannah Park (kayak)
 - I don't like the boardwalks ever. I'd like to see natural river, no boats docked
 - More trees, less concrete
 - New fish pass design destroys the current site
 - Integrate or connect with TART
 - More places to pull out/put in canoes/kayaks, visit parks and businesses
 - Security! Motion sensor lights, litter disposal at Union St. bridge, lots of fishing debris
 - Hannah Park to Pine St. bridge
 - I'd like to see more green space
 - Keep it as natural as possible
 - Limit access do its not overrun with happy, drunk kayakers (reach 5)
 - Soften shoreline and channelization to improve recreation experience (reach 5)
 - Opportunity for public art under bridge (reach 5)
 - Possible pull out at pedestrian bridge to allow business access (reach 4)
 - River setbacks, more riparian buffers
 - Protect banks from erosion
 - Casual concerts in the park, not full out big concerts

- Native riparian buffer up to the shoreline wherever possible (reach 1)
 - Riparian buffers are needed to maintain the river health (reach 1)
 - No need for more kayakers in large parks (reach 1)
 - Stagnant/dead water area (reach 1)
 - Improve pedestrian underpass of 8th to decrease traffic conflict with TART trail (reach 1)
 - More public access, walking along the river (reach 2)
 - Green to limit stormwater runoff (reach 2)
 - Infuse native plantings to improve water quality (reach 3)
 - Council circle in town on river interactive destination with engagement opportunity (reach 3)
 - Need a barrier or parking at the end of the boardwalk because people will fall in, especially at night (reach 2)
 - Bridge to Hannah Park (reach 3)
 - Make access sites actually assessible. 15th kayak access is not accessible
 - Not whitewater park (2)
 - Whitewater park at Union Dam
 - Pine St. non-motorized bridge n-s (4)
 - Education center with interpretive at farmer library
 - No more development along river
 - Universal access where possible
 - Rotary Square – housing will give it to city
 - Make North Cass St. bridge a little higher over river
 - Secluded, zen like park area
 - Need to be mindful of people who live on the water and hopefully control the effects of too much drunken boat traffic
 - Bay-oriented kayak/surf/ski launch
 - Access to river for non-motorized craft – not easy for able body
 - Make the riverfront banks beautiful, keep them beautiful, manage noise and pollution
 - Portages around the dam, north side of dam accessibility
2. Policy
- Patrol along the river
 - Regulate beer drinking kayakers from 4-6 pm on 1st Saturday of August
 - Regulate the kayak, bike and brew crowd – development will only grow this market
 - Keep/put controls on usage of river
 - No wake restriction on Boardman River
 - Ban alcohol on Boardman
 - Restrict times/number of pints and paddlers
 - Overuse of Union Park area-drunk kayakers
 - Can anything be done to curtail all the drunks in kayaks on the river downtown?
 - How did uptown get built right on the river? Should not have been allowed
 - More environmentally focused, no more development
 - Buildings too close to the water
 - We don't want San Antonio Riverwalk-too commercial
 - Regulate guided/tourist kayak numbers
 - Permitting success to river can be regulated by city. Alcohol issues with drinking tours
 - Drinking tour trash, noise
 - Clean-up old garbage, no glass allowed
 - Regulate/limit kayak numbers
 - Increase policies on how to behave on the river...city regulations (reach 1)
 - Regulate the use of the river-no beer tours on the rivers, no tubes on the river (reach 1)
3. Best Practice
- No hardening of the river
 - Concerned about DNR allowing steelhead up river at fish pass, not good idea
 - Concerns with fish pass-really able to control invasive species

4. Value/Other

- Most all current recreation is for adults only (ex. Paddle for pints). Have more recreation events for kids/teens
- Protect the river, keep it natural
- Must get people more personal with the river. Design it so it is easy to get on, get close, hear and feel it
- Homelessness along the river may discourage some people from accessing it. Just “moving homeless along” won’t fix the issue. Let’s use this river conversation as a conversation for affordable housing as well
- Clean up 8th St. underpass by riverine
- Kayak tours and opportunities for kids to learn about the river
- Accessible! Accessible! Accessible!

E. History and Culture

1. Project

- Native American mural, maybe have kids involved, paint
- Ottaway, name-publicize – make known
- Make history about river and areas (2)
- Tribal art installation
- Restore Ottaway name
- Tribal recognition - names, translations
- A city on a river owes its life to the river and should treat the river with the respect of a revered ancestor – we have much to atone for. We will be known by the way we treat “our” river
- Respect the Odawa, no more development, stop the ETOH
- Appreciation for nature
- Change name back to Ottaway (8)
- Protect spiritually significant sites if shared by tribe
- Interpretive signage – what is the right amount? Stores/perspectives
- Hannah Park remain naturalized, not commercialized
- Emphasis on Native American culture and history
- Need to communicate to the public via news paper the importance/history/connections of Native American tribes to Great Lakes, Boardman R/GTB
- Pre contact history for Hannah Park
- More respect for the river and those who live/work along it
- Role of the river in the growth and development of Traverse City
- Only native plants being planted – the same ethic should inform the choice of which fish are allowed passage – through fish pass – native species only
- More learning-based events about Boardman history (ex. guided kayak tours giving information about different parts of Boardman history)
- Develop historical encampment at north of Boardman, represent tribal camp with artistic sculptures depicting tribal activities
- More historical markers – sawmill, Native American village at government center site
- Publicize historic containment levels
- Restrict development
- Where did Boardman name come from?
- Boardman Lake keep name – change name of river, keep/acknowledge both cultures
- Where did the original mouth occur? What was the uses between river and bay?
- Help homeless that may be displaced. Celebrate Traverse City helping to find homes for those effected
- Incorporate a Native American philosophy in the design
- Emphasis on representing Native history and landmarks
- Stations along Riverwalk to explain history and culture, different starting points

- Interactive information/art/interpretive “what kind of fish” paddle/walk and find answer
 - Art along river sensitive to culture/history
 - Historical markers, interpretive signage, information kiosks
 - Include signage about significant Native American historical sites
 - Environmental and historical interpretive signage
 - The Indians where here first, then we displaced them (and a lot worse, sad history) but now we have the opportunity to respect their history
 - Tell store
 - Move the waste water plant
 - Important to incorporate signs about history and culture
 - On new and existing trails and walkways, install stations depicting/describing cultural and historical points – S/B every ½-mile, or so, along trails (not covering same points)
 - Walk of history, Milken Potatoes Factory, oral bowl factory
 - Restore the river to original name
 - More history and culture, less recreational facilities
 - Effort to inform community about the history of the river and its cultural significance
2. Policy
 -
 3. Best Practice
 -
 4. Value/Other
 -

F. Planning, Land Use, and Development

This station included a series of images and text that described different development approaches and issues along the riverfront. Facilitators asked participants to use colored dots to indicate support or lack of support for these ideas. In descending order, these issues and approaches are as follows:

- Site Planning and Ecological Viability (7 positive votes)
- Public Access (6 positive votes)
- Promote direct access to the river (5 positive votes)
- Site planning and Building Orientation, images showing boardwalk, landscape bank, and residential buildings oriented to river (5 positive votes)
- On-site Storm Water Management (2 positive votes)
- Site Planning and Building Orientation (1 negative vote on image of concrete wall at river bank)

Other comments and input recorded include:

1. Project
 - Lets do a pop-up park on one of the parking lots
 - Land to river interface. Access points for rec. whitewater park and Union dam. Remove Wier
 - Expanded farm market facility
 - Redevelop parking lots into usable public space (park-like/plazas, etc.)
 - Bridge redo – make each iconic/artistic. Partner with XXX admission
 - I don't like the fish pass-concrete, no trees, huge scale
 - I'm concerned about safety. People moving from boardwalk onto private prop need garbage, lights on boardwalk
 - Remove parking "across river" from farmers market/make park, benches, fountains
 - Temp rec access at American Legion park during construction pf fish pass
 - Fish pass work being done off season (May-June)
 - Where can I put a kayak in? how does the dam work?

- No development below fish weir, no additional boardwalk. Enjoy river from canoe or kayak (no motor) paddleboat
 - Keep Hannah Park the same/natural. Improve, OK, but keep natural
 - Ban paddle for pints (2)
 - Public access needs visibility, river undermining alley
 - Protect the shoreline
 - Honor appropriate setbacks
 - Leave or maintain natural vegetation
 - Eliminate invasives
 - Continue to improve alley behind barriers and the river
 - Eliminate parking
 - Enhance green space
 - Protect the cement bark or improve
 - Prevent undermining of cement walk
 - Water rising/undercutting an issue
 - Ensuring vegetation is maintained and planted along the river is extremely important for the health of the river and aesthetics
 - Public open space – difference between green space/public and places
2. Policy
- Create zoning to protect the public access along the river's edge
 - No more development tight along river. Keep the natural edge of the remaining river
 - Need more spaces for cars
 - Use by residents not so much for tourists
 - "Transfer" parking spaces to the new deck
 - Less parking
 - Any lighting should be minimal, following night sky friendly guidelines
 - Relocate parking away from rivers edge
 - Develop alleys to activate the river with business
 - Increase building setbacks
 - Less condos
 - 1 tall (4 fl) spot for parking, keep it condensed
 - Increase set backs from river an Front St.
 - Activate the riverfront along downtown buildings
 - Café spaces
 - Opo-up events
 - Concerts
 - Shops/markets
 - 50' setback for buildings and parking
 - Make setback for buildings/development 25' from river's edge (or high water mark) More greenspace along the shore
 - Don't want to see XXX motorized tours
 - Businesses should be thinking about deliveries in front to free up river side
 - Enable small pop ups shops for small local venders-seasonal attraction. Detroit-rents for use to XXXX market. Chicago-walloon sheds
 - Don't want it to be San Antonio's. No lights 24/7, not too intense, but bring people to riverfront
 - More mixed-use, less room for cars
 - Increase setbacks along river, including for parking lots
 - Fisher people trash is an issue
 - Develop the alleys/lots
 - "Boardwalk watch" i.e. neighborhood watch
 - How much land on the river does the city have control over?
 - Restaurants on the river

- Buffer should be at least 25' for whole river, as hydrograph shifts with more intense XXX events, buffer is only going to need to get wider to protect the river and the buildings next to it
3. Best Practice
- Improve the natural aspects
 - Eradicate invasive species
 - No encroachment on building without 20' setback
 - If there is any left, maintain existing greenbelts along the BR. This includes trees
 - Add native pollinator path to Hannah Park
 - Keep west bend natural. Bridge access to Hannah further east
 - Restore "natural" riverbank, remove concrete, replace with vegetation stabilized banks
 - No further removal of bank side vegetation unless critically necessary, restore vegetation
 - Identify parcels at risk to flooding/inundation with climate change scenarios. Purchase or set strict dev. Guidelines
 - Emphasize ecological viability of all development projects
 - Educate existing land owners on river friendly landscape management +/- incentives
 - More green infrastructure instead of setbacks due to tight sites already
 - No hardening of banks. Remove what exist
 - People have to think about rising water levels
4. Value/Other
- People over-using the river is not my vision. Keep the river natural
 - The river was historically used and abused. It's been coming back but too much interest is being directed at over development, needs to be natural
 - Design for human use, not just for otters
 - The best way to get people to connect with the river us to get them out of their cars and off the sidewalks and get them in and on the river, activities
 - All of Traverse City is not for guests
 - Incorporate downtown on both sides of the river
 - Please stop approving any plans within this 1.6 miles until this is a unified plan
 - Moving homeless people along from river and elsewhere doesn't work, need housing
 - Its not Disney World, it's a river in northern Michigan
 - Native people should be included in the decisions
 - We have to retrain ourselves, our thinking
 - Is TART involved
 - Fish Pass will close down river temp. what do we do?
 - I's like to see a lot of green space
 - Easier kayak access
 - Waterfront could be more attractive

CONCLUSIONS

Based on the input from the public engagement workshop, the general trends indicate that the public supports the following:

1. Project
- Providing public access (e.g. boardwalks) along the river; assume the need for universal access

- Monitor and repair places where high water and currents are undermining the shoreline-return to soft shores wherever possible.
2. Policy
 - Limit/manage additional development along the river corridor
 - Increase building setbacks
 - Limit/manage the use of kayaks and tubes on the river to ensure opportunities for all users and quiet enjoyment of the river for downtown residents.
 - No additional hardened edge should be allowed
 3. Best Practice
 - Support the use of native plants and habitat creation to control erosion
 - Utilize best practices to manage stormwater and other means of improving water quality.
 4. Value/Other
 - Continue to engage the public throughout the planning process
 - Shift the balance towards habitat and nature over human recreation and economic development
 - Limit facilities for gathering or events along the river-focus should be on downtown/bay

DRAFT

ATTACHMENTS

PROJECT	Lower Boardman River Unifying Plan	MEETING NO.	N/A
PROJECT NO.	11510.000	MEETING DATE	7/25/2019
PROJECT LOCATION	Traverse City, Michigan	MEETING TIME	4 meetings total, one in morning and one in afternoon of each day
SUBJECT	Focus Group Workshops	MEETING LOCATION	Traverse City Opera House
PREPARED BY	R. Doyle		

ATTENDEES**COMPANY**

 Traverse City DDA (Jean Derenzy and Tim Ervin)

 LBR Leadership Team Members

 SmithGroup/Limnotech Team (Bob Doyle)

 Community Members

The purpose of the public engagement workshop was to provide the public with an understanding of the project and solicit input into the direction of the project early in the planning process.

The four meetings had an intended focus; however, the public was welcomed to attend each and any of the meetings as they wished. The focus of each meeting was as follows:

- Meeting #1: Recreation Groups
- Meeting #2: Community Development, Business Focused Organizations and Other Groups
- Meeting #3: Business and Property Owners
- Meeting #4: Sustainability Groups

The smaller, more intimate format of the Focus Group Meetings was intended to allow for more in-depth discussion of the project and the community's needs and desires for the river corridor. The sessions are not intended to be presentations, but an opportunity to get feedback from generally well informed and active citizens. Graphic boards from the public workshop were set up around the room, covering the six primary topics. Copies of the summary from the public meeting conducted on June 12th were available for focus group participants.

Introduction

At the beginning of each session, the DDA and SmithGroup provided some brief introductory remarks to review, covering-

1. The purpose of the Study and why this process is different
2. The general make-up of the Leadership Team from the community and their role
3. The upcoming planning process and scheduled-anticipated pop-up workshops, then the follow-up idea generation phase and new round of public input
4. The anticipated product and outcome (Projects, Policies, Best Practices, and Implementation/Maintenance)
5. The public workshop results, based on the handout provided
6. The six topics from the June Kick-off Meeting include:
 - Engagement and Past Planning
 - Vision and Values
 - History and Culture
 - River Conditions and Habitat

- Access, Open Space, and Recreation
- Planning, Land Use, and Development

Discussion

Following the introductory remarks, the team lead an informal dialogue about the topics the participants were most interested in, including concerns, issues, and ideas. Input from the open discussions was recorded on flip charts. Discussion topics and input discussed include the following:

Meeting #1

- Concerns about the FishPass project relative to the need for an operations manual and a determination about responsibilities for maintenance and who controls which fish species are allowed to pass upriver.
- How are maintenance responsibilities being handled for both the infrastructure of the FishPass and the actual fisheries; both during the 10 years of fish study and the years thereafter.
- There is a desire for a north-south access through the project area for bicycles. Non-motorized crossing of the river on axis with Pine Street has been noted in this and other discussions as it links to a larger network for bikes along Pine to the south of the project area.
- Access for pedestrians and cyclists across the Grandview Parkway is very desirable, connecting downtown, the Lower Boardman, and the bay front parks. Perhaps this could be studied when MDOT improves the Parkway in the years ahead, as is currently planned.
- Hannah Park should remain green and open, but some improvements would be helpful. The City is investing in some path improvements and other improvements this year.
- Boardman Lake, and the Lower Boardman river (to a lesser extent) are hidden gems. The river corridor needs more places for people to access and enjoy the river.
- There needs to be increased management of the use of the river, and at the same time, better access for non-motorized watercraft. Hannah Park and the existing boat ramp were noted as logical places to improve access to the river.
- There is an open question-how much use of the river is too much? What is its carrying capacity for recreation? How do other communities with similar issues manage river use?
- The community needs to get the private kayak/recreation boat vendors involved in the solution.
- The group was reminded by a participant to be mindful that many users of the river are not at this meeting, and the river is an important recreational resource for them.
- Related to the FishPass Construction, how are kayakers and recreation users of the river going to be accommodated? Will they be expected to portage at American Legion Park? Will facilities be provided to protect the park from damage?
- Users of the river on recreation crafts use a variety of stopping and starting points. One typical trip is to go from Hull Park to the bay.
- The river corridor needs clear and workable access points for commercial and non-commercial users.
- The FishPass and existing fish weir (managed by the DNR) should accommodate newer forms of recreation craft, e.g., canoes with outriggers.
- Passing through the fish weir is difficult due to the narrow channels and high water. The DNR needs to be part of the discussion on the future of the river.
- The community should consider using adjustable boardwalks in light of the potential for increased volatility in water levels.
- Maintenance of the river infrastructure needs to be built into the plan. Maintenance needs to be nimble to adjust the infrastructure depending on what is working, and what is not. Management and maintenance need to be a daily part of the effort.
- Management of the river could include proactive engagement with the public on a daily basis to help keep the river quiet, clean, etc.

Meeting #2

- Building and development setbacks are important tools to manage the character of the river.
- Flood zones need to be identified and considered when reviewing new development plans. FEMA is reported to be in the process of updating flood mapping in the area.
- Cleanup and access improvement should be celebrated by the community and part of local events.

- The rear of the lots along Front Street could be better utilized than being parking and utilitarian. Deliveries need to be considered but could be accommodated.
- Pilot projects and pop-up events along the river should be part of the implementation of the plan.
- Need to look at options for improving kayak access beyond Hull Park and the dam. Consider suggestions from the Water Trail Plan.
- What are the potential economic impacts of river improvements? They are likely to be positive and could help people understand why the project is important. A previous study conducted by Upjohn may be helpful.
- Can the walls near Front Street be removed? They are not a positive element of the river corridor.
- How resilient is Traverse City based on current climate change predictions?
- Connect the river corridor to TART and to the bay front.
- There was a path in the past along the north side of the river that connected the area near Pine Street and the bay.
- The proposed west end parking deck, Farmer's Market improvements, and civic square are all projects whose outcomes and locations will directly influence the recommendations for the Lower Boardman.
- The natural resources of the river remain present today and are very important.
- Trees in the river can result in congestions and there is an ongoing need for maintenance.
- A concern was raised about the closing of the river due to the FishPass construction and what impacts that would have on the fish population.
- Universal access to the river is critical.
- How does the boardwalk system connect to existing bike lanes downtown? To BATA stops?
- Trash management needs to be addressed along the river.
- Restrooms would be very helpful along the river corridor.

Meeting #3

- FEMA is remapping the corridor and the flood level needs to be considered in development along the river corridor.
- Maintenance of trees and the vegetation on the river edge needs attention.
- The Lower Boardman is not a rural river, but it shouldn't be clear cut and urban either!
- The treatment and character of the river is not consistent from end to end now and should not be in the future either-it's about allowing it to be funky and to find a balance.
- Wildlife needs to be considered as important as fisheries.
- Maintenance needs to be really thought through-walks, trees, boardwalks, trash, etc.
- Security and safety are also considerations for a management plan for the corridor. Facilities need to be safe and consider increased pedestrian and boater use. What kind of insurance does the City have to cover issues?
- A river ranger group could help with behavior enforcement, safety, visitor orientation, etc. What do other communities like Bend Oregon do?
- Power boat use of Reach 1 and Reach 2 should be considered. Restrict power boats below Boardman Lake.
- Kayaker's drinking and music are the two most annoying aspects of their presence-these seem like the could be managed with the help of the rental operators.
- What if kayak use increases? Seems manageable now but.....
- Kayak access points are needed which are well managed and clear.
- More concerns about maintenance discussed, including overgrown plants, preventative care to landscape and facilities, construction debris from adjacent projects.
- The lack of railings on the boardwalks is disconcerting. Perhaps they don't need to be continuous but considered for key areas.
- Who is ultimately liable for safety?
- With raised water levels the headroom clearance at bridges is a larger concern.
- The pedestrian access under the 8th Street bridge needs to be repaired (current bridge plans were then discussed).
- What are some temporary maintenance and repair jobs that could be done in the short-term?
- Stairs down to the boardwalk are often too steep and poorly lit.
- Renaming the river to Ottoway was viewed by participants as positive. How much of the river could be renamed? Should the community rebrand the boardwalks and river front as the "Ottoway Trail?"

- An interpretive learning/cultural center/FishPass Learning Center should all be considered along the corridor.
- Should there be limits in franchise operators on the river? Regulations as to time and intensity of use? How do communities along the AuSable and Manistee River manage use?
- Is there, or should there be, a river use fee? License fee?
- The management plan for the river should establish a set of specific goals and monitor achievements.
- Perhaps the community should “fix up what we have” as a priority.
- Could the maintenance along the river use an “Adopt a Highway” approach to limit impact on city services? Community based investment in maintaining things could work very well in Traverse City. Perhaps there is a restorative period in the winter when use is so low that some maintenance projects could occur during?
- There needs to be defined objectives related to water quality as the river projects move ahead.

Meeting #4

- Building resilience into the long-range plan is critical.
- Development should be managed through improved ordinances to manage things like density, building orientation, lot coverage. The city should consider the extent to which they want to subsidize development.
- Should there be a moratorium on new development?
- The concrete rubble along the river’s edge is a concern.
- Generally, there is no need to provide access along both banks of the river-it can remain habitat focused.
- There shouldn’t be any more hardscape along the river.
- Riverview Terrace does not have a boardwalk and doesn’t need one per residents of the facility.
- Keeping trees healthy is a valuable investment-perhaps using a professional arborist as part of the corridor maintenance plan. Hannah Park is an example of how vegetation, even native materials, needs maintenance.
- There is a need to balance visual access to the river and the need for vegetation along the banks.
- There is a need to balance recreation and resilience along the river.
- Ensure the long-term agreement for public access when developments are occurring is important.
- The riverfront needs to be universally accessible.
- Building setbacks are important. The city should consider development incentives for green roofs, carbon/water zero development.
- What kind of development requirements does the city impose on itself when it makes improvements along the river?
- What are we doing on public lands to reflect the values established for the project?
- The city should remove all parking along the river.
- There is concern about the erosion of the riverbank along Wadsworth Street.
- The FishPass project seems highly developed; should the project get the fish passage part done and wait to implement other features?
- Impervious surfaces should be limited along the river, and stormwater management best practices used.
- The city has changed the development setback from the “dock line” to the Ordinary High-Water Mark.

Further Input

Following the group discussion, the meeting participants were encouraged to enter into one-one one or small group conversations with team members. They were also encouraged to place comments on the six topic boards reviewed earlier in the meeting.

The comments have been organized for each of the six stations into several categories, including

1. Project-specific ideas for improvements
2. Policy-ideas related to the land development and use policies which guide change along the river
3. Best Practice- Ideas related to the engineering, planning and design best practices that are known or anticipated to improve the river.

Specific comments and input recorded at the focus group meetings include:

A. Public Engagement Process and Existing Plans

Included at this station was a series of images related to planning studies completed in the last several years which provide excellent background into the river corridor and ideas for improvements.

1. Project

- FishPass is an improvement of what we have now
- FishPass is an experiment; it could just as well be a Fish Flop. I would rather not do this plan
- Boardwalks: I think there are enough-most are rarely used. The new boardwalk by Uptown is ugly with all the ramps.

2. Policy

- Be sure to include in your plans the improvements in the "Prosperity Plan" between Cass, 9th, and North Shore (note-this area was missing from graphic)
- I would only focus on natural landscape enhancement, sustainability of the riverbanks, remove invasive vines which are killing trees-and no more development within 25 feet of the river

B. Visions and Values

At the Focus Group meetings, the participants were asked to review the **list of guiding values established by the Leadership Team and indicate their preferences for the values they supported. The Guiding Values**, and the number of preference votes they received, are as follows, in descending order of supporting votes received:

- *Foster the restoration of native fisheries, herpetological and ornithological resources, and landscape to be consistent with best riparian and aquatic science and water and land management practices and be harmonious with the River. (5 positive votes)*
- *Make nature-based stormwater best management practices (BMP's) a priority. (4 positive votes)*
- *Prohibit further hardening of the shorelines that are inconsistent with the Plan. (3 positive votes)*
- *Be explicit to the commitment to improve, restore and protect the health and integrity of the Riparian ecosystem of the lower River. (3 positive votes)*
- *Ensure that the natural flow of the River is enhanced and not curtailed or impeded by any element of the Plan. (3 positive votes)*
- *Manage invasive vegetation and protect and retain existing native vegetation and add native vegetation where possible. (2 positive votes)*
- *Reflect the City's commitment to the River as a public resource and asset to be passed to residents and visitors in perpetuity. (2 positive votes)*
- *Use the natural and cultural values of the River as a guide for decisions about the commercial, economic or utilitarian values to be leveraged for the public good. (2 positive votes)*
- *Help ensure that new or rehabilitated developments along the River are compatible with the City's renewable energy goals. (2 positive votes)*
- *Provide that the recommended initiatives contained in the Plan will account for the impact of those initiatives on residents, habitats and the ecological status of the River. (2 positive votes)*
- *Enhance ecological and aesthetic River conditions, take advantage of and integrate iconic structures and identify new sites and structures that serve as destination or centers of programming to attract year-round access. (0 votes)*
- *Establish that development sites, destinations and structures must protect the health, aesthetics, accessibility and health of the relationship between the river and residents/visitors. (0 votes)*
- *Contain public goals for the River and City, in keeping with the community's visions about what the River is and can become as a centerpiece for downtown identity and ethos. (0 votes)*
- *Serve to foster and sustain partnerships with shared responsibilities among public and private stakeholders who share the value that the Boardman is a "common resource" that connects everyone. (0 votes)*
- *Identify/prioritize opportunities for multi-modal access to the River. (0 votes)*
- *Integrate existing river walks and pathways with new connections between sites and destinations that link the River to the city in ways that are physical, visual, aesthetic and psychological. (0 votes).*

The public was also asked to rate the following topics in answering the question: “What do you value the most about the Lower Boardman?” In descending order, the public supported the following:

- Water (6 positive)
- Nature (6 positive)
- Habitat (5 positive)
- History, and Culture (3 positive)
- Health (2 positive)
- Economic Vitality (1 positive)
- Recreation (1 positive)
- Identity (0)
- Traditions (0)
- Events (0)
- Special Places (0)

C. River Conditions and Habitat

1. Project
 - Create Habitat
 - Commit to using only native plants for restoration
 - Plant trees
 - In reference to FishPass- A jewel, a showcase of stormwater management through use of trees and green space. An example that changes business as usual.
2. Best Practice
 - Never talk about sustainability or preservations: Please instead use restoration, regeneration, and regenerative design

D. Access, Open Space and Recreation

1. Project
 - Make the riverfront safe for grandparents and 6-year olds to be around
 - Must have a public pier at mouth of river
2. Policy
 - Prioritize pedestrians first and single occupancy cars last
3. Best Practice
 - How can we make the landscape and installations turn a walk into teachable moments?
 - Engage learners of all ages

E. History and Culture

1. Project
 - Aanishinabek Cultural Center-Language Center
 - Highlight native American heritage/history-cultural center
2. Policy
 - Restore the name Ottaway
3. Best Practice
 - Ground penetrating radar
 - Refer to Dr. M.I. Leach and Wilbert B. Hinsdale-Excerpts and expound on these authors and History

F. Planning, Land Use, and Development

1. Project
 - Improve existing river walk already established on east side of river channel (note near Wadsworth St)

- How can we make urban riverbed meander?
 - Continue boardwalk for as many places that are possible
 - Continue boardwalk
 - Increase river access downtown
 - Remove some parking by market
 - Connect the boardwalks upstream and downstream of the Cass Street Bridge (near Hagerty) by looping new boardwalk under the re-built bridge
2. Policy
- Expand the land buffer around the river
 - State-level authority for stormwater utilities to form
 - Make use-by-right hit really high ecological standards-well building certification, living-building certification, etc.
 - Building standards that go beyond code for efficiency and ecology
 - Do not limit number of kayakers, fisherman, users in general. If noise is a problem, consider limiting alcohol
 - Bigger setbacks for new buildings
 - Bar motorboats past Boardman Street
 - Limit number of kayaks per hour, don't encourage paddle and brew
 - Anyone should be able to use the river-kayakers, swimmers, fisherman
 - Limit or ban drinking while paddling/fishing
 - Prohibit motorized traffic downstream of the 8th Street Bridge (exception for electric trolling motors)
 - Make American Legion Park not used by kayakers-disturbs wildlife. Protect habitat muskrats, otters, mink
 - Why not a water use fee for kayakers to help maintenance of river?
 - Building setbacks
3. Best Practice
- As the Boardman downtown formerly was an industrial land, has the presence/absence of toxins in sediment been assessed?
 - Universal access is a must
 - Edge treatment/landscape suggestions for private riverfront owners (and incentive to do so!)
 - Priority on stormwater infiltration/groundwater recharge
 - Ecological Building standards-green roofs, renewable energy etc.
 - Accessibility for those with different physical abilities

CONCLUSIONS

As is clear from the discussion, there is considerable interest in the community to ensure that the river corridor receives necessary maintenance and management, both in the short term and long term. The responsibility of management to be configured such that the corridor can receive prompt and timely maintenance. The community, residents and businesspeople, appear willing to contribute effort into the corridor and be part of the solution.

The specific input from the meetings has been incorporated into the summary worksheet, combining the input from these focus group meetings with the input received at the June 12th Public Kick-off Meeting.

ATTACHMENTS

Appendix 1. Round One Public Engagement Results

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summarizes the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September, 2019.

QUESTION #1: What is your favorite activity related to the Lower Boardman River?

TOPICS	SUPPORTING COMMENTS							NOTES
	1-25	26-50	51-75	76-100	101-125	126-150	150+	
Walking							159	
Kayaking/Canoeing				95				
Sitting/Picnicking			52					
Watching Wildlife				100				
Fishing		32						
Enjoying Nature					121			
OTHER		43						Bicycling, motor boating, living along the river, drinking coffee at Morsel's, other forms of individual water craft, scuba diving, events

Notables:

1. Interesting to compare to the results from Question #3

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summarizes the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September, 2019.

QUESTION #2: Where is your favorite place along the Lower Boardman River?

TOPICS	SUPPORTING COMMENTS						NOTES
	1-10	11-20	21-30	31-40	41-50	51+	
Reach One: Boardman Lake to Cass St.					47		
Reach Two: Union St. Dam			27				
Reach Three: S. Union to Front St.						54	Hannah Park, the river bend at Wadsworth St.
Reach Four: Front to N. Union St.		14					" Warehouse District", pedestrian bridge at Pine St.
Reach Five/Six: Union St. to the Bay						55	"Downtown", boardwalks, combination of natural and urban
Anywhere along corridor			25				

Notable:

1. A well loved river with a dispersed appeal
2. A surprising amount of "love" for the downtown reaches, given the support in other areas of input for reducing hardness of surfaces and walls.

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summarizes the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September,

QUESTION #3: What is your favorite memory of the Lower Boardman River?

TOPICS	SUPPORTING COMMENTS						NOTES
	1-10	11-20	21-30	31-40	41-50	51+	
Social Activity and Quiet Enjoyment				38			
Kayak/Canoe type use					50		
Fishing			27				especially, fishing with parent/grand parent
Wildlife Watching					48		
When there was less development and activity	8						
Programs and Events		16					Antique Boat Show
Walking and Biking		17					
Swimming/Swing/Jumping into river	7						
Other		13					Watching river flow, moving in, helping homeless, boat breakdown, sledding, dog walking, running a business, visit library

Notable:

1. Kayaking and Canoeing rank high among favorite memories, but are also thought of as nuisance generators.

Appendix 1. Round One Public Engagement Results

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summaries the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September, 2019.

QUESTION #5: What do you think are the top priorities for improving and protecting the natural environment along the Lower Boardman River? Examples: Habitat improvements, Stormwater management and water quality, Elimination of non-point source pollution, Shoreline stabilization Invasive species removal?

TOPICS	SUPPORTING COMMENTS								NOTES
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	
Water Quality, especially related to non-point source pollution								80	
Manage development, parking, and expansion of boardwalks				36					
Habitat protection and creation					41				
Maintenance and removal of invasives					50				
Shoreline stabilization and eliminating hard edges							66		
Managing Stormwater and flooding							70		
Limiting Kayak and boat use		13							
All things noted in question				33					
Other				36					Education, keep things natural, add more boardwalk and access, interconnected nature of improvements, how many tourists do we need?, removing dam, stop releasing steelhead trout, create a swimming hole, keep invasive fish out

Notable:

1. Managing development, parking, boardwalks noted strongly as concerns though they were not provided as examples.
2. Consider "Managing Stormwater and flooding" along with "Water Quality, especially related to non-point source pollution".

Appendix 1. Round One Public Engagement Results

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summarizes the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September, 2019.

QUESTION #6: What do you think are the top priorities to improve the built environment along the Lower Boardman River? Examples: Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River, Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River, Provide for barrier-free/universal access along boardwalks:

TOPICS	SUPPORTING COMMENTS								NOTES
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	
Restore natural environment, reduce /eliminate parking and walls		16							
Make the waterfront universally accessible			27						
Maintain riverfront for trash, views, etc.		16							
Manage/restrict new development, insure access along private land							67		Includes those who noted "Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River"
Provide more/better access, facilities, places, connections					43				
Protect/Enhance natural environment and character, find balance				38					Includes those who noted "Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River"
All things noted in question	7								
Other		23							Affordable housing, fishing pier, native culture, stormwater management, don't need to access every foot, lighting for safety, water quality, education, over-use by kayaks/boats

Notable:

1. There is a simultaneous desire expressed in these answers for providing better access and making sure that nature is preserved.

Appendix 1. Round One Public Engagement Results

Lower Boardman River Unified Plan

Analysis of Input from the On-Line Survey

September 16, 2019

This document summarizes the input from the public on-line survey hosted on the Traverse City DDA website. The survey was opened in June 2019 and ran through early September, 2019.

QUESTION #7: What is the most important thing to keep in mind as we develop a Unified Plan for the Lower Boardman River? Examples: That the plan be a reflection of civic engagement, That a process for ongoing civic engagement be preserved, That the plan establishes a clear implementation schedule with responsibilities, timeline and costs, That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River.

TOPICS	SUPPORTING COMMENTS							NOTES	
	1-10	11-20	21-30	31-40	41-50	51-60	61-70		71-80
Limit development and influence of economic interests				36					
Provide for maintenance, safety, ongoing funding	6								
Protect and Enhance natural environment, water quality, health						54			
Continue to engage citizens, users, environmental organizations				31					
Implement a realistic plan with transparency, accountability/oversight				36					
Use values based plan to influence government policy			26						
Manage use of river	6								
Provide for access/walkability		12							
All of the items noted in the question		12							
Other		20							Think long term, limit cost to taxpayer, provide activities for children, pier, restaurants facing water, protect access, concern for homeless, education, keep plan flexible and adaptable

Notable:

1. A key comment-"Maximize access with minimum impact"

Report for Lower Boardman River

Response Counts

Completion Rate:

53.5%



Complete



270

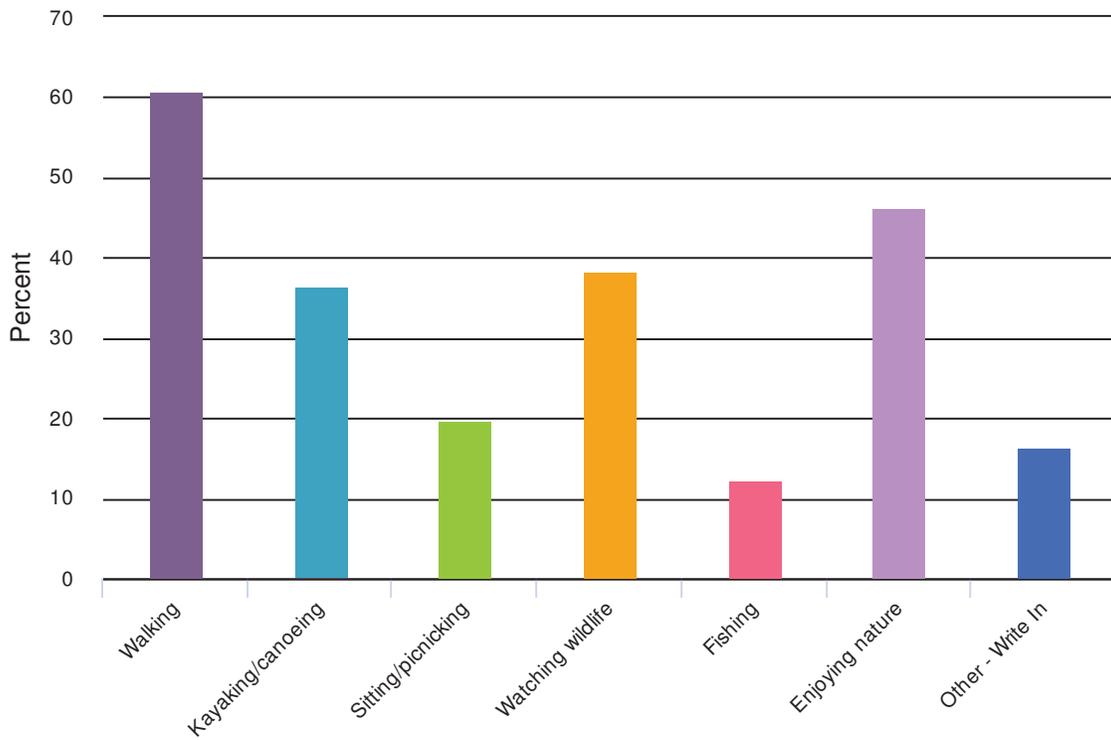
Partial



235

Totals: 505

1. What is your favorite activity related to the Lower Boardman River?



Value	Percent	Responses
Walking	60.9%	159
Kayaking/canoeing	36.4%	95
Sitting/picnicking	19.9%	52
Watching wildlife	38.3%	100
Fishing	12.3%	32
Enjoying nature	46.4%	121
Other - Write In	16.5%	43

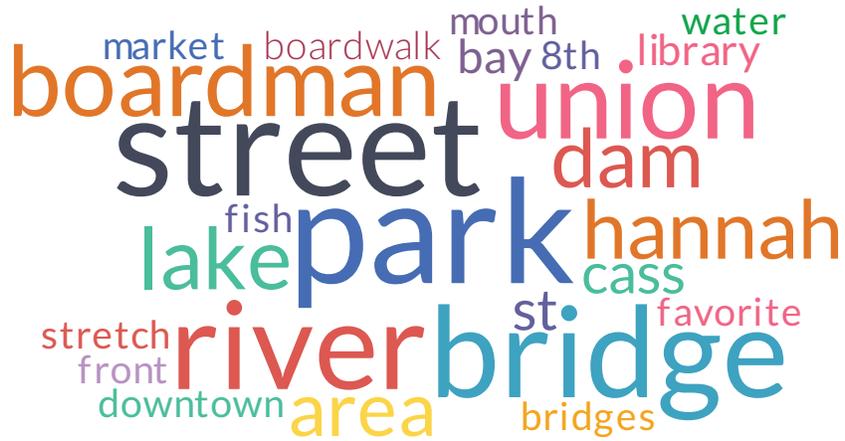
Other - Write In	Count
Biking	1
Biking to it	1
Birdwaching	1
Totals	42

Other - Write In	Count
Boating up to the Chamber of Commerce Building from Lake Michigan and parking for a few hours while having lunch downtown.	1
Camping on it's banks	1
Enjoying businesses located along it.	1
Enjoying the green and coolness of being near the river in summer.	1
Fitness/running	1
Helping make it better	1
I have participated in most of the above activities on the river within the last year	1
I live next to river & Union St. Bridge	1
I live on it..	1
It's a wonderful back drop to the other activities downtown.	1
It's out my window; I enjoy the view and peace and a bit of separation from the busy road and bayfront Park.	1
Keeping an eye on development.	1
Living on it	1
Living on the river	1
Paddle boarding	1
Photography	1
SUP	1
Scuba diving	1
Seeing beautiful landscapes along the River banks	1
Seeing the moving water while in town.	1
Sitting at Morsels, drinking coffee	1
Stand Up Paddling	1
Totals	42

Other - Write In**Count**

Stand up paddle boarding	1
The natural beauty of the river is a wonderful environment to counter the concrete environment of the city.	1
The natural beauty of the river provides respite from the concrete city.	1
Urban respite	1
biking	1
boating	1
clean-ups	1
gardening	1
just watching it	1
lake activities on Boardman Lake	1
never go there anymore	1
observation of fish weir	1
running	1
sitting on my porch enjoying being by the river.	1
snorkeling/scuba diving	1
tubing/floating	1
vintage boat show in August	1
Totals	42

2. Where is your favorite place along the Lower Boardman River?



ResponseID Response

51	any place where you can shut out the hustle and bustle of town activity and just enjoy the sights and sounds of the river
53	Don't dissect the river. Think of it as a single identity. As you would float it or hike it, that's the single, continuous identity that cannot be section.
54	The area near the 2 bridges where the water leaves Boardman Lake and enters the Lower Boardman River
56	The Union St. Dam area, or from Park Street to the bay
57	The boardwalk by the farmers market
58	I don't have a favorite place. I just like having the river there and the foliage that is on the banks.
60	Rolling by the shops out to the big lake
61	Hannah Park, and the new boardwalk across the river
64	cass and union street bridges
65	It was behind J&S Hamburger until the area was developed and the army of kayaks come through.
68	Hannah park.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

69 No one spot. Maybe the last few blocks before entering the bay. Moving water is just magical with even a brief glance despite the traffic, noise and people around. It draws me to look.

72 Any walkway along the river...I walk them all...year around.

75 Sarah Hardy Market stretch - very visible

76 behind history center

79 The section in the couple of blocks before the river opens up to the bay; I love the city/river contrast and the unique things that come from the river being part of the urban landscape.

81 The mouth, where it enters the bay.

82 Morsels outdoor seating and the Union St. dam area.

89 Most frequented is the walkway/sitdown area across from LITTLE FLEET near mouth of the Boardman.

90 behind Central Methodist Church

91 All the walkable areas with natural settings

96 Along the parking areas there

99 Between 8th and Cass

100 at the mouth

101 The boardwalk stretch

102 Where I live and was able to enjoy peaceful views from my balcony and the river until the kayak company started using the Boardman at the dam as a stop over to go to the bars and restaurants along the river, with lots of activity, people and noise, sometimes yelling and screaming so that I no longer can enjoy the evenings and weekends on my patio,

103 No favorites anymore

104 Walking/bike/sitting trail on east side.

105 Between Cass and Union Dam

106 Over the bridge near the lake & on the boardwalk paralleling downtown.

Appendix 1. Round One Public Engagement Results

ResponseID Response

107	The boardwalk sections.
109	At the 14th street area...
110	maybe by the farmers market or the park near sixth street.
111	Anywhere I can enjoy the natural beauty of the river.
115	Union street to Murchie Bridge section & Behind Hagerty near damn also fish weir & new foot bridge near J & S Hamburg
116	The bend, where Kids Creek enters.
117	The steps down from Union St Bridge
119	On the bridges looking over the rails into the water
121	Pedestrian Bridge at start, near waste treatment plant.
124	Farmers Market
125	anywhere that it can be viewed from a bridge
126	The pedestrian bridges - watching kayakers, fish, the trees - with my family.
127	Hannah Park
128	The stretch behind Pine St
129	the park
130	Hull Park and west loop of the Boardman trail
131	From 8th street bridge to the fish harvest station.
133	Downtown
134	boardwalk behind the State Street businesses
138	Little park on Sixth st. next to the old carnegie building, boardwalks downtown
139	Dam area. Cross over at farmers market
142	sitting on Morsel's patio
144	sitting near the river in the morning with coffee at morsels

Appendix 1. Round One Public Engagement Results

ResponseID Response

147	Anywhere you can easily access - Hull Park and the Park off 6th and Union st.
149	Hannah Park
151	Hannah Lay Park
152	Below the Union Street Dam
154	On the water
156	Hannah Park
158	Both above and below Cass road dam It would be great if there was a bypass that you could canoe down without portages
159	The river between downtown and West Bay
160	Where it exits Boardman Lake.
161	Hannah Park I live outside of town (Silver Lake) and mostly enjoy the upper Boardman.
163	boardwalk between the boat ramp and the Cof C building
165	Boardman Lake Trail crossing and TART trail underpass
167	don't have one
169	From Union street to Park street
171	any of the areas with the most tree canopy cover--also Logans Landing is very special from a wildlife perspective and could be a great venue for many nature related activities including wildlife watching, however it is outside of the Lower Boardman reach
174	Nothing really rises to the top of my mind as a "favorite". It's all so developed. Maybe down near where the Farmer's Market is held? Or the area near Morsels and Paesanos.
175	2 favorite places: 1) between Cass and the bay, 2) Midtown area to Wadsworth
176	Launch near the mouth to Boardman Lake and return. Great after work trip.
178	The pedestrian bridge from Front St to the Warehouse district is where I linger most often.
181	The pedestrian bridge near the farmer's market.
182	pedestrian bridges over the water Morsels outdoor seating

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

184	Dock platform at "old library"
185	One of my favorite places is the fish weir and new pedestrian bridge nearby. They are great places for watershed and river biology education by promoting direct interaction with the river itself.
186	Probably where the river flows into Lake Michigan. I enjoy that stretch of the river from the TART trail both on my bike and walking as well as when I'm in canoe or kayak. The bend around where Traverse City housing is also particularly nice.
190	From the Trussell, to the mouth, it's so pretty! Boardman lake is wonderful to drive by on Cass street too!
191	It's hard to pick a favorite
192	Above 8th St bridge
195	I have no 'favourite place', but I live along the shoreline of the Boardman River just opposite Hannah Park.
200	I don't have a favorite place, I like it all
202	Downtown Boardwalk
203	6th street behind Carnegie building
209	All of it
211	Last 1/4 mile before empties in bay.
213	Union Street Dam site
215	The fish ladder
217	The Pine St. Ped bridge
219	My back porch ;) Also enjoy the boardwalks along the river.
222	Governmental Center during winter for waterfowl.
223	Boardwalk along Front St area and union street area.
228	The meeting of Boardman Lake and the river and the area that runs by the museum (old library)
232	From TC south to old dam area. Especially for hiking and kayaking.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

236	use to be around the old library, sixth street
238	The park area by Union St. Dam, but I wish there were more access to the Lower Boardman.
242	where it comes out of boardman lake and heads under the bridge into the river
249	east side of Cass St. to Boardman St.- lots of kayakers & paddleboarders in summer, many waterfowl in winter.
250	Anywhere I can find ti get away from the homeless that have taken over the bridges & library park
251	Pedestrian bridge near the library.
252	The bridges over the river at the North end of Boardman Lake.
254	The dam is important. I'm glad their is a fish weir. I'm glad the kayakers can get around it. The Union street dam keeps Boardman Lake. The lake is a gem of traverse city. I would hate to see the Union Street dam removed.
255	Boardwalk near Boardman Lake
257	The River Guardian
258	Bridge
259	Under the Union Street Bridge
260	Between Pine and Eighth Streets, from behind the old library to the Eighth Street bridge.
261	Between Boardman Lake and the union Street dam. I think I would like the rest if it was cleaned up and looked nice. It is pretty dismal and a disappointing view from the river between the dam and the bay.
262	From The old Cass St dam to town.
264	Along Hannah Park and around the bend by Riverview Terrace
266	The fish weir The dam The mouth of the river at West Bay
268	The last section from Front Street bridge to the bay.
270	It used to be the sledding hill behind the old Carneige Library. I am disappointed that the "uptown"? development was permitted there.
271	Union Street da m and park down river from Union Street.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

273	Between Cass and 8th Street.
274	Union Dam area and Hannah Park
276	Any natural place along the river where I might happen to be.
277	Union Street Dam
279	Enjoy the entire length of the River. It's a beautiful aspect of our community to be enjoyed br all.
280	Through downtown just before the bay
281	Today it's the short boardwalk from the end of Wellington Street that goes under the Murchie Bridge. This would likely change if we had a consistent boardwalk the length of the Lower Boardman. Second favorite spot is the boardwalk between the 8th Street bridge and Cass.
283	the stretch adjacent to the Sara Hardy market, behind Horizon Books and the theatre
285	Any area that has a natural buffer of plant material and the river looks natural from the shoreline and the water.
286	Between the railroad trestle and Union Street dam.
287	All areas that have a naturally vegetated shoreline and reflect a natural river.
290	Boardman valley
295	There are plenty of locations for water sports outside the downtown area. The tranquility of a natural setting can offset the bustle of a busy downtown, and is one of the elements that draws people to vacation here.
298	Chamber of Commerce docking area. Great place to dock for a few hours while shopping or Lunching downtown.
299	Warehouse District to where the river flows into GT Bay
300	Hannah Park
301	To watch it as it meanders through town.
305	- my home overlooking the river in the Midtown development - the TART trail along Boardman Lake
306	In front of the Midtown Condos on the dock.

Appendix 1. Round One Public Engagement Results

ResponseID Response

307	Downtown boardwalk area and trestle just below the lake.
311	Union street bridge/dam and Hannah Park.
314	The park on 6th St
315	The beginning where it flows out of Boardman Lake, in back of the old library, the stretch where it flows into the Bay.
318	boardman lake to union street dam
319	Behind the old library .
321	Anywhere
322	Hannah Park & downtown.
325	TART
326	The area right after the foot bridge by library and right after the dam, before the fish weir.
327	The boardwalk behind patisserie amie
330	I enjoy the area by the dam and also by Lay Park. It is quiet. It is natural. I am concerned about some the changes coming about with the new Fish Pass. While I'm fine with the Fish Pass itself, the area that they are suggesting for an amphitheater brings more development, more concrete, which causes more runoff. There are parks in that area - Hannah Park and Lay Park, where groups could be taken to discuss the Fish Pass, etc. There are few places along the Boardman that are quiet and accessible. The area of the dam is accessible. Hannah Park is accessible to a lesser degree. Downstream from there I've found little accessibly.
331	By the dam, weir, and boardwalk
335	Hannah Park
336	I love the area right by the bridge over by the library, but love just looking out over the Union Street bridge too into Hannah Park.
339	Alongside and Behind the Crooked Tree arts center. Quiet and peaceful
340	behind Central Methodist Church walking across the dam
342	My house

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

343 The riverfront at Hanna-Lay Park, and stretch of trail there that parallels Sixth St. And the stretches between Gov Center and Union. Also along between the Parkway from Union St. to fish landing - until it was pretty much ruined and paved over, with limited access now.

344 The area of the river that runs immediately before it enters into the bay. That part that runs under the city streets leading to the beaches. The borders of the river need planning, ie: will the habitat be managed or just let to grow wild.

345 The mouth of the river

346 walking east and west tart trail along Boardman Lake walking the trail behind the old library

348 multiple sections along the stretch from the lake to west front street bridge.

349 government center

350 By the union St. dam,west side of bridge.

351 the railroad tresle area by the lake

354 the walkway just below the parking where the farmer's market is.

355 I live in Midtown right on the river so this is my favorite place! However, I enjoy the river in general adwish it was in better shape as it progresses towards the lake

356 Hannah Park

358 Hannah Park

359 Union St Dam

364 Between front and cass

367 the boardwalk

368 Between hall street and union street

369 8th Street Bridge area

371 Between Cass and Union

372 8th street bridge

378 I don't have a favorite place

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379	Hannah Park
380	East Creek (Mayfield) is where our cabin is and where Dad fished for decades. Also, I love to overlook the river at the place where the fish pass is being proposed. I am against this fish pass plan because there will someday be flooding and the fish pass will spill over causing detriment to the native trout.
382	Along the boardwalk and around the parks as there are benches to stop and have a quiet moment.
384	The stretch from South Union Street bridge behind the post office down to Front street and then past the fish weir and on to North Union Street bridge.
385	The bike path that runs from behind The Filling Station over to Oryana!
389	The bridges
391	entrance to the bay
393	By the library
394	hannah park
395	I work next to the Cass St Bridge, so that's where I spend the most time. Guess I'd have to say it's my favorite spot.
396	The bike bridge on the TART Boardman trail
398	Hannah park with all of the trees and shrubs along the river.
399	The bridge on the Boardman Lake Trail
401	Between the water treatment plant and Cass Street bridge.
402	The outlet into the bay.
406	From Firefly through 6th St
409	From the bend above the weir to the bay.
410	From Union Street to West Bay
413	near Hannah Park
415	Where Kids Creek empties in to the river
417	Hannah Park

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

419	Behind T adl library, and the small boardwalk behind paesanos
424	Hard to say. It's variety is what makes it part of TC and so great!
426	Biking the path from the library to Medalie Park
428	Fish wier
430	Walkway (currently under water)
433	The park between 6th st and the river
434	Wadsworth bridge and behind Morsels
436	Hannah Park
442	standing on the bridge looking down into the water. Walking along the walkway
443	The little wooden landing near Pasanos Pizza and Real Estate One.
446	The bend. Confluence of Kids Creek
447	The park between Perry Hannah and the old library (Crooked Tree).
448	Between the Tart Trail bridge at south end of Boardman Lake and Union Street Dam. We love looking for and counting the numerous turtles out sunning and looking for the occasional otter.
449	Hannah Park
450	Our condo at 234 Washington Street.
451	My condo on Washington street
453	don't have one
454	The mouth
456	Watching kayak through the Boardman river
457	The stretch between Cass Street east to the 8th Street bridge. This urban waterway is akin to another neighborhood street where there is always a parade of people and wildlife enjoying nature. The gentle flow of the river seems to have a calming affect on all who choose to include it in their day.
458	Along the TART

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

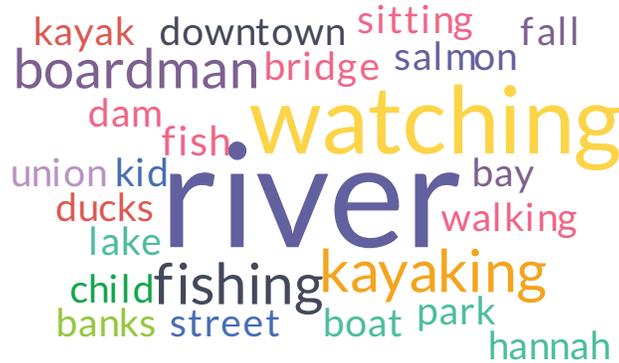
460	Boardman Lake Trail Bridge and the new stairwell and boardwalk northwest of the Union Street Bridge.
461	The Union Street damn to the old library open area across (south) from the Post Office.
465	The mouth
470	just before and the 8th street bridge. after the dam for fishing
471	Looking out the window while mediating at Higher Self.
472	Kayaking from the lake.
473	The section from where you go under the foot bridge that leads to Oryana to going under the road bridge at Cass
475	the park next to the old library
477	At the West front street bridge
480	In front of midtown condos
482	- no favorite - the boardwalk recently built in 2019 should be extended to run the entire length of the river to the mouth of GT Bay
483	The docks at Firefly
484	The elbow section near Kids Creek
485	Behind the Carnegie Bldg/Art Center
487	The Bridges Downtown
488	Near Oryana.
489	Along the stretch that is parallel to the farmers market
494	Bridges I like on Cass or Union...
496	Hannah park Pine Street Bridge Walkways by the dam between cass and union Walkway between 5/3 bank (new apts) and Pine St. Bridge
497	I live on the Boardman Lake and frequently find myself in the downtown parks.
498	Hannah Park, Sixth St.
499	downtown- between front st and grandview parkway

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

500	Sixth Street
501	Tough call. Probably use the area where the lake meets the river most often
503	riverwalk between 8th Street and Cass
504	Park that runs along the upper reach.
505	Boardwalk along Cass and paddle boarding. Would like a pass through at Union dam so don't have to port board over.
508	Fish weir
510	Near the farmers market because of the natural banks
511	Between Cass and Boardman Lake
513	Near oryana
525	Sitting or walking along the river diwntown
529	Hannah Park
530	the pedestrian bridge between Cass and Union
531	The boardwalk underpass/park area near Merchie Bridge. The large stone that make a stair type area near the farm market where children can walk down and watch the ducks and people can sit and relax.

3. What is your favorite memory of the Lower Boardman River?



ResponseID	Response
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51	Seeing wildlife like cranes, mink and salmon swimming upstream
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53	Fishing as a kid, walking along it and thinking I was Huck Finn.
----	--

54	Kayaking with the kids from Midtown into Boardman Lake ...
----	--

56	Canoe racing during the NCF as a kid
----	--------------------------------------

57	Dateing my future wife in the 50's
----	------------------------------------

58	Viewing the vintage boats. Kayaking upstream to the farmers market and shopping.
----	--

60	We started kayaking from the south end of the boardman all the way to the beach. It was amazing! A little windy that day but amazing. :)
----	--

61	As a kid, catching bluegills and rock bass off a fallen log sticking into the river near Wadsworth
----	--

65	Fishing the river. It basically has been destroyed by the river clean-up activities. They have removed all the fish habitat. They move quickly to the weir because of the massive weed beds.
----	--

69	Watching the salmon at the ladder or from one of the bridges. My toddler "chasing" ducks at the farmers's market.
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72	Watching ducks in the winter time.
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Appendix 1. Round One Public Engagement Results

ResponseID **Response**

75 Sitting on bench at mouth of the river, eating and watching people come in and out on boats, watching wildlife, seeing people fish

76 growing up as a kid, fishing , exploring, floating

79 I love walking along the boardwalks and on the bridges over the river and watching wildlife and kayaks and the scenery.

81 Fishing as a child just north of the bridge near Hall Street.

82 Using a rope swing that was downtown when growing up.

89 Paddling upstream and then returning back to the bay. Picnic in the Park behind the library.

91 No river traffic

96 watching salmon migrate up the river, fishing in the lower section

99 100 waterfowl waiting out the winter

100 kayaking/paddle boarding up the river with a group of friends

101 Watching salmon swim up to the weir

102 The peace and tranquility I had before the kayak co. starting using the river for their commercial business. At least the homeless people who used to reside there went about their lives quietly for the most part.

103 That brief moment in time when there was not a multitude of cheap, ugly urban-looking developments right up to the waterline that totally block the view of the river.

104 A picnic with a friend several years ago.

105 Seeing mink and loons.

106 Spending time with family on the river or walking next to it.

107 Love the wooden boat shows.

109 Living in peaceful nature...

115 The River to me is always a peaceful oasis within a sometimes busy tourist area, teeming with wild life.

116 Watching the large fish. (Salmon?)

Appendix 1. Round One Public Engagement Results

ResponseID Response

117	Kayaking in fall with my husband
121	How scary it was 40 years ago, and now so improved. Lighting, bridge. Tart trail, etc. Some development is good
124	Boardman River Clean-up
125	none specifically come to mind
126	Enjoying the farmer's market
127	Watching an otter catch a fish and carry it in his mouth along the river bank.
128	Catching steelhead
130	Kayaking from Hull Park to Clinch Park.
131	Waterfowl.
133	The antique boat show
134	romantic walk along the boardwalk along the river north of State Street. As I recall someone had parked a boat that looked like an English canal boat and it was so cool.
138	Kayaking
139	Have no particular favorite, just enjoy the river and always amazed at the speed of the flow.
142	Sitting by the river after farmers markets in the summer
144	showing my children all the fish
147	Paddling down the river with my friends all the way from Boardman Lake to Little Fleet for some food and drinks.
151	Paddle boarding up the river to Boardman Lake
152	Sitting along the river having lunch and watching the wildlife.
154	Canoeing on top of the boardwalk in 1986.
155	Being a member of the BRAG (Boardman River Advisory Group) in early 1980's gave me early insight. Who has the records of BRAG now? Our charge was similar I recall.
156	Watching the fish in the river, fall colors

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

158	Spring and fall paddle
159	canoe racing from Brown Bridge pond "All the Way to the Bay" at the Holiday Inn
161	I grew up on 6th Street, and a girl friend and I had a tree house in a big old willow at the east end of 5th. From on high, we used to aim at objects floating down the river with our home-made sling shots and an ample supply of chestnuts.
163	the boat show
165	canoeing from lake to bay
167	the 'homeless' people and others who bring 6-packs of beer and sit on the decks at Hannah Park drinking, cursing loudly, sometimes building bonfires where they cannot be seen from 6th Street, and generally being totally obnoxious.
171	seeing hooded mergansers and other waterfowl near the Cass road bridge, having coffee at Morsels, and seeing my nephew learn to sail at TACS (not on lower boardman per-se)
174	Long picnics with friends and family in the park near 6th street, before the condos were developed across the river (feels like a fishbowl now). As a kid, lots of fishing near where Firefly is now.
176	Snorkeling for "treasures" on the Boardman thru town as a kid.
178	--our kayak ride on this stretch of the river was eye opening and memorable. You can see firsthand what should be preserved and what needs to be improved. --attending an evening rally for Obama at the Inside Out Gallery while folks fished along the banks of the river during salmon season, it was that blend of cultures that helped me fall in love with TC
181	Not necessarily my favorite, but my most memorable was dropping off a man after giving him a ride "home" after work to sleep under a bridge.
182	kayaking it once. Watching the salmon run and people fishing in the fall
184	Fishing at Union Street bridge with my Grandpa.
185	TACS Sailing Camp!!!! ----> I know, I know, it's not quite the lower boardman but it is hard not to include Traverse Area Community Sailing in this conversation. This organization has introduced whole swaths of the local population and more to the very existence (not to mention personal connection via recreation) of the Boardman Lake and River. Furthermore improvements such as TACS and the city docks are great examples of what a little nudge from municipal organizations can spur drastic revitalization of an area and natural resource.

Appendix 1. Round One Public Engagement Results

ResponseID Response

186	Not so much a single memory, but the combination of all the times paddling from Boardman Lake to the river's mouth or just to Union Street. One particularly fun morning my wife and I took the very slow route downtown via the river, tied our canoe beneath Fire Fly, and got brunch downtown - no worries of parking!
190	Paddle Boarding up the river.
191	Sitting on the bank of the river watching ducks swim by
192	Paddling from Boardman Lake to the Bay
195	I have no favourite memory, But I can tell you about memories I have of the shoreline of this river along Hannah Park. My memory is of the mothers and little children who come to the shoreline to see the fish and ducks - these people are great to have around the shoreline. Another distinct memory is the 'homeless' guys and others who bring their 6-packs of beer and whiskey bottles, sit on those lovely decks built out into the river at Hannah Park, these guys drink, smoke, talk loudly with vulgar language, sometimes they build bonfires in the evenings, and sometimes spend the whole night on the decks or lawn of Hannah Park. This is when I or my immediate neighbours call the police to chase these guys out of the park. These are distinct memories of this part of the river.
202	Swimming and hanging on the Union St Dam. -- probably not possible today, but when I grew up, we used to go there and hang on the dam.
203	Shakespeare by the River
209	Picnics Quiet With loved ones
211	Standing/sitting on boardwalk near bridge
213	Scuba diving with the salmon
215	Fishing with my two brothers
217	The rope swing that was hanging from a tree in front of what is now Morsels
219	Walking along the boardwalk between 8th and Cass
222	Watching a Peregrine Falcon catch a Bufflehead over the river.
223	Too many to make note of, but most recently a sunset walk with my wife from Union St dam down.
228	Picnicking and sledding down by the old library
232	When I turned my kayak over and soaked myself in very cold water.
236	When they cleaned up the old Ironworks foundry location!

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

238	I would not have one favorite memory, as nearly every day I enjoy looking at the Boardman river on my walks downtown. The area is peaceful and calming. The lower Boardman, and TC Downtown provide for me a sanctuary of peace and stress mitigation of daily life events. I enjoy all the resources that the Lower Boardman has to offer and I look forward to what is to come.
242	paddle boarding with my neice and nephew, and the time period when my mother lived at 234 washington av which looks over the river. she loved watching the bird life and all the paddlers.
249	a tie between seeing swans, and seeing a dog paddling in the river alongside his human paddleboard companions
250	Being able to walk the boardwalk and enjoying our natural area without fear of being attacked or harmed
251	Watching the fish from above on the bridges downtown.
252	Moving to a condominium on North Boardman Lake and realizing what a beautiful area this is.
254	Fishing with my son, and watching the kayakers float by....
255	Kayaking from Hull Park to West Bay
257	Biking and/or Walking under the bridges.
258	Our pontoon boat breaking down
259	When one of my friends (now passed on) pushed me into the river on an extremely warm day. Man that felt good!
260	Playing along the riverbank west of the Union Street bridge, picnics, the Cherry Festival Ducky races, Shakespeare in the park.
261	Walking along the grass downtown when my kids were younger 25 years ago.
262	When it had no condominiums lining its banks.
264	Floating slowly down it in a kayak.
266	We contemplated the purchase of our current home and relocating to TC while sitting on the deck at Paesano's pizza overlooking the Lower Boardman (a beautiful sunset that night) and shortly thereafter, we closed on our home at Real Estate One in a conference room overlooking the lower Boardman as well.
268	The river flowing through downtown, with natural banks and trees.

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270	Shakespeare Theatre performances on the banks of the Boardman River.
271	Seeing wildlife
273	Watching the wild mink, who I have not seen in a couple of years, fish.
274	folks fishing
276	As a child, watching the river flow while ducks and ducklings paddled around.
277	Walks with my family (wife and 2 daughters) near the Union Street Dam.
279	Kayaking the river with my wife, brother and sister in law. They were visiting from Eugene Oregon.
280	Fishing with my son and the salmon harvest
281	Watching beavers work while kayaking the lower Boardman between Boardman Lake and the 8th Street Bridge.
285	Many views where natural vegetation dominates the river banks.
287	All views that include a natural, vegetated shoreline with the associated ecosystem.
290	just the view of the undisturbed landscape
295	Standing on the bridge with my son, and then my grandsons, watching for fish on a lazy afternoon.
298	Kayaking from Boardman Lake to Lake Michigan.
299	Watching the changes in currents and watching the ducks
300	Seeing a Kingfisher working the river. and the ducks in the winter near the Gov't Bldg.
301	As a child, jumping off the bridge into the river downtown.
305	Seeing otters, mink and loons from my deck overlooking the river
306	Living the seasonal changes on the river. Seeing the wild birds and otters.
307	Jumping off the trestle as a kid.
311	Yesterday.
315	Watching the salmon run and walking along it's shores!

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ResponseID **Response**

318	when it was cleared of all the dead trees and you could enjoy getting closer to the water
319	Watching the river flow with boyhood chums!!
321	Cherry Festival duck races
322	Every year the birds congregate.
325	Boat
326	Viewing the city from a kayak floating down the river for the first time. I grew up in TC and never floated down that part of the river until age 45!
327	solitary walks
330	Fishing with my nephew.
331	Having a Steelhead jump several feet out of the water while hooked to the end of my fishing line.
335	sledding as a child
336	As a kid, we would swim and tube the river from Hannah Park to the end, before he fish weir went in.
340	watching the ducks
343	Too many to list. Walks or runs all seasons.
344	Seeing kids fishing with their parents. I enjoy the older wooden boats on exhibit in summer.
345	As a child in 1956 i roamed the banks, swam and fished as i pleased.
348	kayaking with my daughter through TC - talking, laughing - building memories.
349	fishing and watching nature
350	when it was wooded along the banks.
351	kayaking it
354	kayaking up from West Bay to the dam and floating back down
355	Walking along the walk in Midtown. Sitting in my condo watching the kayaks go by in summer and watching all the migrating ducks in the winter

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ResponseID **Response**

356	paddling it
358	Kayaking with my partner
359	Fishing as a kid
363	Canoeing it as a young child.
364	Winter steelhead fishing
367	participating in a motorized duck race
368	Bird song
369	Kayaking
371	Watching water go over dam
372	the wooden boat show
378	Stand Up Paddleboarding with my cousin who was visiting, and enjoying the crystal clear water and sunshine
379	Sledding on Winter and my kids exploring the river the rest of the year
380	We chose to live here because of the natural resources. My Dad fished the Boardman River since 1938. It's "Blue Ribbon" status means even more now that the dam removal has cooled the river. The Boardman is a treasure to this region. I hope the fish pass does not change the great brook trout fishing.
382	Walking with my dog when all the people have left for the season.
384	Catching steel head and coho salmon and fishing there with my son when he was a boy.
385	Taking peaceful walk breaks near 8th street bridge
391	fishing the mouth of the Boardman
393	Rubber duck race at cherry festival
394	fishing
395	Watching an otter climb up the bank, go across Cass, around Firefly restaurant, then down to the river on the other side. But it was too unexpected to get my phone out and get a picture.
396	Rushin waters over the Union St dam

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ResponseID Response

398	Spitting over the side of the Union Street bridge, because my Grandpa always told us that it "kept the trolls at bay".
399	Dog walking in Hannah Park
401	Watching people fish for steelhead in Hannah Park...below the, now, Crooked Tree Arts Center.
402	Watching people on kayak tours flip their kayaks when they enter the bay and aren't prepared for the wind/waves.
406	Fishing as a kid from the dam to the mouth. Enjoying the park environment along 6th St
409	Catching steelhead
410	Kayaking with my daughter and her family during a clean-up and an environmental rally day last year.
415	Kayaking
417	Salmon run
419	Walking the boardwalks at night after a nice dinner
424	Kayaking it and going slow enuf to talk to and enjoy others on the river.
430	Urban serenity
433	time spent at that same park along 6th st
434	Rubber duck races and sledding at Hannah Park
436	Canoeing and watching the many water birds
442	seeing mink swimming in the river
446	After nearly a century of discontinuity,the day we met with the Great Lakes Fishery Commission to learn we finally had an opportunity to realize a meaningful solution to achieving the final goal of fully reconnecting the Boardman-Ottaway River watershed to the Great Lakes.
447	Kayaking under the trail bridge at the lake outlet and down to Cass Ave....(And the oil-spill kayak flotilla last year was memorable)
448	We once counted 18 turtles including one stack of six on each other's back.
449	Seeing it clean and clear and without noisy and drunk kayakers

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450	Watching river otters and mink on our condo dock.
451	Seeing river otters playing on our dock.
453	the quietness
456	Watching Rubber Duck race, Long time ago! I won Beannie Babies complete set! Gee, Whiz! Whatever that is!
457	River otters putting Cirque du' Soleil to shame. Rafts of ducks and geese crowd the river and have a lot to say to each other each spring.
458	Watching Monarchs and bees in the vegetation.
460	swimming in it during fall salmon run and experiencing its current flow while using scuba gear.
461	Swimming and snorkeling up and down the lower Boardman River.
469	Walking and enjoying nature
470	kayaking to dinner or with friends
471	Looking at the older trees that line the river.
472	Family kayaking
473	One very unusually warm November 6th day, paddle boarding the Lower Boardman with my husband.
480	Kayaking
482	children playing in Hannah Park along the shoreline of the Boardman River
483	Traveling up the Boardman River from Boardman Lake by boat and docking at the docks by Firefly at Cass St, and walking downtown
484	Running my rental business in the warehouse district. We built a safe river access point after hand clearing all the invasive plants scrub growth from Union to the fish weir. I remember escorting and consulting a group of UofM students along the entire length who were going to devise a plan for our river.
485	Walking along the river with toddlers
487	Watching the Salmon and wildlife...

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

488	Talking hikes with my daughter along the path that starts on South Airport Rd. and runs to the library.
489	Watching an otter swim along its banks
494	Canoe Kayak with my son from the north end of Boardman lake to the clinch park ...and previous to that stopping at Holiday Inn...
496	Growing up in Traverse City, as a child, fishing with my father and uncle. Today, fishing with my kids, walking along the river.
497	The peace and restorative powers of the water in a city environment.
498	Watching for fish from the South Union St bridge
499	watching fish off the bridges downtown with my Dad when I was a kid- all kinds of fish back then (the '50's) - pike & walleye, trout and sturgeon. all scarred up from the lamprey eels So cool.
500	I remember going to the library on Sixth Street with my family as a child, and playing behind the old library with my brother and sisters after picking out books.
501	Kayaking it with my children the first time Once we watch a boy catch a fish it was thrilling to watch how excited he was We always bring our guest in September to salmon catching spot behind J&S Burgers. So that they can see how amazing the fish are
503	watching river otters play in water, along shoreline, and on deck across the river
504	Fall colors. Watching someone catch a fish on the lower section. Plus fishing near the upper dam.
508	Kayaking
510	Fishing as a kid
511	Kayaking with my niece
513	Riding bikes on bridge and also enjoying walking along bridges
525	Seeing trout swimming
529	Sledding at Hannah Park, getting our engagement photos there, too!
530	sitting on the "steps" with my son watching the water go by and not-feeding the ducks :-)
531	Walking/sitting along the boardwalk and sharing peace love and little donuts with my daughter. Taking my daughter to see the ducks after visiting the farm market, watching fish from the bridge that crossed near the farm market and going to the fish ladder.

5. What do you think are the top priorities for improving and protecting the natural environment along the Lower Boardman River? Examples: Habitat improvements Stormwater management and water quality Elimination of non-point source pollution Shoreline stabilization Invasive species removal



ResponseID Response

51 Eliminate "Paddle for Pints" and groups of kayakers who are drunk and rowdy

53 Keep all buildings at least 25 feet from the river. Do not commercialize the river by making "event" spaces. The river lined with trees, quiet, green in the midst of the city, speaking its own sound -- protect that.

54 Water quality should be the number one priority. Provide habitats for wildlife including fish but also animals such as river otters which we have seen over the last year living in the river.

56 The river is an untidy "mess". It appears neglected. It is Traverse City's front door, but looks more like it belongs to the Munster's house. Scary bad! It leaves a lousy first impression on visitors to see such neglect.

57 Shoreline stabilization

58 I like all of the examples but would add protections to the natural river. Keep the trees and create real setbacks for all future development that preserves and restores the river ecosystem.

60 Water quality and invasive species removal.

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61	Improvements in shoreline stability and erosion control to better withstand heavy recreational use (fishing, kayaking) while minimizing negative impact to the river itself. Also, better management and removal of trash from the banks and overhanging trees, especially fishing tackle.
64	water quality
65	Flood/stormwater management Invasive species Fish habitat improvement Boardwalk replacement South side concrete wall stabilization/replacement
68	Zoning and setbacks of new construction along the river and elimination of parking lots along the river
69	Protect the view/access for everyone. Keep it clean and free flowing. Limit shoreline construction. Too much would make it look as through a private culvert if surrounded by tall buildings.
72	1 stormwater management and water quality 2 elimination of non-point source pollution 3 shoreline stabilization
75	Shoreline beautification with access for all
76	shoreline stabilization , stormwater runoff habitat improvements
79	Storm water management and water quality, shoreline stabilization.
81	Keeping it pollution free.
82	Elimination of non-point source pollution.
89	Shoreline stabilization Pollution control
90	work on clean river flow help walkers navigate the area safely
91	All the above and reduce recreation on the river
96	fish passage and habitat. Ensure any "improvements" do not impact the health of the river system and the fish and other aquatic species that live there. I would hate to see a kayak park that would potentially impact the vitality of the river and its inhabitants
99	1/3 completely natural, for mink and muskrats. 1/3 improved natural for picnics and fishing. 1/3 built for walkways, docks, bridges, weirs, boat ramps etc.
100	shoreline stabilization and storm water management
101	Habitat improvements

Appendix 1. Round One Public Engagement Results

ResponseID Response

102 I think everything you are doing is great but it will attract more tourist and congestion for our town. I have had to , accept what living in a condo downtown brings with it. During Cherry Festival, I cannot get out of my garage (blocked in) or even open my front door to access Union St. with people putting their chairs right against the doors of my home and our business and trampling the flowers in my flower garden along the alley from the Boardman, using it for trash, etc.. I have never complained to the city. Now with the kayakers, and next the renovation to the dam and a park setting, my enjoyment of my home is going to be greatly impacted. I think the renovation will be the "gem" for TC (away from the beach) but how many more tourist do we need? Does the city consider the people who live here and pay high taxes to do so? I just hope when all this is renovated, that some consideration for quietness, especially in the evenings, will happen and that some restrictions for can be placed on the kayak company, reminding them to oversee what their paying tourist do and remind all that people live here.

103 Storm water management, developing a minimum setback for construction, purchasing what little undeveloped riverfront that remains and creating a linear park, no tree removal on shoreline, OR leaving it alone (no more sheet metal channelizing and construction up to the waterline).

104 Shoreline stability., removal of invasive species.

105 Habitat improvements, including re-naturalization, water quality, etc.

106 Keep clean & safe for children, women walking alone & families.

107 Water quality, including eliminating pollution. Habitat improvements. Really, all of the above.

109 Keep it natural...and protected.

110 shoreline stabilization and stormwater management and water quality

111 -Habitat improvements -Removal of the concrete barrier - return to natural vegetation state -Remove the parking lot along the river (where the farmers market is located)

115 Large buildings on rivers edge is bad. Shocked to see recent approval of 8th Street 4 story building Higher Grounds. Doesn't matter who the tenets are. Building on the edge of the river isn't good. Condos or Higher grounds =same thing. Bad news for river.

116 Keep the water as clean and clear as possible. Keep additional downtown development away from the immediate edge of the river.

117 --Stormwater management/CSOs --Habitat quality improvement

118 Stormwater management, environmental education and protection

119 All of this!: Habitat improvements Stormwater management and water quality Elimination of non-point source pollution Shoreline stabilization Invasive species removal

Appendix 1. Round One Public Engagement Results

ResponseID Response

121	All the above. Plus zoning that has greater setbacks, if possible, and management and education of fertilizer, pesticides usage by city and Boardman River property owners. They do whatever they want, it seems, now!
124	Invasive species removal Shoreline stabilization
125	Shoreline stabilization
126	All of them! Stabilizing the shoreline, cleaning stormwater runoff, creating/improving habitat, allowing places for solitude & enjoyment, allowing businesses/restaurants to have patios or rooftops where patrons can view & enjoy (and therefor want to protect) the river.
127	Improve the habitat along the river banks by eliminating walkways instead of adding more. The life of the river happens at the edges.
128	Not placing a boardwalk through all the natural bank cover that steelhead and other species utilize
129	-dam removal -riparian zone protection -road salt infiltration -storm drain runoff
130	Stormwater management and water quality Elimination of non-point source pollution Shoreline stabilization
131	I would like to see the vegetation and dead falls along the river and near the 8th street bridge cleaned up. Too much dead wood and invasive grape ivy that climbs other healthy trees and dominates the environment. The lower river is vital and a great recreational vehicle for watercraft, but the dead falls near the bridge and other obstacles hinder its effective use. Kayakers want to see the buildings and beauty along the river (the downtown portion of the river is not wild and scenic), its urban. Open up the banks for both viewing by those on the shore and on the water. Thanks for this opportunity.
133	Environmental issues (water quality, etc), access and beautification
134	shoreline stabilization
138	Keep it natural. Don't make it too groomed and manicured. Avoid building right up to the river's edge so it's all concrete. Educate people about pollutants from their lawns, i.e. fertilizer/pesticides washing into the river. Do something to discourage the homeless population from camping under underpasses and leaving litter/excrement that washes into the river.
139	Storm water management and the elimination of pollution. Hopefully this allows for the habitat areas to improve. Of particular concern is to control and minimize people's trash.
142	Storm water management and water quality (which ties into elimination of non-point source pollution), creating green buffer around river, reducing impervious surfaces.

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ResponseID Response

144	ACCESS!!!!!!!!!!!!!! Water quality
147	All of the above.
149	Restoring the river's natural banks Landscaping along the river with native plants Improving water quality by eliminating pollution and managing stormwater run off
151	Eco-friendly improvements to the boardwalk. Consulting our various ecological groups in town, I.E. FLOW. Eliminating pollution and removal of invasive species. Stormwater traps at any pipes that lead to the river.
152	Setbacks for development and no building in flood plains. Maintain shoreline vegetation.
154	All of the above and more.
156	Protecting the river by limiting/eliminating building along the river. Preserving public access along the entire river - on the shorelines.
158	Walk and paddle friendly
159	access for non-motorized boats. including ramp or dock & parking, protect water quality from pollution, limit development along river, boardwalks connected to TART's Boardman Lake Trail, regular trash clean-ups, limit drinking in boats along river
160	Eliminate building of structures with 100 feet of the river. Lawns should not be permitted within 25 feet of the river. Plant native species along the river.
161	All of the above plus start requiring significant set-backs for all future development. Develop a few pocket parks along the way from some of the adjacent vacant land and from lots currently used to park cars. I think boardwalks are a good idea to allow people to get close to and enjoy the river, but where there are permanent walls (like behind Horizon Books) it would be better to have the walk along there with the other side staying natural and providing an enjoyable view. The current bruhaha about drunks on stretches of the AuSable and Pine and Manistee comes to mind. Let's not bring that problem to the Boardman by providing opportunities to obtain alcohol along the way. I'd like to see outfitters say no alcohol and no glass. I could foresee a point where permits to paddle might have to be issued if outfitters are overburdening the river.
163	shoreline stabilization keeping out the Asian carp Storm water management pollution elimination
165	Shoreline stabilization - especially setbacks
167	All of the above noted in this survey. Also the shoreline along the Hannah Park and other areas of shoreline going downriver from the dam need to be better groomed, trimmed, weeds removed, dead branches and dead tree trunks removed to make the shoreline a beautiful and pleasant view and place for wildlife (ducks and the like) to habitate.

Appendix 1. Round One Public Engagement Results

ResponseID Response

169	Stormwater management and control of waste in the river. The pictures I uploaded are from the Boardman River Clean Sweep which I have done for over 10 years. Amazing the trash in the river.
171	all of the above and inclusion of the entire boardman in this excellent initiative/website!
174	All of the above.
175	Shoreline stabilization, beautification and public safety. Water quality I believe the Lower Boardman may have been damaged or compromised by the removal of the dams upstream (not sure whether or how this impact was taken into account when those decisions were made & implemented). Please make sure to consider all the consequences, even those outside the boundaries of this planning area.
176	Shoreline management, prevention of limiting access by public
178	All of the above, plus making the beauty of the river a focal point of downtown rather than keeping it a parking lot overlook.
181	Habitat improvements
182	Stormwater management and connecting it more to the community with access points and views
184	Stop building on the banks of the river! Restore habitat, storm water management & water quality, reduce/eliminate pollution. Help us clean the river, we do at least three downtown Boardman clean ups every year. Spring time with the Boardman River Clean Sweep, Friday of Cherry Festival week, and in the fall (usually September). Go to traverseareapaddleclub.org to get more information & sign up.
185	Please remove parking! Better integration with the town as opposed to regulating the river to being a parking lot through the downtown area will help visibility and engagement with the river and the watershed as a whole. The better and more accessible the everyday recreation and "third space" building along the lower boardman the more people will care about the broader environmental quality of the river. The Bay-Front, the River, and Downtown should all be intertwined and integrated.
186	Within the relatively short portion of the river that this focuses on I think that we should focus on problems that can be addressed at that scale, i.e. removing invasive species might be a too robust task. Better stormwater management, shoreline softening and stabilization, and a stronger focus on native plants.
190	Keeping the birds happy.
191	Eliminating pollution Wildlife protection
192	Minimize commercial use - limit group size to under 15

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ResponseID Response

195	Stormwater management and water quality and elimination of pollution are very important. Also shoreline stabilisation is important especially around the city parks like Hannah Park. The City would do well to get the funding to 'manicure' the parks, especially Hannah Park shoreline which by early June is totally overgrown with rotting logs from the trees, bushes hanging over the shoreline and a generally messy environment.
200	All of these
202	Setbacks for all bldgs of at least 25 ft. More green space along the river. No iron sea walls, and building on the river's shore. Better stormwater management
203	all off the above
209	All
211	All above
213	Improved walkways, elimination of non-point source pollutants,
215	Habitat improvement, stormwater management, naturalizing the banks of the river wherever possible.
217	Elimination of non-point source pollution Activating the river to be a destination with events, commerce, and nature
219	Stormwater management and water quality Elimination of non-point source pollution Invasive species removal
222	Invasive species removal, specifically Norway Maples.
223	Keep steel head and other "desirable non-native" species of fish out of the upper Boardman. Fishpass can do this, but the DNR wants steelhead in the upper.
228	Elimination of pollution and shoreline stabilization
232	There are so many protections necessary that its hard to prioritize. The examples above on on target-- shoreline stabilization and stormwater management and most of all water quality and protection of the larger watershed. Forward thinking and good science are very very important. The current needs of the river and our decisions now are tantamount to the rapidly advancing future.
236	Ban promotion of recreation on river with alcohol events causing consequential misuse and overuse, increasing pollution of river with debris and waste from unconcerned users. Encourage users (including summer "campers" upstream) to do their part in keeping river clean for fish, wildlife and people.

ResponseID Response

238	Elimination of non-point source pollution Accessibility without destruction of banks and habitat Community education points for those experiencing the lower Boardman that would discuss the value of the ecosystem, tree habitat, wildlife and fish ecology education.
241	Habitat Improvements Water quality
242	stormwater management, pollution, and preserving the shoreline in an attractive way.
249	Remove dead trees and brush. Plant more native species on the bank. Other than that, the examples given are leading.
250	Pollution, shore stabilization & safety
252	The "clean" wastewater is pumped back into the river just north of Boardman Lake. In my opinion, I would not want to make contact with this water. The treatment process can remove waste and neutralize some contaminants, but it can not remove some household chemicals. The Wastewater plant is necessary, and I am not sure if there is a solution to this concern.
254	stormwater management
255	Balancing efforts to leave nature alone versus development. Need to consider limiting large groups of paddlers from disseminating on the river at one time, say < 20 within 30 minutes.
257	Elimination of non-point source pollution.
258	Water quality
259	Would be nice if wooden platforms, suitable for tents placement, were erected along the river bank, to accommodate those of us who enjoy river front property we cherish as our nomadic home in Traverse City.
260	Green space, as much as possible.
261	Water quality, shoreline stabilization. Safe access.
262	Less traffic from commercial interests. Storm water control.
264	Riparian buffer zones and stormwater mitigation
266	Water quality Shoreline protection and stabilization Invasive species removal/remediation
268	Natural habitat improvements Stormwater management; pollution elimination Shoreline restoration Restrict overuse by drunken kayak tour companies

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ResponseID Response

270 Yes, all of those issues listed above. In addition, zoning should be enforced or strengthened to eliminate commercial and residential development that impacts the river banks. What has been permitted already is more than enough, in fact too much. There are other places to develop in the city of TC other than on the banks of the Boardman. There is too much pressure on the city and the existing neighborhoods. Maintain and improve what has already been developed but do not approve any more bankside developments.

271 Do not allow it to become like the lower Platte River. I am waiting for some inexperienced kayaker who has been drinking to tip over coming out of the river into the lake and drowning.

273 Water quality, habitat, and invasive species control.

274 Stormwater management and water quality Invasive species removal

276 Protect it in its natural state.

277 Shoreline stabilization and invasive species removal/control.

279 All of the above.

280 Water quality, reducing pollution and maintaining habitat

281 Improving stormwater management and water quality.

283 all of these things seem relevant and I am not expert enough to prioritize, but the goal of enhancing and preserving the river for generations to come seems paramount; therefore recreational and development interests should be subservient to this goal.

285 Retain natural vegetation along the riverbank where it exist and restore areas that already have been destroyed by seawalls when possible. A natural buffer of vegetation (25 feet minimum) is a minimum design requirement to protect the water quality of the river and West Bay.

286 Habitat protection, improvement and restoration, both in channel and shoreline.

287 A 25 foot vegetated buffer area adjacent to the water's edge along with a sustainable stormwater system are the two most important elements in protecting the water quality and ecosystem of the Boardman River and West Bay.

290 habitat maintenance and improvements

298 All of the above.

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ResponseID Response

299	Controlling erosion, clearing & cleaning up the overgrown riverbanks is extremely important for public safety as well as appearance, water quality (what are we putting into GT Bay & Lake Michigan?), ensure that recreational users of the river are not polluters or abusers of the river.
300	Non-development: no boardwalk. No more vegetation removal.
301	Leaving as natural as possible. NO concrete right next to the river. STOP development/construction of buildings so close to the river.
305	- habitat improvements - more trees, green infrastructure - fewer kayaks - eliminating non-point source pollution
306	Water quality. Habitat improvement.
307	Habitat improvements Pollution control More opportunities for access to natural sections
311	Habitat improvements and invasive species removal.
314	Stormwater management, altho all of your examples are important
315	Keeping it as natural as possible...(for example please do not allow any building of water park type things) No pollution from treatment sewage facility.
318	stormwater management, shore line stabilization, more boardwalks to get closer to the river
319	All of the above
321	Invasive species removal, Water quality management.
322	All of the above; along with continuing recreational activities and ways to interact with the river.
325	-Habitat improvements -Stormwater management and water quality -Elimination of non-point source pollution -Shoreline stabilization -Invasive species removal
326	Invasive species removal and storm water/general pollution management.
327	Returning the river to it's natural state as much as possible without tearing down all the buildings along the river
330	Stormwater management Improve the habitat by making the banks secure and removing invasive species Try to eliminate pollution - I guess that's non-point pollution
331	Removing Union Street dam.and creating a natural drop, falls, rapids, area. Fishing/Walking pier at the river mouth into the bay

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ResponseID Response

335	Stormwater management and shoreline stabilization
336	Stormwater management and shoreline stabilization
339	Overall Water quality and protection of the environment with thoughtful development, not just developers putting in the most units possible.
340	stormwater management and elimination of dirty soap suds at the bottom of the dam
342	All of the above
343	public access and habitat improvements Water quality, elimination of pollution
344	Habitat improvements. Invasive species removal. I would like to see major improvements to the Union St dam and I am in favor of the salmon run I have heard about.
345	Habitat improvements Storm water mgmt Stop private developement.
346	invasive species
348	storm water management, and any pollution source elimination - water quality in general
349	Protecting the shoreline.
350	Leaving as much natural shoreline as possible,yet improve flow towards the lake.
351	shoreline stabilization, no canoe/kayak liveries, clean water
354	Retaining public access as a primary use instead of giving in to residential development.
355	All of the above. Plus beautification i.e. native planting and access. Maybe making the alleys one way and narrower with sidewalks along the water (eliminating them altogether?)
356	Shoreline stabilization - especially in high use areas (portages, fishing, boat take out/put in points), increasing building setbacks from the river, increasing park space and public access around the river and reducing the concrete jungle built around it along the Front Street alley. Habitat improvements, invasive species prevention.
358	Stormwater management Planting buffers along the river edge
359	Stormwater Fish passage Fishing
363	Stormwater management and water quality.
364	Maintain clean runoff and minimize garbage trash in river

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ResponseID Response

367 pollution and invasives removal

368 Wetlands (do not allow housing etc to go right to river bank). Leave space for run off to be absorbed. Community use that is not based entirely on tourism. Be able to walk next to river

369 Protect wildlife and maintain clean water

371 Water management in an urban setting

372 all the above

377 Restoring native plant communities and fish / aquatic habitat as well as cleaning up the water quality

378 keeping it clean. keeping the habitat natural for animals. removing invasive species. making sure people treat the natural environment in a responsible manner (that boaters using alcohol use only minimally/responsibly)

379 Stormwater management

380 I believe that releasing steelhead trout is the wrong thing to do. Steelhead trout are not native. DNR's plan to release them into the Boardman River would be detrimental to our native brook trout population.

382 All of the above, especially water quality and habitat improvements. Also invasive species removal.

384 Habitat improvements and bank stabilization along the steep slope next to Wadsworth Street (near Kids Creek convergence), planting native ground cover and bushes and trees where appropriate, possible woody structures placed along the banks to provide more cover for fish, These same improvements should go for the north bank of the river downstream from the fish weir all the way to the boat launch. Rehabilitation work needs to continue in the Kids Creek corridor to reduce the sediment and pollution levels dumping into the river during big storms and high run-off events.

385 Habitat improvements and stormwater management/quality

389 Stormwater management and water quality

391 restoring the channel to a more natural state.

393 Green space preservation

394 installation of a continuous boardwalk extending from the north end of boardman lake near Hull park all the way along the river until the mouth at West Bay

395 Stormwater management, keeping invasives out

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ResponseID Response

396	Water quality, pollution elimination
398	Natural shorelines (not hardened, and minimizing development right on the river), minimizing pollutant inputs, especially through runoff.
399	Stormwater management and shoreline stabilization
401	Habitat improvements Stormwater management and water quality Invasive species removal
402	Stormwater management, access for all not just those that purchase condos.
406	Keeping Salmon and lampreys from going over the dam. Improve the usability of the area below the dam to the Union St bridge. A mess. Cutting back large overgrowth of water edge vegetation Erosion control Removal of excess silt trash and non natural junk from river Is there still household discharge going into river.? Shoreline stability Why is there smelly foam?
409	Stopping development along it's banks.
410	Habitat improvements which include all the rest of the bullet points.
413	With climate change causing more frequent heavy rain events, stormwater management and water quality are probably most important. But habitat improvements would help with that.
415	Storm water management and water quality Followed closely by shoreline stabilization and invasive species control
417	Keeping garbage out of the river!
424	Stormwater management which also helps the shore line Eliminate pollution Invasive species removal helps habitat improve,ent
426	Stormwater management Limiting hard shoreline building
428	shoreline stabilization water quality
429	water quality invasive species removal stop homeless living there do not allow commercial building along shore
430	Stormwater management, water quality
433	Water quality and responsible shoreline access
434	Noise and garbage control from tourists; maintaining natural habitats for wildlife; improving appreciation of the river (specifically to the north of Front Street businesses, which currently allow parked cars to enjoy the view).

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ResponseID Response

436	all of the above
442	all above along with not letting builders build right along the side of the bank with no easement
443	Removing the parking spaces along the river and using that space for parks, dining, events, and activities. I don't think the river front should be a place for storing automobiles.
446	Stormwater management, water quality, habitat quality and diversity, education
447	Shoreline stabilization; habitat enrichments; avoid lawns and don't fill the river with kayak liveries
448	Shoreline stabilization combined with better control of water over Union Street Dam.
449	Elimination "Paddle for pints and like activities. keep booze off the river!!
450	Stormwater management. Erosion of shoreline from dam removal and increased river traffic. Shoreline stabilization.
451	1. Improving waste water effluent from Boardman Lake immediately upstream. The soluble nutrient load is choking both lake and river with algae. 2. Prohibit motorized boat traffic between the Boardman Lake and the dam. 3. Monitor and remove toxic discharge from Boardman Lake/ adjacent groundwater 4. Sediment control for lake and river. Both are filling with sediment.
453	stormwater management and water quality
454	Water quality Keeping the homeless away to avoid use of the river as a toilet and trash can
456	Remove all the trees on the river and remove all the deep bushes that will help lower the water on the river.
457	- Shoreline stabilization - Invasive species removal - Habitat improvement and protect - Establish NO WAKE ZONES
458	Invasive species removal Water Quality
460	habitat improvements; stormwater management and water quality; elimination of non-point source pollution; shoreline stabilization; invasive species removal
461	Stormwater management and water quality Creating a swimming hole between the Union Street Dam and the Union Street Bridge .much like what I have seen in the old photos down river from the Union Street Bridge. With features like a rope swing a slide a monkey bar type course etc.

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ResponseID Response

464	A1) Water quality restoration!! Eliminate pollution sources /runoff management B) habitat /shoreline stability B2) invasives
465	water quality, elimination of non-point source pollution, stormwater management
469	Storm water management and water quality to keep wildlife alive
470	shoreline stabilization moving removing fallen trees and debris.
471	Keeping the water clean from run off and trash.
472	If the fish pass is installed my priority would be to make sure invasive species are not able to pass. I would like to see the downtown river made more accessible and beautified.
473	Water quality
475	Your examples, yes. This survey is too open-ended for the average citizen in my opinion.
477	removal of drunks in Kayaks
480	Water quality Water volume/depth Safety of bridges. I was told by a city engineer that the Cass st bridge that has been closed to pedestrians for YEARS could drop cement on boaters below Shoreline stability
482	1) Shoreline stabilization & cleaning up rotting logs and branches along the shoreline of this urban river, 2) Regulation of kayaking by large groups (10 kayaks at one time) drinking alcohol, playing loud music and yelling as they paddle down river with kayak sideways, backwards, and so on (maybe these are 'invasive species'? to be removed) 3) stormwater management and water quality 4) elimination of pollution including by people who throw trash in the river
483	Cleaning up downed trees and debris
484	Improve the gutter section from Union to Park. That wall on the south shore needs to be altered. Create meander, narrow the channel, increase the flow rate, build in features that promote eddy currents and currents that can "stir" the water. The human side benefit is a more scenic and approachable, usable stream. Safe kayak access and egress points.
485	stormwater management and water quality
487	Stop turning Traverse City into a major city. Every building that goes up, every unnecessary festival... add to the pollution!!
488	Two pronged approach -- keep the water quality good and avoid human interaction on the river degrading the beauty of the area.

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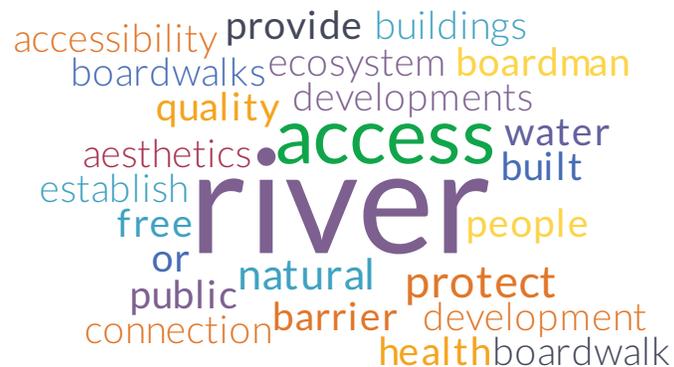
ResponseID Response

489	Keeping the river AND the corridor (its banks and land on either side) as natural as possible for access to wildlife, stabilizing shoreline in natural way (not concrete), and manage water quality
494	Habitat improve Eliminate pollution Remove invasives Water quality Stabilize shore
496	- Shoreline stabilization - getting the foam (which I think is PFAS) out of the river -
497	Stormwater management and water quality depends on management of development and overuse of the river. I have concerns about the management of invasive species with the unproven fish pass.
498	Water quality is the most important in my mind, this encompasses stormwater management, shoreline stabilization, elimination of sources of pollution.
499	all of the above Habitat preservation is high priority as is pollution elimination/removal
500	Shoreline stabilization
501	All of the examples
503	all of the above examples! but if I had to choose one, Habitat improvements and water quality
504	Easy portages. Secure places to land kyaks a access downtown venues. Some way to make out and back kayaking into the bay easy. Sections for habitat support - not just animals but also interesting plantings / water gardens. And thought about winter use for the river.
505	Habitat improvement and providing easier SUP/kayak access from Boardman lake to the Bay
508	Stormwater & water quality
510	Habitat and storm water protections are number 1. Second build more parking decks and remove parking front the banks of the river and build a natural buffer.
511	1. Shoreline stabilization 2. Invasive species removal
513	Stormwater management and water quality
529	Shoreline stabilization, responsible zoning, reducing pollution, maintaining public spaces and access.
530	Stormwater management is important given how many impervious surfaces are adjacent to the river in this area. An expanded greenbelt and a natural river bank are priorities for this area

ResponseID Response

531 All of the above, but also some areas for people to get close to and enjoy the river, so it may not be all naturalized in spots in order for this to happen

6. What do you think are the top priorities to improve the built environment along the Lower Boardman River? Examples: Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River Provide for barrier-free/universal access along boardwalks



ResponseID Response

51 Stop cutting down trees to make way for buildings on the river. Do something to make the cement wall along the river on the 200 block of Front St more attractive and less industrial looking Encourage development that will blend in with the historic feel of downtown and compliment the surrounding natural beauty of the river

53 Prohibit any building within 25 or more feet of the river bank. Respect its natural state as its only value.

54 Protect and improve the quality of the water by preventing unhealthy runoff and providing non-invasive access for kayakers (vs climbing down a river bank). At the same time - I think we should create an environment where more people can appreciate the views of the river (such as rooftop decks on restaurants, park seating on the river). Buildings today on Front Street all back to a parking lot on the river and almost no one can appreciate the water.

56 Trim and remove all of the dead trees from the water and the banks. Trim back the nasty vegetation. Complete the pedestrian access to the river. Put some "pride of ownership" into the aesthetics and the river environment. Make it an attraction instead of an ugly nuisance.

57 Barrier free access

ResponseID Response

58 Protect and restore the river to as natural a state as is possible. Limit development on the river and establish hard setback rules for development and prohibit destruction and removal of the natural flora of the river ecosystem. When I look at the river, I want to see a river with trees and foliage. I do not want see condos and restaurants. If boardwalks are developed, I'm not a fan of them because they are not kept up and frequently attract undesirable people, please commit to maintain them and patrol them.

60 Providing universal access along the boardwalks.

61 No new riprap or other hardened banks, while working to restore some existing sections to a more natural state. More access points for a person to launch a canoe or kayak. A more accessible platform and walkway on the NW corner of union, nearest the visitors center. Better sidewalk/path along both sides of the river west of Union. Improved access around the current dam site on all sides.

64 needs a natural shoreline, no more walls

65 Minimize improvements and establish ecosystem that is tolerant of flooding. That river has to be allowed to rise with the ever increasing amount of water coming in from various water sheds due to development.

68 Zoning and property setback regulations

69 A built environment is opposite to a river environment. Nothing man-made ever tops Mother Nature. Keep it simple, clean with the intent of highlighting it's natural grace. Stabilize the shore as needed but let it flow.

72 1 improve health of the ecosystem both short and long term 2 add barrier-free/universal places for people to meet/connect and enjoy the river (including boardwalks and snow removal in the winter) 3 accomodate various forms of transportation (by foot, by bike, etc) 4 improve aesthetics of alleys (building facades, removal of parking) 5 provide toilet facilities and trash containers 6 provide fishing stations and kayak access points that don't impact the stability of the river banks

75 Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River

79 Barrier-free/universal access, carefully managing development so that the balance between urban and nature/water quality is maintained or improved.

81 Return it to it's natural state, such as a removal of parking on the south side with a park like replacement.

82 Activating the lower-Boardman with exciting private developments that turn our attention to the river, like the San Antonio Riverwalk.

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ResponseID **Response**

89 Build a patio/walkway system along the sides of the river. I like the idea of identifying TEN KEY POUNTS and then intertwining them with flowing walkways, sit-down areas, etc along both the north and south sides of the river. Eliminate auto parking along the river. Develop the riverside of retail stores. I like seeing what others in the WORLD have done with their waterfronts..LEARN FROM THEM and adapt to our waterfront. I BELIEVE YOU ARE DOING A GREAT JOB.....Keep up the good work and be in no hurry....

90 be careful on boardwalk development; it should not intrude on private residences

91 All the above

96 I think it first needs to start with understanding how any "built" structures will impact the riparian zones. I worry that further development will impact shade, produce sediment and have other negative impacts on the health of the river system. So anything that is going to be built should maximize the integrity of the banks, the quality of the river bottom, and not be focused on the human enjoyment but the needs of the river system. A natural and healthy river will lead to human enjoyment.

100 maintain the natural ecosystem with minimal human interference as necessary

101 Provide consistent effort to improve the health and integrity of the lower river ecosystem - requiring future projects to account for this helps create a mindset of consistent improvement as a matter of course

102 All is good. I've always thought the Boardman is one of the town's most treasured asset. I don't have a solution for the tourist problems this will create, but hope you are able to put some controls on that so that your own citizens can enjoy it first and foremost. I know this isn't "on subject" and think you're doing a good job of planning. I do question having the public baths so near this area, especially if the homeless people continue to inhabit this area when no one is around. I fear the baths will be trashed frequently and think a well lit place with a lot of street traffic will be a much better location for the public baths.

103 This is a very funny question to be asking now. It is far too late to think about improving the "built" environment along the lower Boardman. Is demolishing the developments an option?! It's very sad to think that we have a river running through our downtown and most of it cannot be seen except for those who live or work in the buildings that have been allowed to be constructed right up to the river's edge. Allowing the removal of trees, which stabilize the bank, slow runoff and reduce erosion, and promoting channelizing with sheet metal and building right up to the now artificial bank is about the worst, most destructive and least natural option. It's so ironic that we are so concerned about returning the upper Boardman to its natural state (while destroying a clean energy source) but are so willing to bow to the developer's dollar and destroy the lower Boardman I was shocked and saddened the last time I kayaked the lower Boardman. No more riverbank development is the only answer to this question.

104 Make a serious commitment to protect the river, especially from development which restricts public access and threatens wildlife.

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105 Provide a mix of large natural areas sufficient for wildlife; provide moderate developed open areas for public park and walkways; and provide minimal concrete areas for bridges, weirs and boat launches. Balance a continuous walking path on one side only with natural habitats throughout.

106 Avoid additional developments & keep open space open!

107 Safe, connected sections that provide universal access; discreet lighting to contribute to evening use.

109 Keep any "construction" far away...

110 Love the plans for the fish weir! really a community place where people can enjoy both the river from walking, sitting or watching and also kayaking.

115 Boardwalks are nice, although I don't actually see a lot of people using them. See more use back behind Hagerty.

116 Raise the boardwalks that are almost underwater in this current period of high water. Water levels are cyclical, of course, so this won't be the last time the boardwalks are this close to being washed over. Clean up the trash along the banks. Keeping the homeless from hanging around semi-permanently under the bridges and on the banks might help reduce the deplorable amount of litter that junks up the river. Don't overdo it with excessive landscaping and new overbuilt access points. There are enough access points already. Every bit of artificial overbuilding--every man-made addition to the river--chips away at the natural feel of the river. East of Union Street, the "river" has been transformed into something much more resembling a concrete canal. No more concrete. In other words, resist the urge to make the lower Boardman a playground. Keep it as natural as possible. For the city to approve a plan that spends \$20M on rebuilding Union Street dam and still doesn't allow for kayakers to pass through without having to portage (again, more concrete and artificial landscaping) seems like a real missed opportunity. But I suppose the time to address that is now past.

117 Improve access along the entire lower Boardman, turn it into a space where more people can engage with (and therefore learn to value!) the river.

118 better walking paths and public plazas/seating and viewing areas

119 Less built is better!! Keep it natural.

121 All

124 Create development guidelines that must incorporate public access. Do not let development restrict public access.

126 I believe the natural & built environments can go hand-in-hand. Stabilizing the shoreline & creating habitat will make a more appealing river, reducing stormwater provides opportunities for innovation & public art, etc.

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127	The built environment should not be allowed to impede upon a reasonable setback from the river's edge...15 feet?
128	More natural vegetation. River clean up projects. Developments should still allow wading access along riverfront
129	-replace the Union St dam with a whitewater or wave park
130	Naturalize the south wall of the River that runs behind the Front Street alley. Make boardwalks barrier free. Expand the river walk and make the alley more aesthetically pleasing and another entry to the retail shops.
131	Make it useful for a large segment of the population. Open it up rather than keep it hidden by too much vegetation.
133	I would say all of the above
134	continuous trail along river
138	If there is anything that can be done to encourage natural features along the built up portions, that would be priority.
139	Don't over build. Avoid drainage into the river. Remove boat docking. Enforce littering ordinances. Don't allow the river to become an congested area of kayaks, canoeing and drinking stations.
142	Have a clear plan on how to restore older developments on the river to better protect the integrity of the ecosystem and integrate newer developments into that plan.
144	1.)build community access 2.)Develop rules that future development blends into the environment and keeps the access available to everyone
147	Protect, restore and improve the habitat and ecosystem of the lower river. There is enough development already - let's have access for the public to enjoy this natural asset.
149	Zoning to prevent development on the flood plain Building setbacks for new construction Relocating downtown parking to construct a river walk with natural landscaping
151	Removal of any boat mooring spots. Improved boardwalk through the downtown area. Better backs of the northern buildings in Downtown, I.E. public art such as murals or banners. Any spaces that are city owned in the alley behind the north buildings should be improved by creating pocket parks in these spaces.
152	New developments should not hang-over the river and clear all vegetation. They should be setback and blend in to the natural environment.
154	Yea

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156	Prohibit development within a minimum of 20 feet of the rivers high water mark to make access available to the public- for walking, picnics, etc.
158	Boardwalk additional and Cass dam improvements
159	use native plants & trees along river, provide benches, limit buildings so natural environment
160	Where possible remove man made structures.
161	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River !!!!!!! A couple of my photos illustrate an example where this did not happen.
163	keep it green walkways along both sides of the river universal access is a great objective but the unique location may make that impossible without really compromising the entire project.
165	control point source pollution stabilize river banks remove deteriorated boardwalks, and don't replace them
167	Those whose residences or buildings along the shoreline need to give good cooperation with the City for good development.
169	Control use by commercial outfitters to assure safe use on the river. (ie: drinking on the river) Continue the boardwalk / river walk.
171	although not in the Lower Boardman, Logans Landing improvement as a park/nature center (with businesses, or something creative), or removal of those buildings for establishment of a park there
174	Access to the riverfront for PEOPLE in. No more buildings by the river where a few people benefit but the greater community loses their connection to the river.
175	The river is currently undermining important infrastructure such as the alley beside it from Park St to Cass, maybe Union - this has to be managed! Downtown and the river have to coexist; one should enhance the other. Clean up the river & riverbanks & then maintain them Provide benches, perhaps picnic tables, to allow people to sit, relax & enjoy a peaceful riverside.
176	Ease of access for kayaks and walkers, and beautification of shoreline
178	Given that development will happen, definitely establish environmental protections for building near the river. We are sorely missing a riparian buffer zoning ordinance. That should be a top priority.

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181 Using this opportunity to build multi-sector community support for ways in increase affordable housing in the area. This idea could be a taking/discussion point at Lower Boardman River meetings.

182 more ped/bike river connections

184 Stop further development & improve what currently exists. Access to the river should remain open to the public along all boardwalks.

185 Contiguous ADA accessible riverwalk from west bay to boardman lake trail. Please REMOVE the parking!!! Seriously. Better integration with downtown as opposed to being shunned and regulated to parking. Please utilize this resource in a dynamic way with commercial kiosks, public art, walking trails, multifaceted recreational facilities etc. Think San Antonio River Walk. While developments such as Midtown and the weird little luxury condos over by the post office can be positive for the built environment they often have the effect of perceived access restriction. These developments have a way of making public spaces along the river feel walled off or difficult for people to interact with. These spaces don't draw in the casual pedestrian. Instead any future developments should EXPLICITLY invite the casual passerby with direct signage, landscape design, public art, wayfinding signs, performance spaces, mixed use commercial and other points of interest. One should feel compelled to spend time in the built and natural environment of the Boardman River and should have the explicit access to do so at EVERY development along the river. I am talking more than just a random little blue awning next to Paesanos or some small staircase hidden behind some trees as an entrance to the riverwalk. The passerby should want to drive a parade down this thing. The aforementioned "perceived access restriction" is probably a mild to moderate design intention so as to keep it "quiet" for the residents, but this design mentality is deeply flawed and inherently exclusionary. By designing for "quiet" many think they are promoting safety, property values, and access to river recreation for the proximate residents, however the results of such design are often counterintuitively contrary to those very intended purposes ---> see Jane Jacobs - Death and Life of Great American Cities.

186 Either connect or remove the boardwalks - disjointed walkways bring some enjoyment and access for fishing, but unless the boardwalk will actually be continuous for a more substantial portion it isn't worth the effort to maintain it. I'd rather see small parklets or fishing platforms instead disconnected chunks of a boardwalk. Aside from that it would be great if there could be a reduction in the channelization of the river downtown. Or at the very least make that stretch of the river more attractive to small craft (e.g. easier portage, more places to pull out, public art under bridges, etc.)

190 Keeping trash and debris out of the river through clean ups, and awareness. Some more walking bridges south of front street.

191 Provide barrier free access along boardwalks and add more places to sit and have a picnic.

192 Keep navigatable waterway clear of downed trees. Increase setback of buildings on water edge to 50 feet

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195	All along the shoreline of the river in the city the environment needs to be well kept to provide not only a good ecosystem but also provide an aesthetically pleasing river and shoreline. The city is building boardwalks in certain parts of the river which have no safety features, some boardwalk areas 'behind' Front Street are at least 8 inches under water and cannot be used. It seems like the City has no interest (and probably no money) to keep the river and environment around it in good condition. The City planners need to bring out a good 'unified plan' and find the funding to support it.
200	All of the above, esp. universal access. Continuous access along both sides of the river would be good too.
202	Fewer developments; and those that are there should protect the quality, aesthetics, accessibility and connection to the River.
203	accessibility for the public , a walkway along the river
209	All, ADA Access is not what's recently been built
211	Encourage use of boardwalk, eliminate barriers for users.
213	Fishing pier at the mouth and linked barrier free walkways/boardwalks along the river.
215	Barrier free access, development that turns our faces (not our backs) to the river, pedestrian friendly, good vibe. Acknowledging the native people and the importance of the resource to our region.
217	Create more access and activities (public and commercial) along the river. Provide for barrier-free/universal access along boardwalks
219	These ring true for me: Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River Provide for barrier-free/universal access along boardwalks
222	Elimination of storm water run off into the river and continued restoration of bank habitat.
223	More of and better access to the fragmented boardwalk.
228	Protection of the ecosystem with accessibility improvements
232	We need stringent rules, regulations, ordinances that address both quality and aesthetics. Then we need to make sure everyone who uses the river know these rules and guidelines. The rivers needs should come first, and we cannot endlessly accommodate human wants versus river needs. We need to get serious about protections and enforcements!!! We cannot continue to allow anything and everything just to accommodate more tourists. If people use the river, they need to RESPECT IT . We need to find ways to make people feel proud to be informed and vigilant stewards.
236	?

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238	Walkability would be a priority in my opinion -- a greenway for the downtown area, while keeping the ecosystem healthy, usable and protected (a challenge, I know!)
241	leave what is natural natural, any change in build features should blend in
242	i feel that as the shoreline is increasingly pressured by the building of condos, that it must continue to be accessible to the public. it is a natural asset that cannot be replaced, and should not be privatized. keep it stable, and accessible.
249	Fine to keep developments along the river, just make them aesthetically and environmentally friendly. Uptown of course did not do this!
250	Barrier free Access for all abilities. We have to do all we can to keep our water clean & pollution free & free from invasive species.
252	More natural area buffer zones between the river and the built environment or manicured lawns.
254	keep the Union street dam. build more boardwalks.
255	Minimize use of concrete while maintaining navigable waters. The feel and appearance of the river and surroundings should be appealing whether looking down on the river, or from the river looking up.
257	Sustainability; human scale; aesthetically pleasing and complimentary to the natural environment; barrier-free; adaptable to climate change.
258	#2
259	I don't understand what it is that you are asking here. This question, as worded, is nonsensical. Built environment? Well. My wooden platform idea would be nice.
260	Restore and protect the ecosystem, ensure that businesses protect the natural environment.
262	Do no allow the Fish Pass. No commercial use of the river without permits and assurances that all users have been properly educated as to river use.
264	Remove hardscaping walls along the lowest portion (terraced block walls in portions similar to the Farmer's Market can be appropriately implemented)
266	Commitment to the upkeep, access and aesthetics of the existing boardwalks and careful consideration to ensure future development does not cause negative impact to the shoreline/ecosystem
268	Preserve and restore the natural identity of the river

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270	People don't need access to every linear foot of the banks. Leave more boardwalk-free and free of residential/commercial development.
271	Keep public access to river
273	All of the above examples are important, but especially protecting the health of the river and its ecosystem/habitat.
274	Provide public access while also growing native water-filtering plants. Thus increasing public enjoyment while also increasing water quality.
276	Strongly limit the "built environment."
277	I would like to see a bike trail connection between the Boardman Lake trail and the TART trail along the river, providing a safe, convenient connection between the two trails that minimizes street crossings.
279	Maintain the natural beauty as much as possible. Protect against pollution and invasive species.
280	Providing access to the river
281	Maintaining public access to the river. New developments should protect the quality of the river, particularly water quality.
283	Again, given the goal of enhancing and preserving for future generations, development interests must be constrained in the direction of making the river a resource for all, not just those squatting alongside.
285	Create zoning ordinance that includes setbacks for natural buffer areas (25 feet minimum) to assure maximum water quality and ecosystem protection.
286	Establish and enforce more effective vegetative buffers and building setbacks.
287	Establish a zoning ordinance that requires a vegetated buffer area (25 feet minimum) adjacent to the water's edge to protect water quality and and to enhance the river ecosystem. While a buffer area is often viewed as a negative by waterfront developers, with creative design this concept can add value to any project.
290	make sure every action is an improvement in maintaining the natural environment
298	Walking path improvements such as low level lighting for night time strolling and safety.
299	Public safety, developments must protect the river/ riverfront quality & aesthetics, access to the river/riverfront should be city or county responsibilities (like parks).
300	Tear it all down. Realizing that will not happen, except perhaps for the existing boardwalk. Developments CANNOT protect the aesthetics of the river.

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301	Keep all habitat now. Plant more native plants. Increase and enforce set backs.
305	-focus on restoring the health of the river -emphasize a healthy ecosystem, more wildlife, more trees, green infrastructure
306	Commit to improving the water quality so that as a community we can continue to enjoy.
307	Health and integrity of the ecosystem balanced with opportunities for access and recreation. Less private development.
311	Develop greater ease of access and a stronger connection of the people to their river.
314	Require developments to protect the quality of their connection to the river/watershed and to enhance the aesthetics. And to somehow do this with a mind to ensuring we don't allow overdevelopment of this great resource.
315	No more commercial or residential building along the river. A commitment restore health to River.
318	clean the river of dead brush, trees and trash in the river, dead trees trap all kinds of floating material from trash to weeds ect. more boardwalks to increase easier access, some day a tuber or a person in a kayak will get trapped and drown in the mess, blood on somes ones hands!
319	yes
321	Too much clutter
322	Providing access for all, whether by boardwalks or with recreational activities. Possible boardwalk eateries, food trucks, low impact concessions. An amphitheater for concerts, etc... Educational/wildlife signage. A dedicated bike trail along the river?
325	-Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River -Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River -Provide for barrier-free/universal access along boardwalks
326	Use of the river should be accessible to all who want to enjoy it, but also with respect to the ecosystem and people who live around it.
327	Restore habitat to fish and birds

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330 There doesn't need to be more high density building projects along the Boardman. And new buildings should have been or should be set back further from the river. Barrier free is important. And you must remember that the law suggests only the minimum requirements for barrier free/universal design. The design should exceed the minimum. There need to be signs indicating which boardwalks can be accessed with wheelchair/strollers, etc - and also telling where the next exit is. So if you take a ramp down, you will know where you can get back off the boardwalk.

331 Stacked stone veneer or similar along "The Cement Wall" the river runs along by the parking lots downtown.

335 No more development at the water's edge

336 Keeping a balance of development and the natural health of the river.

339 Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River

340 make walkway all along the river on both sides even if the sides are cement to avoid erosion

342 Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River

343 All three above.

344 The use of barrier free and safe universal access is important.

345 Protect the river from non public development.

348 all of the above -

349 I believe that every person should have barrier free access to as much of the river as possible to enjoy what we have been given.

351 cleaning the boardman lake as it used to be an industrial dump site, would like more public areas around the river, more natural appearance along the shore line

354 Providing public access for walking

355 All of the above

356 Creating a continuous urban hiking trail/walkway/boardwalk from Boardman Lake to West Bay - there are only a few gaps left. Portage and put in spots for kayakers that protect the bank of the river. Infrastructure that is equal to usage. For example: The dam area is a high use area. It needs bathrooms and more garbage facilities as well as fishing platforms and portage sites. Hannah & Lay Parks are lower use areas and only require one garbage can and no bathrooms.

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358	Create a continuous walkway along the entire river Plant buffers along the entire river, even on private property Prohibit construction of buildings on the river edge
359	aesthetics water quality health of river
363	Development should stop along the Boardman. It is time to preserve not develop the river
364	Public accessibility and protect water quality
367	protect the ecosystem
368	Cut down large groups of roudy kayakers who drink their way up and down river. Be able to walk along river. Worry about lack of space for run off.
369	Maintain the natural aesthetics of the shoreline to encourage wildlife while making waterway accessible and user friendly form the lake to the bay.
371	Focus on concentrated development and access. Reduce boardwalk plans. Increase park setting and kayak access behind ATT building
372	all the above
377	stabilize shoreline by providing built access, keeping riparian buffer wide
378	Put the health of the river first, and people's access to it (to see it, walk around it, access it) second.
379	Improve the commercial area behind down town stores which are facing the river. Eliminate parking, increase green space make it more park like. Eliminate traffic.
380	please have soft edges for the lower Boardman..... not smooth cement or steel sides to the lower Boardman. thank you.
382	I believe it should be user friendly to accommodate our aging population. More benches and observation features for those with young children or limited abilities. Access for pedestrians to reach their destination by walking the river instead of the streets. Lighting for evening safety.
384	Make a commitment to avoid building new hard surface structures on the river banks, and where possible, remove concrete and steel retaining walls that channelize the river. Wherever possible, enhance natural aesthetics, fish habitat, native plants and trees etc. Plan to protect and enhance access for hikers, walkers, anglers, and paddlers.
385	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River
389	access and providing trash cans so there is not as much litter

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391	access to the river. for example; the addition of a fishing pier and fish cleaning station.
393	River setbacks
394	installation of a continuous boardwalk extending from the north end of boardman lake near Hull park all the way along the river until the mouth at West Bay
395	Barrier-free access, management of commercial usage (kayak tours, etc)
396	Ensure zoning policies are followed for new development and any redevelopment
398	Ensure minimum setbacks from the river so that natural shorelines can be maintained.
399	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River
401	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River Provide for barrier-free/universal access along boardwalks
406	Trim back water edge vegetation on a regular basis Boardwalks would be nice Access to and from river without generating erosion Keep river clean Allow fishing along the river Show more care than the city has shown over the past 50 years
409	Prevent invasive species from getting up stream of the dam.
410	Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower river.
413	Commit to improve, restore and protect the health and integrity of the ecosystem.
415	Developments should protect river integrity and not block access by the public
417	Keeping garbage out of the river! Particularly construction garbage.
424	First example is a must. The second one is essential too. The third choice should be along some of the area but no all of it. There are obvious boardwalks that can be barrier free and those would be sufficient. We would ruin the habitat completely if we made the whole,course barrier free. Sorry!
426	Protect quality of water
428	improve appearance stabilize and "clean up" shoreline as it runs through downtown
429	no development
430	Universal access

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433	protecting water quality, aesthetics, and access
434	Ensure that buildings and developments utilize the river's presence (in terms of quality, aesthetics, and connection) in creating new and rehabbing old spaces.
436	absolutely the first bullet point
442	all above
443	Removing the parking spaces along the river and using that space for parks, dining, events, and activities. I don't think the river front should be a place for storing automobiles.
446	Instill a community ethic and kinship standard of care to the health, well being and integrity of all contributing waters to the river. An informed community that cares together heals together.
447	Promote improvements accessible to all -- park spaces, boardwalks, trails, benches -- NOT more condos. At existing commercial properties, provide public access to nearby river amenities like boardwalks or parks.
448	I look forward to the improvements at the FishPass with the Dam improvements as well as better kayak/canoe Traverse at Union Street
449	Eliminate paddle for Pints Make more areas walkable, i.e., expand the boardwalk
450	Shoreline stabilization below the Baptist church and jail.
451	1. Eliminate under bridge homeless campsites. 2. Repair/ replace existing bridges 3. Ensure long term structural integrity of the dam 4. Remove the train bridge 5. Improve portage at the dam 6. Locate whitewater activities on another segment of the river, this is not a rapid section of the river.
453	provide for barrierfree/universal access
454	I would love to see the downtown have a river walk instead of parking
456	last time, It was built to renovate in 1992. If they have the same problem for next year. It is time to capital gains the project to change the landscape on the river barrier.
457	- Commit to salvaging the natural shoreline between City Hall and the Baptist Church. Utilizing fish, otter, mink, duck and turtle habitat such as boulders, downed trees from City parks work and natural greenery.
458	Provide education to residents who don't understand the impact of human activity on water quality.

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460	Be explicit to the commitment to improve, restore, and protect the health and integrity of the ecosystem; establish that developments must protect the quality, aesthetics, accessibility, and connection between people and the river; add to, and improve or replace boardwalks
461	A proper portage area at the Union Street Dam. Patrol the sleeping, drinking/passing out places on the boardwalks. Including the three examples listed for this question.
464	Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River
469	Provide for barrier-free/universal access along boardwalks
470	shoreline stabilization of the shoreline and remove debris, also, Boardman Lake and the river are being contaminated with the silt from the dam removals up stream which has been causing massive weed and algae growth, this is also causing the river and lake bottoms to rise.
471	Keep the ecosystem in tact.
472	the new river condos are way to close to the river! It is a travesty that they were allowed to be built right on the river with no buffer of natural area for plantings and privacy both for residents of the condos and walkers.
473	Provide for barrier-free access along boardwalks
475	Same
477	Keep it as Natural as possible!
482	1) ecosystem & aesthetics very important to show this as an urban river that is taken care of with great diligence by the city.
483	Maintain a Union Street damn that stabilizes the level of Boardman Lake. Allows walking access on boardwalks for public access along river
484	My previous comments apply. Fix the gutter section
485	Be explicit to the commitment to improve, restore and protect the health and integrity of the ecosystem of the lower River
487	The Eighth Street Project... better not involve more high rise buildings! But, we already know that is why it took from MAY to OCTOBER to redo that road. Funny how it is rarely worked on!

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488	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River. Don't allow paradise to be paved and then lost.
489	keeping development back off the river, putting into place mandatory practices for development to protect water quality and stabilize the banks
494	Protect quality of river Limit access points and built structures adjacent to river Make sure developments don't create barriers to the river...
496	- making sure developers aren't infringing on public access to the river - making sure buildings don't negatively impact the health of the river - establish building standards for protection and aesthetics
497	Developments must be sensitive to the entire ecology of the river. Barriers, riverwalks, kayak access and other development must be designed (and potentially regulated) within the context of the entire watershed.
498	I love the boardwalks but they need to be kept in good repair and patrolled so they are safe and not just monopolized by our homeless population.
500	more seating in the parks
503	facilitate repair and upgrade of walkway under 8th street bridge at Boardman so that it does not flood, is safe, and free of litter
504	Better bank design - being able to support lots of use without the bank becoming a trampled down ribbon of dirt. Trash control (?) -- the mixed us puzzle. Sections / stretches that have nice vistas / views - with urban elements as backdrop.
505	Consider protecting environment and watershed when approving developments
508	Fix the 8th Street underpass walkway... it's nasty
510	All of the examples above should be a priority
511	Establish that developments must protect the quality, aesthetics, accessibility and connection between people and the River
513	Protect and improve ecosystem
529	Provide access and protect parks.
530	I believe improving access to the River and just general enjoyment of this natural asset in downtown TC is important. Safe walk-able enjoyment along the river would be great!
531	All of the above

7. What is the most important thing to keep in mind as we develop a Unified Plan for the Lower Boardman River? Examples: That the plan be a reflection of civic engagement That a process for ongoing civic engagement be preserved That the plan establishes a clear implementation schedule with responsibilities, timeline and costs That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River



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51 The city needs trees and water and open spaces and basic walking paths. Beyond making the natural environment accessible for passive use, we need to protect the water quality that feeds into the Bay. We need to protect the river at all costs.

53 Invite the groups that have traditionally cared for and protected the environment. For once, give them primacy, because they are the true value-added river stewards.

54 Should agree upon a core set of principles and also be forward looking (15-20 year) instead of short-sighted an ill-prepared for future growth in the downtown area.

56 The future is most important. We live now with a narrow river, created in the past. Make it usable. I wanted to see if a small lock could have been built at the south edge of the Union Street Dam, for small boats, and paddlers to go both directions and embrace Boardman Lake. There are locks that prohibit species from heading upstream, leaving the fish ladder for spawning.

57 That it reflects the views of the citizens

58 Consider what the people of TC value first and not developers and the Chamber. The river should be for everyone, not just people that can afford a condo on the river. Whatever is decided make it clear, enforceable, and followed.

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60	To always have the environment and protection of all wild life be the #1 priority and then focus on how to allow humans to enjoy the same environment without disturbing what's truly important.
61	Incorporating perspectives from a white range of current lower Boardman users, including paddlers, fishermen, walkers, and the homeless.
64	water quality
65	The river is not in its natural location. It was forced to be there and development should be kept to a minimum around the river.
69	When in doubt, put to a public vote. Less wil always be more.
72	The plan is a master plan that is actually implimented and used to make decisions that impact the River
75	Create an environment as beautiful as the development of Kids Creek next to the Cancer Center at Munson - that has become an absolute oasis, and we need more of those along the Boardman. If you haven't walked there, go soon! Then you'll know what I mean.
79	That the process is open and transparent about the plans, costs, schedule, etc.
81	Keep in mind what is best for nature.
82	That it isn't an all or nothing proposition. We can have development and protect the river, but this isn't a free-flowing, wild river. It shouldn't be treated like one.
89	all of the above!!
90	the plan should be thorough with a clear understanding of who the users are
91	Eliminate recreational use of river ...the project is to return it to its natural state
96	The unified plan must put the health of the river first. Then it must look at how to maximize human appreciation without negatively impacting the health of the river and the lake it feeds. Lastly, this plan needs to set benchmarks as to how we will measure "health" and ensure that these metrics are bought off on from DEQ, Trout Unlimited and others that will monitor hold leaders accountable. These metrics need to be in place with means for monitoring and holding any projects and leaders accountable.
100	That the plan establishes a clear implementation schedule with responsibilities, timeline and costs That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
101	That a process for ongoing civic engagement be preserved

ResponseID Response

103	The most important thing is to have a plan. As I said, it's a little late in the game to be even talking about this. Talk of creating a fake "rapids," a fish pass, and other such tourist attractions will do nothing to enhance the beauty of this natural resource. Instead, it creates a circus-like atmosphere and more congestion where we don't need it. We succeeded in removing the Morgan-McCool canning plant and the power plant from the bay front and the Iron Works from the river front. One can only hope that the same will happen one day to the cheap, visually appalling development that has been allowed on the river.
104	Once established, with open input, that the plan have a watchdog who is made accountable to SOMEONE and also given real power of enforcement (i.e. fines, etc which will have impact on violators)
105	Make an ironclad master plan that emphasizes preservation and increase of natural habitat. Then do nothing. Then, only when action is necessary, follow the master plan closely.
106	Creating a clean, safe environment for all who enjoy the river area.
107	Plan the work, work the plan. Establish accurate costs and work flow to identify potential funding sources.
109	Let the plan benefit the river - not just those people whose interests would exploit this work of Nature.
110	the fourth statement.
115	Don't over think and try to do too much.
116	That the plan preserves the natural character of the river while minimizing the cost to taxpayers
117	That the plan is quantifiable, sustainable, and includes accountability measures.
118	That the plan is respectful of the environment and ecology
119	Protect the health of the river and the bay at all costs. It is our lifeblood in this community. As it goes, we ALL go.
121	All
124	The plan be published with revised timelines for future objectives.
125	That the plan establishes a clear implementation schedule with responsibilities, timeline and costs

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

126	The most important thing to keep in mind is that the plan must be actionable; it must be able to be put to use, that our elected & appointed officials will be held to it, and that it reflects the incredible opportunity to do right by the river and our community.
127	That the plan recognizes that the river is a wild place in the midst of the city...and because it is wild it adds to Traverse City's uniqueness and charm.
128	Keep the river wild. Natural habitat with limited intrusion is important to spawning salmon, steelhead, brown trout and other species. Overdevelopment and additional structures along the riverfront leads to poor habitat
129	-to create a destination by replacing the Union St dam with a whitewater or wave park - link Boardman Lake to the Bay with a trail or Boardwalk
130	The plan involve citizens. The plan have established priorities and an implementation schedule. That a funding formula and plan is developed and executed for the priority projects. The funding plan should also include maintenance and replacement costs.
131	The public use and maintained beauty are paramount.
133	That the plan be sustainable in both funding and upkeep
134	That it has space and activities for children.
138	That the health and integrity of the river comes first, not more recreational activities that will put more pressure on the river.
139	Keep it simple. Keep the plan doable and funded. Consider the impact on the community and habitats of the river. In summary less is certainly more.
142	There is obviously multiples uses for the river and people value it for different reasons. It's impossible to make every user happy. We must think of the health of the river first.
144	Open community engagement and a clear vision for the entire plan that will enable government and community to make decisions moving forward.
147	We need this plan to benefit the health and integrity of the ecosystem first and foremost.
149	The Boardman River is an invaluable natural asset that the city should showcase with: - Restaurants and outdoor seating - Access for human-powered crafts such as kayaks and canoes - A fishing pier at the mouth of the river
151	Clearly defined schedule, timeline and costs. Transparency on all platforms, like social media and newspapers. Celebration of simple wins such as stormwater traps where needed, new pocket parks or improved boardwalk. Impact on the river and the native species.
152	The plan should be for the people, not the developers and the commercial users.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

154	All
156	That the river is a gift to everyone - respect it and protect it. Restore as best as possible the river to its original state. Prohibit "commercialization" of the river, such as paddle-for-pints, etc.
159	That the plan establishes a clear implementation schedule with responsibilities, timeline and costs That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
160	The Chamber of Commerce and developers should not be given a place place at the table when developing a plan for the river. The river is not for sale to the highest bidder.
161	Especially the last item above. The river is still charming in many places. I worry without a plan it will just be nibbled away at and swallowed up eventually by development in town. The river should be sacrosanct from that.
163	don't get too bogged down with the details. Keep your eye on the big picture.
165	Listen to all concerned parties, not just developers
167	The plan must establish a clear implementation schedule with responsibilities, timeline and costs.
169	Respect for the river and it's importance to the area.
171	That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
174	That the plan protect and enhance the communities access to their river.
175	All of the above plus how are the improvements maintained & by whom
176	Getting broad based ongoing civic involvement and input. I think it looks like you have started a good process. I would be willing to serve on a citizen committee.
178	All of the above. We have to reconcile the challenges of having a precious natural resource running right through our economic development center. We have to marry environmental concerns with the needs of a thriving downtown. It's a delicate balance.
181	The most important thing to keep in mind that people who are homeless that may be displaced from areas they sleep during improvement processes need somewhere to go. Simply moving people to another spot on the river or wooded area around town will not alleviate the issue. Working with homeless and housing programs would be very beneficial to work towards helping the displaced people gain access to housing.
182	when people come visit they leave with a strong and pleasant memory of the river they got to experience

Appendix 1. Round One Public Engagement Results

ResponseID Response

184 To keep access to the shoreline open to the public. This resource should be available to all people, there should be no private off limit areas in the lower downtown section.

185 Do NOT allow the old guard of TC thinking prevent innovation and progress.

186 I think the most important piece is acknowledging the balance that must be maintained between all of the many (at times) disparate users. I do think that one thing that all of the actual users of the river can agree on is that development on the remaining riverfront space should be very limited and focused on improving that use/habitat/health and not allowing for more hardscape space or buildings.

190 Construction without blocking roads.

191 All plans should take into consideration the already existing integrity of the river and it's little inhabitants.

192 Make river access and usage available to all, not just property owners

202 That the plan establish priorities and guidelines for government policies, including development and use of the river. Insure that uses of the river occur in moderation and with respect and consideration of water quality and the surrounding environment.

203 protection of the river, park for all, implementation sooner than later

209 All

211 That all citizens are welcome to act in care of and have access to our waterways.

213 Maximum access with minimum impact.

215 That the plan be reflective of community input, have specific goals and a plan for moving it forward.

217 That the plan is flexible and based on quantifiable facts.

219 All of the above!

222 The plan's mission should focus on restoring the river to a more natural state(native plants/trees) while also providing easy access for recreation such as kayaking and canoeing.

223 That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River

228 Plan with values and guidelines

Appendix 1. Round One Public Engagement Results

ResponseID Response

232 Items #3 and #4 examples above---clear and specific schedule, responsibilities, values, guidelines, with ordinances to back it all up. And commitment to enforce all of this. People should be embarrassed to not know and observe these guidelines!!!

236 The right of the public to have access to the river, yet not overwhelm it's usage.

238 Community engagement is important; however, it is equally important that experts educate the community on the ecosystem we have in the lower Boardman, how it could be best utilized for natural habitat and accessibility.

241 Spend less money studying things to death and more on improvements

242 that public access is prioritized, and the health of the river is retained.

249 Again, these are leading examples and are very broad -- no specifics at all. One specific idea would be to prohibit motorized watercraft of all kinds from the lower Boardman. It should be gentle and serene for all the wildlife and the kayakers.

250 The plan must be specific & meaningful to the public & open to community opinion. Not by 1 group of committee. Costs, timelines & goals must also be specific & relevant.

252 The first goal should be to protect the environment, no matter what popular opinion may be.

254 I've noticed that your public meeting dates are completely during working hours. This ensures that people who work cannot attend. I hope that the discussion is no hijacked by people who are retired. (occasionally and stereotypically they can forget about people who use the river for recreation and business, and care about fish and fauna.....

255 Keeping the river as a valuable asset to all citizens and not just a money maker for breweries and paddle businesses.

257 Honoring and respecting the area's Native American heritage - please consider re-establishing the original name to the river - The Ottaway. The lake can remain Boardman.

258 Ongoing civic engagement

259 Engage those who live along the river, but are always ignored. I'm speaking of the nomadic residence, who the river banks are their summer property "Up North." We matter also!

260 Establish guidelines that protect the natural environment and allow people -- kids, families, all residents -- to enjoy the riverside respectfully.

262 That the river not be further exploited for economic interests.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

264 The river is a huge asset. The plan should allow and encourage development that embraces the river but doesn't exploit it. The design for Common Grounds is a nice example. Make it a focal point, design developments to improve access and observation, refrain from alleys/parking lots along the river.

266 Clear and realistic plan, budget and timeline and every attempt to prevent local politics from getting in the way.

268 That preserving and restoring the natural identity of the river is the priority That the river is a public trust, not a commodity for exploitation

270 I am concerned that we are taking a "Disney World" approach to the lower Boardman. I am not interested in a "wave pool" or any other amusement park treatment of the river. TC has plenty of built and natural attractions for residents and visitors. Trendy park projects become neglected eyesores quickly when maintenance funds are not endowed.

271 Plan establish values, guidelines and priorities that influences gov.policies and cruces that impact the river.

273 The plan needs to reflect the values and priorities of the community and suggest government policies and rules that will protect the health of the river.

274 That a process for ongoing civic engagement be preserved

276 That the plan focuses on keeping the river in as natural state as possible with no further "development."

277 Preserve water quality and protect native species both in this section of the river and upstream.

279 The end product. Whatever needs done to protect its natural beauty and maintain its health.

280 Clear plan with with established goals and expectations

281 That the plan be a reflection of what the public wants. Need a consistent path of access (e.g., a boardwalk) that goes the entire length of the Lower Boardman, even if it needs to veer away from the river for a short portion.

283 that adequate rules, regulations and laws be put in place to constrain those interests inimical to the longterm preservation of the natural aspects of the river

285 That water quality issues are the top priority.

286 That the river is the client, not developers.

287 All decisions must consider the impact on the water quality first and foremost.

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

290	avoid the influence of commerce on the suggested changes
298	Not sure.
299	The river is part of a vibrant residential area and thriving, bustling town center - each should enhance the other. It is part of the whole picture, not a standalone entity.
300	Get the DDA off the planning team.
301	To keep as natural as possible while upholding the integrity of the river.
305	That the plan prioritize the natural values of the river
306	The plan and process needs to include both a commitment to improving the water quality while engaging in the surrounding communities to get their buy-in.
307	Civic engagement
311	Establishment of guidelines and priorities influencing government policies that impact the river and the adjacent community.
314	To establish the values, guidelines and priorities that impact the river. Include in this some definition of overdevelopment.
315	That the plan reflect what is in the best interest of a healthy River and ecosystem.
318	start listening to the common people and not all the so-called people who want to turn into a jungle, it's an urban river for people to enjoy, if you want pure nature, go a few miles south and enjoy that, but please don't trample on other peoples rights who want to use it for recreation
321	Don't base decisions on a purely liberal agenda. All voices need to be heard and respected.
322	The river should be returned as much as possible to its original and natural state, but at the same time become a place for people to appreciate and enjoy. A San Antonio riverwalk type approach.
325	-That the plan be a reflection of civic engagement -That a process for ongoing civic engagement be preserved -That the plan establishes a clear implementation schedule with responsibilities, timeline and costs -That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
326	The plan should be protective of this natural resource but also easily executed for future sustainability.
327	Money is not the most important thing. Nature must be unharmed for future generations

ResponseID Response

330 There needs to be discussion of what people want. That discussion also has to address preserving what natural areas remain along the River. And, how to make the areas more natural. We do need to be responsible with costs. One thing I forgot to mention earlier is limiting some of the kayak and brew tours. While i think the kayaking is good, the numbers of people using the river for the brew tours makes it hard on the river banks. There needs to be discussion about the WHOLE rather than someone working on one part of the river and someone else doing another part. A whole view is difficult, but necessary to define river use, and resources to be guarded,

331 We all agree we would like to protect every tree, fish, bush and riverbank. But getting the final result will require an excessive restoration process and everybody should be prepared for what that might look like in the short run.

335 That the "quest" for ever more density not destroy what makes this such a beautiful place.

336 The plan incorporates a strong sense of preservation and natural habitats.

339 That the plan be a reflection of civic engagement That a process for ongoing civic engagement be preserved

340 make it walkable

342 That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River

343 The plan preserve the ecosystem of river, and safeguard it from further commercial development.

344 The plan must not be centered on commercial interests but keep the natural beauty intact. Civic engagement is key if taxes or donations will be required.

345 Restore the original status of the river free from trash and pollution.

346 restrict shore line building

348 I would support the top 2 priorities. In my opinion, the lower 2 might be too rigid and divisive - being flexible for all parties in the future is key.

350 that it is a working and important role in our salmon/trout spawns and not just some aquarium to exploit

351 include public input

354 Retaining public access for walkers and paddlers

355 Again all but the third one is most important. People get tired of being told that something is going to happen and then waiting with no progress forthcoming

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

356	All stakeholders have an opportunity to provide input, review the plan and provide feedback.
358	Need for a continuous walkway along the entire river Create stream buffers
359	Clear plan & costs clear line of responsibility state funding, grant funding
364	The plan is representative of northern Michigan and ensures public access to a clean free flowing river
367	that the policies conserve the river as a natural resource
368	Plan should be based on citizens concerns not on ways to increase tourism and add to an already congested Downtown. The more activity on river increases TC reputation as a party town.
369	Be diligent when considering the effects of development outweighing the costs to the natural wonder that exists on its own
371	Balance property owner and public interest. Limit access so river is not "drowned"
372	all the above
377	take into account expert opinion/sound science when considering impacts on river ecology
378	That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the river.
379	Long term vision with achievable goals
380	It is important that citizens' input be included in the planning for the lower Boardman. Also, the planning group for the Lower Boardman needs to protect the Boardman's "Blue Ribbon" status by letting DNR know that releasing steelhead non-native trout in to the Boardman is a detriment to Brook trout.
382	All of the above.
384	It reflects the will of a broad civic consensus and that it focuses on making progress toward practical and achievable goals.
385	That the plan prioritizes environmental health over human uses.
389	Keep costs realistic and not over the top. Please explore how you can combine with other orgs to do this instead of adding paid staff.
391	Don't allow commercial/special interests that aren't looking to improve the river to direct the project

Appendix 1. Round One Public Engagement Results

ResponseID **Response**

393	River setbacks
394	installation of a continuous boardwalk extending from the north end of boardman lake near Hull park all the way along the river until the mouth at West Bay
395	Establish guidelines and priorities, along with costs and timelines
396	Environmental concerns take precedence over man made amenities
398	That the plan puts the environment first before private interests. Enough of the river has been impacted by private development. It is time to put the river's health and best interests first.
399	That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
401	That the plan be a reflection of civic engagement That a process for ongoing civic engagement be preserved That the ecological health of the river continues to improve.
402	That the plan maintains the natural aspects of the river.
406	Communicate a clear plan with costs and time lines for completion. Please, no endless studies. Easy to maintain (not Clinch Park water feature) easy to understand (not a brain sculpture) Natural beauty, not overbuilt (not West Front St). Classic designs always last and work for the long pull.
409	That the plan leaves the river in as natural a state as possible.
410	Bullet 4
413	That as a result of civic engagement, the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River.
415	That the plan lay out a blueprint for the city to follow to monitor development and maintain green space adjacent to the river
417	Protecting/preserving the natural health of the river.
424	Last one.
426	The plan establishes the guidelines that influence government policies that impact the River
428	you are on a great path, considering all things important
429	that the plan follow what the citizens of TC want, not what developers want
430	Establish values, guidelines and priorities

ResponseID Response

433	That the plan always do what is best for the health of the river.
434	The process/plan should have clearly outlined values and guidelines to ensure the river and access to it are properly preserved.
436	the fourth bullet point, and, is this plan needed for the betterment of the river's health or the community's health. If both, the river's health should always take priority.
442	all above
446	Keep the plan forward looking, adaptive, system based and central to all decision making processes that have implications to threaten the system's health and longevity. Plan for a century rather than a political cycle.
447	That the plan reflect ordinary citizens' needs, not the interests of developers. That the plan work to keep TC unique and welcoming to all.
448	I like that idea that the various governmental and civic organizations continue to work together to protect the river and our use of this valuable resource
449	That the plan protects the river for years to come That continuous improvement and continuous insights from residents be gathered
450	Your last example.
451	Who exactly needs or wants a unified plan for this 1.5 miles of variously owned riparian real estate? Who gets to decide? Land owners? Voters? NGO's? What about Boardman Lake? Why not include it too? This artificial ecosystem truly stretches from Airport road to Lake Michigan. For over a century it has not been a "natural system". It is not likely to be natural in the foreseeable future given the infrastructure present. Why not consider the whole system Lake and River? The river can only be as healthy as it's source.
453	That the plan establishes a clear implementation schedule with responsibilities, timeline and costs
454	Continue to listen to input from all residents
456	That they need to change the landscape for every 30 years, Need new guidelines for Boardman river. Because of Climate change on earth.
457	Balancing this urban waterway between residential and natural flowing waters. Do not create rapids that upsets the current organic balance. Post and enforce NO WAKE ZONES in support. Incorporate educational signage that reflects our history, goals and maybe physical fitness notes. Make our Boardman River memorable in activity and knowledge,

Appendix 1. Round One Public Engagement Results

ResponseID Response

458	No opinion
460	That the plan establishes a clear implementation schedule with responsibilities, timeline, and costs. That the plan establishes the values, guidelines, and priorities that influence government policies and rules that impact the river.
461	Create a safe (lifeguarded) area for all to enjoy aquatic recreation, much like the aquatic recreation areas of Disney Land and other types of water parks that utilize natural and man made waters.
464	The plan should be an ongoing civic engagement that reflects the peoples awareness of the life sustaining purpose to the rivers existence.
469	That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
470	that there is a clear scheduled maintenance plan to ensure that the river and lake are kept at the new plan level of excellence.
471	Ecosystem stability
472	Public information.
473	That the plan be a reflection of civic engagement.
480	Establishes implementation plan with \$ provided for maintenance. At a recent town hall, we were told that there is no current maintenance budget for the boardwalks
482	1) establish regulations for use of river by commercial entities and events, such as brew pubs and kayaking businesses
484	Keep the community engagement. Since it is a downtown river include the human interface element and capitalize on it for education (ecosystems, recreation, water safety, healthy fisheries, husbandry of our environment)
485	That a process for ongoing civic engagement be preserved
487	Traverse City is already TOO BIG!! It is no longer a cute little town up north and the people the DDA has brought to the area DO NOT CARE ABOUT NATURE~!! The destruction of the river is on the DDA and the City GOVT!
488	That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River
489	the 3rd example above
494	Values, guidelines and priorities must be agreed upon ...in order to guide plans to implementation Timeline and costs of course are important !

ResponseID Response

496 - develop a set of agreed upon values and priorities that can be used for each project - develop a process for each project

497 While a plan is always a priority, it must be sensitive to the changing conditions of the river, new/additional knowledge base, and the environment. Short sighted political and/or economic considerations should be challenged.

498 I would say all of the above. The lower Boardman is a treasure for the whole city, citizens should be engaged, there should be a clear implementation schedule for projects, and there should be guidelines to put in place government policies that protect the river and keep it accessible to all.

503 Establishing a well publicized and ongoing communication policy so people know who to contact when they see problems in or along the river

504 Balance mixed use interests.

505 That citizens are engaged in a plan that considers economic as well as environmental priorities

510 That the plan reclaims the cement zones Around the river and rebuilds a natural buffer.

511 That the plan establishes the values, guidelines and priorities that influence government policies and rules that impact the River

513 Engage with experts such as ecologists to develop short and long term plans for environmental protections and improvements

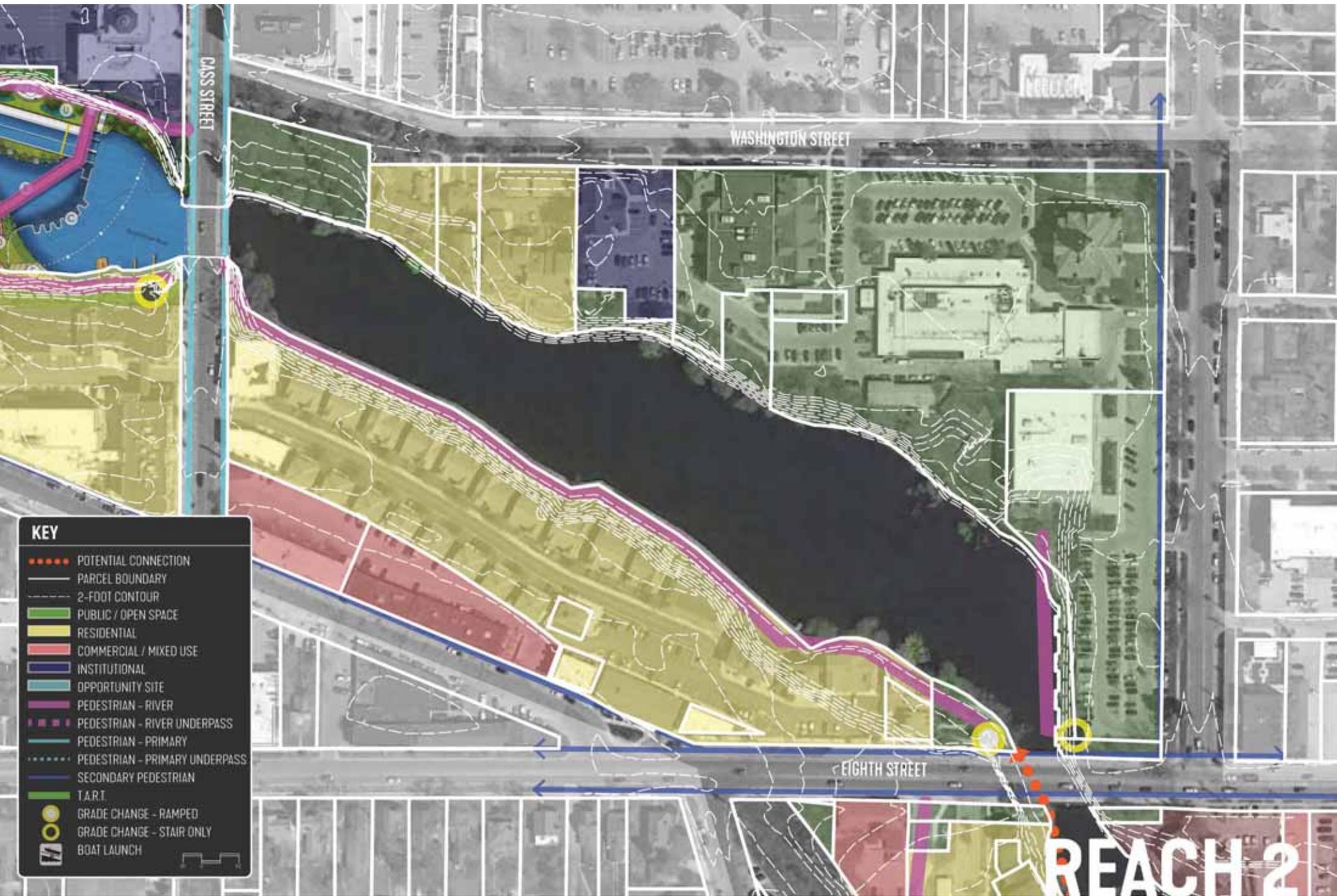
529 Emphasis the natural resources in what is a very urban environment.

531 The plan have a process for ongoing civic engagement and that the plans establish guidelines and priorities that influence government policies and rules that support the values shared by community members

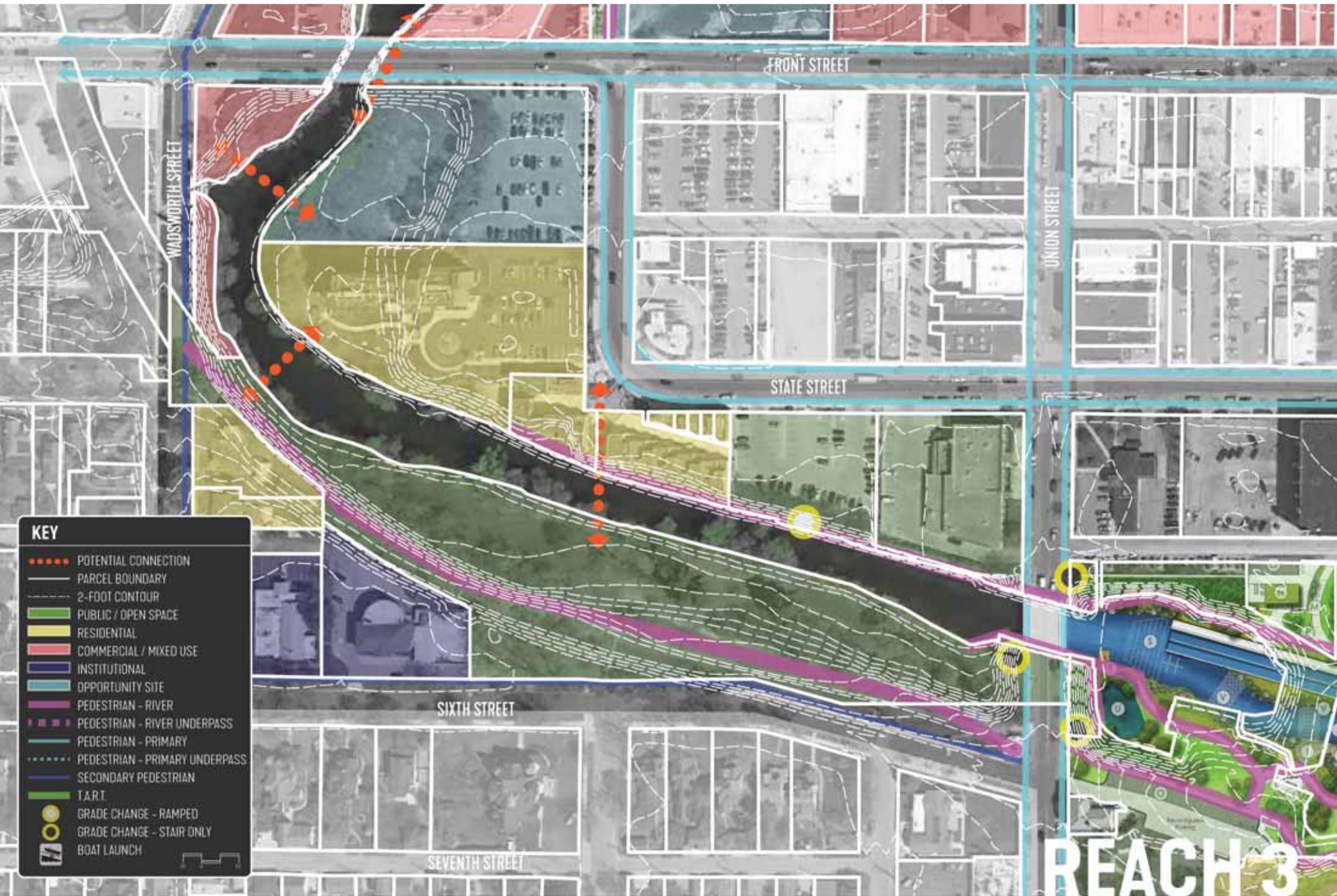
Appendix 2. Existing Conditions Mapping



Appendix 2. Existing Conditions Mapping



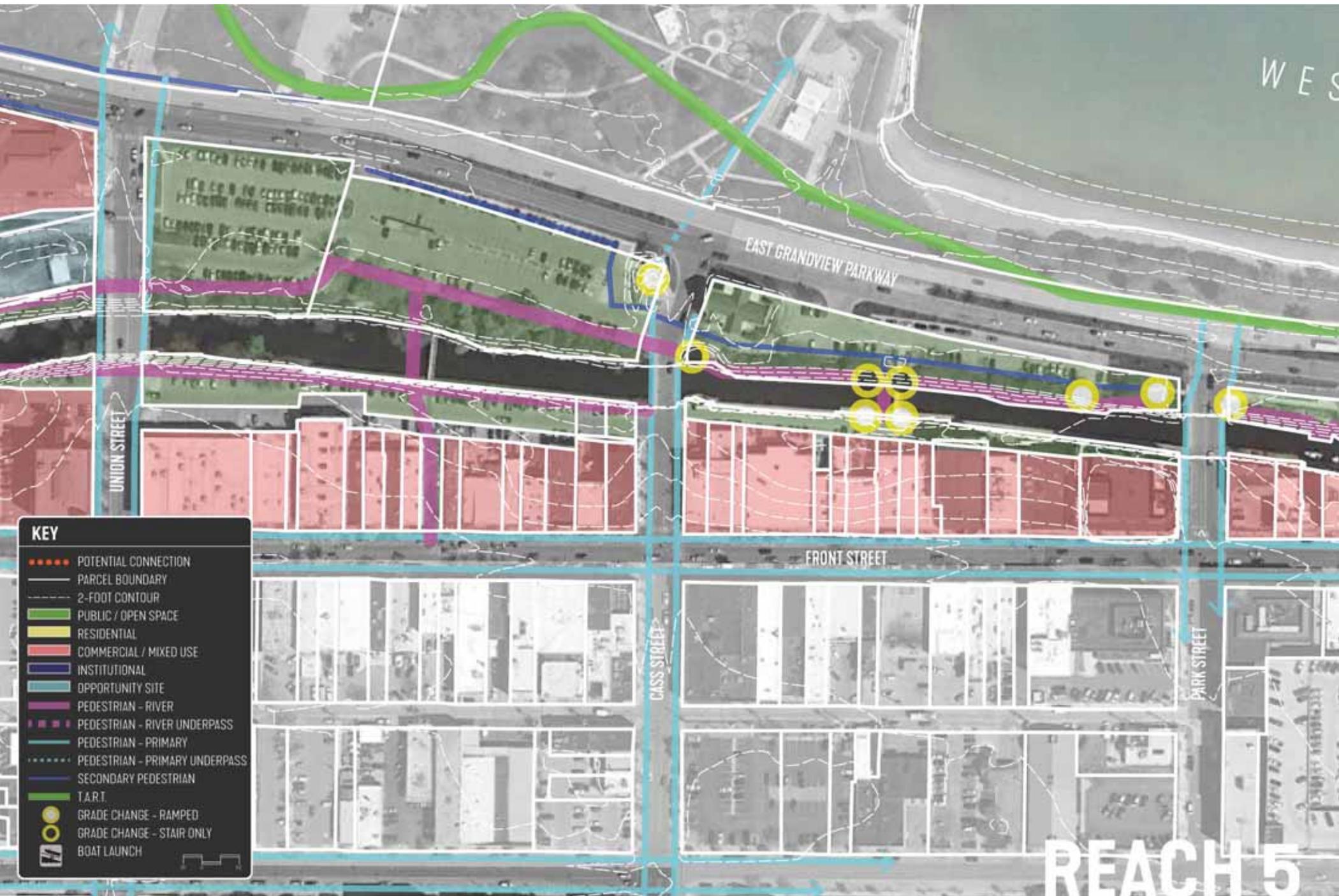
Appendix 2. Existing Conditions Mapping



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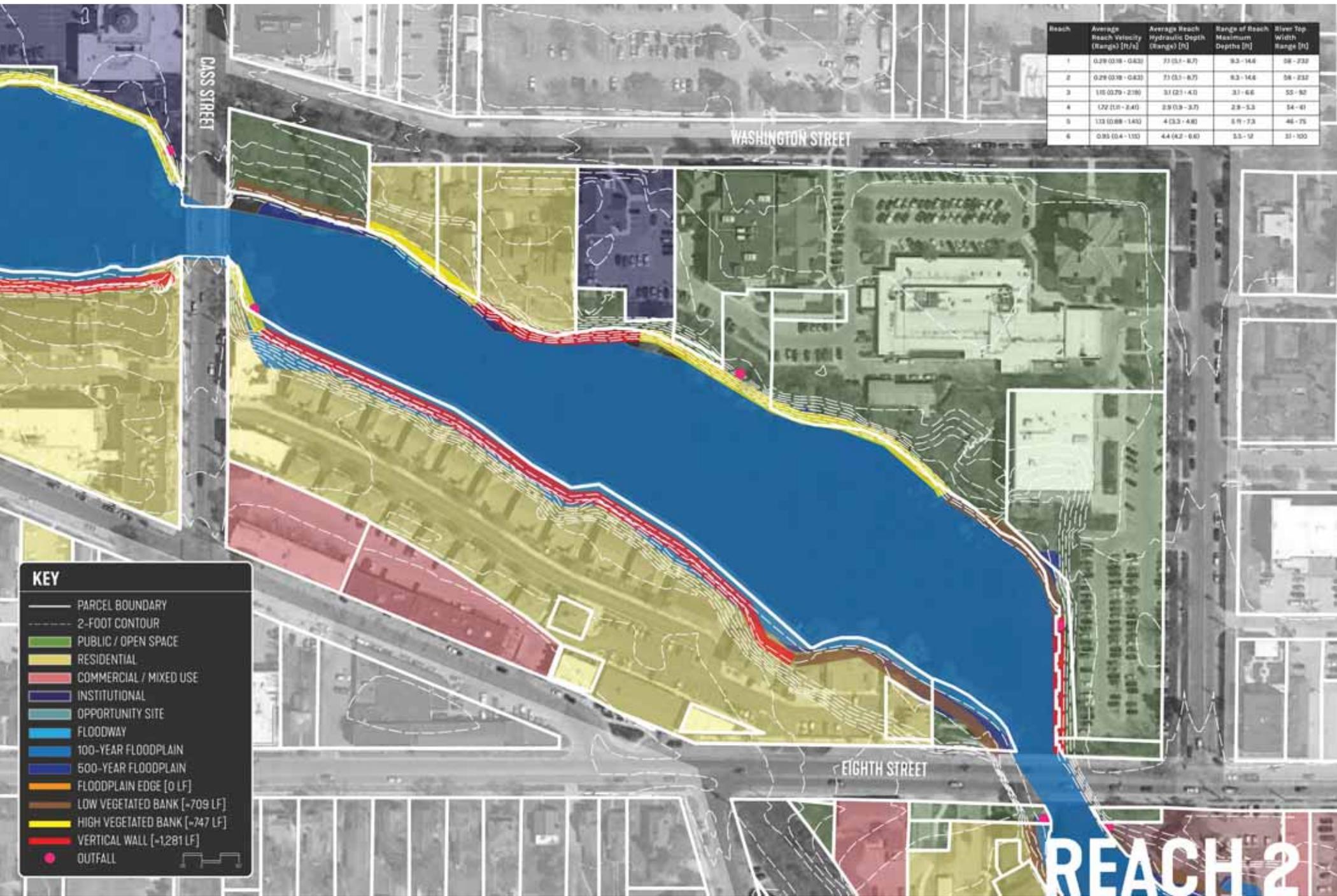




Appendix 2. Existing Conditions Mapping



Appendix 2. Existing Conditions Mapping

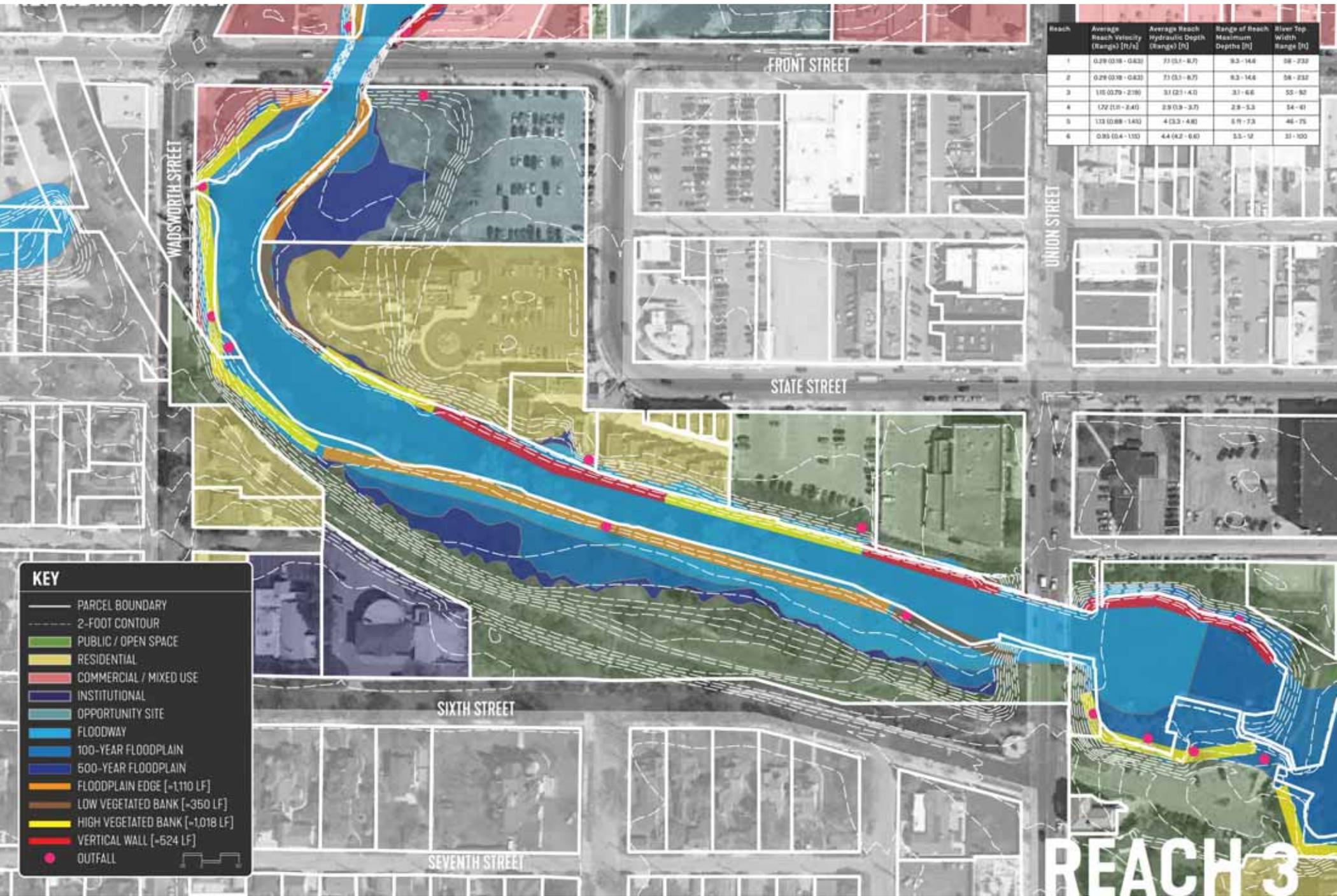


Reach	Average Reach Velocity (Range) [ft/s]	Average Reach Hydraulic Depth (Range) [ft]	Range of Reach Maximum Depth [ft]	Sliver Top Width Range [ft]
1	0.29 (0.18 - 0.43)	7.1 (5.1 - 8.7)	8.3 - 14.6	58 - 232
2	0.29 (0.18 - 0.43)	7.1 (5.1 - 8.7)	8.3 - 14.6	58 - 232
3	1.0 (0.70 - 2.00)	3.1 (2.1 - 4.0)	3.1 - 6.6	55 - 97
4	1.72 (1.0 - 2.40)	2.9 (1.9 - 3.7)	2.8 - 5.3	54 - 61
5	1.33 (0.88 - 1.80)	4 (3.3 - 4.8)	5.9 - 7.3	46 - 75
6	0.93 (0.4 - 1.00)	4.4 (4.2 - 6.0)	3.3 - 9	31 - 100

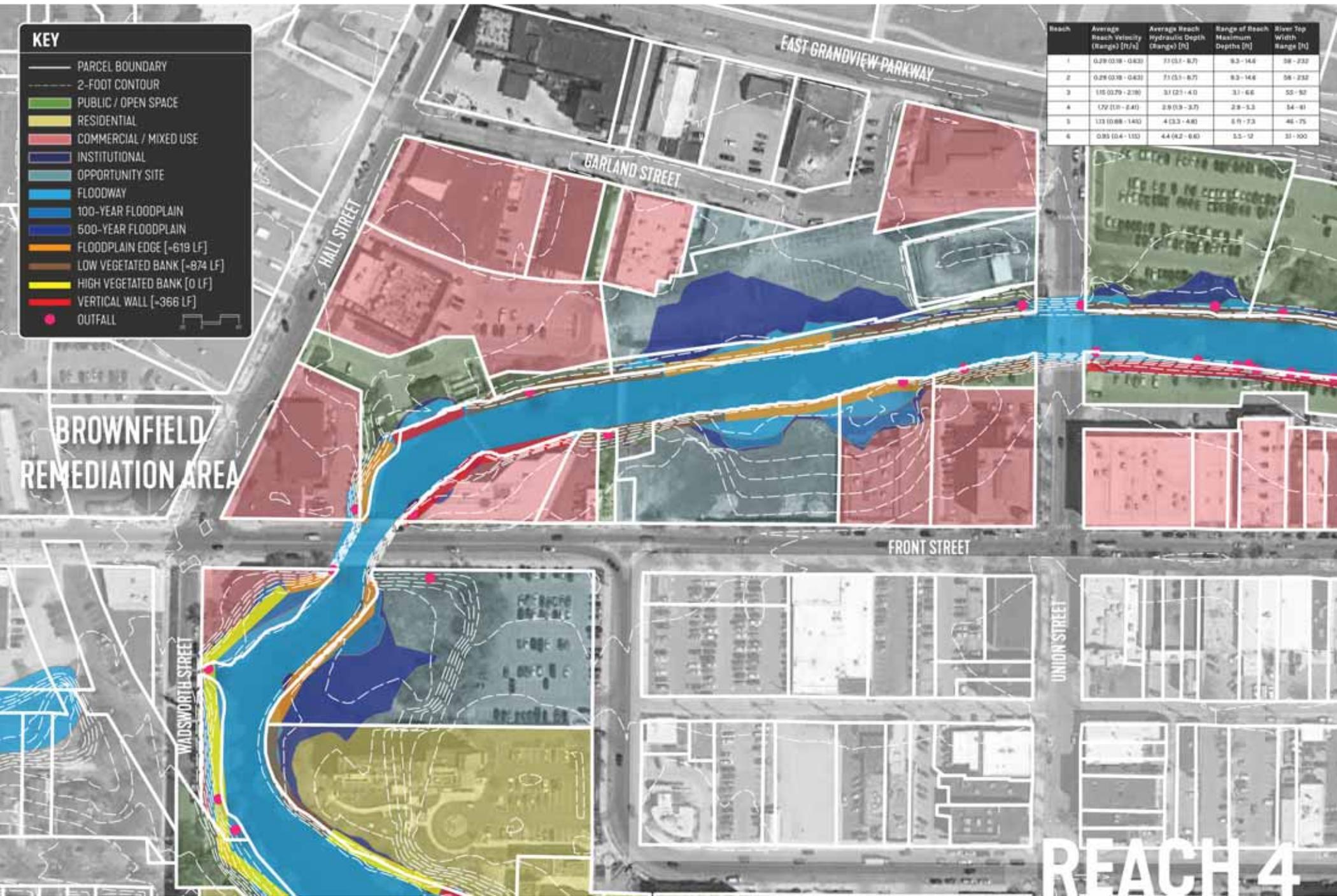
- KEY**
- PARCEL BOUNDARY
 - - - 2-FOOT CONTOUR
 - PUBLIC / OPEN SPACE
 - RESIDENTIAL
 - COMMERCIAL / MIXED USE
 - INSTITUTIONAL
 - OPPORTUNITY SITE
 - FLOODWAY
 - 100-YEAR FLOODPLAIN
 - 500-YEAR FLOODPLAIN
 - FLOODPLAIN EDGE [0 LF]
 - LDW VEGETATED BANK [-709 LF]
 - HIGH VEGETATED BANK [-747 LF]
 - VERTICAL WALL [-1,281 LF]
 - OUTFALL

REACH 2

Appendix 2. Existing Conditions Mapping



Appendix 2. Existing Conditions Mapping



Appendix 2. Existing Conditions Mapping



WEST ARM GRAND TRAVERSE BAY

Reach	Average Reach Velocity (Range) [ft/s]	Average Reach Hydraulic Depth (Range) [ft]	Range of Reach Maximum Depth [ft]	Sliver Top Width Range [ft]
1	0.29 (0.18 - 0.43)	7.1 (5.1 - 8.7)	8.3 - 14.6	58 - 232
2	0.29 (0.18 - 0.43)	7.1 (5.1 - 8.7)	8.3 - 14.6	58 - 232
3	1.0 (0.70 - 2.0)	3.1 (2.1 - 4.0)	3.1 - 6.6	55 - 97
4	1.7 (1.0 - 2.4)	2.9 (1.9 - 3.7)	2.8 - 5.3	34 - 81
5	1.3 (0.88 - 1.4)	4 (3.3 - 4.8)	5 ft - 7.3	46 - 75
6	0.85 (0.4 - 1.0)	4.4 (4.2 - 6.0)	3.5 - 12	31 - 100



- KEY**
- PARCEL BOUNDARY
 - - - 2-FOOT CONTOUR
 - Public / Open Space
 - Residential
 - Commercial / Mixed Use
 - Institutional
 - Opportunity Site
 - Floodway
 - 100-YEAR FLOODPLAIN
 - 500-YEAR FLOODPLAIN
 - Floodplain Edge [0 LF]
 - LDW VEGETATED BANK [-963 LF]
 - HIGH VEGETATED BANK [-279 LF]
 - VERTICAL WALL [-1,853 LF]
 - OUTFALL

REACH 6

Appendix 2. Existing Conditions Mapping

Lower Boardman River UNIFIED PLAN

REACH BY REACH ANALYSIS

Based on field observations and GIS data review, and mapped on files 2020-0129 50' scale Ex. Conditions. Dimensions are approximate.

January 05, 2021

CONDITIONS	Reach 1		Reach 2		Reach 3		Reach 4		Reach 5		Reach 6		TOTAL	
	LF	%	LF	%										
Floodplain Edge	0	0%	0	0%	1,110	37%	619	33%	200	8%	0	0%	1,929	13%
Low Vegetated Bank	1,709	100%	709	26%	350	12%	874	47%	984	37%	963	34%	5,589	38%
High Vegetated Bank	0	0%	747	27%	1,018	34%	0	0%	0	0%	55	2%	1,820	12%
Vertical Wall	0	0%	1,281	47%	524	17%	366	20%	1,476	55%	1,853	65%	5,500	37%
Subtotal	1,709	100%	2,737	100%	3,002	100%	1,859	100%	2,660	100%	2,871	100%	14,838	100%

Floodplain Edge: Very low bank (typically less than 6 foot from average water elevation) adjacent to floodplain beyond top of bank.

Low Vegetated Bank: Banks from 6 to 10 feet above average water elevation, often "stabilized" with rubble below vegetation.

High Vegetated Bank: Banks higher than 10 feet above average water elevation, typically stabilized with rubble and/or vegetation.

Vertical Wall: sheet pile, concrete, or concrete unit walls. Height of wall varies, as top of wall can be below 100 year flood elevation.

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BOARDMAN RIVER WALL STABILIZATION MEMORANDUM OF FINDINGS

City of Traverse City and Traverse City DDA
April 12, 2021

PROJECT BACKGROUND

Along the frontage of the Lower Boardman River in the 100 and 200 block of Front Street a concrete retaining wall built in the 1930's supports a sanitary sewer main and surface parking and sidewalks. The wall is a cantilevered retaining wall, itself supported by a series of timber piles. In recent years it has become apparent that the river is scouring out the soil underneath the wall footing, which was confirmed by an underwater video inspection of the wall. During the spring of 2020, depressions formed in the landscape areas, paving showed signs of failure, and signposts began falling over, all of which indicated that soil stability issues exist adjacent to the wall.

Issues

The loss of soils is problematic to the community and the river because the support for the sewer service connections is being lost and/or weakened, which could potentially contribute to the release of raw sewage into the river. In addition, the impact to the sewer system pipes and connections encourages ground water infiltration into the sewer pipes which increases the community costs to treat sewage on typical days and contributes to the failure of the sanitary sewer on larger storm event days as were experienced on three occasions in the spring of 2020. The 24" sewer main resting on the foundation of the wall was lined which aids in preventing ground water infiltration but the numerous sewer service connections are not lined, and ground water can infiltrate the pipes. The 24" sewer main was lined in 2003 and the lining has a life expectancy of 40 years.

The sanitary sewer service lines connecting the commercial businesses along Front Street and the sewer main built on the wall foundation are threatened by the soil subsidence, particularly on the 100 block. Within the past decade the service lines were updated on the 200 block with modern sewer pipes with sealed fittings and fewer joints, making the service lines more ridged. On the 100 block it is assumed that the service lines are predominately clay pipe, many of which likely date back to the construction of the wall and sewer main in the 1930s. These pipes are susceptible to failure at the joints, particularly in the area where soil is settling adjacent to the main to which the service lines connect.

If a sewer service connection were to break, the damage could be detrimental to the Boardman River and the surrounding area. A sewer service connection could leak raw sewage into the Boardman River and into Grand Traverse Bay. While currently ground water may create pressure on the service connection pipe and limit the quantity of effluent escaping the pipe, there remains concern that discharges could negatively impact habitat, wildlife, and water quality. A leak could also cause the ground to become saturated and unstable causing pavement failure to the parking area and unstable soil near building foundations, eventually leading to settlement, if a service connection broke near the buildings. A failure of a service connection can also compound and create a failure in the sanitary main as well. These failures can be dangerous to the infrastructure but also to pedestrians and other users of the public alley.

The soil subsidence has posed risks to the public infrastructure and those who use the sidewalks, parking, and alley. The amount of annual subsidence has increased over the past decade, and this trend is unlikely to slow. In 2020, the loss of soil support caused a parking station to overturn and a hole to open up in the landscape area between the sidewalk and the wall on the 100 block. While the loss of soil is typically incremental over time, the paving in the area can mask over areas of underground soil failure until the issue is made apparent by a sizeable collapse or settlement of pavement. Larger areas of failure can lead to destabilizing events which may threaten the condition of the wall and lead to more significant damage to the sanitary sewer main.

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Study Process

In June of 2020, the Traverse City Downtown Development Authority (DDA) authorized an inspection of the wall by SmithGroup to investigate the soil stability issue and sought recommendations on how to stabilize the soils and wall.

Based on the review of the video of the dive inspection of the concrete wall, the review of the wall engineering plans and details (Appendix B), and the observations of the field review, it is apparent that there has been little to no movement of the concrete retaining wall. There is no evidence the wall has settled or canted, and no major cracking of the wall was evident (other than in locations that had been modified by subsequent construction along the wall). The timber piles supporting the wall's foundation are fully submerged and are driven to a bearing capacity of 15 tons. According to the dive inspection, the timber piles appeared to be stable and did not show signs of degradation. Fully submerged timber piles can be expected to maintain structural integrity indefinitely (FHWA).

The inspection also found that the subsidence and settling along the back side of the wall is due to a loss of soil material within the backfill of the wall, specifically within a zone of 10 feet +/- behind (south) of the wall. These soils are being lost due to scouring and undermining of the retaining wall footing. The material loss is exacerbated by high water levels of the Great Lakes and connecting channels which causes soil saturation, loss of consolidation of the backfill soils, and loss of the soils through gaps below the footing and through the walls at penetrations.

The inspection concluded that soils would continue to be lost due to these conditions, and even as water levels recede the soil loss will continue due to the lack of consolidation.

It was agreed that an assessment of options and then the determination of best and most feasible approaches should be determined. The key components of this study include the topographic, bathymetric and utility survey of the area (Appendix C), geotechnical borings (Appendix D) and analysis of the soils on the south side of the river, the development and feasibility assessment of alternative solutions, the refinement of the river's hydraulic model, and testing of alternative solutions to determine the impacts of the alternatives on the river system.

The DDA is in the process of creating a Unified Plan for the Lower Boardman/Ottaway River, and this study is developing recommendations on, among other topics, the restoration and management of the shoreline of the river to create habitat improvements in support of riparian wildlife and fisheries and provide for public access to the waterfront. Extensive public engagement has been conducted as part of this planning effort and the greening of the river's edge and increasing the setback of parking and development along the river have each been significant interests of the community.

ALTERNATIVES CONSIDERED

SmithGroup explored many options to mitigate the undermining of the existing retaining wall due to scour. The options are detailed below.

A. Sheet Pile on Land Side of the Wall

This option would require excavation behind the wall to expose the footer of the wall, the sanitary sewer and the sewer service leads. Sewer services could be repaired, and areas of settlement due to scour identified. As needed, a sheet pile wall would be driven into the earth behind the footing of the wall, sealed against the footing with tremie concrete and the excavation backfilled with engineered fill.

Although this option would have no impact on the flood levels of the river, this option was found unsuitable because scour may continue to undermine new areas of the shoreline where sheet pile was not installed, limiting the value of the solution in the long term. Further, the construction logistics of

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installing sheet pile in and around the sewer, service lines, and other utilities is problematic, and would increase construction costs. The sewer service connections could be repaired within the construction limits which would benefit businesses on the 100 block; however, the sewer connections on the 200 block have already been updated and would add costs to the project without benefit to this infrastructure. Storm sewer and roof drain outfalls would need to be rebuilt on both blocks. On the 100 block, it is desired to recreate a natural shoreline for habitat restoration in the future and the investment in this solution would not further the long-term goals of the DDA and the Unified Plan.

B. Concrete Filled Geotextile Tube

This option would place a geotextile tube at the river bottom elevation on a bed of scour stone and filled with sand or concrete to close the gap between the river bottom and bottom of the existing wall footing.

This option was deemed unsuitable because this work would not be a long-term solution and does not address the sanitary sewer main and service connections. Scour could continue to occur at the bottom of the river and could eventually expose and create another gap between the concrete filled geotextile sock and river bottom. Due to the size of the tube and the extent to which the tube would intrude into the river, this option will result in raising to the flood elevation of the river more significantly than the other options. This option would also be abandoned or removed if the 100 block's shoreline is restored in the future.

C. Cores in the Footer

This option would require excavation of a trench behind the existing retaining wall and coring into the existing footer to pump concrete. The concrete would fill the gap due to scour below the concrete footer. A temporary dam would need to be placed in the river to create a dry area for pumping of concrete under the existing footer. Conventional concrete formwork would be used to contain the poured concrete on the river side of the wall foundation.

This option was deemed unsuitable for many reasons. The first being the potential damage to existing utilities and wall. Coring into the footer could create issues in the currently sound footer and existing piles. It could also result in damage to the existing sewer line that is behind the wall. This option also risks the occurrence of additional scour at the riverbed.

D. Wall Removal and Sewer Relocation

This option would remove the wall and leave the wall footing and timber piles in place. The sanitary sewer would need to be relocated to the south (closer to the buildings), sanitary sewer connections can be replaced back to the source, and a slope installed with landscape and erosion and scour protection (likely, stone riprap). As a consequence of this option, the northern 20-30 feet of paving would need to be removed, and the pedestrian bridge would need to be replaced with a single span structure. Depending on the final design of the alley, the pavement demolition may remove approximately (44) parking spaces in the alley. Designed correctly, this option could provide meaningful habitat benefits and align with the Unified Plan.

This option is feasible on the 100 block as adequate space exists to create the landscape slope without impacting the service function of the alley. However, on the 200-block, space is constricted and this approach could not be used without removing the service alley completely.

The study also included an assessment of the potential to lower grades in the parking lot/alley on the 100 block to reduce the restored slope steepness and/or flood elevation. Assuming the pedestrian/vehicular shared use of the alley, the future design needs to consider the need for Universal Access, which may restrict the ability to add slope to the paved area. This investigation also identified two additional key considerations; the need to add steps and walls in the alley to access businesses, and the potential impact to communications and electrical infrastructure in the alley which would be sensitive to changes in

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grade due to limited burial depths. This idea merits further creative problem solving in future design and engineering efforts.

E. Sheet Pile Wall Protection

As described below, this option uses sheet pile along the face of the wall to prevent further scouring and allow for any voids below and next to the wall to be filled. This option is feasible for both the 100 and 200 blocks, although it would not forward the goals of the DDA and the Unified Plan and would cause some change to the flood elevation outside of the project area if completed for both blocks.

ASSESSMENT OF ALTERNATIVES

The criteria to assess the efficacy and suitability of the solutions includes:

1. Provide long term protection for adjacent properties and sanitary sewer.
2. Maintain the alley and service access on the north side of the commercial buildings facing Front Street to preserve the function and integrity of the historic structures.
3. Limit impact on the flooding elevation of the river; especially upstream of the project area.
4. Preserve opportunities in the future to achieve the developing goals of the Unified Plan, greening the river edge while creating opportunities for pedestrian access to the river.
5. While considering long term goals for the project area, ensure that improvements are prudent and cost effective.

For each alternative we assume the need to replace the sanitary sewer service lines from the sewer main to the building connection on the 100 block.

The table below summarizes the results of our assessment of the alternative approaches. A more detailed description of the cost analysis and hydraulic modelling reflected in the table is provided in Appendix A.

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Alternatives	Long Term Protection – Adjacent Properties and Sanitary Sewer	Maintain Alley and Service Functions	Limit Flood Impacts to Project Area	Achieves goals of the Unified Plan	Cost Effective*	Overall Rating
Sheet Pile – Land Side	2	3	3	1	2	2
Concrete Filled Geotextile	1	3	1	1	1	1
Cores in Footer	1	3	3	1	1	2
Wall Removal & Sewer Relocation	3	2	3	3	3	3
Sheet Pile – River Side	3	3	2	1	3	2.5

Ratings:

1. Does not meet defined criteria, or meets criteria in a minimal way
2. Meets defined criteria satisfactorily or meets a portion of the defined criteria
3. Exceeds defined criteria

*** Cost Effectiveness Ratings:**

1. Meets less than or equal to 25% of long-term criteria (Unified Plan, scour, sanitary sewer protection, alley service function, constructability)
2. Meets less than or equal to 50% of long-term criteria
3. Meets greater than or equal to 75% of long-term criteria

RECOMMENDED APPROACH

Our analysis and assessment determined that the most prudent solution to the issues outline in this report is to treat the two blocks uniquely and respond to the evaluation criteria and the site conditions and constraints of each. Preliminary plans and cross sections are provided (see Appendix E) to illustrate the recommendations described below.

100 Block

SmithGroup recommends the removal of the wall on the 100 block. Removing the existing retaining wall allows for a natural shoreline and restoration of habitat along the riverfront. The existing stem of the wall would be removed with the existing footing and timber piles to remain. Riprap would be placed along the river bottom and up the shoreline to protect the shoreline from erosion and scouring while creating habitat for fish and other aquatic and riparian wildlife. Plantings, trees, grasses, and other landscape items will be added to protect the new bank from erosion and promote habitat.

We recommend removing only the vertical stem of the existing concrete wall, leaving the horizontal footing of the old wall in place as a shelter habitat for fish. Methods of creating a stable, scour resistant toe of the slope near the wall foundation will require further consideration during final design.

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This approach requires the existing sanitary sewer line behind the wall to be rerouted further south within the alley. The 100 block has many sanitary leads that need to be replaced and this reroute provides the opportunity to fix and stabilize the leads (some of which may be dating back to the wall construction), which will reduce the infiltration of ground water into the sewer system. Replacing the numerous sanitary service connections is also an opportunity to ensure the most effective infrastructure is in place to minimize any opportunity for raw sewage leaks.

In order to do this construction, an easement or purchase of land would be required for a riparian private parcel of land on the 100 Block. This parcel is on the east end of the block and is existing private property. An easement may be agreed upon between the landowner and the City of Traverse City if the owner is willing or the city may be required to purchase the land if the owner is willing. This has potential to delay the construction schedule if not addressed in a timely manner.

200 Block

SmithGroup recommends installing a sheet pile wall on the river side of the wall in the 200 block. A sheet pile wall would be driven into the earth on the river side of the retaining wall. The top of the sheet pile would coincide with the top of the wall footing. Once the sheet pile is driven into the river bottom, concrete would be pumped between the sheet pile and the existing retaining wall and fill under the existing footer as well to completely fill the gap. The sheet pile would protect the wall from further scour. Rip rap could be placed into the river bottom to provide some fisheries habitat benefit.

The sanitary leads on this block were replaced about 10 years ago and their condition is likely to be good. As a precaution, we recommend that removing the asphalt alley behind the concrete wall to locate any signs of soil subsidence and backfill with compacted aggregate material, as well as excavate and repair any storm or sanitary sewer service leads that appear compromised.

This option may be constructed with a temporary dam in the river and dewatering between the dam and the existing retaining wall. The concrete that would be pumped between the sheet pile and the wall, and underneath the wall, will create similar conditions long term protection for the timber piles because the concrete and piles will be saturated from the river and ground water. The timber piles should not experience large amounts of degradation and remain structurally sound.

RECOMMENDATIONS FOR IMMEDIATE ACTION

There are two intermediate recommendations that could be acted on immediately:

1. Coordinate potential FEMA permitting with the Fish Pass project
2. Enact a monitoring program to track potential infrastructure failures between now and construction

As will be discussed in the modelling portion of this report, we currently anticipate that additional FEMA floodplain permits will be required. The Fish Pass project is also going through the FEMA permitting process for the upstream reach. Coordinating with the Fish Pass project may allow the City to complete the permitting process one time for both projects.

It is also recommended that the following monitoring activities be implemented. The goal of these activities is to check for potential soil loss behind the wall, condition of the existing sanitary sewer and leads, and understand how this soil loss may be impacting the wall's integrity.

- Survey of the existing wall and monitoring the wall's cant
 - Every 6 months, preferably Spring and Fall (after winter freeze and thaw cycles and after spring and summer rain)
- Place benchmark nails in the pavement to the south of the wall and track their elevation fluctuations
 - Monthly and immediately after every larger flow events

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- Measure the width of pavement cracks
 - Monthly and immediately after every larger flow events
- Measure point locations of scour depth
 - Monthly and immediately after every larger flow events
- Conduct underwater scour inspections
 - Annually
- Monitor flows in the wastewater line to identify new infiltration resulting from a break in the sewer line
 - Continuous monitoring with weekly evaluation
- Televis the existing 24" sanitary sewer main and sewer service connections in both the 100 and 200 blocks to understand the existing conditions of the pipes and assess the areas in most urgent need of repair
 - Perform this task within the next 2 to 4 months



APPENDICES

APPENDIX A. Technical Analysis (Project Costs and Hydraulic Modelling)

APPENDIX B. Record Drawings of Existing Retaining Wall

APPENDIX C. Topographic, Bathymetric, and Utility Survey

APPENDIX D. Geotechnical Report

APPENDIX E. Plans and Cross Sections

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APPENDIX A. Technical Analysis

PROJECT COSTS

A cost analysis was performed for the above-mentioned recommendations for the 100 and 200 block. The cost analysis includes (8) main components which will be broken down below. The cost estimate does not account for any permitting fees.

1. Construction Mobilization
 - a. This cost is estimated to be 5% of the total construction cost, and include temporary utilities, facilities, and management to support construction
2. Site Preparation
 - a. All demolition items (tree, pavement, landscape, curb, wall, and utility removals) plus an additional allowance for miscellaneous items found in the field. This section also includes soil erosion control measures.
3. Utility Systems
 - a. New storm and sanitary piping, structures, excavation and installation, and storm water quality items (swirl chambers and infiltration landscape beds).
4. Earthwork and Wall Rehab
 - a. All materials being hauled off site and all materials brought to site (aggregate, riprap, backfill, tremie concrete, and sheet pile wall).
5. Hardscape Improvements
 - a. Concrete for sidewalks, concrete for curbing, HMA, and an allowance for additional base material for HMA (asphalt) pavement to meet final grades.
6. Lighting and Electrical Systems
 - a. Conduit and wiring for re-installing the existing pedestrian lighting along the sidewalk and parking lot.
7. Signage and Pavement Markings
 - a. This section includes 2 allowances for signage and pavement markings and traffic management devices.
8. Landscaping
 - a. All items for restoring any disturbed areas along with all landscaping materials to create a shoreline suitable for habitats (trees, grasses, seeding, etc.) This does not include habitat structures, boardwalks, water access stairs/ramps, special alley paving, or pedestrian amenities, but accounts of the basic restoration of the site.

These components created the cost analysis for both the 100 and 200 block. The cost analysis accounts for a 20% contingency for unforeseen construction related costs. The 100 block estimated construction cost is \$1.4 million and the 200 block estimated construction cost is \$1.0 million with a total construction cost for the entire project area being approximately \$2.4 million.

As noted below, the modelling of the river considered the option of utilizing the sheet pile approach on the 100 Block. This would have some impacts to the flood elevation as noted below. From a cost perspective, this approach is considered “cost neutral” to the recommended approach of removing the wall on the 100 block, since the cost of the sheet pile, removal of the 200 block boardwalk, and other modifications to make this option viable offset the savings from leaving the sewer main in place on the 100 block.

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HYDRAULIC MODELLING OF THE RIVER

Recommended Option – 100 Block Wall Removal

Combining the removal of the retaining wall and laying the slope back to create a more natural shoreline on the 100 block and use of the sheet pile on the 200 block does increase the flood elevation in the project area but eliminates the impacts upstream of the site. All other approaches were modeled, and all the other approaches raise the flood water levels upstream to the Boardman dam.

This approach has been modelled in several configurations, with slopes ranging from 3:1 to 4:1, with the installation of fish habitat, and with the preservation of the horizontal footing. While some impacts to the flood elevations occur within the project extents (up to 0.1 ft), none of the configurations tested resulted in upstream flood impacts.

Due to the rise of flood levels, the recommended approach will require a Letter of Map Revision (LOMR) and Conditional Letter of Map Revision (CLOMR) which involves seeking approval of all impacted landowners. LOMRs and CLOMRs are required by the Federal Emergency Management Agency (FEMA) whenever a design project causes a rise in the 100-year flood elevation of more than 0.01 foot within a FEMA designated floodplain. This process should be reasonably expeditious since the City of Traverse City is the predominate riparian landowner.

Additional alternatives were tested in an attempt to mitigate the predicted rise and eliminate the need for a LOMR. These alternatives included modifying the northern shoreline, removing the boardwalk, dredging a portion of the channel, and repairing the existing scour damage; however, none of these alternatives successfully mitigated the predicted rise.

Other considerations for this alternative include:

- Consistent with emerging Unified Plan and community input
- Relocates a segment of the sewer away from the river and allows for upsizing of the sewer in this area
- Facilitates the addition of storm water management best practices to 15 storm leads in this area
- Provides closer access to water
- Adds habitat for fisheries and riparian mammals
- The grades in the alley parking area could be lowered such that the green slope would require less slope
- Easements or property purchase may be required from the single privately held riparian parcel in the project area, as referenced above

100 Block – Sheet Pile Alternative

It was found that the addition of a sheet pile wall in the 100 and 200 block will cause a rise in river flood elevations in the project area as well as upstream (to the Union Street Dam/FishPass) of the project area by up to 0.02'. Although the rise is limited, such an impact would require a Letter of Map Revision (LOMR) and Conditional Letter of Map Revision (CLOMR) which involves seeking approval of all impacted landowners between the project site and the Union Street Dam/Fish Pass.

This alternative also requires the removal of the boardwalk on the 200 block. It should be noted that the city believes that the boardwalk was installed with grant money, and such grants often include penalties for removing the improvements. The inclusion of a wetland bench on the north side of the river helped mitigate – but not eliminate – the flood impacts, and the inclusion of a constructed wetland would exceed the cost of a LOMR.

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Additional alternatives were tested in an attempt to mitigate the predicted rise and eliminate the need for a LOMR. These alternatives included dredging the channel, repairing scour, replacing the 100-block pedestrian bridge with a single span structure. None of these alternatives yielded a positive effect.

Other considerations for this alternative include:

- Does not preclude future opportunity to green the bank but does add cost to this idea if the community is going to do this at some future date.
- Requires the removal of the boardwalk on the 200 block to eliminate upstream flood level impacts.
- This approach assumes we would still upgrade sewer service leads on the 100 block.
- This approach would preserve public parking on the south side of the river.

Modelling Process & Discussion

The original source model for this assessment is the FEMA Flood Insurance Study (FIS) model, which was further refined by the Boardman Dam project. A copy of the existing conditions model for the Boardman Dam project was provided by the Great Lakes Fisheries Commission. The model was further updated by the design team using the survey data collected on 11/24/2020. This updated, existing conditions model served as the baseline model upon which all of the design alternatives were evaluated.

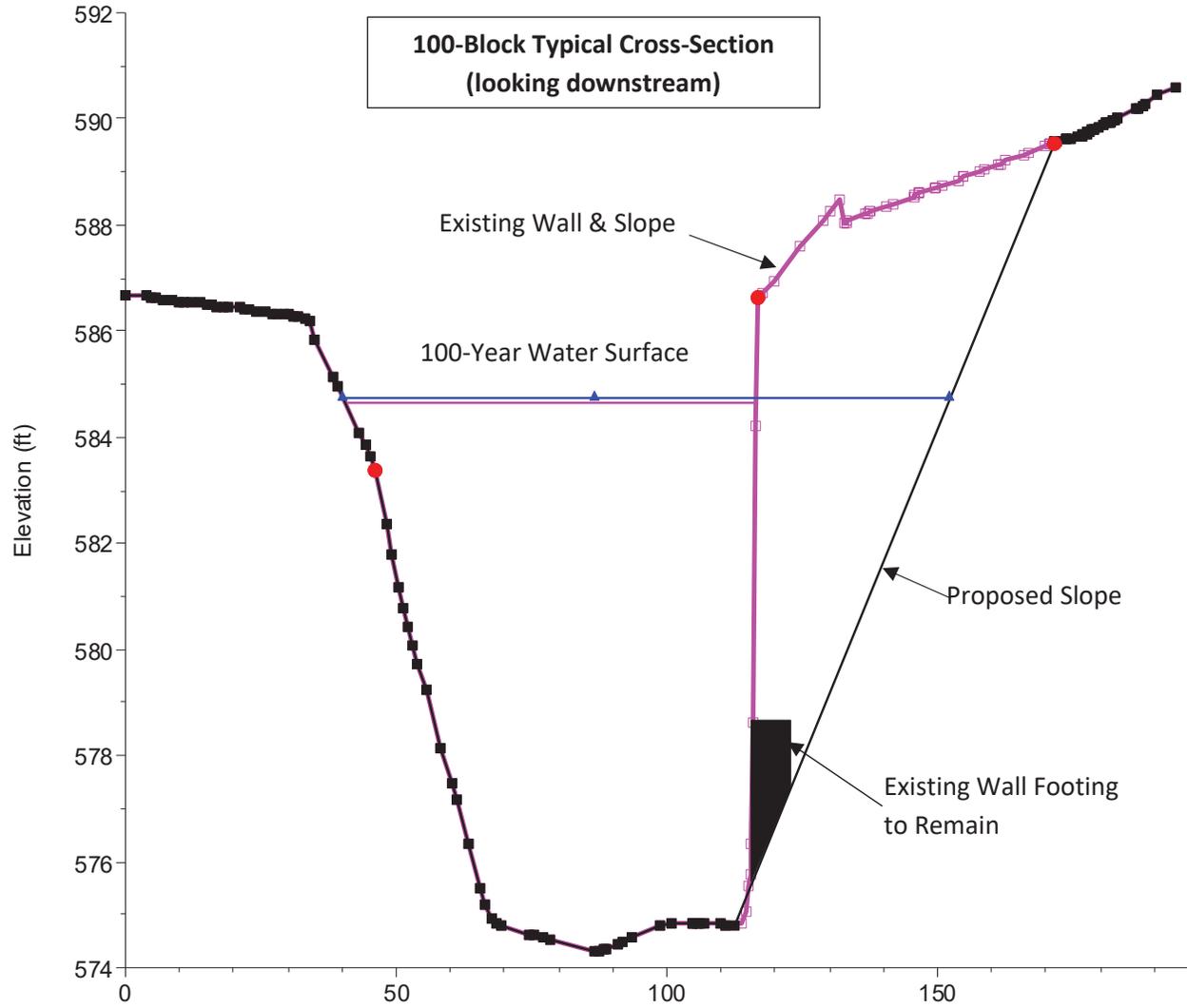
The boardwalk was included in the model as ineffective flow areas. Ineffective flow areas exclude any flow conveyance under the boardwalk; consequently, this analysis cannot assess potential impacts/benefits yielded by adjusting the elevation of the boardwalk.

The existing pedestrian bridges were updated in the model based on the survey data. We do not anticipate any additional scour risk around the piers resulting from the proposed project.

The images below will present typical cross-sections for the proposed design (as represented in HEC-RAS) and a profile plot of the 100-year flood water surfaces (as predicted by HEC-RAS).

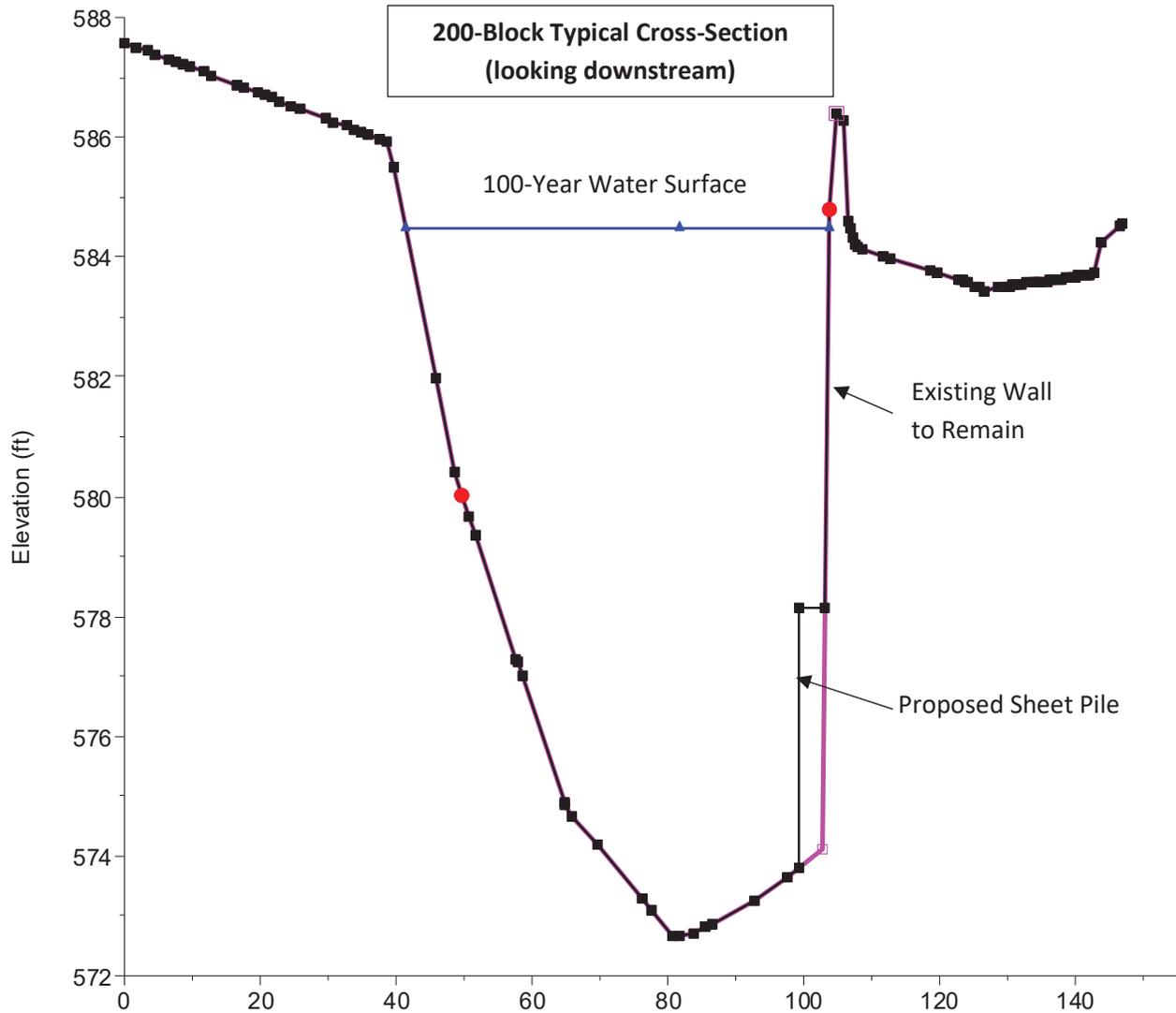
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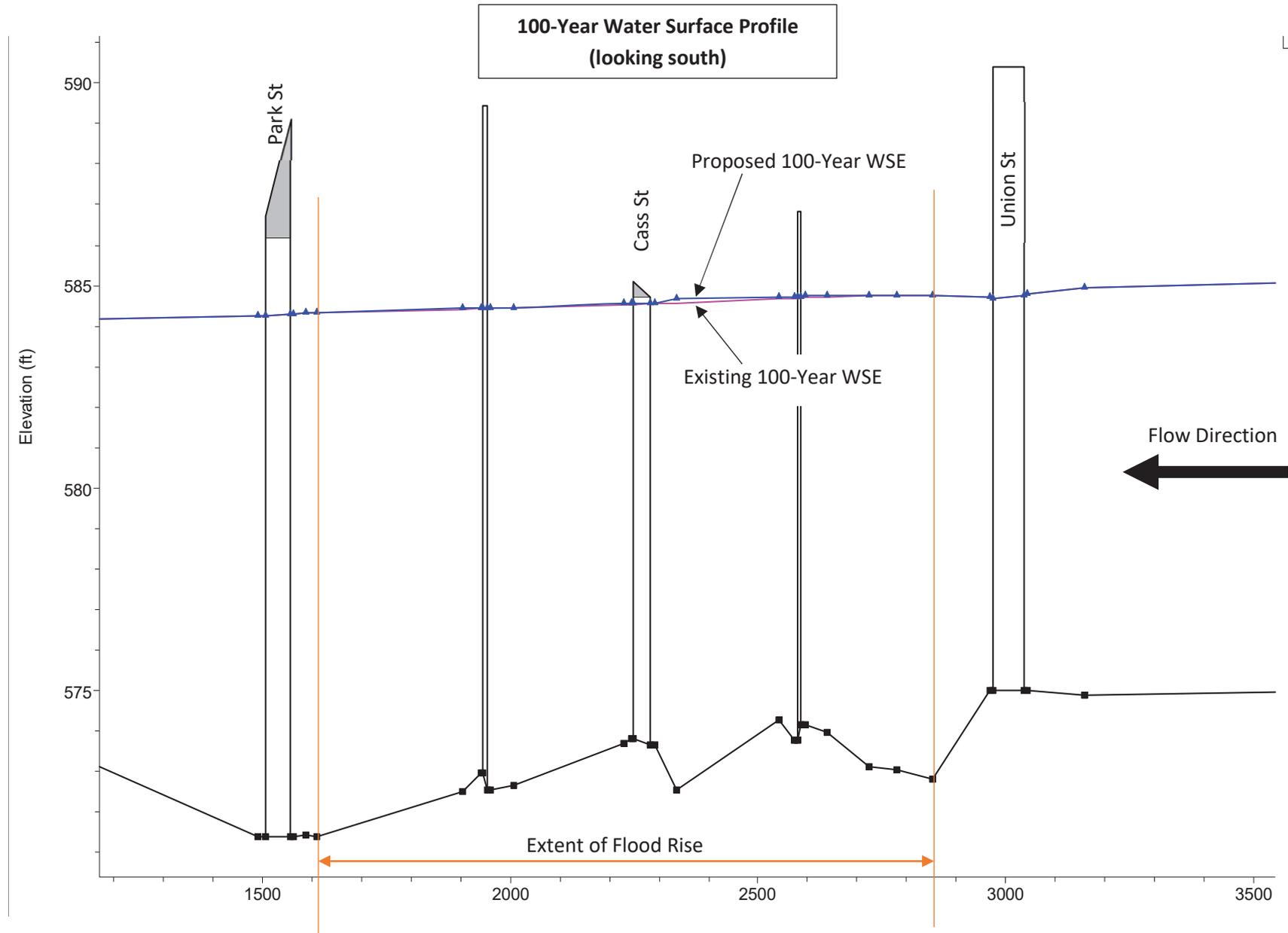
A typical cross-section from the 100 Block is presented below. This example utilizes a 4:1 side slope and extends the toe of the slope 3 feet in front of the retaining wall foundation.



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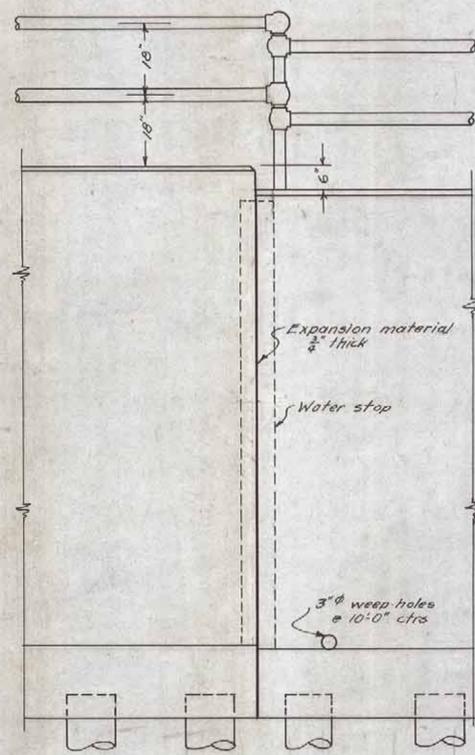
A typical cross-section of the 200 Block is presented below. The sheet pile extends up to the base of the wall and slightly constricts the channel.



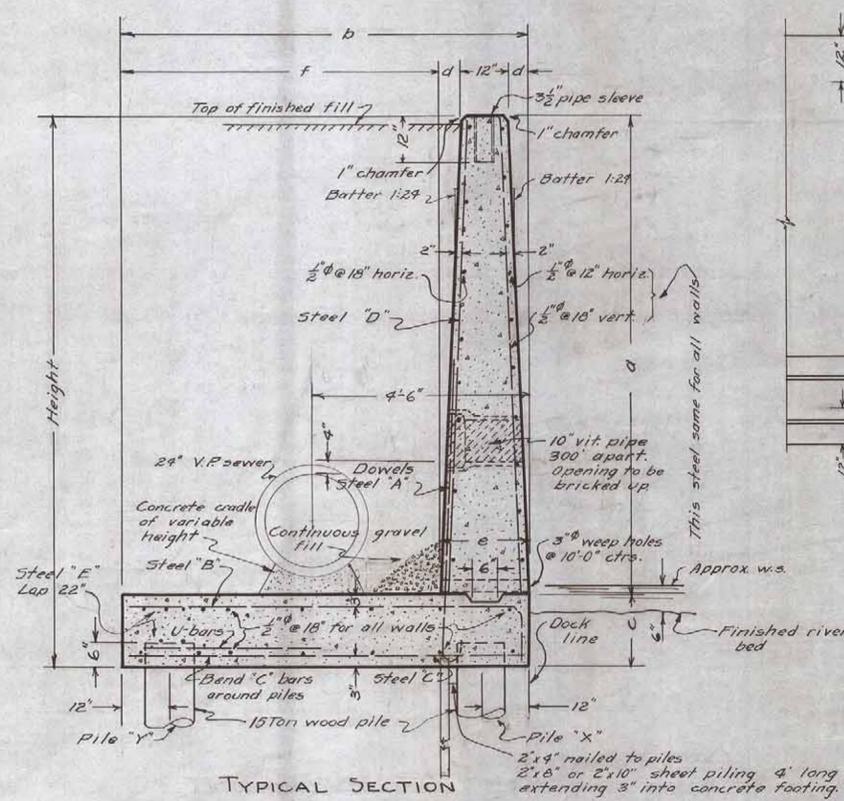




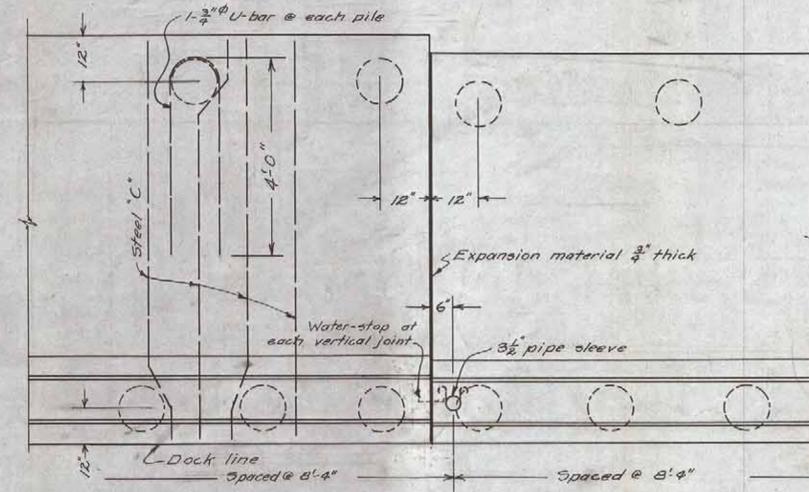
APPENDIX B. Record Drawings of Existing Retaining Wall



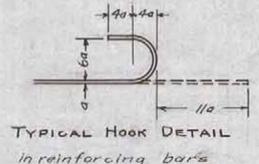
ELEVATION



TYPICAL SECTION



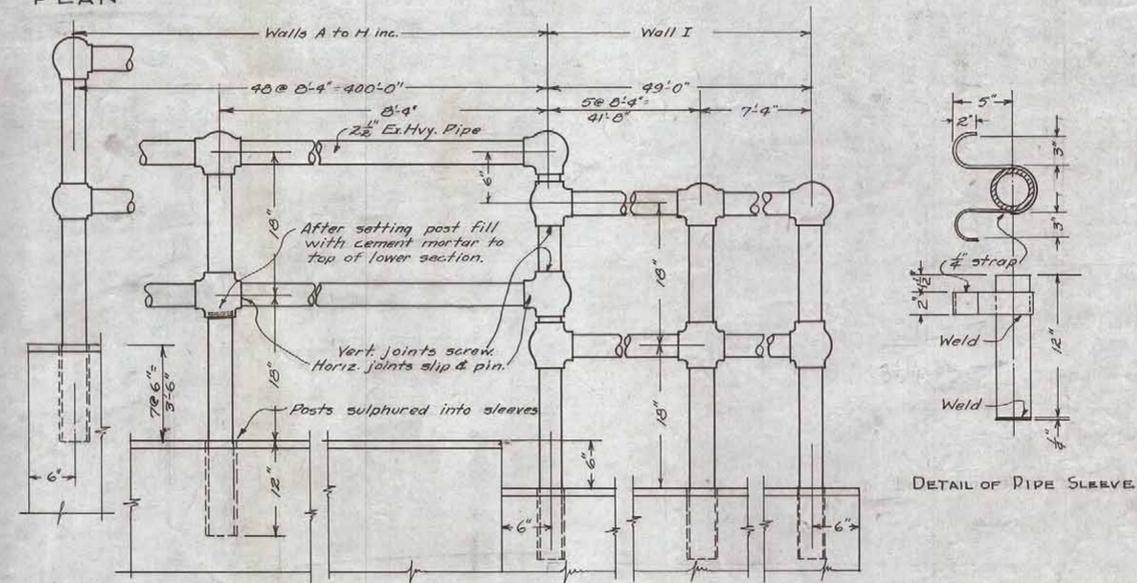
TYPICAL DETAIL AT JUNCTION OF WALL SECTIONS
PLAN



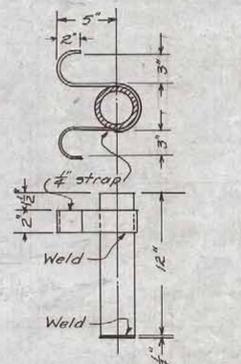
TYPICAL HOOK DETAIL
in reinforcing bars



DETAIL OF WATER-STOP



DETAIL OF PIPE RAILING
Scale: 1"=1'-0"



DETAIL OF PIPE SLEEVE

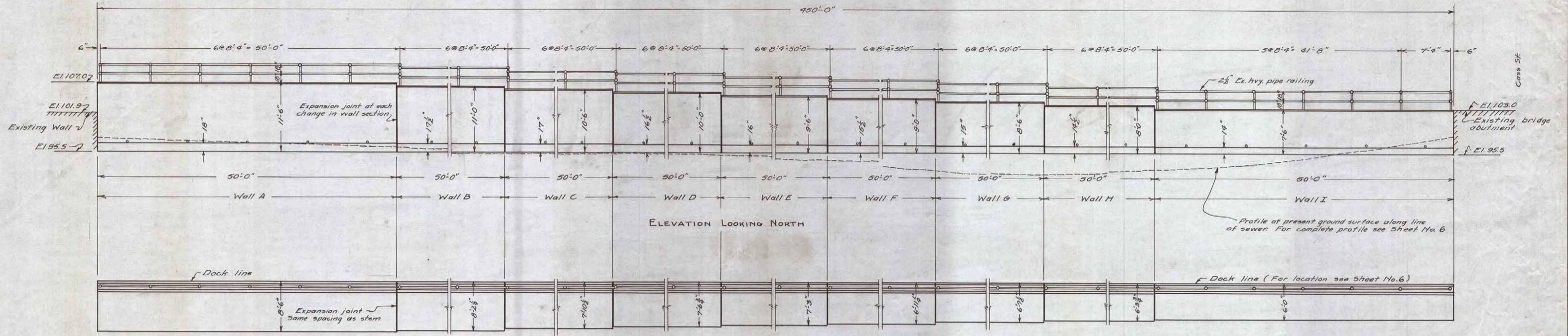
Wall	TABLE OF DIMENSIONS							PILE SPACING		STEEL REINFORCING													
	Height	a	b	c	d	e	f	"X"	"Y"	"A"		"B"		"C"		"D"		"E"					
										Size	Spac.	Length	Size	Spac.	Length	Size	Spac.	Length	Size	Spac.	Length	Size	Number
A	11'-6"	10'-0"	8'-6"	18"	5"	22"	6'-8"	2'-6"	3'-9"	3/4"	7 1/2"	7'-0"	7/8"	8"	9'-0"	3/4"	12"	8'-0"	3/4"	15"	9'-10"	1 1/2"	4
B	11'-0"	9'-6 1/2"	8'-2 3/4"	17 1/2"	4 3/4"	21 1/2"	6'-4 3/4"	2'-9"	4'-3"	3/4"	8"	6'-9"	3/4"	6"	8'-7"	3/4"	12"	7'-8"	3/4"	16"	9'-4"	1 1/2"	4
C	10'-6"	9'-1"	7'-10 1/2"	17"	4 1/2"	21"	6'-1 1/2"	3'-0"	4'-6"	3/4"	9"	6'-5"	3/4"	7 1/2"	8'-3"	3/4"	12"	7'-4"	3/4"	18"	8'-11"	1 1/2"	4
D	10'-0"	8'-7 1/2"	7'-6 3/4"	16 1/2"	4 1/4"	20 1/2"	5'-10 1/4"	3'-3"	5'-0"	3/4"	10"	6'-2"	3/4"	8"	7'-11"	3/4"	11"	7'-0"	3/4"	20"	8'-5"	1 1/2"	4
E	9'-6"	8'-2"	7'-3"	16"	4"	20"	5'-7"	3'-6"	5'-6"	3/4"	12"	5'-11"	3/4"	9"	7'-7"	3/4"	11"	6'-9"	3/4"	24"	8'-0"	1 1/2"	5
F	9'-0"	7'-0 1/2"	6'-11 1/4"	15 1/2"	3 3/4"	19 1/2"	5'-3 3/4"	3'-9"	6'-0"	3/4"	9"	5'-6"	3/4"	8"	7'-3"	3/4"	12"	6'-5"	3/4"	18"	7'-6"	1 1/2"	5
G	8'-6"	7'-3"	6'-7 1/2"	15"	3 1/2"	19"	5'-0 1/2"	4'-3"	6'-9"	3/4"	10"	5'-3"	3/4"	10"	6'-10"	3/4"	12"	6'-1"	3/4"	20"	7'-1"	1 1/2"	5
H	8'-0"	6'-9 1/2"	6'-3 3/4"	14 1/2"	3 1/4"	18 1/2"	4'-9 1/4"	4'-9"	7'-3"	3/4"	12"	5'-0"	3/4"	9"	6'-6"	3/4"	10"	5'-9"	3/4"	29"	6'-7"	1 1/2"	5
I	7'-6"	6'-4"	6'-0"	14"	3"	18"	4'-6"	5'-3"	8'-3"	3/4"	12"	4'-9"	3/4"	9"	6'-2"	3/4"	12"	5'-6"	3/4"	29"	6'-2"	1 1/2"	6

DETAIL OF RIVER WALL
Scale: 1/2"=1'-0"

TRAVERSE CITY, MICHIGAN
SEWAGE DISPOSAL SYSTEM
MAIN INTERCEPTING SEWER
RIVER WALL DETAILS

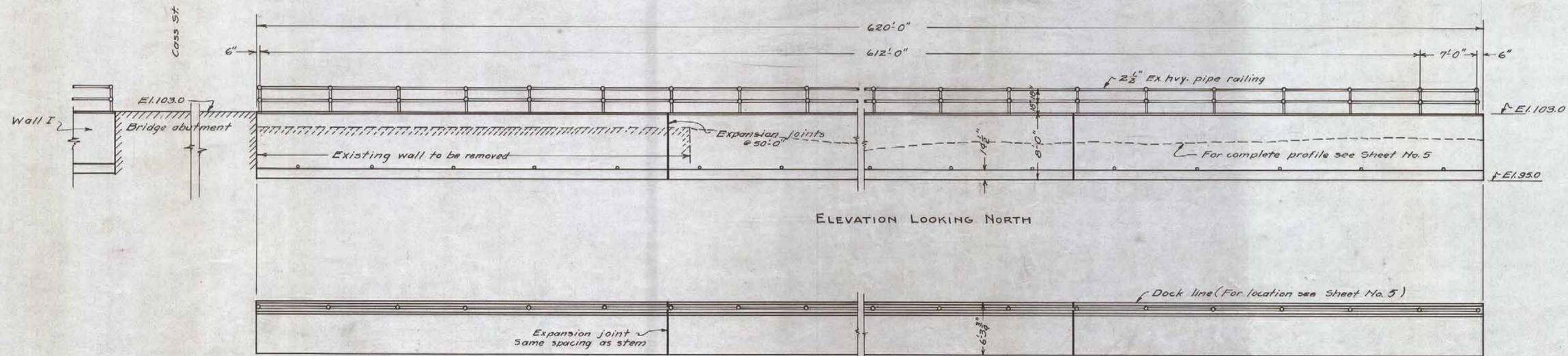
C.E. SAWYER, CITY ENGINEER
HOAD, DECKER, SHOECRAFT AND DRURY
CONSULTING ENGINEERS

SCALES AS INDICATED
NOVEMBER 1931



RIVER WALL WEST OF CASS STREET

Note: For dimensions and structural details see Sheet No. 11



RIVER WALL EAST OF CASS STREET

Note: For dimensions and structural details see Wall H, Sheet No. 11

TRAVERSE CITY, MICHIGAN
SEWAGE DISPOSAL SYSTEM
MAIN INTERCEPTING SEWER
GENERAL LAYOUT OF RIVER WALL

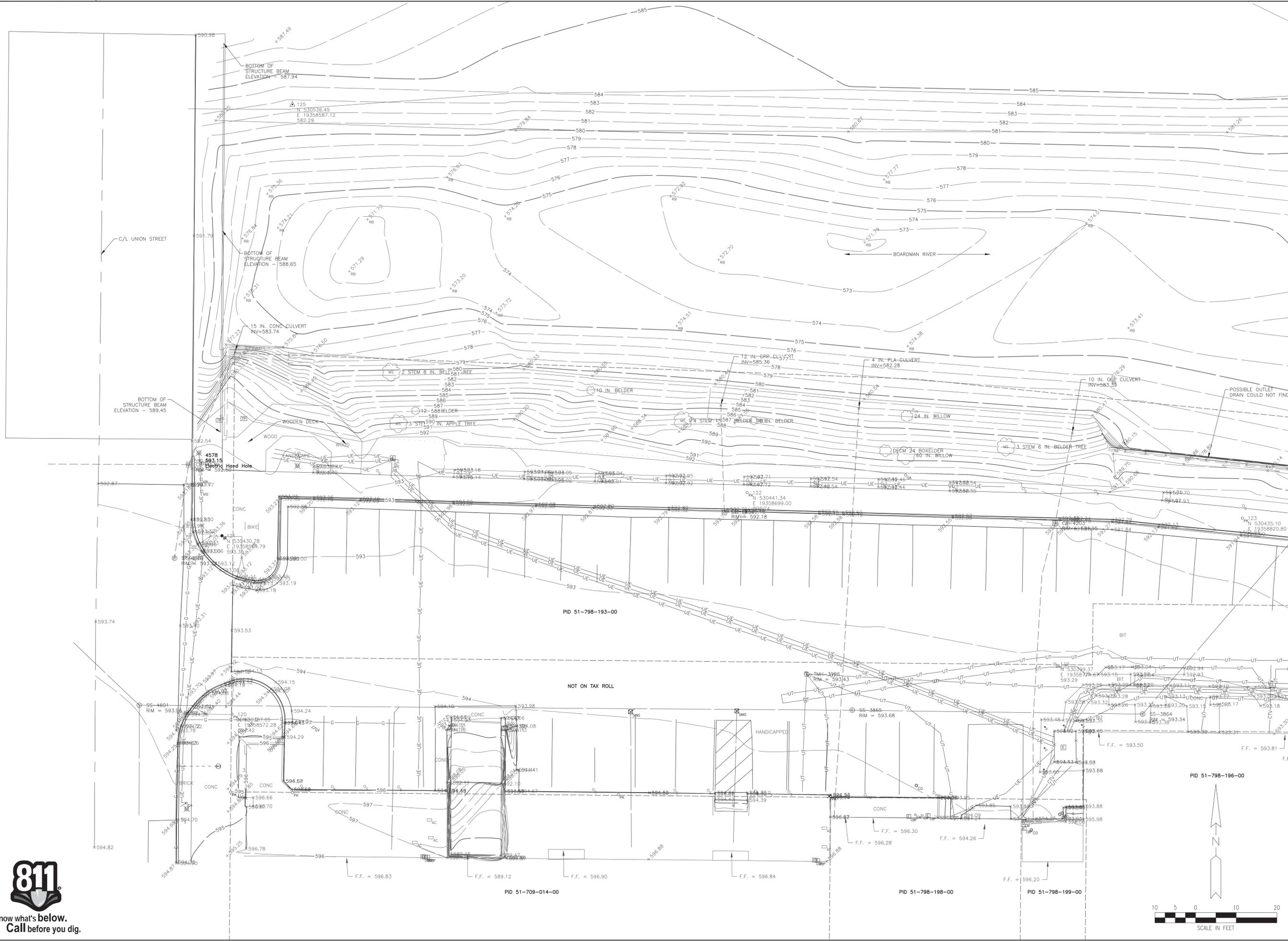
C. E. SAWYER, CITY ENGINEER
HOAD, DECKER, SHOECRAFT AND DRURY
CONSULTING ENGINEERS

SCALE: 1/8" = 1'-0"
NOVEMBER 1931



APPENDIX C. Topographic, Bathymetric, and Utility Survey

FIELD BOOK INFORMATION: C:\USERS\KOBRIEN\SMITHGROUP\COMPANIES\INC\PRJ - 12805 - BOARDMAN (WALL) - SMITHGROUP - SMITHGROUP\CAD\RESOURCE\SURVEY\2021-01\DT\YSP-BASE_SGI2002-01G.DWG - \$1 - PLOTTED 3/23/2021 5:25 PM BY KELLI O'BRIEN



Know what's below. Call before you dig.

REV#	DATE	DESCRIPTION	BY

4241 OKLUS 27 S, Suite 1
 Caywood, MI 49734
 588.732.3554
 www.wadetrims.com

SMITH GROUP INC

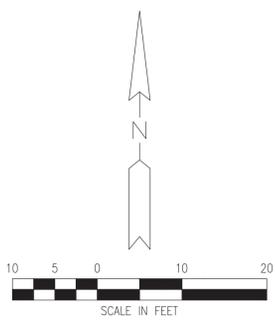
BOARDMAN RIVER IMPROVEMENT PROJECT
 FROM CASS STREET TO PARK STREET, TRAVERSE CITY, MICHIGAN

ISSUED FOR: DATE: BY:

JOB NO.
 SGI2002-01G

SHEET
 1

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FIELD BOOK INFORMATION: -- SMITHGROUP\CAD\RESOURCE\SURVEY\2021-01\07_VSP-BASE_SGI2002-01G.DWG -- S2 -- PLOTTED 3/23/2021 5:25 PM BY KELLI O'BRIEN
 PROJECT MANAGER: -- C:\USERS\KOBRIEN\SMITHGROUP\COMPANIES\INC\PRJ -- 12805 -- BOARDMAN (WALL) -- SMITHGROUP -- SMITHGROUP



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REV#	DATE	DESCRIPTION	BY

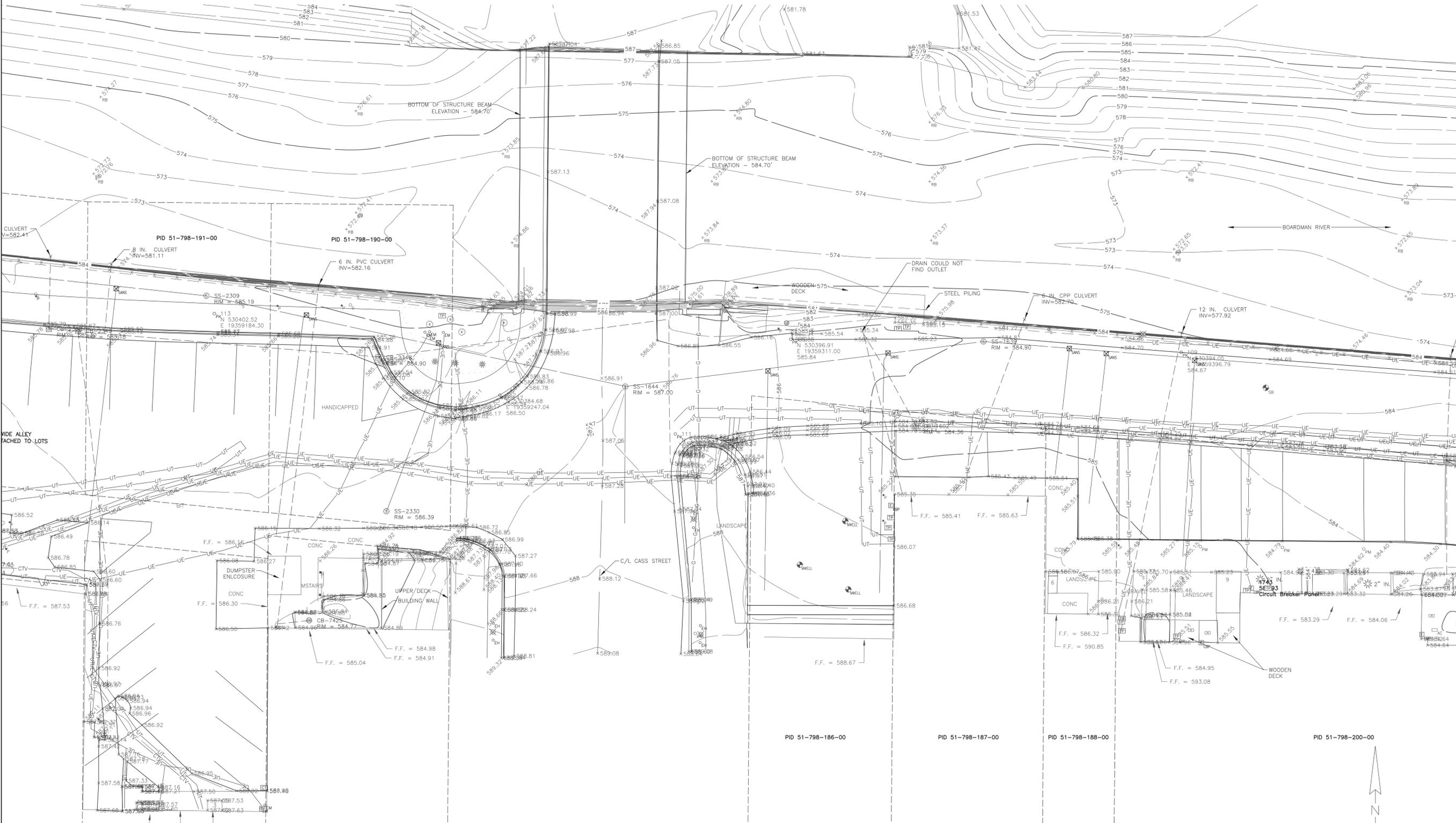
4041 OKLUS 27 S, Suite 1
 Cayce, MI 49734
 588.732.3554
 www.wadetrim.com

SMITH GROUP INC

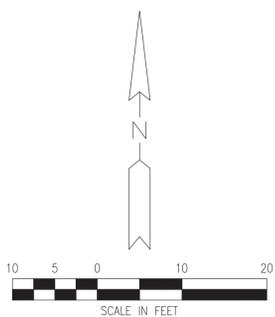
BOARDMAN RIVER IMPROVEMENT PROJECT
 FROM CASS STREET TO PARK STREET, TRAVERSE CITY, MICHIGAN

ISSUED FOR:	DATE:	BY:
JOB NO. SGI2002-01G		
SHEET 2		

FIELD BOOK INFORMATION: -- SMITHGROUP/CAD RESOURCE SURVEY 2021-0107 VSP-BASE SGI2002-01G.DWG -- S3 -- PLOTTED 3/23/2021 5:25 PM BY KELLI O'BRIEN
 PROJECT MANAGER: -- CAUSERS\KOBRIEN\SMITHGROUP COMPANIES INC\FRJ -- 12805 -- BOARDMAN (WALL) -- SMITHGROUP



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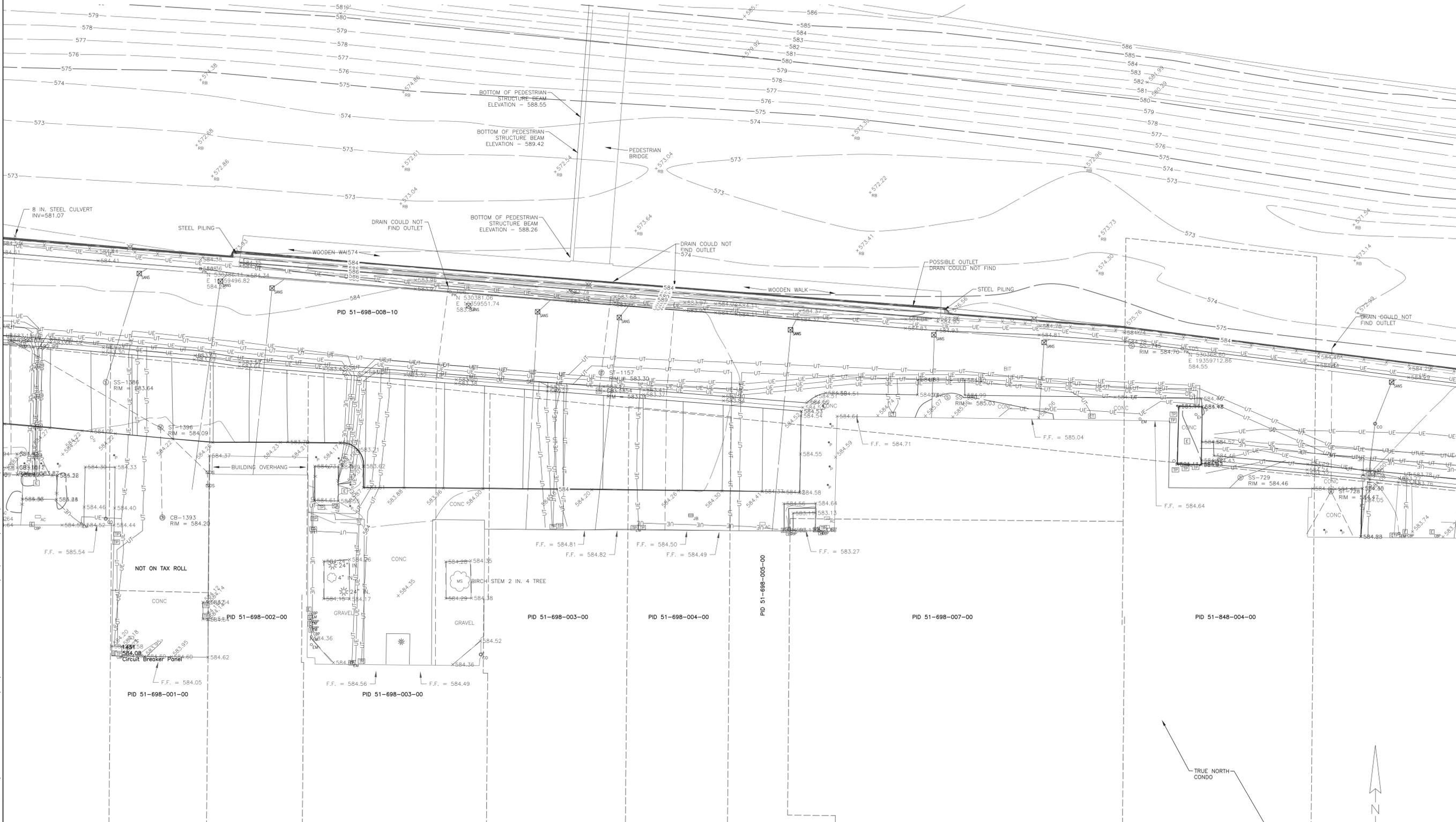
REV#	DATE	DESCRIPTION	BY

4241 OKLUS 27 S, Suite 1
 Troy, MI 48064
 988.732.3554
 www.wadetrims.com

SMITH GROUP INC
 BOARDMAN RIVER IMPROVEMENT PROJECT
 FROM CASS STREET TO PARK STREET, TRAVERSE CITY, MICHIGAN

ISSUED FOR:	DATE:	BY:
JOB NO.	SGI2002-01G	
SHEET	3	

FIELD BOOK INFORMATION: -- C:\USERS\KOBRIEN\SMITHGROUP\COMPANIES\INC\PRJ -- 12805 -- BOARDMAN (WALL) -- SMITHGROUP -- SMITHGROUP\CAD\RESOURCE\SURVEY\2021-01\07_VSP-BASE_SG12002-01G.DWG -- SA -- PLOTTED 3/23/2021 5:25 PM BY KELLI O'BRIEN



Know what's below.
Call before you dig.



REV#	DATE	DESCRIPTION	BY

4241 OKLUS 27 S, Suite 1
 Cayce, MI 49734
 588.732.3584
 www.wadetrims.com

SMITH GROUP INC
 BOARDMAN RIVER IMPROVEMENT PROJECT
 FROM CASS STREET TO PARK STREET, TRAVERSE CITY, MICHIGAN

ISSUED FOR:	DATE:	BY:
JOB NO.	SG12002-01G	
SHEET	4	



APPENDIX D. Geotechnical Report



856 E. Eighth Street, Suite 1
Traverse City, MI 49686-2784

T (231) 941-5200

www.sme-usa.com

January 25, 2021

Mr. Bob Doyle, AIA
Landscape Architect
SmithGroup
201 Depot Street, Second Floor
Ann Arbor, Michigan 48104

Via E-mail: Bob.Doyle@smithgroup.com (PDF file)

RE: Geotechnical Evaluation
100 and 200 Block Subsidence
Traverse City, Michigan
SME Project No. 085455.00

Dear Mr. Doyle:

We have completed the geotechnical evaluation for the subsidence along the alley of the 100 and 200 blocks of East Front Street in Traverse City, Michigan. This report presents the results of our observations and analyses, our geotechnical recommendations, and general construction considerations based on the information disclosed by the borings.

This evaluation was conducted in general accordance with the scope of services outlined in SME Proposal No. P03228.20 dated October 12, 2020. However, one of the proposed borings was omitted due to access considerations. SmithGroup authorized our services.

PROJECT DESCRIPTION

The project site is located along the alley of the 100 and 200 blocks of East Front Street, between Union Street and Park Street. The project site location is depicted on the attached Boring Location Diagram (Figure No. 1).

We understand there has been ongoing subsidence of the alley and parking spaces adjacent to the existing retaining wall along the Boardman River. The existing retaining wall extends about 480 feet along the 100 block, and about 580 feet along the 200 block. The retaining wall is about 7.5 to 11.5 feet high and is supported on driven timber piles. We understand the retaining wall has not exhibited discernable movement or distress. Evaluation of the existing retaining wall was not included in our scope of services.

The project consists of stabilizing the soil beneath and behind (retained side of retaining wall) the retaining wall to mitigate future subsidence of the alley and parking spaces adjacent to the existing retaining wall.

Due the limited depth of embedment of the wall below the river bottom, scour is suspected as the primary cause of the subsidence behind the wall. The preliminary plan prepared by SmithGroup to address the potential scour is to drive steel sheet piles along the front (riverside) of the retaining wall, and place toe protection (rip rap) in front of the sheeting. The gap between the new sheeting and the retaining wall will be filled with concrete that will be placed using tremie methods. In addition, flowable fill will be pumped into the void spaces behind the retaining wall and below the pile cap, if feasible.

EVALUATION PROCEDURES

FIELD EXPLORATION

SME completed three borings (B1 through B3) on November 10, 2020. Each boring extended 45 feet beneath the existing ground surface. The approximate locations of the borings are shown on Figure No. 1.

The planned number and locations of the borings were determined jointly by SME and SmithGroup. SME determined the depths of the borings and located the borings in the field by referencing existing site features. The existing ground surface elevations at the boring locations were estimated to the nearest 1-foot based on the referenced topographic plans.

The borings were performed with a truck-mounted rotary drill rig and were advanced to the sampling depths using continuous-flight, hollow-stem augers. The borings included soil sampling based upon the Split-barrel Sampling Procedure. Recovered split-barrel samples were sealed in glass jars by the driller.

Groundwater observations were recorded during and upon completion of drilling at each boring. After completion of drilling and collection of groundwater observations, the boreholes were backfilled with auger cuttings.

Soil samples recovered from the field exploration were returned to the SME laboratory for further observation and testing.

LABORATORY TESTING

The laboratory testing program consisted of performing visual soil classification on recovered samples in general accordance with ASTM D2488. Since cohesive soils were not encountered, SME did not perform additional laboratory testing. The attached Laboratory Testing Procedures provides descriptions of these laboratory tests. Based on the laboratory testing, we assigned a Unified Soil Classification System (USCS) group symbol to each of the various soil strata encountered.

Upon completion of the laboratory testing, boring logs were prepared that include information on materials encountered, penetration resistances, pertinent field observations made during the drilling operations, and the results of the laboratory tests. The boring logs are attached to this report. Explanations of symbols and terms used on the boring logs are provided on the attached Boring Log Terminology sheet.

Soil samples retained over a long time, even sealed in jars, are subject to moisture loss and are no longer representative of the conditions initially encountered in the field. Therefore, we normally retain soil samples in our laboratory for 60 days and then dispose of them, unless instructed otherwise.

SUBSURFACE CONDITIONS

SOIL CONDITIONS

The soil conditions encountered at the borings generally consisted of asphalt pavement underlain by very loose to loose existing sand fill overlying loose to very dense natural sands that extended to the explored depth of the borings.

The soil profiles described above, and included on each of the attached boring logs, are a generalized description of the conditions encountered. The stratification depths shown on the boring logs indicate a zone of transition from one soil type to another and do not show exact depths of change from one soil type to another. Soil conditions may vary away from the boring locations from those conditions noted on the logs.

Thickness measurements of surficial pavement should be considered approximate since mixing of the pavement with the underlying subgrade can occur during drilling. If accurate pavement thickness are required, pavement cores should be performed.

GROUNDWATER CONDITIONS

Groundwater was encountered about 2 to 8 feet beneath the existing surface during drilling, corresponding to approximate elevations 582 to 583 feet. Groundwater was observed in the boreholes about 2 to 10 feet beneath the existing surface upon completion of drilling, corresponding to approximate elevations 577 to 585 feet. The water surface elevation of the Boardman River will approximately match the water surface elevation of West Grand Traverse Bay (Lake Michigan), which is about 581 feet in January 2021.

Hydrostatic groundwater levels, perched groundwater conditions, and the rate of infiltration into excavations should be expected to fluctuate throughout the year, based on variations in precipitation, the water level of the Boardman River, evaporation, run-off, and other factors. The groundwater observations recorded on the boring logs represent conditions at the time the readings were taken. The groundwater depths/elevations at the time of construction may vary from those conditions noted on the logs.

ANALYSIS AND RECOMMENDATIONS

SHEET PILING FOR SCOUR PROTECTION

Driving steel sheet piles along the front (riverside) of the retaining wall is a feasible approach to mitigate the loss of soil from beneath and behind the existing retaining wall due to possible scour. Suitable scour protection (such as riprap) should be placed in front of the sheeting to prevent future scour in front of the sheeting.

We understand a hydraulic and scour analysis is being performed. The presence and extent of scour beneath the existing retaining wall should be verified prior to final design. Depending on the anticipated depth of scour, other types of scour protection or mitigation may be considered.

Placing concrete between the new sheeting and the retaining wall is also feasible to fill the gap between those structures. Based on the relatively “clean” sand encountered at the borings, we do not anticipate significant voids are present behind the retaining wall, since the sands will collapse relatively quickly as soil is lost from beneath the retaining wall. Therefore, there will likely not be voids to fill. However, some future subsidence behind the retaining wall should be anticipated since the very loose sands will continue to collapse and densify over time.

However, future subsidence will decrease over time after the scour protection has been installed. The risk of future subsidence could be reduced by excavating a portion of the soil behind the retaining wall, compacting the exposed subgrade, and replacing the excavated soil as engineered fill. Compaction grouting of sands beneath critical structures could also be considered to stabilize the subsoils in these areas. However, grouting the soil along the entire stretch of the retaining wall is likely cost prohibitive.

For sheeting below the water level, an equivalent active fluid pressure of 30 pcf and an equivalent passive fluid pressure of 160 pcf should be used for the design of the flexible sheet pile walls. Rip-rap placed against the base of the sheeting will also provide passive resistance to support the sheeting. The amount of passive resistance from the rip-rap will depend on the size and shape of the rip-rap berm. This earth pressure is based on the walls being flexible enough to permit the active earth pressure condition to be reached. An inward movement equal to approximately 0.001 times the height of the wall is generally required to achieve the active earth pressure condition. We anticipate the sheet piles will deflect enough to achieve the active condition.

Care must be exercised during the sheet pile installation so that excessive vibrations do not cause settlement of nearby existing structures, roadways, and utilities. Some localized settlement should be expected around the sheeting. Installing the sheeting with an impact hammer rather than a vibratory hammer may mitigate some potential for settlement.

Although not encountered at the borings, cobbles and/or boulders are common in the area and could be encountered during sheet pile installation. The engineer preparing the project specifications should carefully outline what constitutes an obstruction and how the contractor will be paid for removal of such obstructions. SME would be pleased to provide additional assistance in developing specifications.

The contractor must provide a safely-sloped excavation or an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground. If material is stored or heavy equipment is operated near an excavation, use appropriate shoring to resist the extra pressure due to the superimposed loads.

We appreciate the opportunity to be of service. If you have questions regarding this report, or if you require additional information, please contact us.

Very truly yours,

SME

Report prepared by:

 **Paul Anderson**
Jan 25 2021 3:49 PM

Paul E. Anderson, PE
Senior Project Engineer

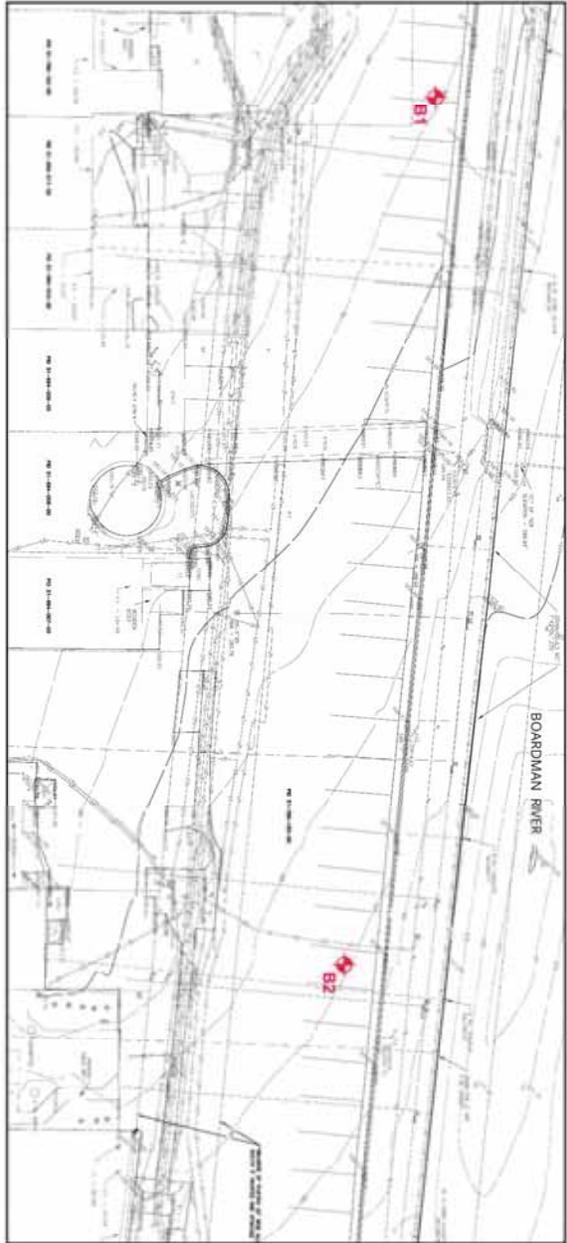
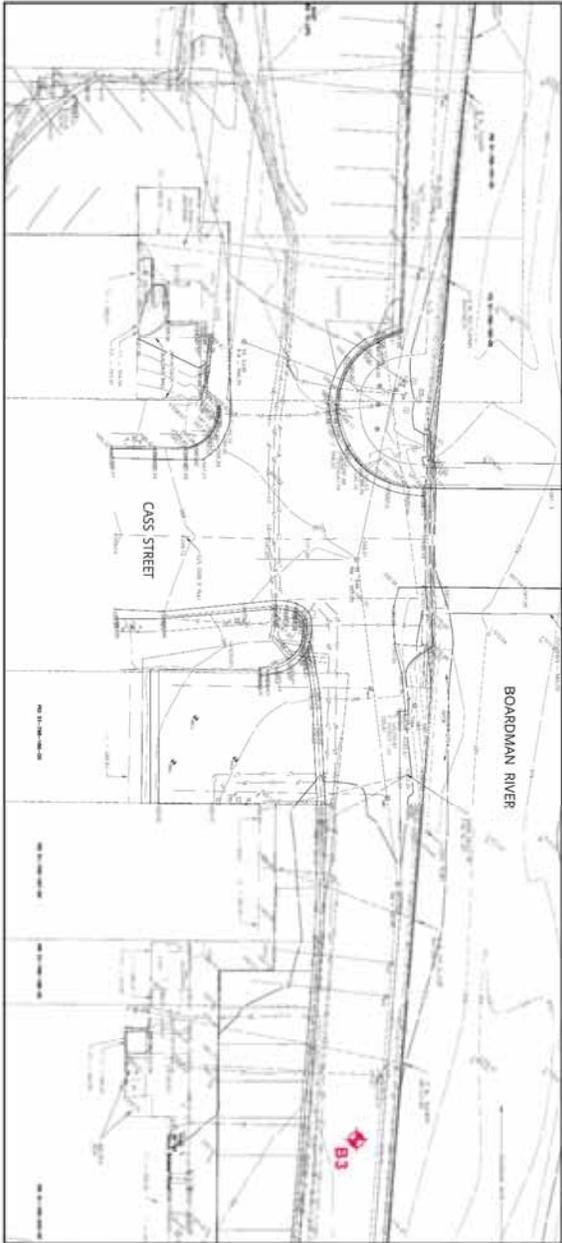
Report reviewed by:


Timothy H. Bedenis, PE
Principal Consultant

Attachments: Boring Location Diagram (Figure No. 1)
Boring Log Terminology
Boring Logs (B1 through B3)
Important Information About This Geotechnical-Engineering Report
General Comments
Laboratory Testing Procedures

Appendix 3. Boardman River Wall Stabilization Report

PLOT DATE: Jan 15, 2021 - 3:06pm - Julie Blake | See: encl:WP-085455.00-CAD-DWG5-BLD-rev085455.00-BLD.dwg



NOTE:
BASE DRAWING INFORMATION TAKEN FROM THE PLAN
TITLED "BOARDMAN RIVER IMPROVEMENT PROJECT"
(SHEET NOS. 2 AND 3) PREPARED BY WADE TRON.



LEGEND

 APPROXIMATE BORING LOCATION



0' 30' 60'
GRAPHIC SCALE: 1" = 30'

Project
**100 AND 200 BLOCK
SUBSIDENCE**



Project Location
**TRAVERSE CITY,
MICHIGAN**

Sheet Name
**BORING LOCATION
DIAGRAM**

No.	Revision Date
Date	1-15-2021
CADD	JAB
Designer	PEA
Scale	AS NOTED
Project	085455.00
Figure No.	1

WARNING: THIS DRAWING IS INTENDED FOR THE USE OF THE PROFESSIONAL ENGINEER OR ARCHITECT ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE USER ASSUMES ALL LIABILITY FOR THE USE OF THIS DRAWING. SEE THE LICENSE AGREEMENT FOR MORE INFORMATION.



BORING LOG TERMINOLOGY

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
COARSE-GRAINED SOIL (more than 50% of material is larger than No. 200 sieve size.)		
Clean Gravel (Less than 5% fines)		
	GW	Well-graded gravel; gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravel; gravel-sand mixtures, little or no fines
GRAVEL More than 50% of coarse fraction larger than No. 4 sieve size	Gravel with fines (More than 12% fines)	
	GM	Silty gravel; gravel-sand-silt mixtures
	GC	Clayey gravel; gravel-sand-clay mixtures
	Clean Sand (Less than 5% fines)	
	SW	Well-graded sand; sand-gravel mixtures, little or no fines
	SP	Poorly graded sand; sand-gravel mixtures, little or no fines
SAND 50% or more of coarse fraction smaller than No. 4 sieve size	Sand with fines (More than 12% fines)	
	SM	Silty sand; sand-silt-gravel mixtures
	SC	Clayey sand; sand-clay-gravel mixtures
	FINE-GRAINED SOIL (50% or more of material is smaller than No. 200 sieve size)	
	ML	Inorganic silt; sandy silt or gravelly silt with slight plasticity
	CL	Inorganic clay of low plasticity; lean clay, sandy clay, gravelly clay
	OL	Organic silt and organic clay of low plasticity
SILT AND CLAY Liquid limit less than 50%	MH	Inorganic silt of high plasticity, elastic silt
	CH	Inorganic clay of high plasticity, fat clay
	OH	Organic silt and organic clay of high plasticity
SILT AND CLAY Liquid limit 50% or greater		
	PT	Peat and other highly organic soil
HIGHLY ORGANIC SOIL		

OTHER MATERIAL SYMBOLS		
Topsoil	Void	Sandstone
Asphalt Concrete	Glacial Till	Siltstone
Aggregate Base	Coal	Limestone
Portland Cement Concrete	Shale	Fill

LABORATORY CLASSIFICATION CRITERIA	
GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3
GP	Not meeting all gradation requirements for GW
GM	Atterberg limits below "A" line or PI less than 4
GC	Atterberg limits above "A" line with PI greater than 7
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3
SP	Not meeting all gradation requirements for SW
SM	Atterberg limits below "A" line or PI less than 4
SC	Atterberg limits above "A" line with PI greater than 7

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

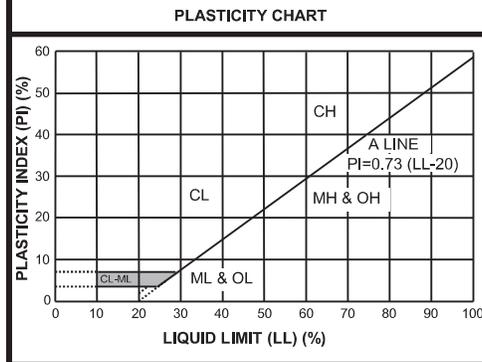
Less than 5 percent.....GW, GP, SW, SP
 More than 12 percent.....GM, GC, SM, SC
 5 to 12 percent.....Cases requiring dual symbols

- SP-SM or SW-SM (SAND with Silt or SAND with Silt and Gravel)
- SP-SC or SW-SC (SAND with Clay or SAND with Clay and Gravel)
- GP-GM or GW-GM (GRAVEL with Silt or GRAVEL with Silt and Sand)
- GP-GC or GW-GC (GRAVEL with Clay or GRAVEL with Clay and Sand)

If the fines are CL-ML:

- SC-SM (SILTY CLAYEY SAND or SILTY CLAYEY SAND with Gravel)
- SM-SC (CLAYEY SILTY SAND or CLAYEY SILTY SAND with Gravel)
- GC-GM (SILTY CLAYEY GRAVEL or SILTY CLAYEY GRAVEL with Sand)

PARTICLE SIZES	
Boulders	- Greater than 12 inches
Cobbles	- 3 inches to 12 inches
Gravel- Coarse	- 3/4 inches to 3 inches
Gravel- Fine	- No. 4 to 3/4 inches
Sand- Coarse	- No. 10 to No. 4
Sand- Medium	- No. 40 to No. 10
Sand- Fine	- No. 200 to No. 40
Silt and Clay	- Less than (0.074 mm)



VISUAL MANUAL PROCEDURE	
When laboratory tests are not performed to confirm the classification of soils exhibiting borderline classifications, the two possible classifications would be separated with a slash, as follows:	
For soils where it is difficult to distinguish if it is a coarse or fine-grained soil:	
<ul style="list-style-type: none"> • SC/CL (CLAYEY SAND to Sandy LEAN CLAY) • SM/ML (SILTY SAND to SANDY SILT) • GC/CL (CLAYEY GRAVEL to Gravelly LEAN CLAY) • GM/ML (SILTY GRAVEL to Gravelly SILT) 	
For soils where it is difficult to distinguish if it is sand or gravel, poorly or well-graded sand or gravel; silt or clay; or plastic or non-plastic silt or clay:	
<ul style="list-style-type: none"> • SP/GP or SW/GW (SAND with Gravel to GRAVEL with Sand) • SC/GC (CLAYEY SAND with Gravel to CLAYEY GRAVEL with Sand) • SM/GM (SILTY SAND with Gravel to SILTY GRAVEL with Sand) • SW/SP (SAND or SAND with Gravel) • GP/GW (GRAVEL or GRAVEL with Sand) • SC/SM (CLAYEY to SILTY SAND) • GM/GC (SILTY to CLAYEY GRAVEL) • CL/ML (SILTY CLAY) • ML/CL (CLAYEY SILT) • CH/MH (FAT CLAY to ELASTIC SILT) • CL/CH (LEAN to FAT CLAY) • MH/ML (ELASTIC SILT to SILT) 	

DRILLING AND SAMPLING ABBREVIATIONS	
2ST	- Shelby Tube - 2" O.D.
3ST	- Shelby Tube - 3" O.D.
AS	- Auger Sample
GS	- Grab Sample
LS	- Liner Sample
NR	- No Recovery
PM	- Pressuremeter
RC	- Rock Core diamond bit, NX size, except where noted
SB	- Split Barrel Sample 1-3/8" I.D., 2" O.D., except where noted
VS	- Vane Shear
WS	- Wash Sample

OTHER ABBREVIATIONS	
WOH	- Weight of Hammer
WOR	- Weight of Rods
SP	- Soil Probe
PID	- Photo Ionization Device
FID	- Flame Ionization Device

DEPOSITIONAL FEATURES	
Parting	- as much as 1/16 inch thick
Seam	- 1/16 inch to 1/2 inch thick
Layer	- 1/2 inch to 12 inches thick
Stratum	- greater than 12 inches thick
Pocket	- deposit of limited lateral extent
Lens	- lenticular deposit
Hardpan/Till	- an unstratified, consolidated or cemented mixture of clay, silt, sand and/or gravel, the size/shape of the constituents vary widely
Lacustrine	- soil deposited by lake water
Mottled	- soil irregularly marked with spots of different colors that vary in number and size
Varved	- alternating partings or seams of silt and/or clay
Occasional	- one or less per foot of thickness
Frequent	- more than one per foot of thickness
Interbedded	- strata of soil or beds of rock lying between or alternating with other strata of a different nature

DESCRIPTION OF RELATIVE QUANTITIES	
The visual-manual procedure uses the following terms to describe the relative quantities of notable foreign materials, gravel, sand or fines:	
Trace	- particles are present but estimated to be less than 5%
Few	- 5 to 10%
Little	- 15 to 25%
Some	- 30 to 45%
Mostly	- 50 to 100%

CLASSIFICATION TERMINOLOGY AND CORRELATIONS			
Cohesionless Soils		Cohesive Soils	
Relative Density	N₆₀ (N-Value) (Blows per foot)	Consistency	N₆₀ (N-Value) (Blows per foot)
Very Loose	0 to 4	Very Soft	<2
Loose	5 to 10	Soft	2 - 4
Medium Dense	11 to 30	Medium	5 - 8
Dense	31 to 50	Stiff	9 - 15
Very Dense	51 to 80	Very Stiff	16 - 30
Extremely Dense	Over 81	Hard	> 30
		Undrained Shear Strength (kips/ft²)	
		< 0.25	0.25 or less
		> 0.25 to 0.50	> 0.25 to 0.50
		> 0.50 to 1.0	> 0.50 to 1.0
		> 1.0 to 2.0	> 1.0 to 2.0
		> 2.0 to 4.0	> 2.0 to 4.0
		> 4.0 or greater	> 4.0 or greater
Standard Penetration 'N-Value' = Blows per foot of a 140-pound hammer falling 30 inches on a 2-inch O.D. split barrel sampler, except where noted. N ₆₀ values as reported on boring logs represent raw N-values corrected for hammer efficiency only.			

1/25/21 3:17:40 PM



PROJECT NAME: 100 and 200 Block Subsidence

PROJECT NUMBER: 085455.00

CLIENT: SmithGroup

PROJECT LOCATION: Traverse City, Michigan

DATE STARTED: 11/10/20

COMPLETED: 11/10/20

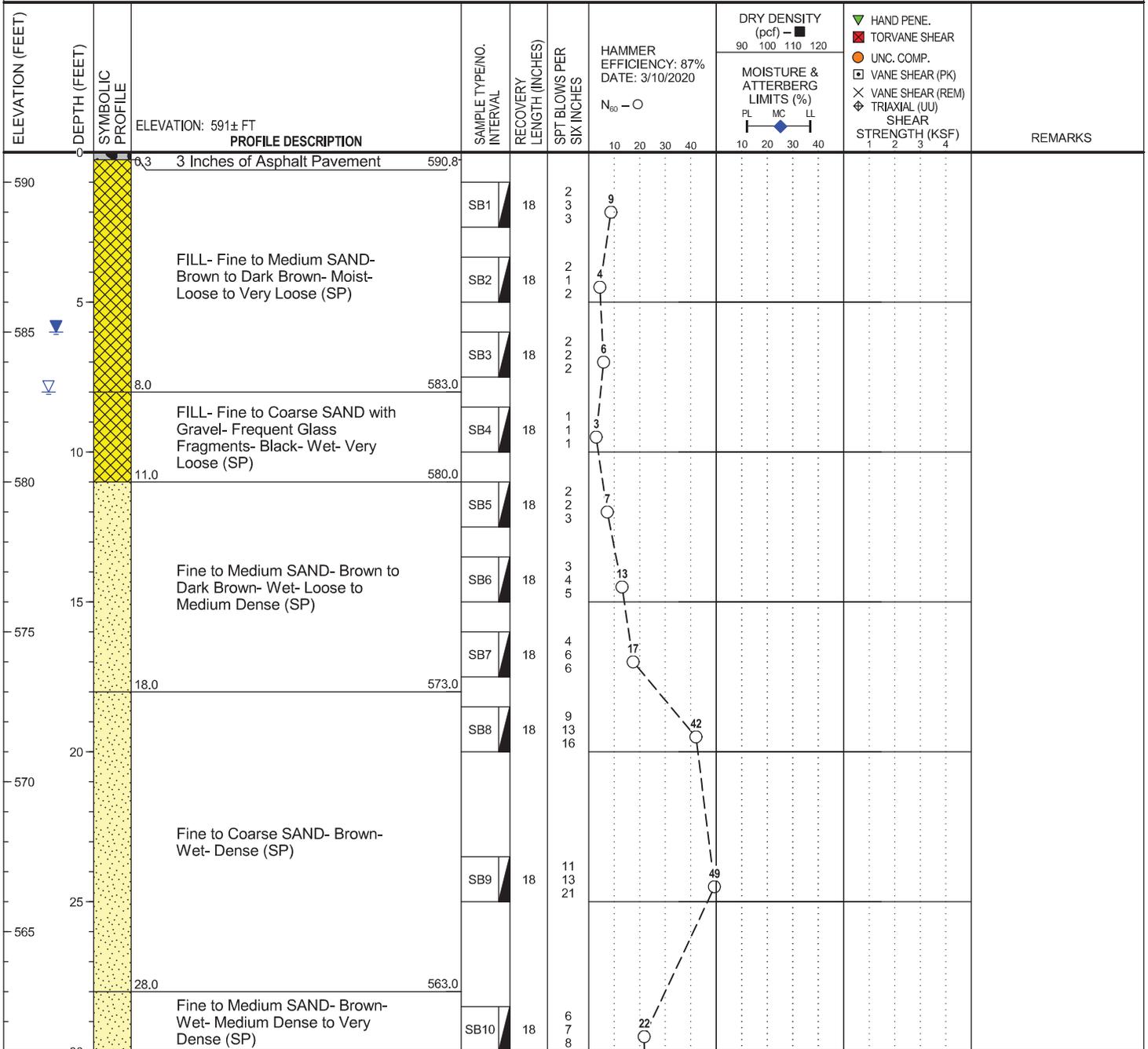
BORING METHOD: Hollow-stem Augers

DRILLER: DB/WN

RIG NO.: 552 (CME 55)

LOGGED BY: BAB

CHECKED BY: JLN



GROUNDWATER & BACKFILL INFORMATION		
	DEPTH (FT)	ELEV (FT)
▽ DURING BORING:	8.0	583.0
▽ AT END OF BORING:	6.0	585.0
BACKFILL METHOD:	Auger Cuttings & EPCO Hole Plug	

NOTES: 1. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
 2. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
 3. Borehole was patched with asphalt after backfilling.



1/25/21 3:17:42 PM

PROJECT NAME: 100 and 200 Block Subsidence

PROJECT NUMBER: 085455.00

CLIENT: SmithGroup

PROJECT LOCATION: Traverse City, Michigan

DATE STARTED: 11/10/20

COMPLETED: 11/10/20

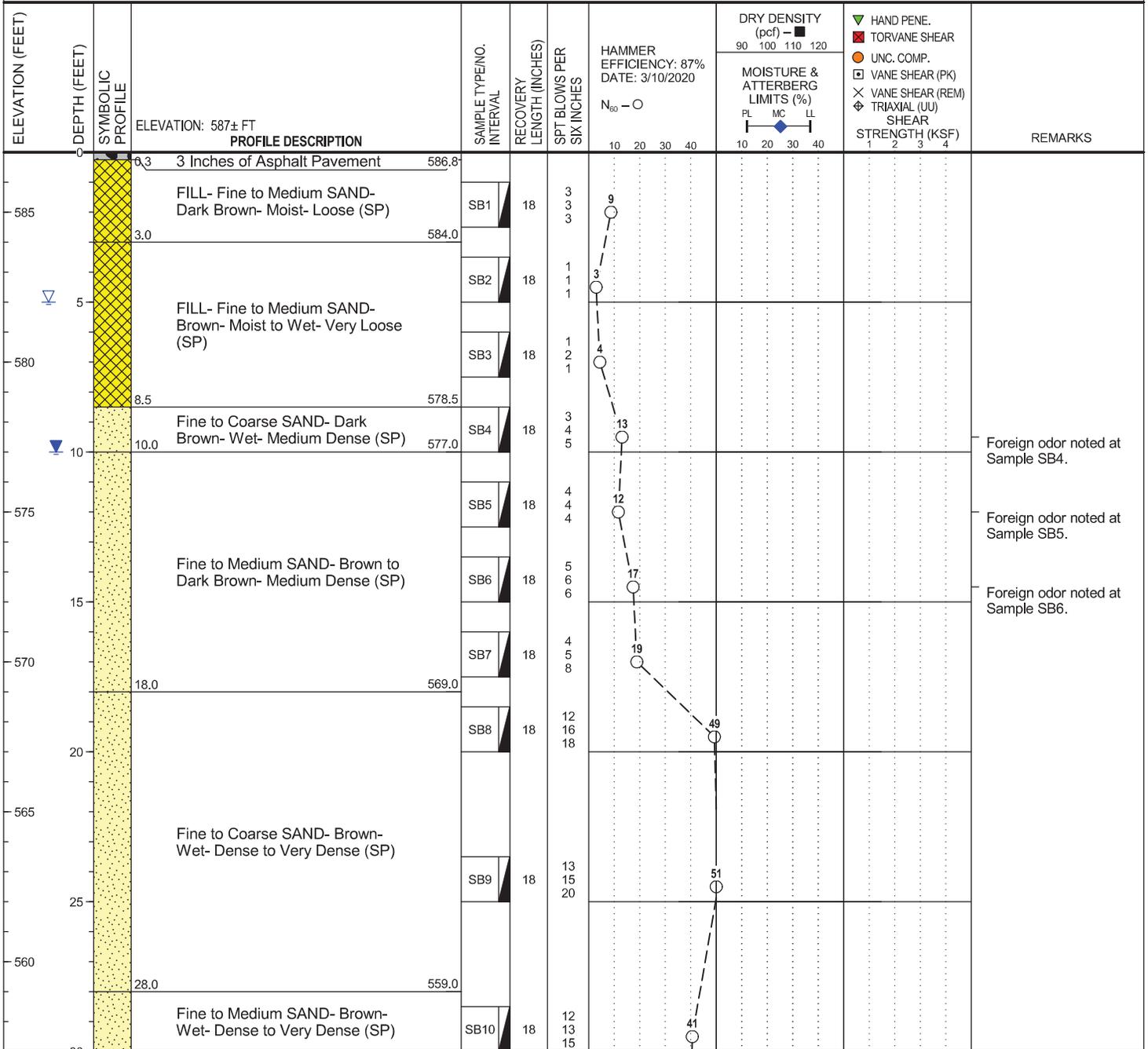
BORING METHOD: Hollow-stem Augers

DRILLER: DB/WN

RIG NO.: 552 (CME 55)

LOGGED BY: BAB

CHECKED BY: JLN



GROUNDWATER & BACKFILL INFORMATION		
	DEPTH (FT)	ELEV (FT)
▽ DURING BORING:	5.0	582.0
▽ AT END OF BORING:	10.0	577.0
BACKFILL METHOD:	Auger Cuttings & EPCO Hole Plug	

NOTES: 1. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
 2. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
 3. Borehole was patched with asphalt after backfilling.

1/25/21 3:17:44 PM



PROJECT NAME: 100 and 200 Block Subsidence

PROJECT NUMBER: 085455.00

CLIENT: SmithGroup

PROJECT LOCATION: Traverse City, Michigan

DATE STARTED: 11/10/20

COMPLETED: 11/10/20

BORING METHOD: Hollow-stem Augers

DRILLER: DB/WN

RIG NO.: 552 (CME 55)

LOGGED BY: BAB

CHECKED BY: JLN

ELEVATION (FEET)	DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: 584± FT PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY LENGTH (INCHES)	SPT BLOWS PER SIX INCHES	HAMMER EFFICIENCY: 87% DATE: 3/10/2020 N ₆₀ - O	DRY DENSITY (pcf) - ■				MOISTURE & ATTERBERG LIMITS (%) PL MC LL	▼ HAND PENE. ■ TORVANE SHEAR ○ UNC. COMP. □ VANE SHEAR (PK) × VANE SHEAR (REM) ◆ TRIAXIAL (UU) SHEAR STRENGTH (KSF) 1 2 3 4	REMARKS	
								90	100	110	120				
583.8	0.3		3 Inches of Asphalt Pavement												
580	5		FILL- Fine to Medium SAND- Few Gravel- Dark Brown- Moist to Wet- Loose to Very Loose (SP)	SB1	18	2	6								
				SB2	18	1	3								
				SB3	18	2	4								
575	8.5		POSSIBLE FILL- Fine to Medium SAND- Dark Brown- Wet- Loose (SP)	SB4	18	1	6							Foreign odor noted at Sample SB4.	
				SB5	18	2	7							Foreign odor noted at Sample SB5.	
570	12.5		Fine to Medium SAND- Brown - Wet- Medium Dense to Very Dense (SP)	SB6	18	7	26								
				SB7	18	6	32								
				SB8	18	8	33								
				SB9	18	6	20								
				SB10	18	9	35								

GROUNDWATER & BACKFILL INFORMATION		
	DEPTH (FT)	ELEV (FT)
▽ DURING BORING:	2.0	582.0
▽ AT END OF BORING:	2.0	582.0
BACKFILL METHOD:	Auger Cuttings & EPCO Hole Plug	

NOTES: 1. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
 2. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
 3. Borehole was patched with asphalt after backfilling.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* **Confront the risk of moisture infiltration** by including building-envelope or mold specialists on the design team. **Geotechnical engineers are not building-envelope or mold specialists.**



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e-mail: info@geoprofessional.org www.geoprofessional.org

GENERAL COMMENTS

BASIS OF GEOTECHNICAL REPORT

This report has been prepared in accordance with generally accepted geotechnical engineering practices to assist in the design and/or evaluation of this project. If the project plans, design criteria, and other project information referenced in this report and utilized by SME to prepare our recommendations are changed, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed, and the conclusions and recommendations of this report are modified or approved in writing by our office.

The discussions and recommendations submitted in this report are based on the available project information, described in this report, and the geotechnical data obtained from the field exploration at the locations indicated in the report. Variations in the soil and groundwater conditions commonly occur between or away from sampling locations. The nature and extent of the variations may not become evident until the time of construction. If significant variations are observed during construction, SME should be contacted to reevaluate the recommendations of this report. SME should be retained to continue our services through construction to observe and evaluate the actual subsurface conditions relative to the recommendations made in this report.

In the process of obtaining and testing samples and preparing this report, procedures are followed that represent reasonable and accepted practice in the field of soil and foundation engineering. Specifically, field logs are prepared during the field exploration that describe field occurrences, sampling locations, and other information. Samples obtained in the field are frequently subjected to additional testing and reclassification in the laboratory and differences may exist between the field logs and the report logs. The engineer preparing the report reviews the field logs, laboratory classifications, and test data and then prepares the report logs. Our recommendations are based on the contents of the report logs and the information contained therein.

REVIEW OF DESIGN DETAILS, PLANS, AND SPECIFICATIONS

SME should be retained to review the design details, project plans, and specifications to verify those documents are consistent with the recommendations contained in this report.

REVIEW OF REPORT INFORMATION WITH PROJECT TEAM

Implementation of our recommendations may affect the design, construction, and performance of the proposed improvements, along with the potential inherent risks involved with the proposed construction. The client and key members of the design team, including SME, should discuss the issues covered in this report so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk, and expectations for performance and maintenance.

FIELD VERIFICATION OF GEOTECHNICAL CONDITIONS

SME should be retained to verify the recommendations of this report are properly implemented during construction. This may avoid misinterpretation of our recommendations by other parties and will allow us to review and modify our recommendations if variations in the site subsurface conditions are encountered.

PROJECT INFORMATION FOR CONTRACTOR

This report and any future addenda or other reports regarding this site should be made available to prospective contractors prior to submitting their proposals for their information only and to supply them with facts relative to the subsurface evaluation and laboratory test results. If the selected contractor encounters subsurface conditions during construction, which differ from those presented in this report, the contractor should promptly describe the nature and extent of the differing conditions in writing and SME should be notified so that we can verify those conditions. The construction contract should include provisions for dealing with differing conditions and contingency funds should be reserved for potential problems during earthwork and foundation construction. We would be pleased to assist you in developing the contract provisions based on our experience.

The contractor should be prepared to handle environmental conditions encountered at this site, which may affect the excavation, removal, or disposal of soil; dewatering of excavations; and health and safety of workers. Any Environmental Assessment reports prepared for this site should be made available for review by bidders and the successful contractor.

THIRD PARTY RELIANCE/REUSE OF THIS REPORT

This report has been prepared solely for the use of our Client for the project specifically described in this report. This report cannot be relied upon by other parties not involved in the project, unless specifically allowed by SME in writing. SME also is not responsible for the interpretation by other parties of the geotechnical data and the recommendations provided herein.

LABORATORY TESTING PROCEDURES

VISUAL ENGINEERING CLASSIFICATION

Visual classification was performed on recovered samples. The appended General Notes and Unified Soil Classification System (USCS) sheets include a brief summary of the general method used visually classify the soil and assign an appropriate USCS group symbol. The estimated group symbol, according to the USCS, is shown in parentheses following the textural description of the various strata on the boring logs appended to this report. The soil descriptions developed from visual classifications are sometimes modified to reflect the results of laboratory testing.

MOISTURE CONTENT

Moisture content tests were performed by weighing samples from the field at their in-situ moisture condition. These samples were then dried at a constant temperature (approximately 110° C) overnight in an oven. After drying, the samples were weighed to determine the dry weight of the sample and the weight of the water that was expelled during drying. The moisture content of the specimen is expressed as a percent and is the weight of the water compared to the dry weight of the specimen.

HAND PENETROMETER TESTS

In the hand penetrometer test, the unconfined compressive strength of a cohesive soil sample is estimated by measuring the resistance of the sample to the penetration of a small calibrated, spring-loaded cylinder. The maximum capacity of the penetrometer is 4.5 tons per square-foot (tsf). Theoretically, the undrained shear strength of the cohesive sample is one-half the unconfined compressive strength. The undrained shear strength (based on the hand penetrometer test) presented on the boring logs is reported in units of kips per square-foot (ksf).

TORVANE SHEAR TESTS

In the Torvane test, the shear strength of a low strength, cohesive soil sample is estimated by measuring the resistance of the sample to a torque applied through vanes inserted into the sample. The undrained shear strength of the samples is measured from the maximum torque required to shear the sample and is reported in units of kips per square-foot (ksf).

LOSS-ON-IGNITION (ORGANIC CONTENT) TESTS

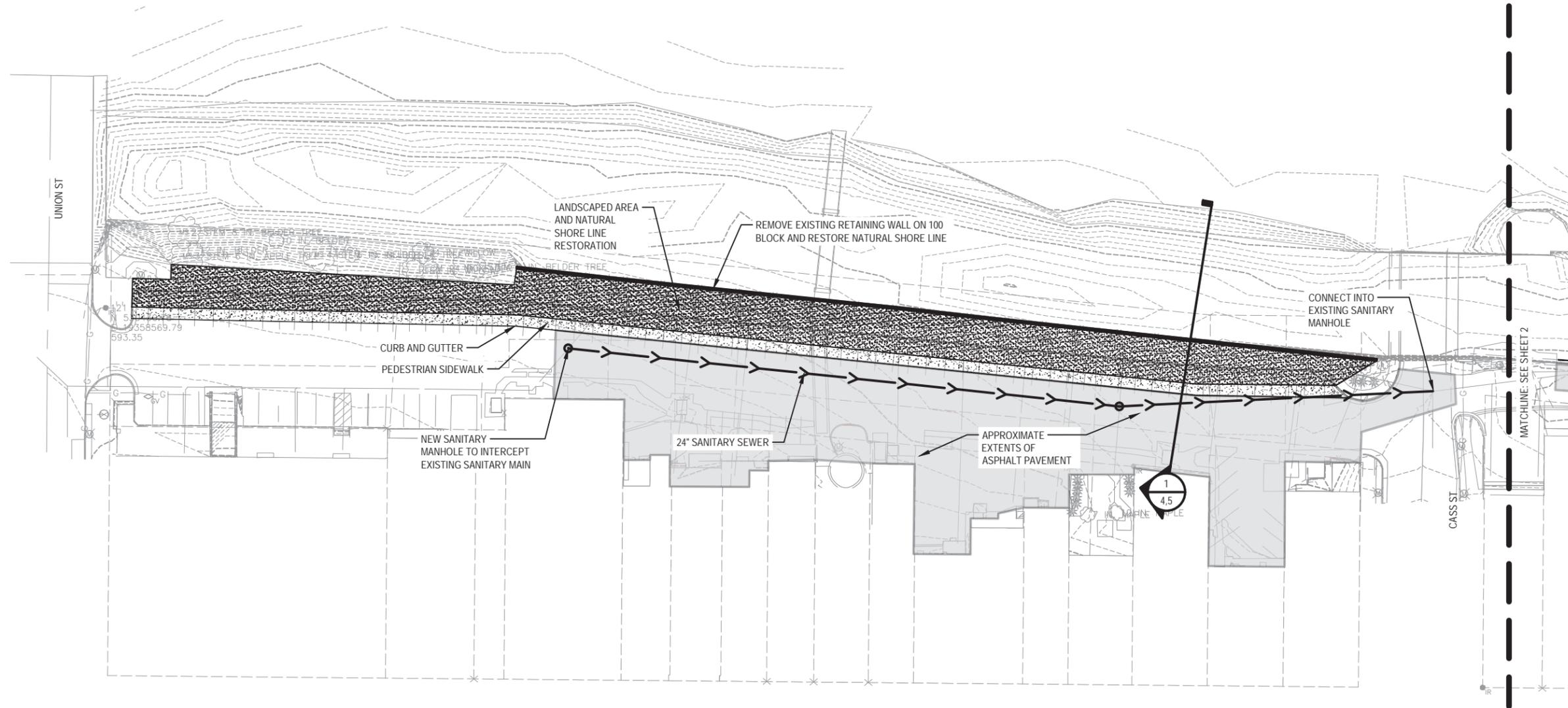
Loss-on-ignition (LOI) tests are conducted by first weighing the sample and then heating the sample to dry the moisture from the sample (in the same manner as determining the moisture content of the soil). The sample is then re-weighed to determine the dry weight and then heated for 4 hours in a muffle furnace at a high temperature (approximately 440° C). After cooling, the sample is re-weighed to calculate the amount of ash remaining, which in turn is used to determine the amount of organic matter burned from the original dry sample. The organic matter content of the specimen is expressed as a percent compared to the dry weight of the sample.

ATTERBERG LIMITS TESTS

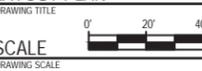
Atterberg limits tests consist of two components. The plastic limit of a cohesive sample is determined by rolling the sample into a thread and the plastic limit is the moisture content where a 1/8-inch thread begins to crumble. The liquid limit is determined by placing a 1/2-inch thick soil pat into the liquid limits cup and using a grooving tool to divide the soil pat in half. The cup is then tapped on the base of the liquid limits device using a crank handle. The number of drops of the cup to close the gap formed by the grooving tool 1/2 inch is recorded along with the corresponding moisture content of the sample. This procedure is repeated several times at different moisture contents and a graph of moisture content and the corresponding number of blows is plotted. The liquid limit is defined as the moisture content at a nominal 25 drops of the cup. From this test, the plasticity index can be determined by subtracting the plastic limit from the liquid limit.



APPENDIX E. Plans and Cross Sections



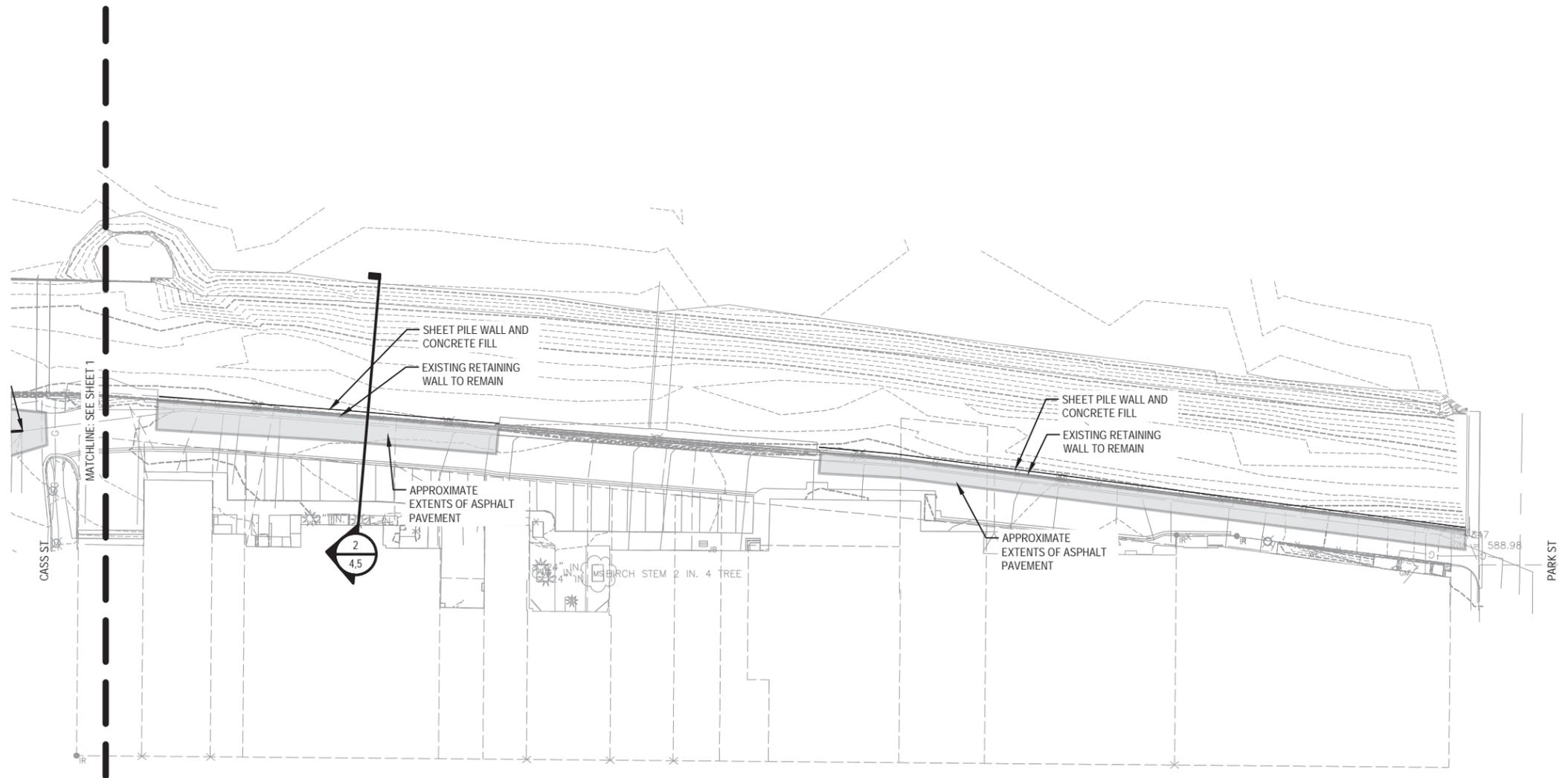
BOARDMAN RIVER
LAYOUT PLAN



JANUARY 15, 2020
DATE

BOARDMAN RIVER WALL
PROJECT NAME

1
DRAWING NUMBER



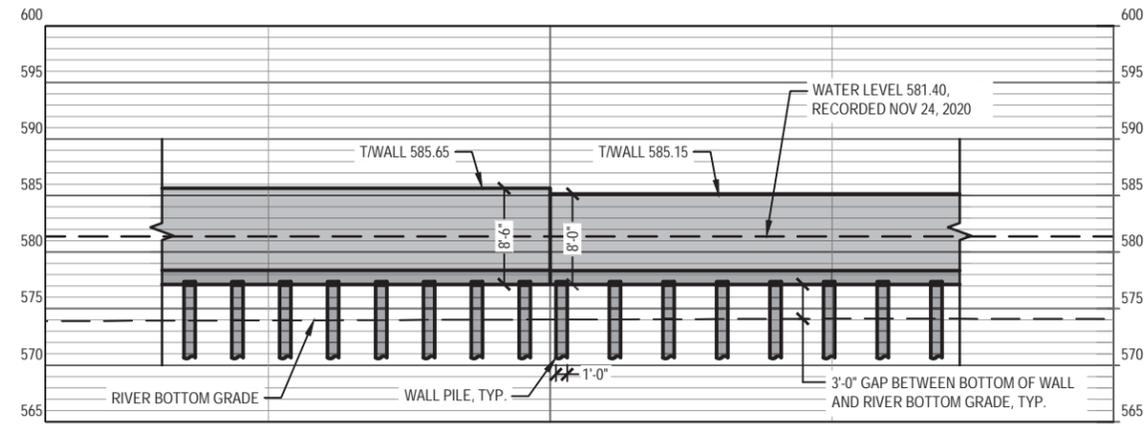
BOARDMAN RIVER
LAYOUT PLAN

SCALE 

JANUARY 15, 2020

BOARDMAN RIVER WALL

2



1 TYPICAL WALL ELEVATION

SCALE: 1" = 10'

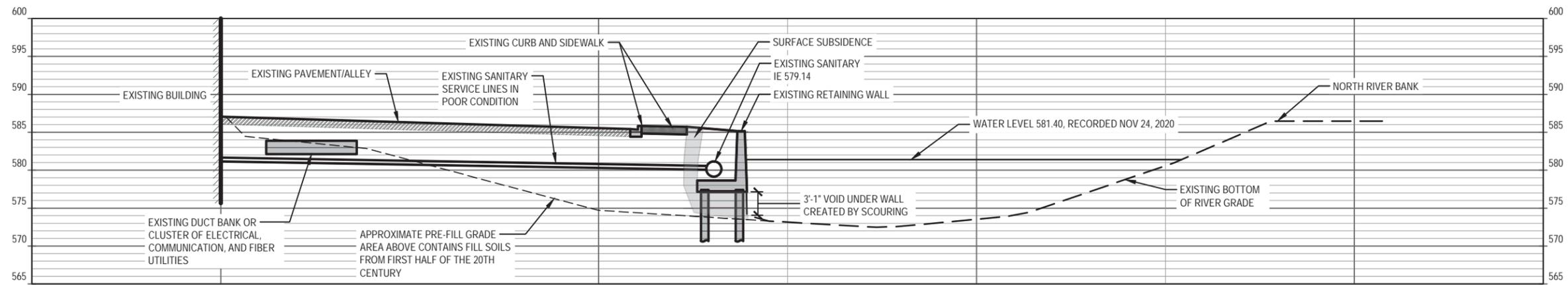
BOARDMAN RIVER
 TYPICAL WALL ELEVATION

DRAWING TITLE
 SCALE 0' 5' 10'

DRAWING SCALE
 DATE JANUARY 15, 2020

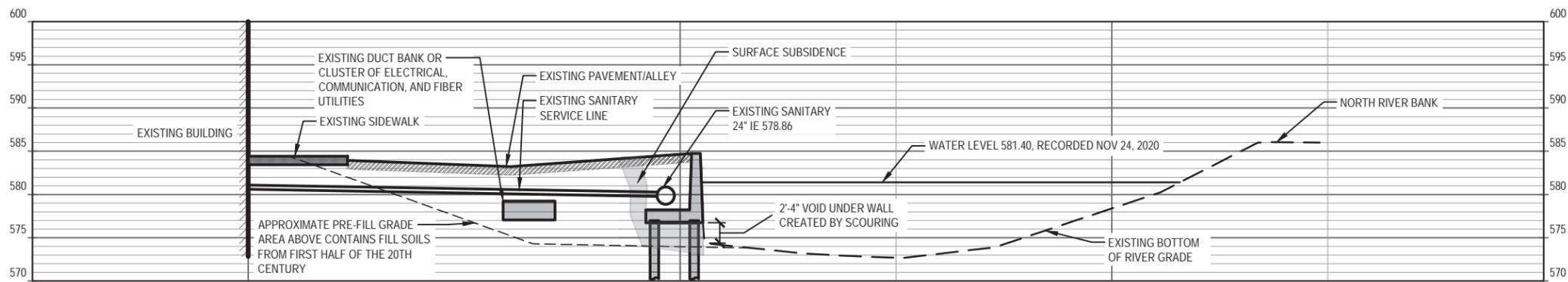
PROJECT NAME BOARDMAN RIVER WALL

DRAWING NUMBER 3



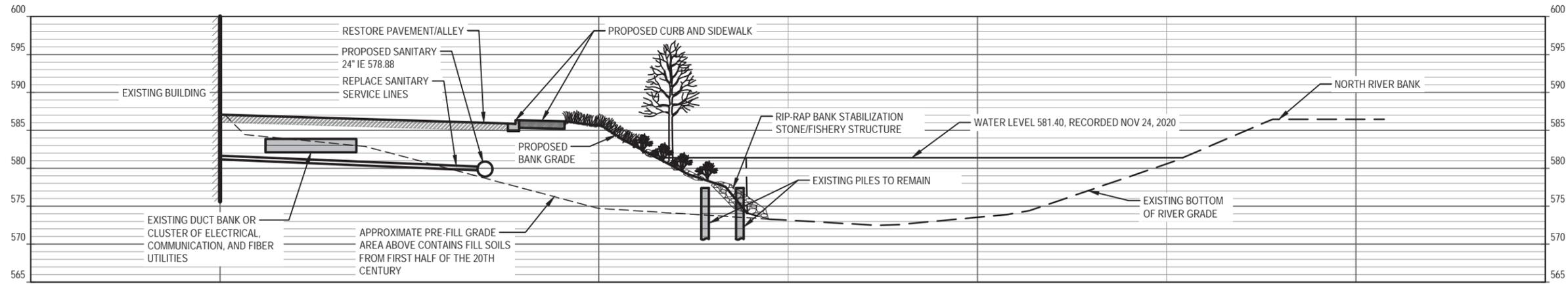
1 EXISTING CROSS SECTION - 100 BLOCK

SCALE: 1" = 10'



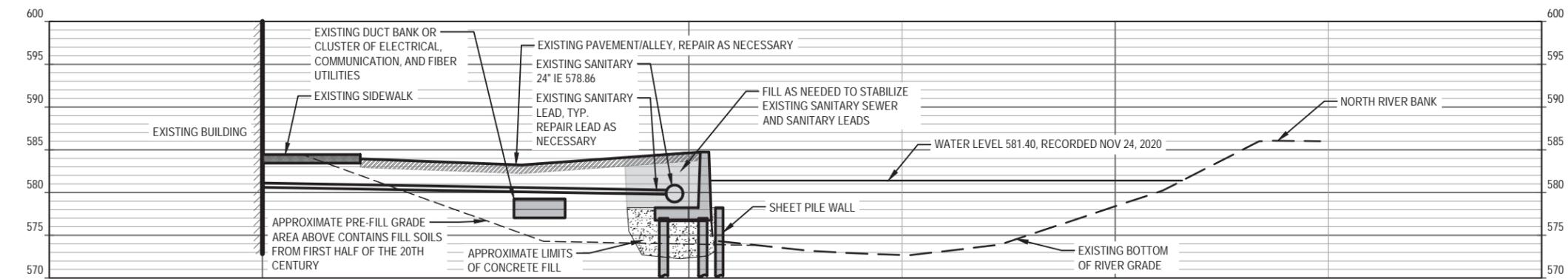
2 EXISTING CROSS SECTION - 200 BLOCK

SCALE: 1" = 10'



1 PROPOSED CROSS SECTION - 100 BLOCK

SCALE: 1" = 10'



2 PROPOSED CROSS SECTION - 200 BLOCK

SCALE: 1" = 10'

TRAVERSE CITY CODE OF ORDINANCES

ORDINANCE AMENDMENT NO. _____

Effective date: _____

TITLE: RIPARIAN BUFFER ZONE ORDINANCE

THE CITY OF TRAVERSE CITY ORDAINS:

That Section _____, _____, of the Zoning Code of the Traverse City Code of Ordinances, be added to read in its entirety as follows:

Chapter 1373 - RIPARIAN BUFFER ZONE

The intent of this chapter is to:

1. Conserve, protect, and restore natural riparian resources through scientifically supported processes.
2. Preserve and enhance areas that intercept and filter surface water runoff and improve water quality.
3. Protect shoreline and floodplain areas critical for flood attenuation and soil loss.
4. Conserve near-shore aquatic habitat for fish and invertebrates and shoreline and streambank habitat crucial for birds, insects and mammals.
5. Provide community scenic, cultural, and recreational values of watercourses and waterbodies.
6. Preserve natural deep-rooted vegetation critical for stable shorelines and streambanks.
7. Provide for the establishment of natural vegetation buffers on all sites adjacent to water bodies to promote public health and safety and protect land values.

1373.01 – Compliance Required.

- (a) For all parcels with a Riparian buffer zone (see Section 1320.07 *General Provisions and Definitions*) located in Grand Traverse Bay, Boardman Lake, Boardman River and Kids Creek where a land use permit is required, the following compliance is required:
 - (2) For parcels adjacent to the Lower Boardman River, the width of the riparian buffer is the full width of the water's edge setback required.
 - (3) No development, permanent structures, fences, impervious surfaces or parking areas shall be allowed in the Riparian buffer zone, except for the following:
 - (i) Private recreational areas such as permeable surface paths; permeable patios, playgrounds and playground safety enclosures;

mown lawns; fire pits; permeable decks and dock landings, boat launches and boathouses allowed by this zoning code; temporary storage of seasonal boats, rafts and docks; temporary structures under 200 square feet are allowed in the Riparian buffer zone that meet the following requirements:

- (a) All private recreational areas are constructed of permeable material that shall not allow for surface water to drain directly into Grand Traverse Bay, Boardman Lake, Boardman River or Kids Creek.
- (b) The total private recreational area may not exceed 30% of the total area of the Riparian buffer zone.
- (ii) For properties with frontage along the Lower Boardman River the strip of land within the Riparian Buffer Zone that is 10 feet wide on the landward side of the OHW Mark shall be subject to further restrictions and is referred to as the Critical Riparian Protection Area.
 - (a) Within the Critical Riparian Protection Area, only the following improvements for private use are allowed: permeable surface paths and permeable dock landings.
 - (b) The part of the improvements for private use located within the Critical Riparian Protection Area may not exceed 15% of the Critical Riparian Protection Area.
- (iii) For properties with frontage along the Lower Boardman River a private recreation area is allowed within the area landward of the Critical Riparian Protection Area to the edge of the Riparian Buffer. Allowed improvements are restricted to permeable surface paths, permeable decks, and one dock landing per parcel of property, which together shall not exceed 20% of the Riparian Buffer Area, exclusive of the Critical Riparian Protection Area.
- (iv) The width of all paths measured in the Riparian Buffer is limited to 8 feet total for the entire lot when such path is intended for private use.
- (v) Public permeable surface walkways are allowed in the Riparian buffer zone that meet the following requirements:
 - (a) Public paths that parallel the river shall be located outside of the Critical Riparian Protection Area. If a parallel path is

located closer to the OHW Mark, the path shall be an elevated boardwalk and be located to the river side of the OHW Mark, an activity regulated by the State of Michigan and the US Corp of Engineers. Refer to Figure Three: Typical Cross Section with Boardwalk.”

- (b) Public paths that are not parallel to the river may exist in the Critical Riparian Protection Area only if they are providing access to overlooks, boardwalks, bridges, or defined public access points.
 - (c) Public paths shall be limited to a maximum width of 10 feet, and a minimum width of 6 feet.
 - (d) A site plan of the Riparian buffer zone area and the public walkway must be submitted to and approved by the Planning Commission.
 - (e) The combined private recreational area and public walkway shall not exceed 40% area of the total area of the Riparian buffer zone.
 - (vi) Paved or unpaved service drives, driveways, working/service areas, materials or refuse storage are not allowed in the Riparian Buffer.
 - (vii) Installation, maintenance or otherwise deemed necessary essential public utility services, maintaining minimal impact to the Riparian buffer zone.
- (4) Existing vegetation and healthy trees shall be preserved in the Riparian buffer zone as enumerated herein and within Chapter 1372 – Landscaping, except as follows:
- (i) Dead and/or diseased woody vegetation, unsafe or fallen trees, noxious plants including poison ivy, poison sumac, poison oak and other plants regarded as a common nuisance in Section 2, Public Act of 359 of 1941, as amended, being MCL 247.62, may be removed from the Riparian buffer zone and shall be replaced with native vegetation within one year of removal.

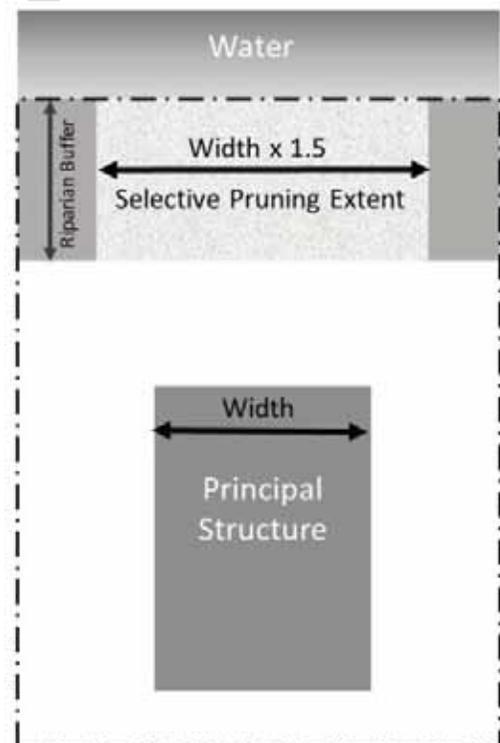
Any tree listed on the State of Michigan Invasive Species list that has been identified by a Certified Arborist may be removed, provided the stump and roots are treated and left in place.

- (ii) Removal of trees less than 6 inches DBH and other vegetation within the Riparian Buffer shall be prohibited unless approved for publicly accessible recreational paths, boardwalks, overlooks, bridges, and related public amenities, and for removal and improvement of degraded habitat, subject to the tree replacement requirements noted herein.

For each tree removed, a replacement native or native cultivar tree of similar size at maturity shall be planted in the Riparian buffer zone within one (1) year of removal. All plant materials shall be maintained in a healthy growing condition pursuant to Chapter 1372 – Landscaping, subsection 1370.03 (e).

- (5) If a dwelling is sited on a Waterfront lot, selective pruning (see Section 1320.07 *General Provisions and Definitions*) within the Riparian buffer zone is allowed as follows:

- (i) No more than an area equal to one and one-half ($1 \frac{1}{2}$) times the principal structure width that faces the waterfront may be selectively pruned.
- (ii) Any area cleared for Private recreational use as defined in this chapter, shall be counted towards the allowable pruned area.
- (iii) No clear cutting of woody vegetation is permitted within the Riparian buffer zone.



- (6) Landscape improvements in a Riparian Buffer shall be required when compliance is required as stipulated in Chapter 1372 Landscaping, Subsection 1372.01 “Compliance Required”.

Pursuant to Chapter 1372 Landscaping all areas not covered by buildings, parking areas, driveways, walkways, pedestrian plazas or other pedestrian oriented surfaces or water surfaces shall be planted with living vegetation, including canopy trees, shrubbery and ground covers. The combination of plant materials selected shall be placed in harmonious and natural associations and represent the approved indigenous landscape materials and their cultivars listed in the Tree Species Guidelines document adopted by the Parks and Recreation Commission and found on the City's website on the Parks and Recreation Division page.

Landscaping within the riparian buffer shall comply with Chapter 1372 – Landscaping, as supplemented herein. New landscape materials in the riparian buffer zone shall be native. Plantings shall be arranged and selected to retard water runoff, prevent erosion, and create wildlife food sources, nesting habitat, movement corridors, and protective cover. Selection of landscape plants shall include a diversity of species within any one plant type and shall be suitable for the conditions of the proposed habitat and reflective of the plant specie’s native habitat.

Proposed landscaping shall be limited to the use of plants that have cultural significance to the First Peoples (including plants such as sage, sweet grass, northern white cedar, and native tobacco), and/or plants that are indigenous to the Boardman River region.

- (7) Soil and erosion measures and procedures will be employed in accordance with Natural Resources and Environmental Protection Act (Part 91 P.A. 451 as amended) and the City of Traverse City Ground-Water Protection and Storm-Water Runoff Control Chapter 1068 of the City of Traverse City Codified Ordinances. Removal or disturbance of vegetation in a manner that is inconsistent with erosion and sedimentation control and riparian buffer protection shall be prohibited in the Riparian buffer zone.
- (8) The following may not be used or stored in the Riparian buffer zone:
- (i) Fertilizers, manures or chemicals.
 - (ii) No unsightly, offensive or potentially polluting material, including but not limited to:

- a. Compost, lawn clippings, leaves, garbage, trash, refuse and animal pens.
- (9) No new private seawalls, bulkheads, broken concrete, rubble, or other shoreline hardening materials along Boardman Lake, Boardman River or Kids Creek shall be located within the Riparian buffer zone. (Private Property owners must seek guidance for appropriate permits for projects which are regulated under jurisdiction of Michigan Department of Environment, Great Lakes and Energy (EGLE) and the Army Corps of Engineers.) Natural Rock Riprap is allowed in the Riparian buffer zone.

This ordinance recognizes that the urban context of downtown Traverse City may not encourage pure landscape, habitat based, or “green” solutions, but for these sites there is a need to find solutions that create real habitat benefits. Rip Rap may be required to stabilize slopes in high current areas, or on steeply sloping banks. The use of landscape plantings and biodegradable materials is encouraged over the use of natural rock riprap. When required, rip rap shall be natural stone and used in concert with landscaping to create pocket plantings, and with other organic stabilization methods such as coir logs, brush mats, live stakes, and logs/stumps to minimize banks hardened with stone. Refer to Figures Two, Three, Four and Five.

- (10) New construction of paved surfaces, including service areas, parking, walks and patios, which are located on all property that includes or is adjacent to a Riparian Buffer along the Lower Boardman River, shall not be allowed to drain directly into the river without pretreatment as recommended in the TIF 97 Stormwater Management Plan and regulated by the City of Traverse City Ordinance Chapter 1068 - Ground-Water Protection and Storm-Water Runoff Control.
- (11) Motor or wheeled vehicle traffic shall be prohibited in any area of the Riparian buffer zone with the exception of pathways or boat launches adequately designed to accommodate the type and volume of vehicular movement, this includes public launches and parking areas.
- (12) Reduction. In the event that the application of the Riparian buffer zone applicable under this Ordinance, results in a legal parcel that cannot be reasonably developed for permitted land uses in the district within which the property is located, a waiver, variance, modification, exception or similar provision shall be determined by the Board of Zoning appeals.

The effective date of this Ordinance is the _____ day of _____, 2020.

I hereby certify the above ordinance amendment was introduced on _____, 2020, at a regular meeting of the City Commission and was enacted on _____, 2020, at a regular meeting of the City Commission by a vote of Yes: ____ No: ____ at the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan.

James Carruthers, Mayor

Benjamin C. Marentette, City Clerk

I hereby certify that a notice of adoption of the above ordinance was published in the Traverse City Record Eagle, a daily newspaper published in Traverse City, Michigan, on _____.

Benjamin C. Marentette, City Clerk

TRAVERSE CITY CODE OF ORDINANCES

ORDINANCE AMENDMENT NO. _____

Effective date: _____

TITLE: ORDINANCE

THE CITY OF TRAVERSE CITY ORDAINS:

That Section _____, _____, of the Zoning Code of the Traverse City Code of Ordinances, be amended to read in its entirety as follows:

1320.07 - Definitions.

As used in this chapter:

Abutting means a lot or parcel which shares a common border with the subject lot or parcel.

Accessory building means a building or structure customarily incidental and subordinate to the principal building and located on the same lot as and spatially separated from the principal building.

Accessory dwelling unit means a smaller, secondary home on the same lot as a principal dwelling.

Accessory dwelling units are independently habitable and provide the basic requirements of shelter, heating, cooking and sanitation. There are 2 types of accessory dwelling units:

- (1) Accessory dwelling in an accessory building (examples include converted garages or new construction).
- (2) Accessory dwelling that is attached or part of the principal dwelling (examples include converted living space, attached garages, basements or attics; additions; or a combination thereof).

Accessory use means a use customarily incidental and subordinate to the principal use of the land or building and located on the same lot as the principal use.

Adult foster care family home means a private residence with the approved capacity to receive not more than 6 adults who shall be provided foster care for 5 or more days a week and for 2 or more consecutive weeks. The adult foster care family home state licensee shall be a member of the household and an occupant of the residence.

Adult foster care small group home means a state licensed adult foster care facility with the approved capacity for not more than 12 adult residents to be provided foster care.

Affordable housing means housing units for eligible low-income households where the occupant is paying no more than 30 percent of gross income for housing costs.

Aggrieved person means a person who has suffered a substantial damage from a zoning decision not in common to other property owners similarly situated, and who has actively opposed the decision in question.

Airport terminal means the main passenger location of an airport and includes all office, hotel and retail uses commonly occurring at such locations.

Alley means a way which functions primarily as a service corridor and provides access to properties abutting thereon. "Alley" does not mean "street."

Alteration means any change, addition or modification in construction or type of occupancy; any change in the structural members of a building, such as walls or partitions, columns, beams or girders.

Basement means that portion of a building which is partly or wholly below finished grade, but so located that the vertical distance from the average grade to the floor is greater than the vertical distance from the average grade to the ceiling. A basement, as defined herein, shall not be counted as a story (see Figure 1-1). A cellar is a basement.

Berm means a constructed mound of earth rising to an elevation above the adjacent ground level of the site where located which contributes to the visual screening of the area behind the berm.

Block means a unit of land bounded by streets or by a combination of streets and public land, railroad rights-of-way, waterways or any other barrier to the continuity of development.

Block, face. "Face block" means that portion of a block or tract of land facing the same side of a single street and lying between the closest intersecting streets.

Boat house means an enclosed or partially enclosed structure designed for the use and storage of private watercraft and marine equipment.

Boat livery means any structure, site or tract of land utilized for the storage, servicing, docking or rental of watercraft for a fee.

***Boardwalk* means a walkway constructed at or above the surrounding grade, and supported by posts or columns embedded into the ground.**

Brew pub means a facility as defined such by the State of Michigan.

Building means any structure designed or built for the enclosure, shelter or protection of persons, animals, chattels or property of any kind.

Building, height of. See "height of building."

Building, principal. "Principal building" means a building within which is conducted the main or principal use of the lot upon which it is located. More than one principal building is allowed on a lot.

Cemetery means property, including crematories, mausoleums, and/or columbariums, used or intended to be used solely for the perpetual interment of deceased human beings or household pets.

Clinic means an establishment where human patients who are not lodged overnight are admitted for examination and treatment by a group of physicians or dentists or similar professions.

Club means an organization of persons for special purposes or for the promulgation of sports, arts, science, literature, politics, agriculture or similar activities, but not operated for profit and open only to members and not the public.

Cluster means a development design technique that concentrates building on a portion of the site to allow the remaining land to be used for recreation, common open space and preservation of environmentally sensitive features.

Communication antenna means a device, dish or array used to transmit or receive telecommunications signals mounted on a communication tower, building or structure that is greater than 1 square meter in a residential district or 2 square meters in a non-residential district. Antenna does not include federally-licensed amateur radio station, television or radio receive-only antennas or antennas used solely for personal use. Communication antennas are not "essential services," public utilities or private utilities.

Communication tower or tower means any structure that is primarily designed and constructed for the purpose of supporting 1 or more antennas for telecommunications, radio and similar communication purposes, including self-supporting lattice towers, guyed towers, or monopole towers. The term includes radio and television transmission towers, microwave towers, common-carrier towers, cellular telephone towers, alternative tower structures, and the like. Communication towers are not "essential services," public utilities or private utilities.

Community garden means a parcel gardened collectively by a group of people.

Convenience store means a retail establishment offering for sale prepackaged food products, household items and other goods commonly associated with the same and having a gross floor area of less than 5,000 square feet.

Country club. See "golf course."

Crematories means a building or structure, or room or space in a building or structure, for the cremation of deceased persons or deceased household pets.

***Critical Riparian Protection Area* is a subset area of the Riparian Buffer Zone, defined as follows: a 10-foot wide area measured landward from the Ordinary High Water Mark and extending parallel to the river, lake or water body shoreline.**

Critical root zone means a circular area surrounding a tree, the radius of which is measured outward from the trunk of a tree 1 foot for each 1 inch of diameter at breast height. The critical root zone shall also extend to a depth of 4 feet below the natural surface ground level.

Cultural facilities means facilities for activities for the preservation and enhancement for the cultural well-being of the community.

***Deck* means an open, unwallled structure that supports outdoor use of property, typically built above adjacent grade and supported by posts, columns, and /or adjacent buildings.**

Development means all structures and other modifications of the natural landscape above and below ground or water on a particular site.

Diameter at breast height means the diameter of a tree trunk in inches measured by diameter at 4.5 feet above the ground.

District means a section of the City for which the zoning regulations governing the use of buildings and premises, the height of buildings, setbacks and the intensity of use are uniform.

***Dock Landing* means a walkway structure or path that is used to provide access from land above the Ordinary High-Water Mark into a waterbody for the purposes of facilitating recreational use of the water.**

Drive-in means an establishment which by design, physical facilities, service, or by packaging procedures encourages or permits customers to receive services or obtain goods while remaining in their motor vehicles.

Drive-through means an establishment which by design, physical facilities, service, or by packaging procedures encourages or permits customers to receive service or obtain goods intended to be consumed off-premises.

Dripline means an imaginary vertical line extending downward from the outermost tips of the tree branches to the ground.

Driveway means a means of access for vehicles from a street, approved alley, across a lot or parcel to a parking or loading area, garage, dwelling or other structure or area on the same lot.

Driveway, service means a point of access solely for the use of vehicles designed to load and unload trash receptacles 3 cubic yards or more in size.

Dwelling means any building or portion thereof which is designed for or used exclusively for residential purposes and containing 1 or more dwelling units.

Dwelling, multiple family. "Multiple family dwelling" means a building or portion thereof containing 3 or more dwelling units and designed for or occupied as the home of 3 or more families living independently of each other.

Dwelling, single-family. "Single-family dwelling" means a detached building containing 1 dwelling unit and designed for or occupied by only 1 family.

Dwelling, two-family. "Two-family dwelling" means a building designed for or occupied exclusively by 2 families living independently of each other.

Dwelling unit means 1 or more rooms with bathroom and principal kitchen facilities designed as a self-contained unit for occupancy by 1 family for living, cooking and sleeping purposes. The existence of a food preparation area (such as a sink and appliances to heat and refrigerate food) within a room or rooms shall be evidence of the existence of a dwelling unit.

Eligible household means a household meeting the income criteria included in Chapter 1376, with income determined in a manner consistent with determinations of lower-income households and area median income under Section 8 of the U.S. Housing Act of 1937, as amended (Section 8 Housing Program).

Eligible housing nonprofit means a 501(c)3 nonprofit housing organization with the means and capacity to guarantee and enforce long-term affordability of affordable housing units meeting the requirements of Chapter 1376.

Emergency shelter means a facility operated by a governmental or nonprofit agency where supportive services and shelter are offered to homeless persons.

Erected means built, constructed, reconstructed, moved upon, or any physical operations on the premises required for the building. Excavations, fill, drainage and the like, shall be considered a part of erection when done in conjunction with a structure.

Essential services means the installation, construction, alteration or maintenance by public utilities or governmental agencies of underground, surface or overhead telephone, electrical, gas, steam, fuel, or water distribution systems, collections, supply or disposal systems, streets, alleys, sidewalks, or trails, including pavement, traffic control devices, signs, poles, wires, mains, drains, sewers, pipes, conduits, cables, padmount transformers, fire alarm and police call boxes, traffic signals, hydrants and similar accessories in connection therewith which are necessary for the furnishing of adequate service by such utilities or governmental agencies for the general public health, safety, convenience or welfare. "Essential services" do not include communication antennas and communication towers.

Essential service-structures. The erection, construction, alteration or maintenance by public utilities or governmental agencies of structures not in the right-of-way over 800 cubic feet in area including, but not limited to, towers, transmission and subtransmission facilities, or buildings related to essential services in all districts.

Facade means the exterior wall of a building exposed to public view.

Family means 1 or more persons occupying a dwelling unit and living as a single housekeeping unit, whether or not related to each other by birth or marriage, as distinguished from persons occupying a boarding house, lodging house or hotel.

Fence means a constructed barrier made of wood, metal, stone, brick or any manufactured materials erected for the enclosure of yard areas.

Flood plain, 100-year. "100-year flood plain" means the lowland areas adjoining inland and coastal waters which are identified on Floodway Maps produced by FEMA (Federal Emergency Management Agency) and which are estimated to have a 1 percent chance of flooding in a given year.

Floor area. See "a gross floor area."

Frontage means the total continuous width of the front lot line.

Golf course/country club means any golf course, public or private, where the game of golf is played, including accessory uses and buildings customary thereto, but excluding golf driving ranges and miniature golf courses as a principal use.

Grade means:

- (1) *For buildings having walls adjoining 1 street only:* the elevation of the public sidewalk, top of curb, or centerline of the street right-of-way, whichever is closest to the building, where a building wall adjoins a street.
- (2) *For buildings having walls adjoining more than 1 street:* the average elevation of the sidewalks, curbs or centerlines of streets, whichever is closest to the building walls adjoining the streets.
- (3) *For buildings having no wall adjoining the street:* the average of the lowest and highest ground surface elevations in an area within 6 feet of the foundation line of a building or structure. Any building or structure wall within 35 feet of a public or private street shall be considered as adjoining the street. (See Figure 1-2.)

Greenbelt means a strip of land of definite width and location upon which existing vegetation is preserved or an area is reserved for the planting of living plant materials to serve as an obscuring screen or buffer strip in carrying out the requirements of this Code.

Grocery store means a retail establishment primarily selling prepackaged and perishable food as well as other convenience and household goods.

Gross floor area (GFA) means the sum of the gross horizontal areas of the several floors of a building or structure from the exterior face of exterior walls, or from the centerline of a wall separating 2 buildings, but excluding any space where the floor-to-ceiling height is less than 6 feet.

Guest night means an adult who occupies a room in a tourist home overnight. (i.e. An adult guest occupying a room in a tourist home for 4 nights has stayed for 4 guest nights.)

Height of building means the vertical distance from the grade to the highest point on a mansard or flat roof or to the median height between the eaves and the ridge for gable, hip and gambrel roofs. (See Figure 1-3).

Home occupation means an accessory use of a dwelling unit for business purposes.

Hospitality house means a facility that provides lodging to patients, family members or caretakers and medical workers while away from their home communities. The facility will typically have shared kitchens, common living areas and private bedrooms.

Host, tourist home, means the owner resides in the tourist home overnight.

Invasive Species means:

- (1) Non-native (or alien) to the ecosystem under consideration; and,
- (2) Whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Impervious surface means any material which prevents, impedes or slows infiltration or absorption of storm water directly into the ground at the rate of absorption of vegetation bearing soils, including building, asphalt, concrete, gravel and other surfaces.

Impervious surface ratio means the area of impervious surface less those areas used exclusively for pedestrian circulation or outdoor recreational facilities divided by the gross site area.

Kennel means any lot or premises used for the sale, boarding, or breeding of dogs, cats or other household pets or the keeping of 5 or more dogs or cats in any combination over the age of 6 months.

Land clearing means:

- (1) The removal of over 4,000 square feet of woody vegetation from any site, or

- (2) The removal of more than 10 trees more than 6 inches in diameter at breast height or 2 trees more than 24 inches in diameter at breast height from any parcel.

Mowing, trimming or pruning of vegetation to maintain it in a healthy, viable condition is not considered land clearing, nor is the removal of woody plants in connection with the installation or maintenance of any essential service not including an essential service building.

Landing area means a landing pad, area, strip, deck or building roof used to launch or receive aircraft, including, but not limited to, power-driven winged or delta-winged aircraft, gliders, balloons and helicopters.

Landscaping means some combination of planted canopy trees, vines, ground cover, flowers or turf so long as a minimum of 80 percent of the landscape area is covered by living plant material. Planted trees shall be a least 2½ inches caliper and shall comply with the species requirements set forth in the City's approved *Tree List*. In addition, the combination or design may include rock ground cover, earth mounds, and such structural features as fountains, pools, art works, screens, walls, fences and benches.

Laundromat means a business that provides home-type washing, drying and/or ironing machines for hire to be used by customers on the premises or operated for the benefit of retail customers who bring in and call for laundry.

Lodging facility means a commercial establishment with 1 or more buildings whose primary use is to provide temporary overnight accommodations within individual guest rooms or suites to the general public for compensation. Accessory uses may include eating places, meeting rooms and other similar uses.

Lot means a parcel of land occupied or intended for occupancy by a use permitted in this Zoning Code, including 1 principal building together with accessory buildings, open spaces and parking areas required by this Zoning Code, and having its principal frontage upon a street or upon an officially approved private street. The word "lot includes the words "plot," "tract" or "parcel."

Lot, corner. "Corner lot" means a lot which has at least 2 contiguous sides abutting on and at the intersection of 2 or more streets.

Lot of record means a lot whose existence, location and dimensions have been legally recorded or registered in a deed or on a plat.

Lot, through. "Through lot" means an interior lot having frontage on 2 more or less parallel streets.

Lot width means the horizontal distance between side lot lines measured parallel to the front lot line at the minimum required front setback line.

Lower Boardman River is the reach of the Boardman-Ottaway River that extends from the northernmost part of Boardman Lake to the Grand Traverse Bay of Lake Michigan.

Manufacturing means the production of articles for use from raw or prepared materials by giving these materials new forms, qualities, properties or combinations, whether by hand labor or machine.

Market, municipal. "Municipal market" means a publicly owned and operated building or space where vendors offer a wide range of different products from open stalls.

Marina means a commercial mooring, berthing, or docking facility for watercraft with or without provisions for launching, haulout, servicing, fueling or sales of accessory supplies.

Medical marihuana facility means a location at which a person is licensed to operate under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City and operates as a medical marihuana grower, medical marihuana processor, medical marihuana secure transporter, medical marihuana provisioning center, or a medical marihuana safety compliance facility.

Medical marihuana grower means a use where a person holding a state operating license under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City cultivates, dries, trims, or cures and packages medical marihuana for sale to a processor or provisioning center.

Medical marihuana provisioning center means a use where a person holding a state license under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City purchases medical marihuana from a medical marihuana grower or medical marihuana processor and commercially sells, supplies, or provides medical marihuana to registered qualifying patients as defined in the Michigan Medical Marihuana Act, MCL 333.26241 et seq., directly or through the registered qualifying patients' registered primary caregiver. Medical marihuana provisioning center includes any property where medical marihuana is sold at retail to registered qualifying patients or registered primary caregivers. A residential location used by a primary caregiver to assist a qualifying patient connected to the caregiver through the

Michigan Medical Marihuana Act, MCL 333.26241 et seq., is not a medical marihuana provisioning center.

Medical marihuana processor means a use where a person holding a state license under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City purchases medical marihuana from a medical marihuana grower and extracts resin from the marihuana or creates a marihuana-infused product for sale and transfer in packaged form to a medical marihuana provisioning center.

Medical marihuana safety compliance facility means a use where a person holding a state operating license under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City takes medical marihuana from a marihuana facility or receives medical marihuana from a registered primary caregiver, tests the medical marihuana for contaminants and for tetrahydrocannabinol and other cannabinoids, returns the test results, and may return the medical marihuana to the marihuana facility.

Medical marihuana secure transporter means a use where a person holding a state license under the Michigan Medical Marihuana Facilities Licensing Act, MCL 333.27101 et seq., and a marihuana facility license under Chapter 845 of the Codified Ordinances of the City of Traverse City stores medical marihuana and transports medical marihuana between medical marihuana facilities for a fee.

Microbrewery means a facility as defined as such by the State of Michigan.

Non-conforming use means a lawful use of land that does not comply with the use regulations for its zoning district but which complied with applicable regulations at the time the use was established.

Nursing home. See "residential care and treatment facility."

Open space, common. "Common open space" means land within or related to a development, not individually owned that is designed and intended for the common use or enjoyment of the residents and their guests of the development and may include such complementary structures and improvements as are necessary and appropriate.

Ordinary high water mark means the line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland and is identified along Grand Traverse Bay and Boardman Lake at an elevation defined by the US Army Corps of Engineers. The Boardman River ordinary high water mark is identified as the line between upland and bottomland that persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the surface of the soil, and the vegetation.

Owner means any person having an ownership interest in a premises as shown on the latest Traverse City tax records.

Parcel. See a "lot."

Parking area means any public or private area, under or outside of a building or structure, designed and used for parking motor vehicles, including parking lots, driveways and legally designated areas of public streets.

Parking area, commercial. "Commercial parking area" means a tract of land which is used for the storage of motor vehicles, which is not accessory to any other use on the same or any other lot and which contains parking space rented to the general public or reserved for individuals by the hour, day, week or month.

Parking area, off-street. "Off-street parking area" means a land surface or facility providing vehicular parking spaces off of a street together with drives and maneuvering lanes so as to provide access for entrance and exit for the parking of motor vehicles.

Parking area, private. "Private parking area" means a parking area for the exclusive use of the owners, tenants, lessees, or occupants of the lot on which the parking area is located or their customers, employees, or whomever else they permit to use the parking area.

Parking area, public. "Public parking area" means a publicly owned or controlled parking area available to the public, with or without payment of a fee.

Parking space means an area of land provided for vehicles exclusive of drives, aisles, or entrances giving access thereto, which is fully accessible for parking of permitted vehicles.

Parking structure means a building or structure consisting of more than 1 level and used to store motor vehicles.

Pavement. "Pavement" and "paved" mean permanent and completely covered with concrete, a bituminous surface, brick or other surface approved by the Planning Director.

Pedestrian scale means design and construction considerations based upon the scale of a human being which imbue occupants and users of the built environment with a sense of comfort and security.

Person means a corporation, association, partnership, trust, firm or similar activity as well as an individual.

Place of worship means a building wherein persons regularly assemble for religious worship and which is maintained and controlled by a religious body organized to sustain public worship, together with all accessory buildings and uses customarily associated with such primary purpose.

Planning director means the head of the City Planning and Zoning Department or the designee of that person.

Plat means a map of a subdivision of and recorded with the Register of Deeds pursuant to state statute

Primary residence means a housing unit in which an owner or lessee resides for the majority of the year and provides proof of primary residence evidence acceptable to the City Clerk.

Principal use means the main use of land or structures as distinguished from a secondary or accessory use.

Pruning means the targeted removal of diseased, damaged, dead or overgrown branches or stems to increase fruitfulness and growth. Pruning does not mean the complete removal or damaging of a tree to intentionally prevent growth.

Public utility means any person, firm or corporation, municipal department, board or commission duly authorized to furnish and furnishing under federal, state or municipal regulations to the public; gas, steam, electricity, sewage disposal, communication, telephone, telegraph, transportation or water.

R-District means a residence district, namely an RC, R-1a, R-1b, R-2, R-9, R-15, and R-29 district.

Recreational facilities means buildings, or grounds, excluding amusement parks, where a variety of sport or exercise activities are offered.

Recreational vehicle means a vehicle primarily designed and used as a temporary living quarters for recreational, camping, or travel purposes including a vehicle having its own motor power or a vehicle mounted on or drawn by another vehicle.

Residential care and treatment facility means a facility providing:

- (1) Services, programs and temporary shelter for residents who are undergoing alcohol or substance abuse rehabilitation;
- (2) Temporary emergency shelter and services for battered individuals and their children in a residential structure.

Restaurant, family means an establishment where food and drink are prepared and served to seated customers. Customer turnover rates are typically less than 1 hour. Generally, these establishments serve breakfast, lunch, and dinner and sometimes are open 24 hours a day. It may include cafeteria-style facilities.

Restaurant, fast food means an establishment where food and drink are served to customers at a counter. Such establishments may or may not have seating facilities. Generally, food and drink is ordered and taken to be consumed outside the restaurant building.

Restaurant, fine means an establishment where food and drink are prepared and served. Customer turnover rates are typically 1 hour or longer. Such establishments serve dinner but generally do not serve breakfast and may or may not serve lunch or brunch.

Right-of-way means a public or private street, alley or easement permanently established for the passage of persons or vehicles.

Riparian buffer zone means all land located within twenty-five (25) feet of the ordinary high-water mark of Grand Traverse Bay, Boardman Lake and Boardman River between Boardman Lakes and the Park Street Bridge, and ten (10) feet of the ordinary high water make of Boardman River downriver from Park Street Bridge and Kids Creek. For areas along Kids Creek, a slope value of 40% or more shall be excluded when calculating the buffer width.

Rooming house means a residential building where rooms or suites of rooms are rented where the renters use common facilities, such as hallways and bathrooms. A rooming house shall not include lodging facilities, apartment houses, 2 and multi-family dwellings or fraternity and sorority houses.

School means an educational institution under the sponsorship of a private or public agency providing elementary or secondary curriculum, and accredited or licensed by the State of Michigan; but excluding profit-making private trade or commercial schools.

Screen means a structure providing enclosure and a visual barrier between the area enclosed and the adjacent property. A screen may also be non-structured, consisting of shrubs or other growing materials.

Screen, opaque means a masonry wall, fence sections, earthen berm, evergreen hedge or a combination of these elements which completely interrupt visual contact and provide spatial separation.

Setback means the distance required between a lot line and a building wall.

Setback, front. A front setback means the minimum required distance, extending the full lot width, between the principal building and the front lot line. If there is more than one principal building on a lot, at least one of the principal buildings must meet the front setback.

Setback, rear. A rear setback means the minimum required distance, extending the full lot width, between the principal and accessory buildings and the lot line opposite the front line.

Setback, side. A side setback means the minimum required distance, extending from the front setback to the rear setback, between the principal and accessory building and the side lot line.

Site diagram means a drawing, drawn to scale, showing the location of buildings and structures on a lot, as well as driveways, curb cuts, alleys, streets, easements and utilities. See Appendix 1, Figure 1-4.

Site plan means a plan showing all salient features of a proposed development, so that it may be evaluated in order to determine whether it meets the provisions of this Code.

Stop work order means an administrative order which directs a person not to continue, or not to allow the continuation of an activity which is in violation of this Code.

Street means any public way, such as a public street, avenue or boulevard, at least 16 feet wide. Street does not mean "alley." See also "Private street."

Street, access. "Access street" means a street or alley designed primarily to provide access to properties.

Street, arterial. "Arterial street" means a street designed to carry high traffic volumes through the community.

Street, collector. "Collector street" means a street designed to carry moderately high traffic volumes from arterial and access streets.

Street, private. "Private street" means an officially approved thoroughfare, other than a public street or alley, permanently reserved as the principal means of access to abutting property.

Structural alterations means any change in a building requiring a building permit.

Structure means anything constructed or erected, the use of which requires a more or less permanent location on the ground or an attachment to something having a permanent location on the ground, including, but not limited to, freestanding signs, billboards, back stops for tennis courts and pergolas.

Tree Canopy Cover means:

- (1) The cover provided by tree crowns over the ground surface, either individually or as a group; also, a measure of the percent of a lot covered by all tree canopy, calculated by dividing the total area of tree canopy cover by the total area of the lot, and multiplying by 100.

Tourist home, high intensity means a single-family dwelling that is a primary residence which is owned and hosted in residence by the owner renting out not more than 3 rooms for compensation, limited to not more than 2 adults per room, to persons who do not stay for more than 14 consecutive days for 85 or greater guest nights per year.

Tourist home, low intensity means a single-family dwelling that is a primary residence which is owned and hosted in residence by the owner renting out not more than 2 rooms for compensation, limited to not more than 2 adults per room, to persons who do not stay for more than 14 consecutive days for no greater than 84 guest nights per year.

Townhouse means a multiple dwelling in which each dwelling unit shares a common wall with at least 1 other dwelling unit and in which each dwelling unit has living space on the ground floor and has a separate ground-floor entrance.

Trailer means any enclosure used for living, sleeping, business or storage purposes, having no foundation other than wheels, blocks, skids, jacks, horses or skirtings, and which has been or reasonably may be equipped with wheels or devices for transporting the enclosure from place to place. "Trailer" includes motor homes, travel trailers and camper vans.

Appendix 4. Proposed Riparian Buffer Ordinance

Transit center means a fixed location where passengers interchange from 1 route or vehicle to another that has significant infrastructure such as a waiting room, benches, restrooms, sales outlet, ticket or pass vending machines and other services.

Transitional housing means a facility which is operated by a government or a nonprofit agency providing interim sleeping and bath accommodations; interim eating and cooking facilities; and professional services to assist individuals or families in locating permanent housing.

Tree protection area means: the soil around and under a tree. The radius of the tree protection area measures 1 foot per 1 inch of diameter at breast (DBH) from the trunk outwards and 24 inches in depth. For example, for a 10 inch DBH tree, the Tree Protection area is located at least 10 feet out from the trunk and 24 inches deep.

Treelawn means the area of public right-of-way lying between the curb line of a curbed street or developed travelway of a noncurbed street and the nearest private property line substantially parallel to said street.

Trip end means the total of all motor vehicle trips entering plus all motor vehicle trips leaving a designated land use or building over a given period of time.

Vacation home rental means a commercial use of a dwelling where the dwelling is rented or sold for any term less than 30 consecutive days.

Woody plant means:

- (1) Vegetation that produces wood as its structural tissue. Woody plants include trees, bushes, shrubs, vines and woody perennial flowering plants.

Yard means an open space at grade between a building and the adjoining lot lines, unoccupied and unobstructed by any portion of a structure from the ground upward, except as otherwise provided in this Zoning Code.

Yard, front. "Front yard" means all land extending across the width of a property and lying between the building line and the front lot line.

Yard, rear. "Rear yard" means all land extending across the width of the property and lying between the building and the rear lot line.

Yard, side. "Side yard" means all land lying between a principal building and the side lot lines and extending from the front to the rear of the principal building.

Zoning Code means Part 13, Title One of the Code of Ordinances of the City of Traverse City and includes the text of this Zoning Code as well as all maps, tables, graphics, schedules as included or attached as enacted or subsequently amended.

The effective date of this Ordinance is the _____ day of _____, 2020.

I hereby certify the above ordinance amendment was introduced on _____, 2020, at a regular meeting of the City Commission and was enacted on _____, 2020, at a regular meeting of the City Commission by a vote of Yes: ____ No: ____ at the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan.

James Carruthers, Mayor

Benjamin C. Marentette, City Clerk

I hereby certify that a notice of adoption of the above ordinance was published in the Traverse City Record Eagle, a daily

Appendix 4. Proposed Riparian Buffer Ordinance

newspaper published in Traverse City, Michigan, on
_____.

Benjamin C. Marentette, City Clerk

Lower Boardman Unified Plan
SUMMARY of the July 2021 PUBLIC ENGAGEMENT

The public engagement conducted in July of 2021 offered participants three opportunities to provide input about the proposed alternatives and ideas being discussed for the Unified Plan-

1. During the face-to-face public workshops and focus group meetings conducted at the Opera House in downtown Traverse City on July 13, 14, and 15.
2. As part of the on-line public survey which collected input from July 13 until August 8. The input gathered from this effort is included in a separate report.

This report summarizes the common elements from the notations and the ideas that came out of the engagement that should be considered by the Leadership Team in the final draft of the Unified Plan.

HIGH LEVELS OF SUPPORT FOR THE UNIFIED PLAN

The face-to-face workshops did not generate the number of participants hoped for despite extensive outreach by the DDA to draw interested community members. This low attendance could be due to a number of factors-

- The project duration has extended beyond 2 years due in large part to the pandemic, and people have lost enthusiasm.
- With the trend upward of infections, there may have been some hesitancy to participate due to COVID.
- Civic engagement participation has waned as people recover from the social impacts of the pandemic, and on a nice summer day are more likely to find more valuable pursuits!

The input received during the workshops was very insightful and helpful, as the sessions could function more as one on one and small group discussions on the merits of the ideas presented.

The online survey reached more than 200 people, who were given the opportunity to participate in parts or all the engagement. The online survey was paired with a website that provided reasonable detailed descriptions of the policy ideas and project alternatives being discussed. Just under two thirds of the survey participants were residents or business owners in the city, and the remaining participants were typically residents of the region interested in the Boardman River and/or downtown.

Positive support for the project was a clear takeaway from the overall engagement-

- *Based on the public on-line survey, the lowest amount of support for one the projects or ideas presented was 70%, which is to say, the key elements of the Unified Plan are highly supported by the community.*
- *The majority of input was consistent with the results of the initial public engagement in the summer of 2019, including support for a green restoration of the river, reasonable regulation of development along the river, increased (and more continuous and accessible) access to the river for the public, and better maintenance and management of recreational river users.*

COMMON THREADS and PROJECT DIRECTION

In both the workshops and online survey participants were given the opportunity to indicate support for policies and projects (or lack thereof!). The two groups of participants reached consensus for the policy ideas and alternative projects presented for most of the project areas, including:

EIGHTH STREET AREA: Add boardwalk under bridge and along river south of 8th Street, connecting the existing path to the existing trails to the south along the water.

CASS STREET: Add a boardwalk under the South Cass Street bridge for Universal Access.

PINE STREET BRIDGE: Add a tree top walk/new pedestrian bridge connecting Hannah Park to the north side of the river through an easement in the Uptown development.

WEST BEND: Add boardwalk in the river on the eastern bank around the western bend of the river to connect to the proposed Front Street underpass from the boardwalk currently terminating at the Uptown development.

FISH WEIR: Add kayak portage and connecting walk near the fish weir.

UNION ST. TO PINE ST. (pedestrian bridge): Add overlooks and boardwalks on the south side of the river.

200 BLOCK NORTH BANK: Add green space, access, and habitat.

EAST END: Link the north side of river to TART, including a new pedestrian bridge near the Murchie Bridge.

RIPARIAN BUFFER and GREEN RIVERBANKS, including the removal of vertical walls where appropriate and increasing building setbacks in key zoning districts west of Park Street.

BEST PRACTICES for managing pollution of the river.

PARKING: Many commentors from both the workshops and online survey indicated that they supported the removal of parking from along the river shoreline, but that the replacement of this parking needed to be implemented in conjunction with the removal.

There were two project areas where the two groups diverged in opinion as to the appropriate solution, including:

- STATE STREET LOT: Convert parking lot E into open space and (potentially) a First People's Cultural Center. The workshop participants preferred the solution that included a built community focused facility such as a First People's Cultural Venter, while the online survey participants expressed a preference for an open park space.
- 100/200 BLOCK SOUTH BANK: Create a shared space alley while moving sewer and stabilizing the bank. The workshop participants preferred the solution that created more space for people focused access to the water and events, while the online survey participants expressed a preference for a less intensively developed riverbank.

NEW IDEAS

A number of new ideas were generated from public input which will be under consideration by the DDA's Leadership Team, including:

A. PHYSICAL IMPROVEMENTS

- Connect to Kids Creek on west end behind fire station
- Connect river to waterfront in East Front Street near terminus of Boardman Avenue. Improve crossings to be like the one at Hall Street.
- Add transient dock on the open space near the terminus of Boardman Avenue
- Consider floating docks to adjust to water levels (since the river does not typically freeze over)
- Provide kayak launch on the north side of river on the 200 block of Front Street
- Provide publicly accessible bathrooms
- Improve connection to boardwalk at Government Center and consider boardwalk on the north/east side of river south of 8th street.
- Add public art, public restrooms, seating, wayfinding signs, lighting
- Replace pilings at river mouth with stone that would increase beach. Connect north and south sides of Grandview in this area.
- Improve options for biking along river and connecting to TART.

B. PROCESS

- Engage with EGLE on Unified Plan ideas
- Further develop parking replacement/increases approach in conjunction with plans to remove parking spaces along river.
- Prepare a plan and/or strategy for the Union Street dam area should that project fail to be implemented.

C. POLICY

Appendix 5. Round Two Public Engagement Results

- Maintain the facilities and river corridor to a higher degree than typical.
- Engage park police and ambassadors to encourage positive behavior, increase perception of safety, and provide basic assistance to visitors.
- Ensure space for Antique Boat Show within project area, but don't base entire plan on one event.
- Make parking lot T a park space, not a development site.
- Support for riparian buffer concept and a greener riverbank.

NEXT STEPS

The public input should drive the physical form of the projects within the Unified Plan, inform the land use development policies, and help establish priorities for implementing the plan.

DRAFT

LOWER BOARDMAN-OTTAWAY RIVER

PUBLIC ON-LINE SURVEY REPORT

AUGUST 17, 2021



SMITHGROUP

PURPOSE

Background

- A comprehensive public engagement program was conducted in July of 2017
- The DDA and Leadership Team sought public input on ideas related to land use policy and best practices, and physical development of the riverfront for recreation and habitat

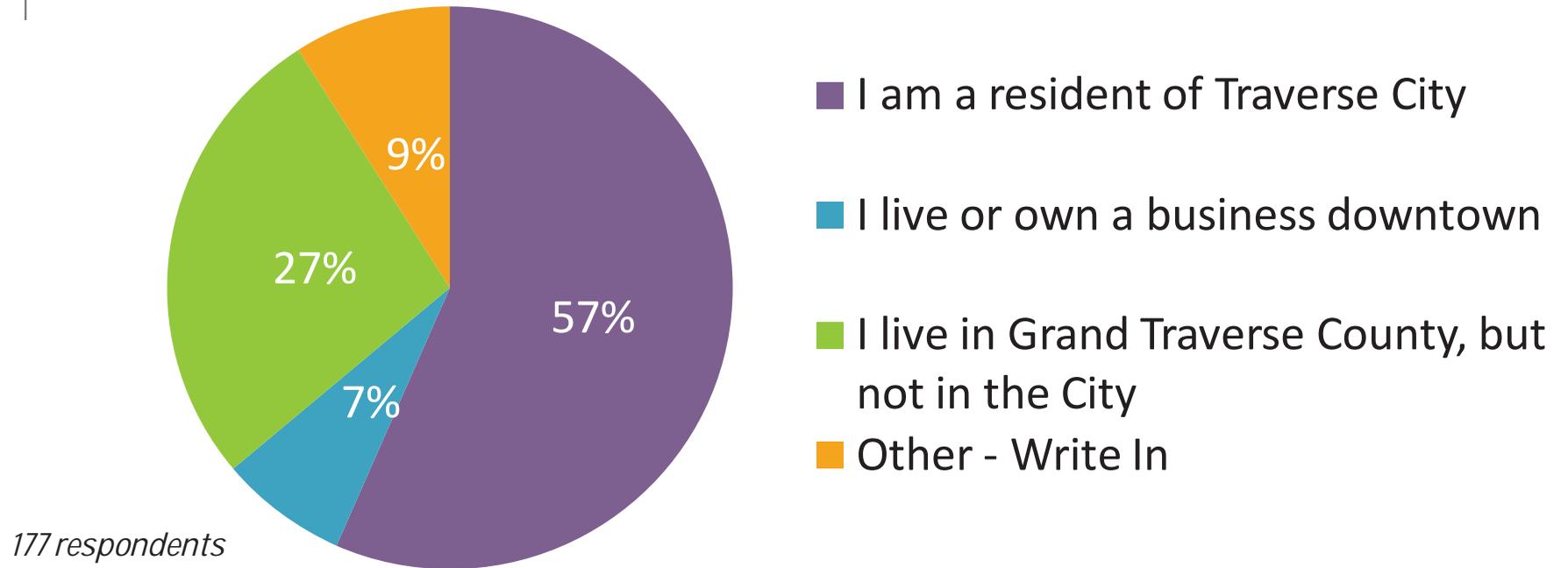
Engagement Opportunities

1. A website that outlined alternatives and ideas being considered
2. An on-line survey
3. A set of four focus group meetings
4. Three public open house meetings
5. A series of Pop-Up Workshops conducted in downtown.

This Report

- Provides a summary of the on-line engagement survey, and a comparison in the preferences expressed during the survey with those from the face-to-face workshops.

ON-LINE SURVEY



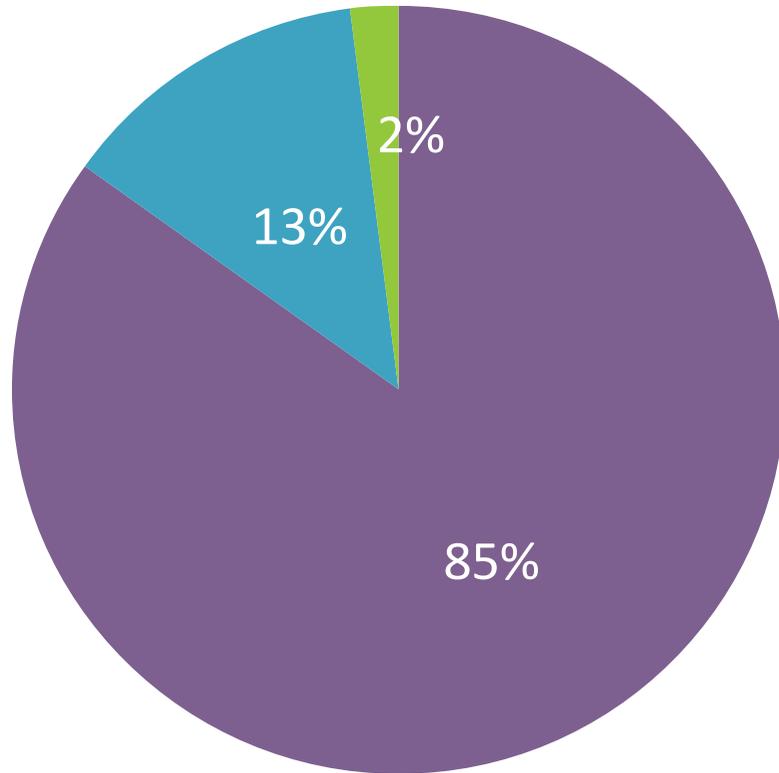
ON-LINE SURVEY

Comments from people who responded “Other-Write In”:

- I live just inside Leelanau county in Elmwood township
- East Bay Township
- Former resident, migrated just outside county line.
- Grew up here then moved to California. Currently residing with my dad in tc
- I Live in Elmwood Twp
- I grew up in TC and I own a condo here, but I am not a resident.
- I live in and own a business downtown
- I lived in TC for 10 years. Have lived in Greilickville for the past 20 years. Have loved walking near the river over the years, and continue to do so.
- Leelanau County resident
- Lived near upper Boardman 23 years
- Local Government Official
- Summer resident

PARKING

- The proposed ordinance restricts parking from being in the riparian buffer to protect water quality. Do you believe the setback should restrict new parking adjacent to the river?



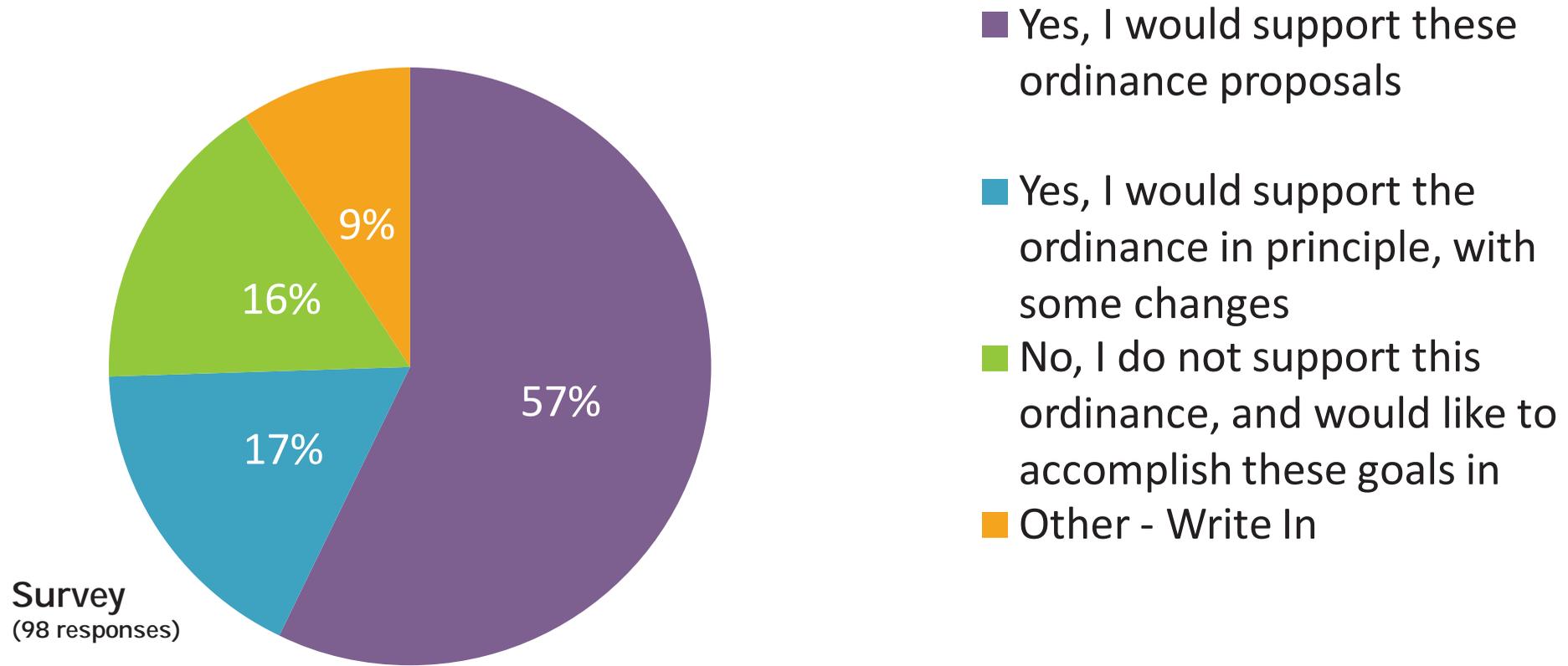
Survey
(99 responses)

- Yes, I support that approach
- No, I think parking should not be restricted
- Other - Write In
 - 25 ft setback at the very least
 - I support it, but I really hope there are plans to address downtown parking, we also work and own a business downtown, it becomes a huge issue for us and employees

RECREATIONAL USE OF THE RIPARIAN BUFFER

The draft ordinance allows private recreational use of the buffer in downtown for paths, decks, and docks, not to exceed 20% of the land area. Sites offering public access would allowed to have up to 40 % of the buffer for paths, decks, and docks. The draft ordinance would also restrict manicured landscapes, parking, service drives, and unrestricted tree removal.

Do you support these proposals?



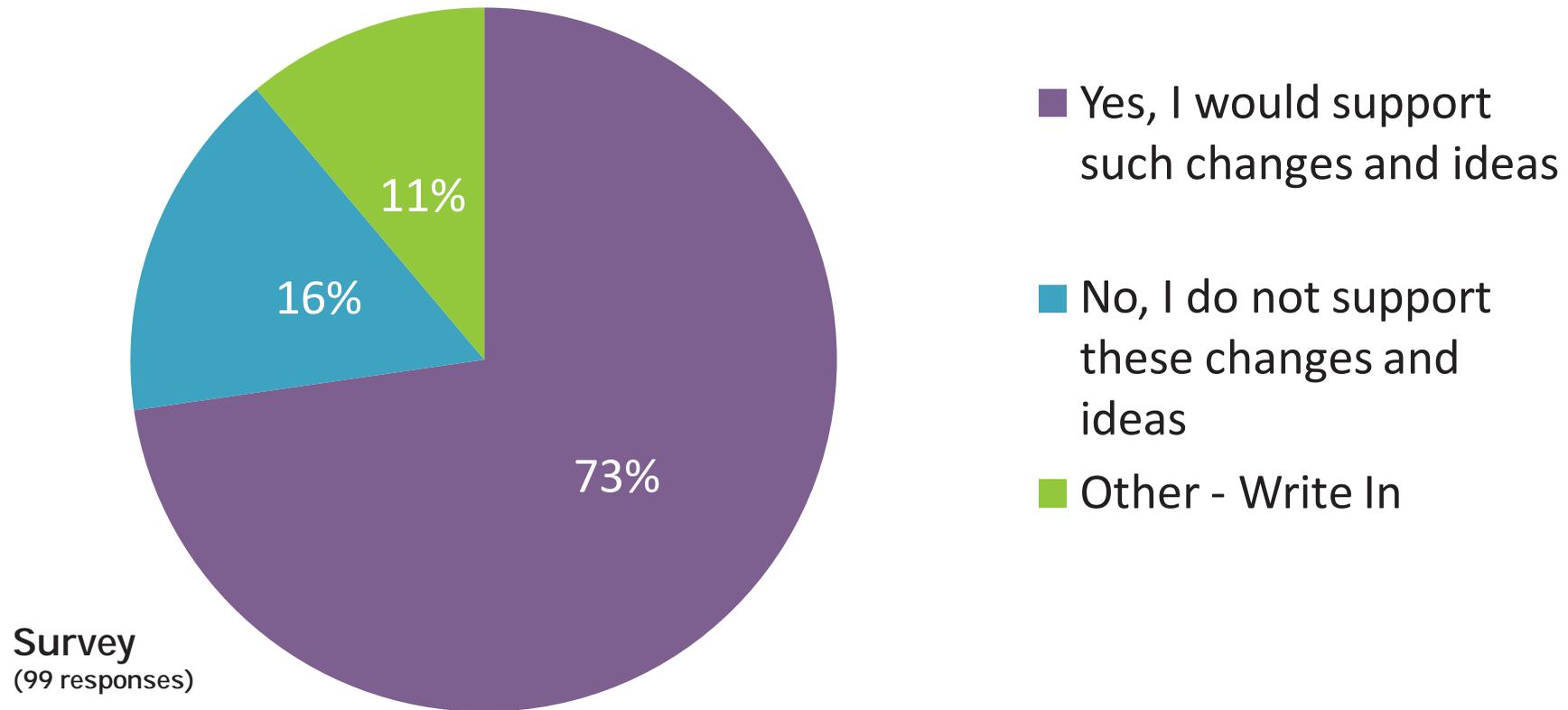
RECREATIONAL USE OF THE RIPARIAN BUFFER

Comments from people who responded “Other-Write In”:

- I would support but would allow invasive species and trees causing existing structural damage (roots in foundations, etc.) to be allowed to be removed and replaced with more site appropriate and native landscaping.
- Prohibit fertilizers & weed kill. Change setbacks to 35 ft and no hardwalls.
- Should be totally public, not private at all
- The public input feels like a sham. The DDA (sic)
- There should be no private use of the buffer whatsoever. Public access (sic) sites should include on the the (sic) minimal use necessary to access the river with motorless watercraft.
- Too vague. Natural bank to remain!!!
- need more information
- protection of the river comes first

LEVELS OF USE AND BEHAVIOR

- One of the key recommendations (based on previous public input) is to amend the city regulatory ordinances to address noise levels and excessive drinking on the river. The plan is also recommending working cooperatively with recreation vendors to encourage more positive behavior through education, signs, and providing adequate facilities, such as portage points.



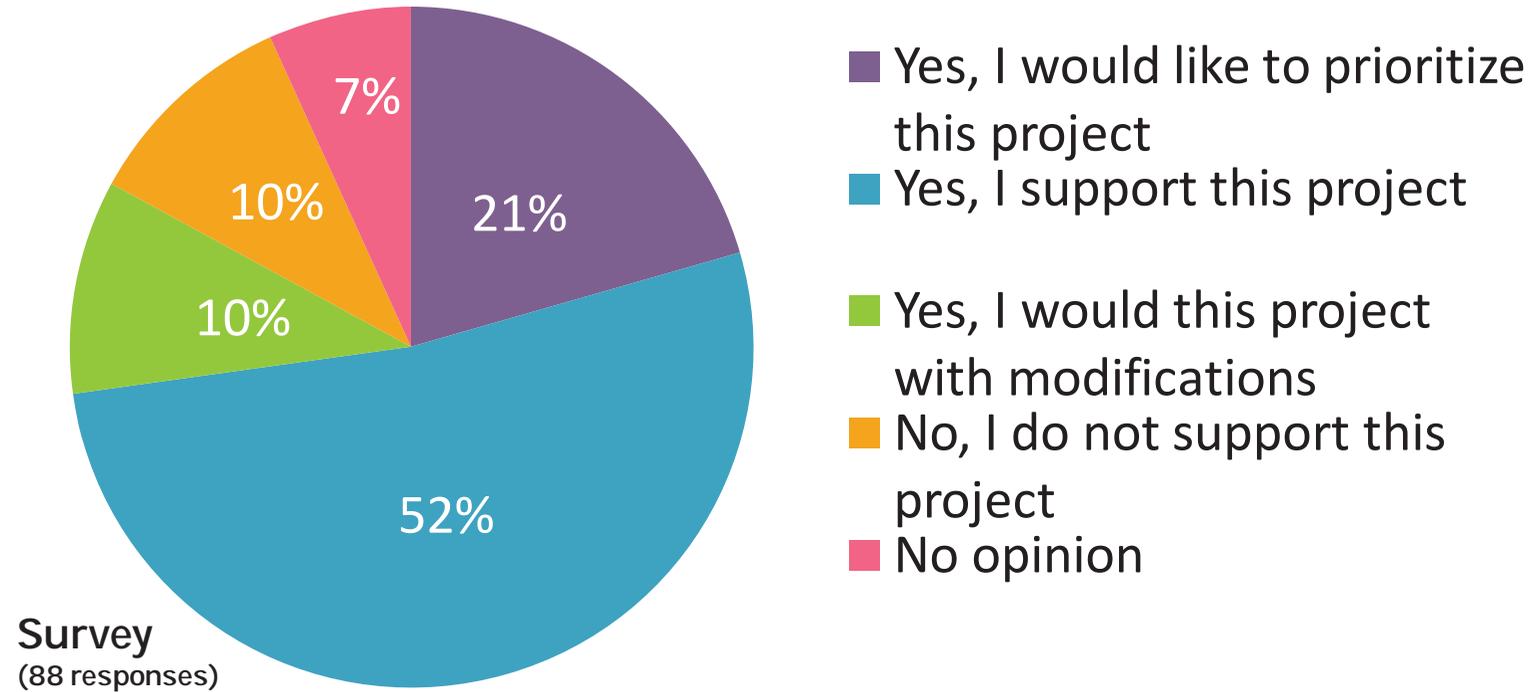
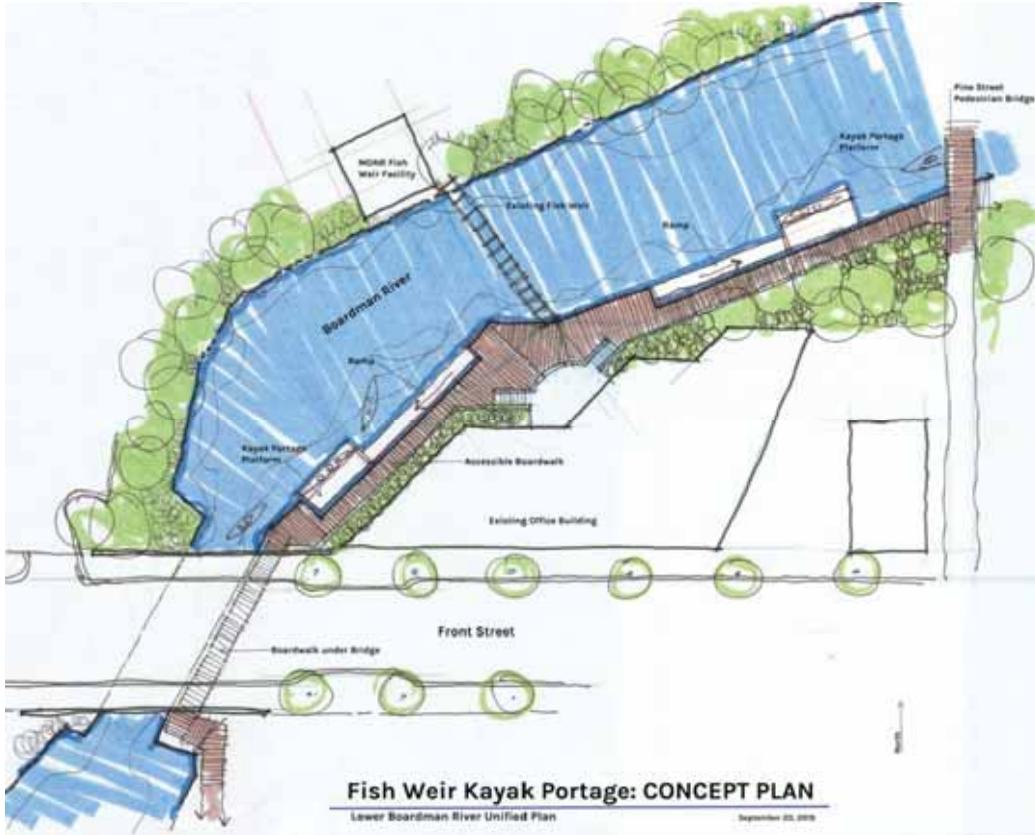
LEVELS OF USE AND BEHAVIOR

Comments from people who responded “Other-Write In”:

- Amend how? I support signage and facilities, but do NOT support increased allowance of alcohol or extended noise allowance
- I agree with the first sentence, but am totally against the second sentence. It is about enforcement not cooperation.
- I need more specifics before I can give blanket approval on new ordinances.
- I support the addressing of noise levels and excessive drinking, but I do not support adding "facilities."
- I support these changes and ideas and would like to specifically suggest that the paddle-and-pints tours be banned.
- I support these changes strongly. I think alcohol consumption ON the river should be banned.
- I want to know how an ordinance will address "excessive drinking." I think posting signs on the river is ugly.
- My last experience on the river was pretty awful with drunken, obnoxious behavior and disrespect for the river (cigarette butts being thrown in river!)
- Not concerned either way
- You should keep the Union Street park more natural. Keep the mature trees wherever possible. Don't have kayak business on the riverbank don't have all those tourist amenities. Most importantly don't re-create a "nature like "setting when you've got real nature to begin with
- no drinking when on the river

FISH WEIR KAYAK PORTAGE

- The variability of water levels has led to difficulty traversing the fish weir. One idea being discussed is the installation of ramps that allow kayakers and others to portage around the weir along the south side of the river.



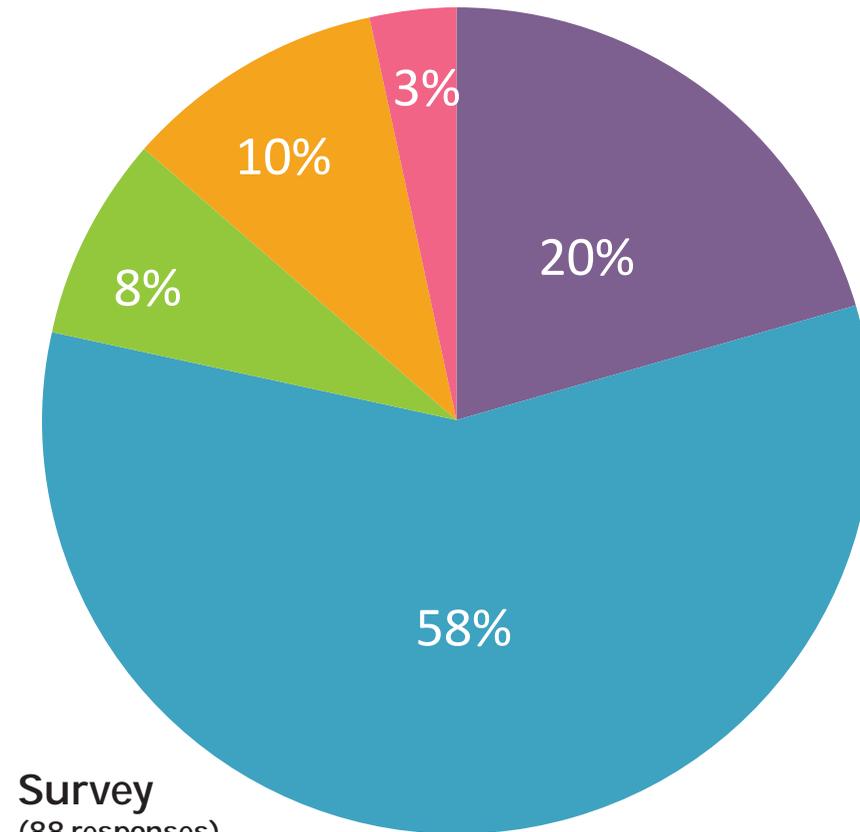
FISH WEIR KAYAK PORTAGE

Do you have additional comments on the proposed Kayak Portage?

- It is not difficult to kayak under the weir. Additional infrastructure is unnecessary (sic) spending and will require expensive maintenance.
- Entering and exiting kayaks is difficult from a platform or dock. I would like to see ramps whose lower ends are covered with at least 6in water at all levels of water likely to be encountered.
- see thru sections to watch directly below and a better design for the walkway more attractive and modern with lighting on it for safe walking at night with some possible information spots on the project
- It seems like there should be something to separate people moving their kayaks from other users of the boardwalk, or to assist people moving their kayaks. Maybe something as simple as an extra railing to separate walkers from kayakers, or possibly a wooden kayak chute to pull the kayak along easily (like at the Forks on the Boardman).
- Fix the bridge first it's literally crumbling apart...
- It may be helpful to explain why the fish weir is there and what, if anything, will happen to it when the Fish Pass project is done.
- Proceeding with this plan may involve a conflict between priorities of kayakers and the rest of the world; while it would be nice to have the portage, I would not favor it IF it meant that priorities of the non-kayaking group got constrained
- Restove (sic) riverbanks to natural state; Do something about cleaning up fish lines and hooks left by fishermen, as well as keeping homeless at bay and garbage clean up
- Leave the existing vegetation
- I would need more information
- No

UNION STREET OVERLOOK

- This small parcel of land east of Union Street offers an opportunity for a river overlook and for businesses to take advantage of river views.



Survey
(88 responses)

- Yes, I would like to prioritize this project.
- Yes, I support this project.
- Yes, I support this project with modifications.
- No, I do not support this project.
- No opinion.

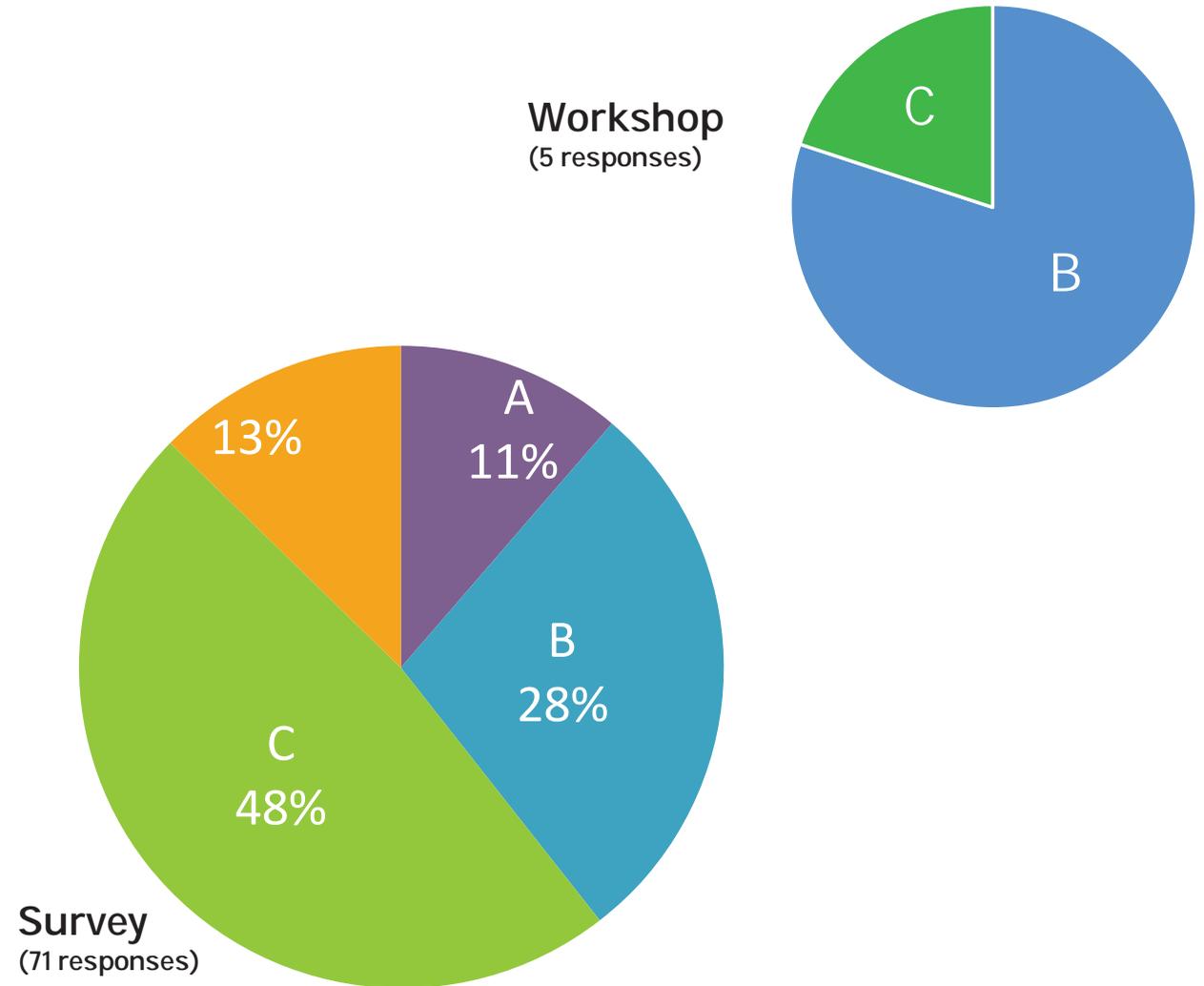
UNION STREET OVERLOOK

- Do you have a preference for which Union Street Overlook alternative you like best?



UNION STREET OVERLOOK

- Do you have a preference for which Union Street Overlook alternative you like best?



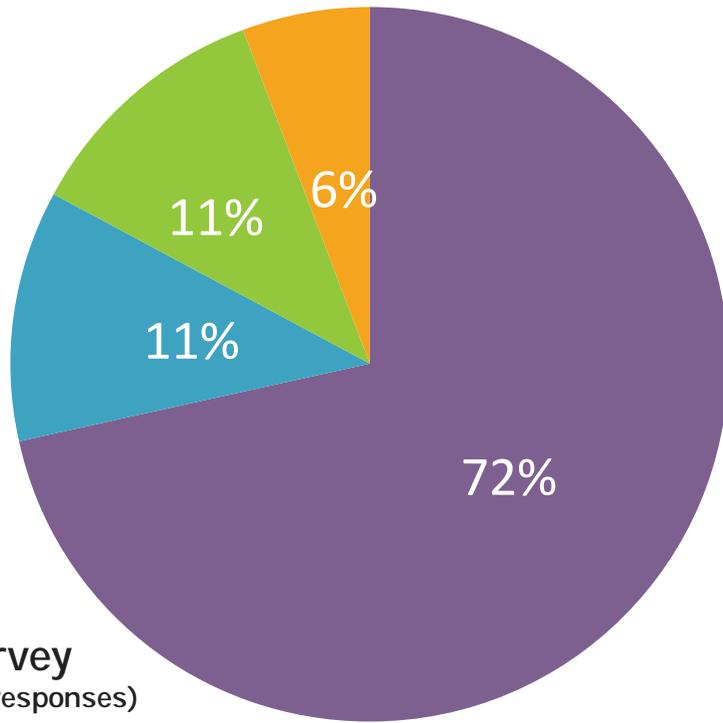
UNION STREET OVERLOOK

What other ideas do you have for the public parcel just west of Union Street ?

- I don't know what to say - there is sooooo much asphalt/concrete! Parks
- leave it natural
- Please keep the trees. Don't make this a concert space or food truck platform or "parklet" or any such thing. A clean, narrow, discreet deck/overlook of simple design would be okay here.
- More accommodating foot travel
- Keep it natural. Trim but keep trees.
- Down lighting, similar to how Ann Arbor handles their light pollution.
- Leave it as green space
- We need the parking
- No food trucks, places for people to sit and enjoy the river can hardly see the river in some places anymore. It should be a scenic area for all to enjoy.
- Do not develop the land for the sake of developing the land. The beauty of the area is in it's natural state, not buildings.
- Be sure to include seating and handicap access. Good lighting is important. Planter boxes? Simple roof 0 sun/rain blocking structure?
- You have switched from east of Union to west of Union. What parcel west of union...the overlook to the south of the bridge? That's fine.. just needs to be spiffed up a bit.
- Low developmenet (sic) of it - keep it natural with a spot to fish and a public trail connector from union to the pedestrian bridge at J & S/State Streetal to (sic)
- remove all the junky seawalls and rip rap and restore river to natural bank

CONNECTIVITY

- Should walks connect on both sides of the river where possible?



Survey
(88 responses)



- Yes
- No
- No preference
- Other - Write In

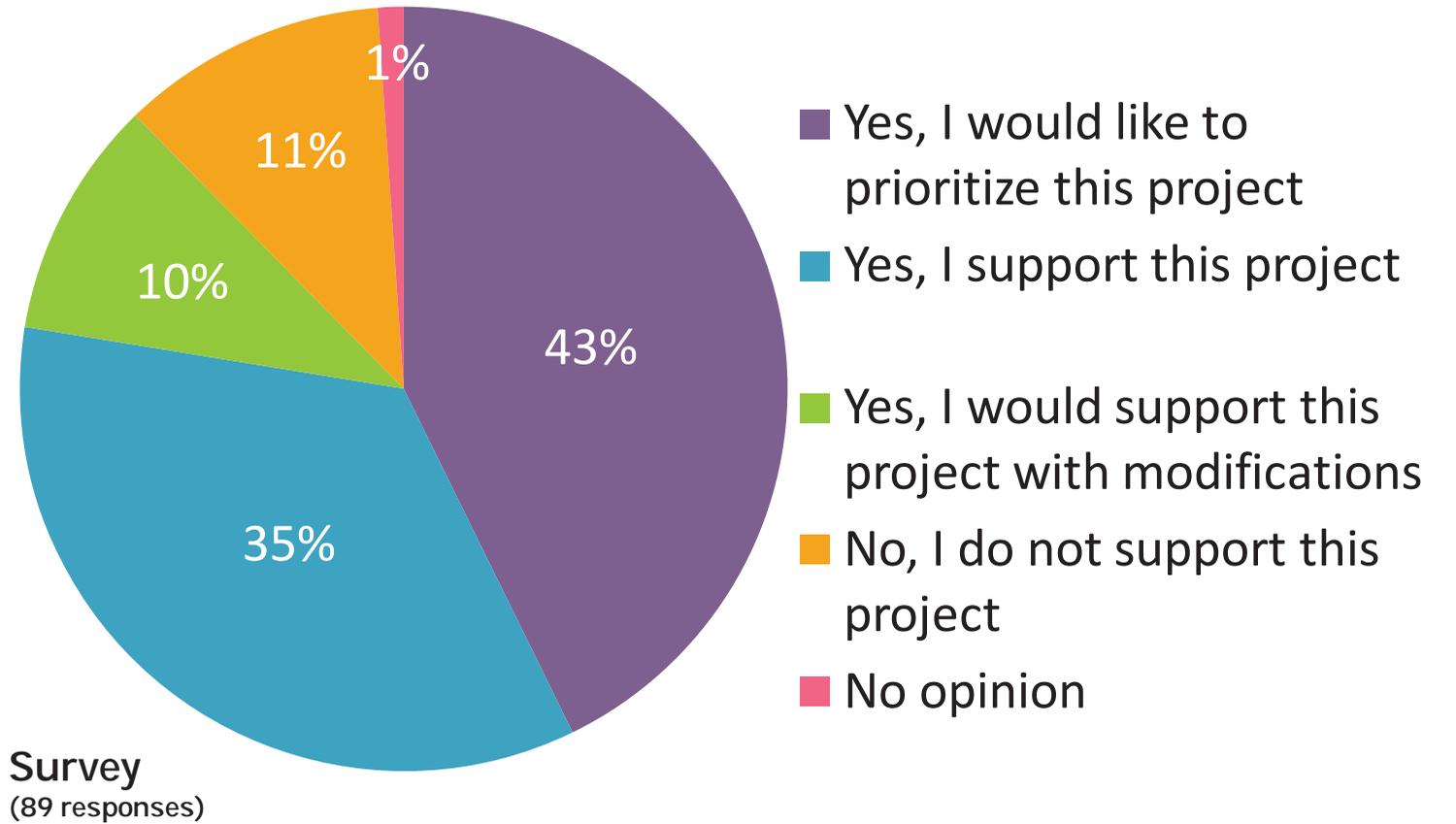
CONNECTIVITY

Comments from people who responded “Other-Write In”:

- Keeping in mind the current flow for fish and wildlife habitat
- River walk on one side. Natural bank on the other.
- Since the natural flow of the river was diverted in the 1950s to accommodate the parkway and development, TC now is faced with terrible infrastructure problems worst of all the sewer main sitting on top of the retaining wall which is being scour the way behind Horizon books on Front Street. The sewer main problem because of the way the river is forced to flow should be the number one priority. Everything else in the aesthetically pleasing in plans you show us pales by comparison to the environmental needs regarding the river and the infrastructure.
- Yes. Isn't breakwater already starting this project on the north side of the river there?

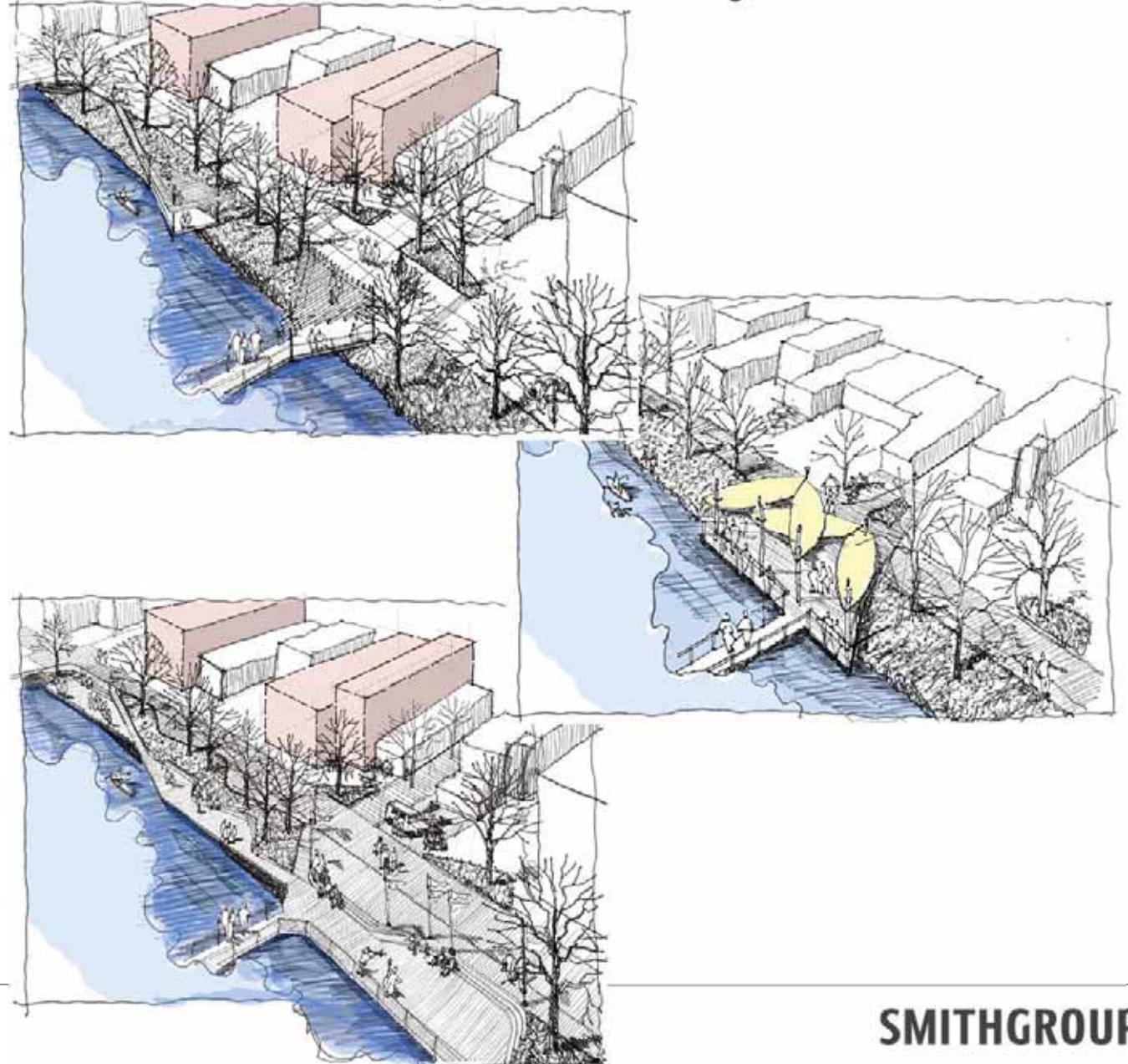
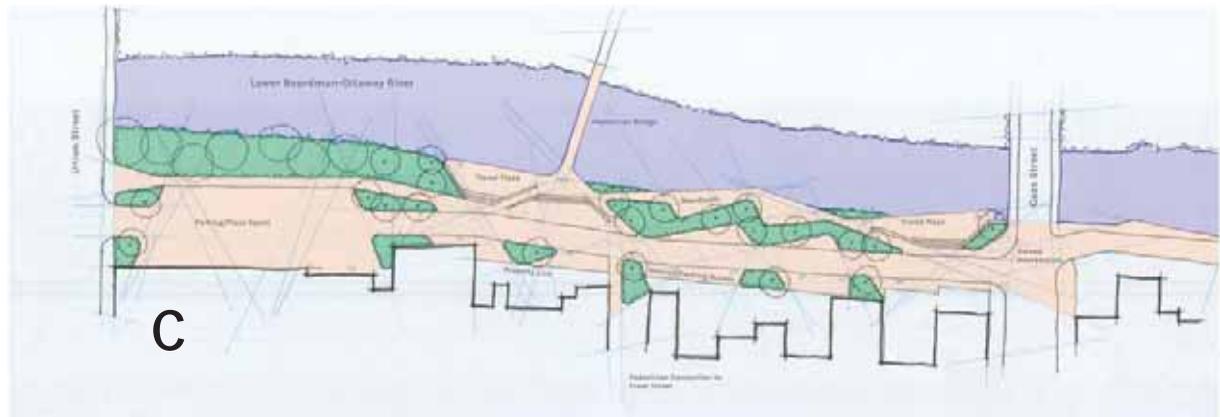
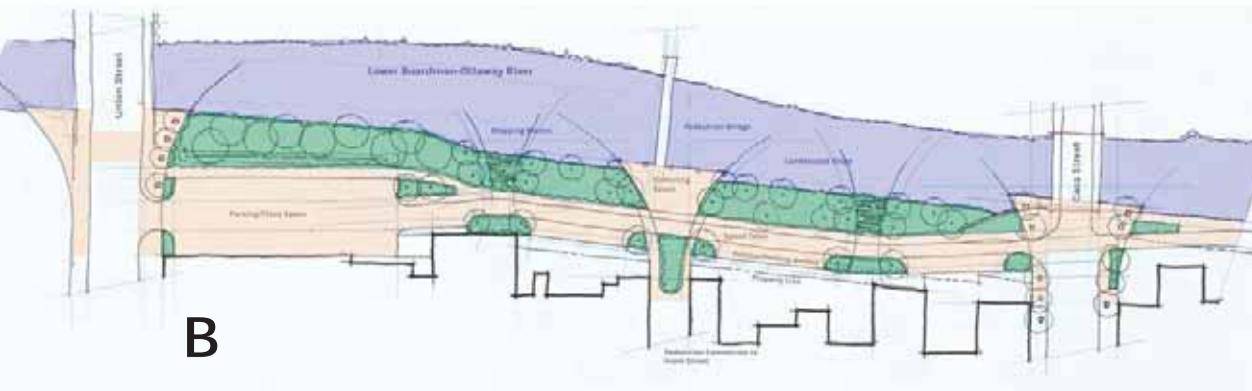
100 BLOCK OF FRONT STREET

- Do you support redeveloping the riverbank and alley along the 100 Block of Front Street as part of this infrastructure upgrade to stabilize the wall and sewer?



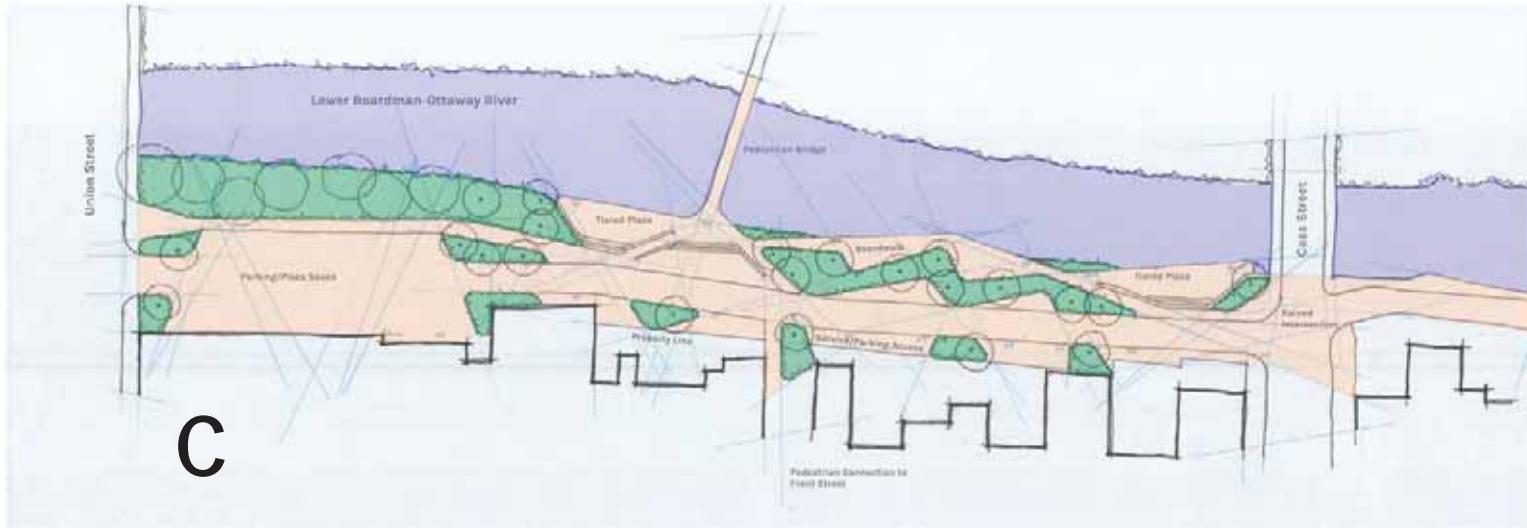
100 BLOCK OF FRONT STREET

- Do you have a preference for which 100 Block of Front Street Concept alternative you like best?

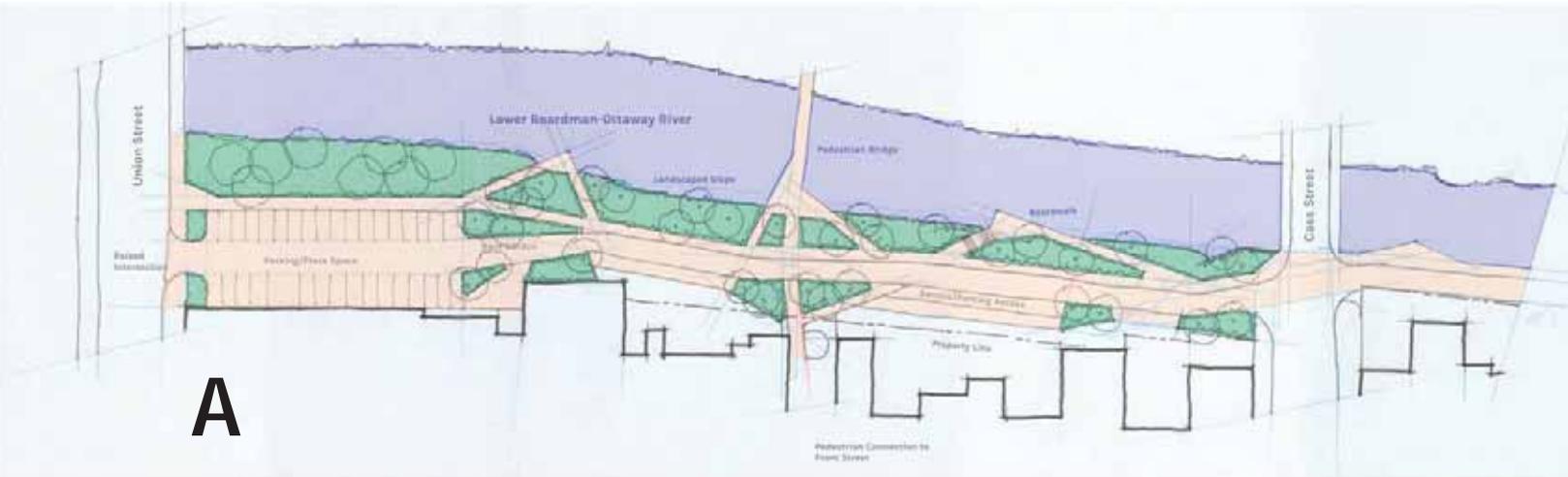


100 BLOCK OF FRONT STREET

- Do you have a preference for which 100 Block of Front Street Concept alternative you like best?

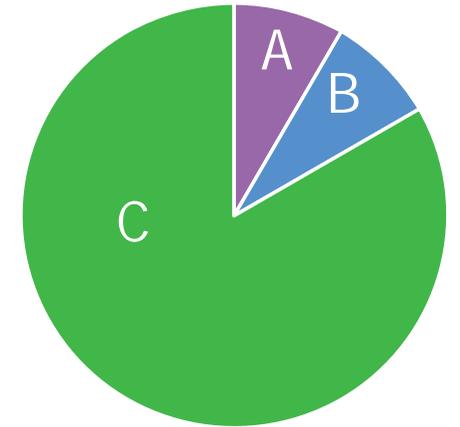


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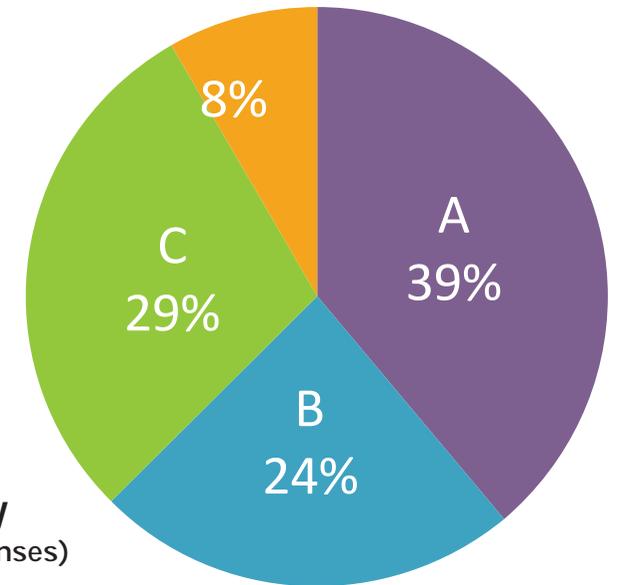


A

Workshop
(12 responses)



Survey
(72 responses)



100 BLOCK OF FRONT STREET

What other ideas do you have for the 100 Block of Front Street area?

- eliminate the additional bridge bridge (sic)
- As much "green" space as possible
- Keep it as green and natural as possible with a large marsh-grass berm. Minimize concrete and crowds. Return this section to nature. Hide the huge sewer mains behind the lush greenness. Parking and recreation should not be here. Only enough parking and vehicular access such that the downtown merchants have room deliveries/maintenance/trash/utilities/(etc.) and that their employees might have places against the buildings to park. Get rid of the public parking that immediately abuts the river corridor. Just do away with it altogether and return the berm to green.
- Remove 100% of parking, restore the riverbank to a more natural state, and prioritize pedestrian access and enjoyment of the river.
- Battleships
- Fix it before anything else. The next intense rain could spell disaster.
- I would like the bank to slope down to the river as it does on the other side. I would like to see only limited stretches of boardwalk that are raised above the river. Stone stepped areas are great and they blend well with a riverbank.
- The area needs life to showcase its beauty and B sets it apart. This will also extend the area for people to witness the beauty of the area.
- Tie the new bank design into the pathway to Front St to have one cohesive area.
- I do not support the removal of nearly all downtown off street parking
- stabilize the wall/sewer and KEEP THE PARKING

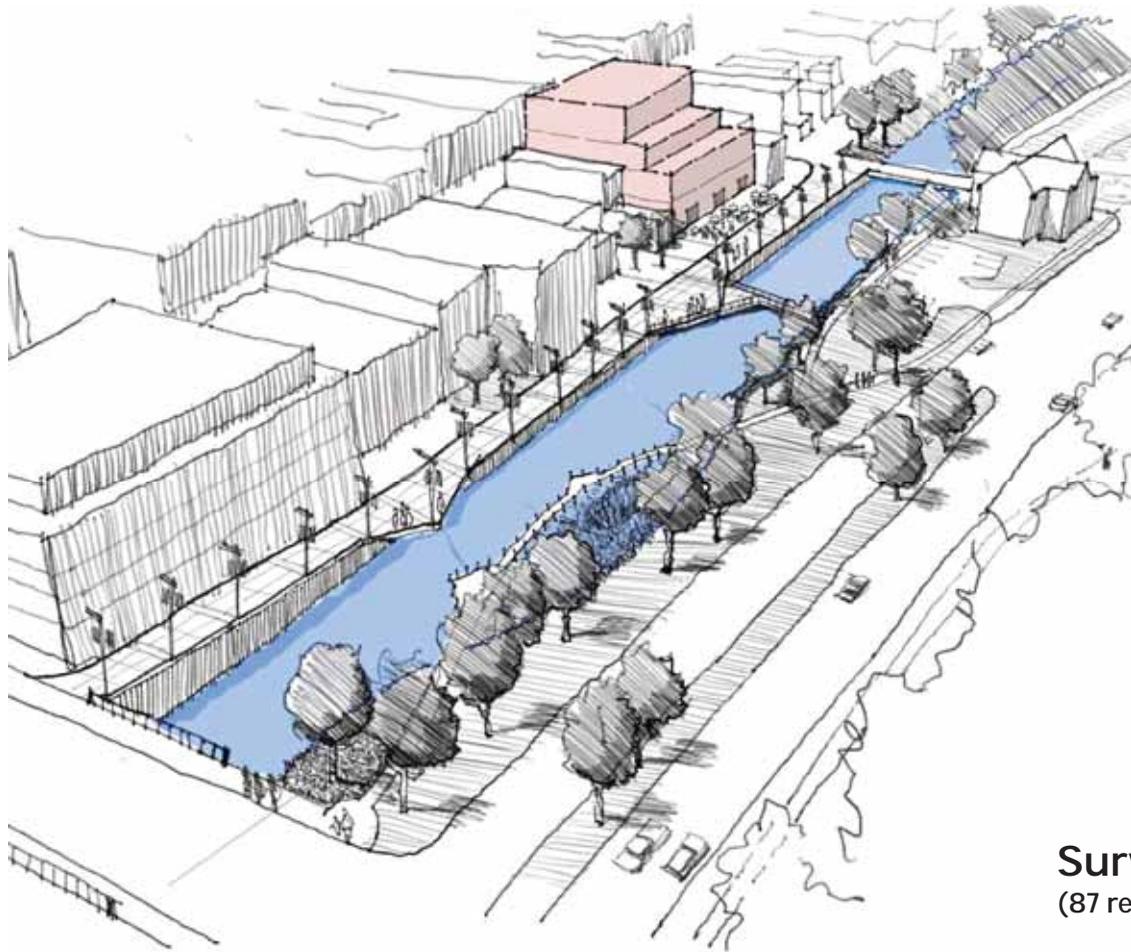
100 BLOCK OF FRONT STREET

What other ideas do you have for the 100 Block of Front Street area?

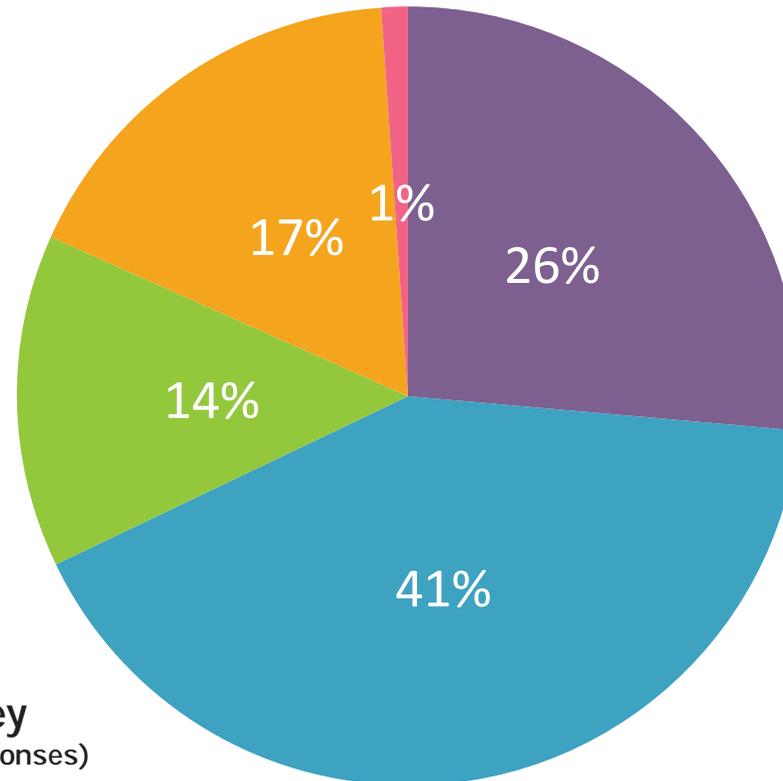
- I am torn between A and B. I think it is critical to increase vegetation in that area but like to think of the fishermen as well. It bears being cautious of building all sorts of walkways that need considerable (costly) maintenance
- From May 1 - to October 31st, limit delivery/garage pick up times in the alley to before noon and after 11pm. Businesses with on-site employee parking should be asked to not use it during those months to allow for the alley to become pedestrian only. Allow restaurants and stores to spill out to the open areas in the back. Add mini pop up shacks for etsy style vendors, farmers, or food trucks (like downtown Walloon), and perhaps permanent busker spots or entertainers (jugglers, face painters, etc.) Like a mini Friday Night Live every day. Mini booths/shacks can be rented for the season, weekly or even daily for area crafts and cottage businesses. You could even reserve one for non-profits to showcase their services.
- I like the concept w most greenspace and stormwater filtration
- Get rid of walls and ugly unnatural hardscape
- save some public parking
- Because of the stability problems on this segment of the river, I support the quickest solution that does not exacerbate the problem in the future. It seems to me that Alternative A is that solution. But eliminating those parking spaces increases the need to replace those spots in the proposed west end parking structure.
- I like C but would hope that there could be at least one stepped access point. Nice to be able to connect directly with the water

200 BLOCK OF FRONT STREET

- Do you support expanding open space on the north side of the river and pedestrianizing the alley along the 200 Block of Front Street?



Survey
(87 responses)



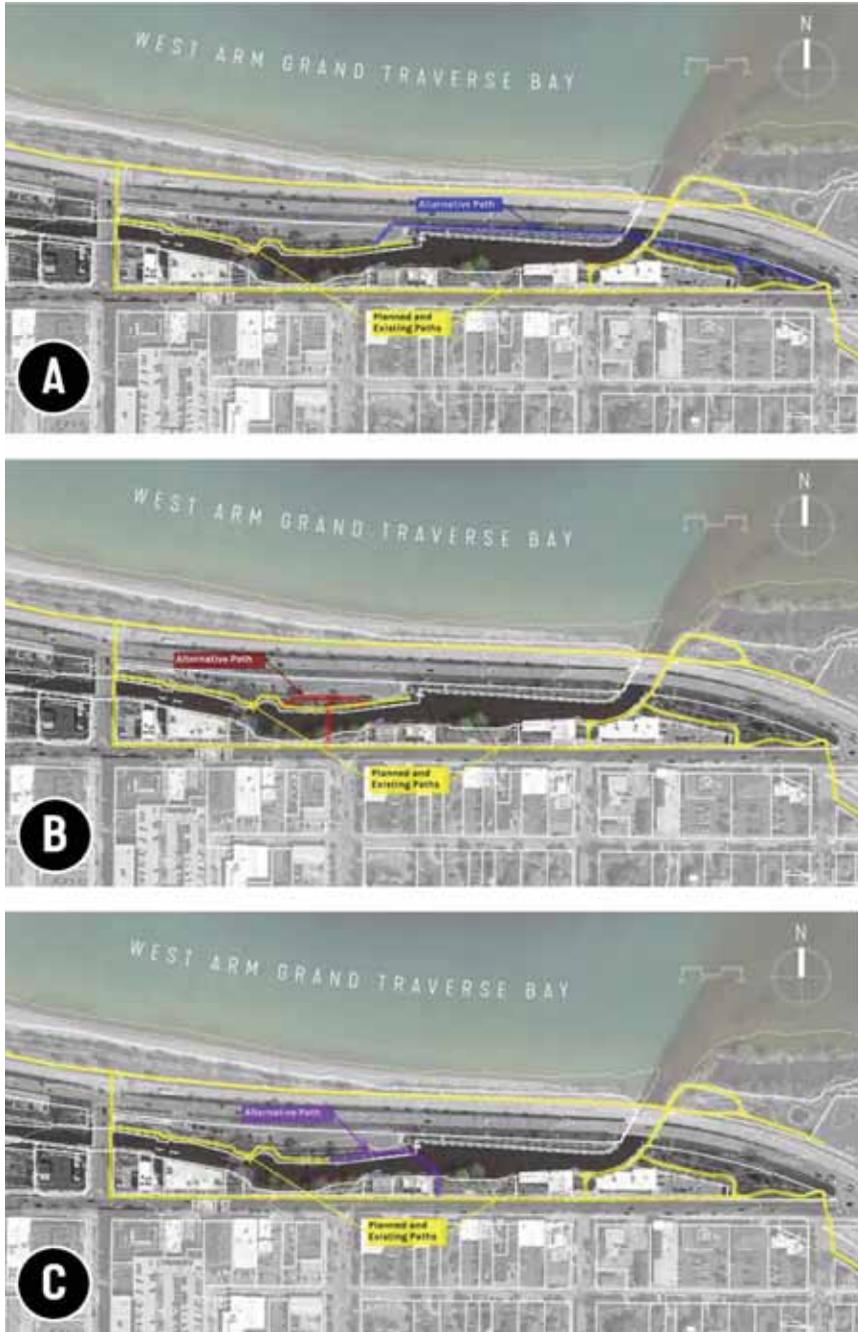
- Yes, I would like to prioritize this project
- Yes, I support this project
- Yes, I would support this project with modifications
- No, I do not support this project
- No opinion

200 BLOCK OF FRONT STREET

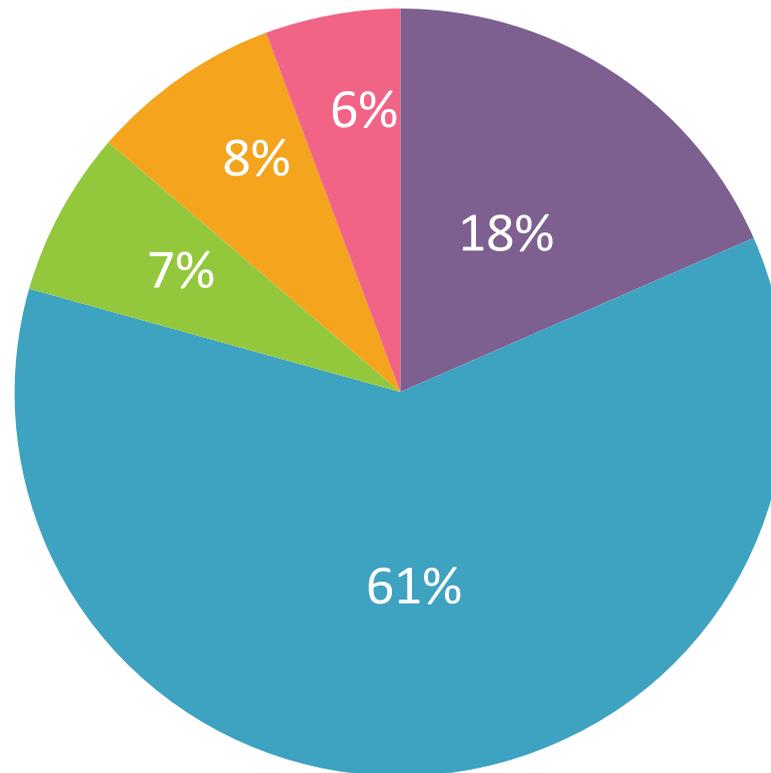
Do you have any additional comments on the 200 Block of Front Street Concept project?

- Don't overdesign it. Keep it clean and simple.
- Prohibit automobile traffic in that stretch of what is now alley - all deliveries to be done on Front St.
- Let the Boardman River resume its natural flow to the bay.
- I approve of increasing the vegetation area on the north (sic) side but think that you could still have parking there.
- Modern bridges with art to mix with nature with night lighting on the bridges
- Leave the parking you are taking it away from these blocks
- No more construction of buildings once there they will never go away and it will be too late to enjoy the river unless you are working there. We already look like a concrete jungle!!!!
- Need more specification as to what is meant with terms like "increase density" of private
- I support the reduction of parking in all cases.
- I don't think we should lose as much Parking as is proposed and the boat launch should be kept
- Keep the parking
- So much of these changes are predicated on a new parking structure being built on the west side of town.
- The south side of the river is okay, but I don't like the north side as depicted.
- I feel like businesses still need alley access and that alley is too narrow to accommodate both in a useful way. The bank should be restored in some way. The cement walls are problematic. I think just a simple pedestrian boardwalk on both sides of the river is acceptable given the small space.
- Again, removing parking spaces that are currently being used means you need to replace them elsewhere, and not in the neighborhoods. Build the west end parking structure if you're going to remove these parking spots.
- repair the sewer first
- I love the idea of green, usable space instead of asphalt for storing cars, but it will make downtown employment even less desirable if people have to walk a long way (esp. in winter) just to get to work (and usually pay for parking as well). If downtown wants to maintain a reputation for service, it needs to keep up levels of skilled workers. The two parking decks are usually pretty full already--this needs to be addressed somehow.

EAST END OF FRONT STREET



- Do you support creating a walking loop along the East End of Front Street?



- Yes, I would like to prioritize this project
- Yes, I support this project
- Yes, I would support this project with modifications
- No, I do not support this project
- No opinion

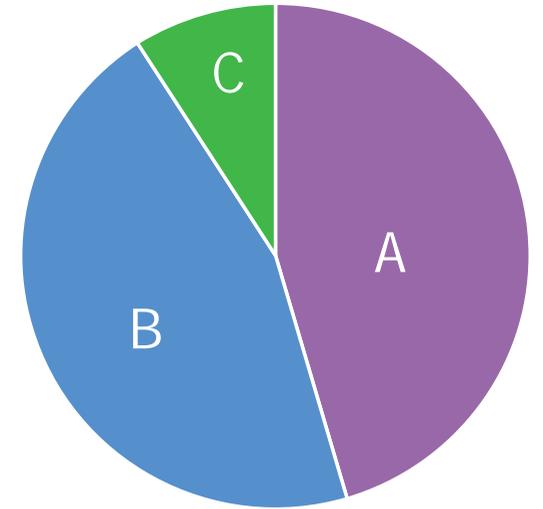
Survey
(87responses)

EAST END OF FRONT STREET

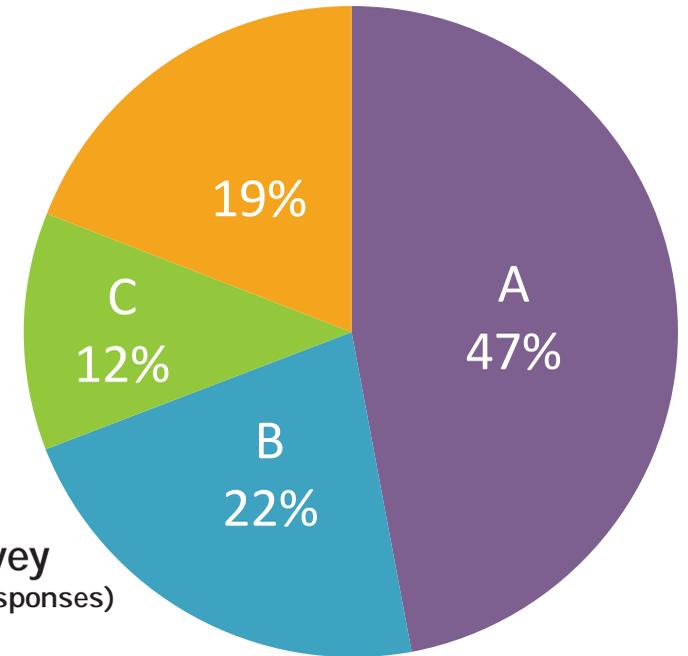
- Do you have a preference for which walking loop alternative you like best?



Workshop
(11 responses)



Survey
(68 responses)



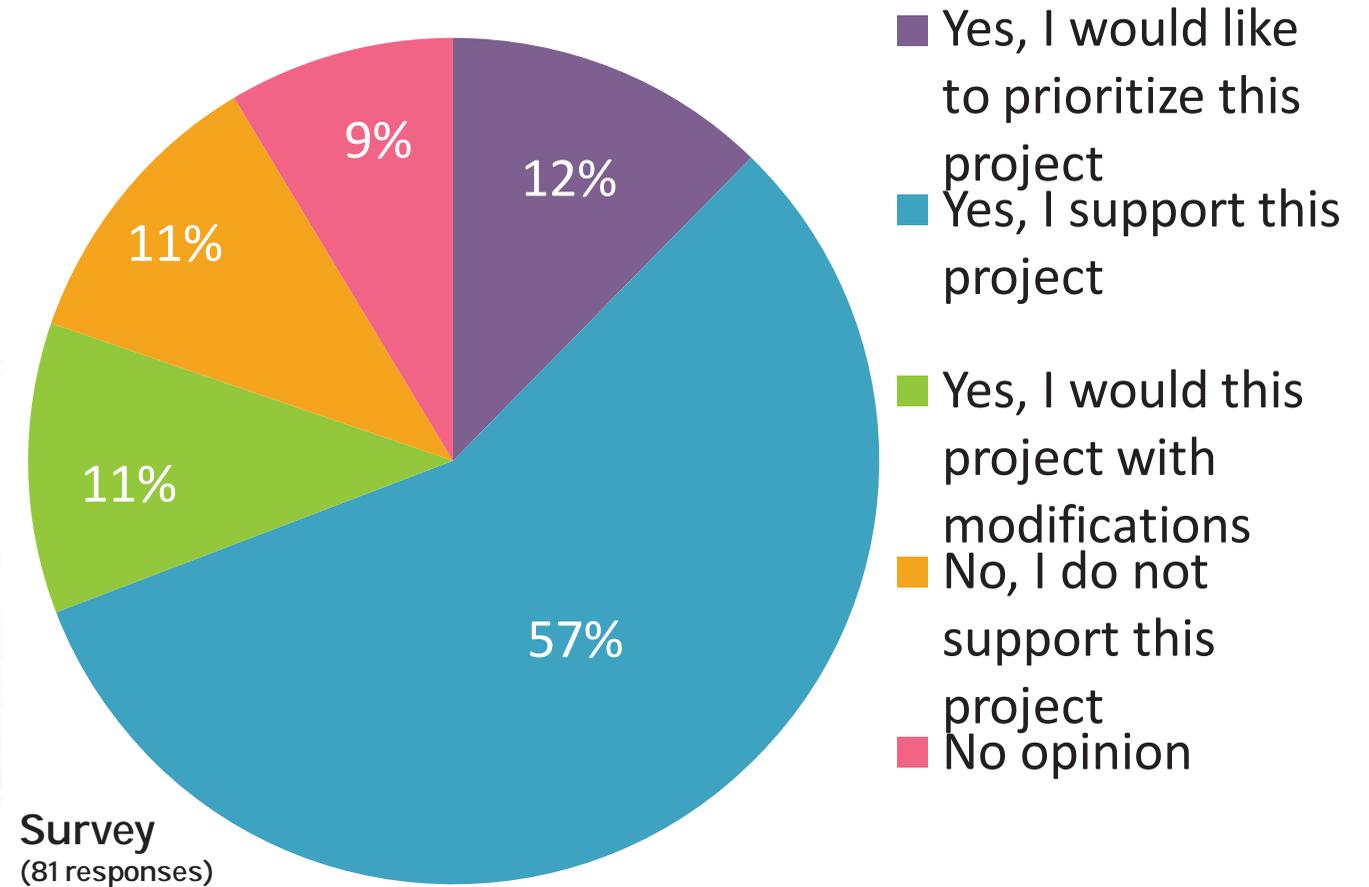
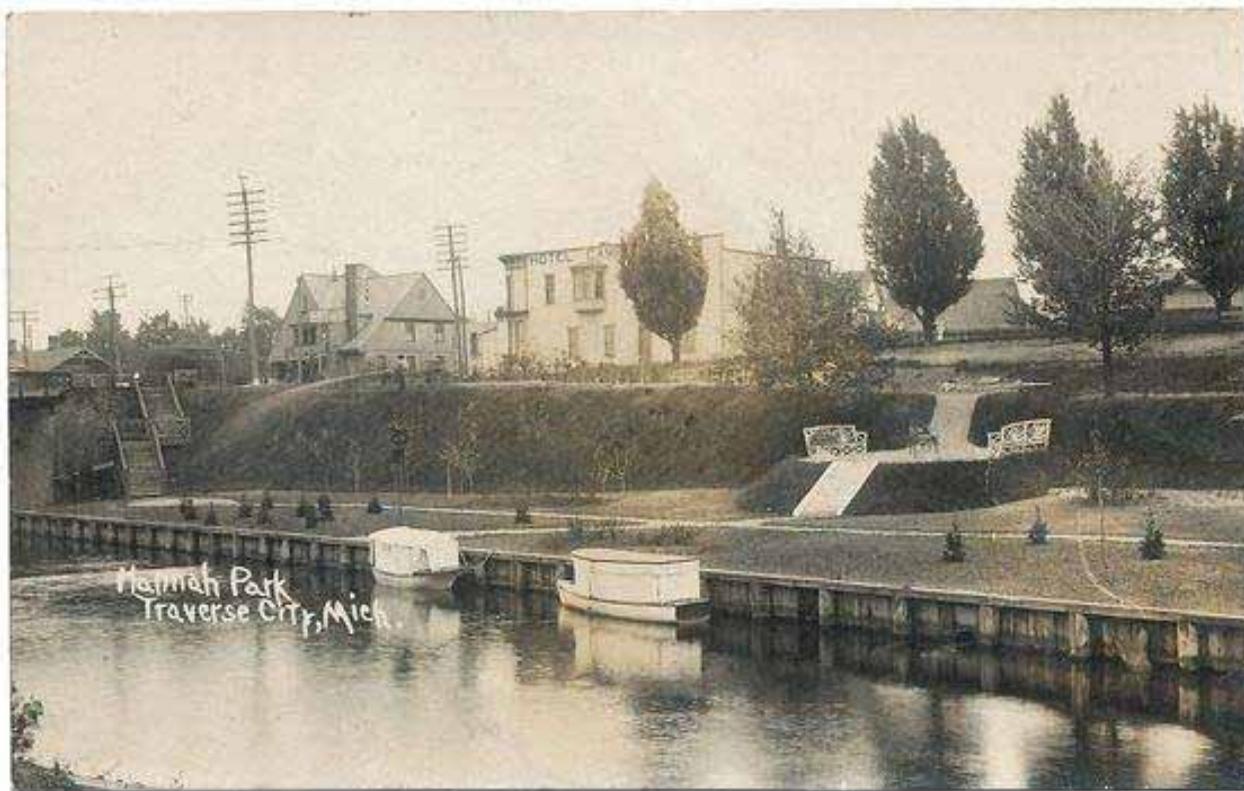
EAST END OF FRONT STREET

What other ideas do you have for the river corridor on the East End of Front Street?

- Leave the north side of the river untouched. Keep it as natural and green as possible. There is enough pedestrian access to Downtown here via the existing connector path that runs through Clinch Park. Squeezing in an additional pathway in that narrow, green, steep bank immediately below the rush of heavy traffic on Grandview seems like a very bad idea. The existing riverbank is a natural buffer between the busy street and the river. Keep it. Don't compromise it by squeezing in an unnecessary pathway, which will be costly to build and maintain anyway.
- It seems to need pumping equipment already. The retaining walls that force this course for the Boardman River will continue to cause problems with the scouring flooding etc.
- Can't support this project because it does not take boaters into consideration. It has become harder and harder for boater to utilize the lower end of the river. It used to be a great place to pull in and go to the store or get something to eat. But the city seems hell bent on chasing off the boating community.
- No more building on any property.
- Need more information
- Sorry, but these schematics are very confusing, making it difficult to see how they relate to the photo.
- I think B or C would be preferable to A.
- Try to get the private businesses and docks on the south side to allow a trail to be built along the river. Would LOVE to see a crossing at Murchie Bridge like the one shown in A.
- This is a little more utilitarian so I would support the least expensive option that gets the job done, so probably less than a bridge.
- keep some greenery!
- no buildings on the river
- I would like a combination of a and b, the path is nice but a bridge is a great idea
- Do a tunnel, we need to support traffic not pedestrians or making things beautiful
- More battleships

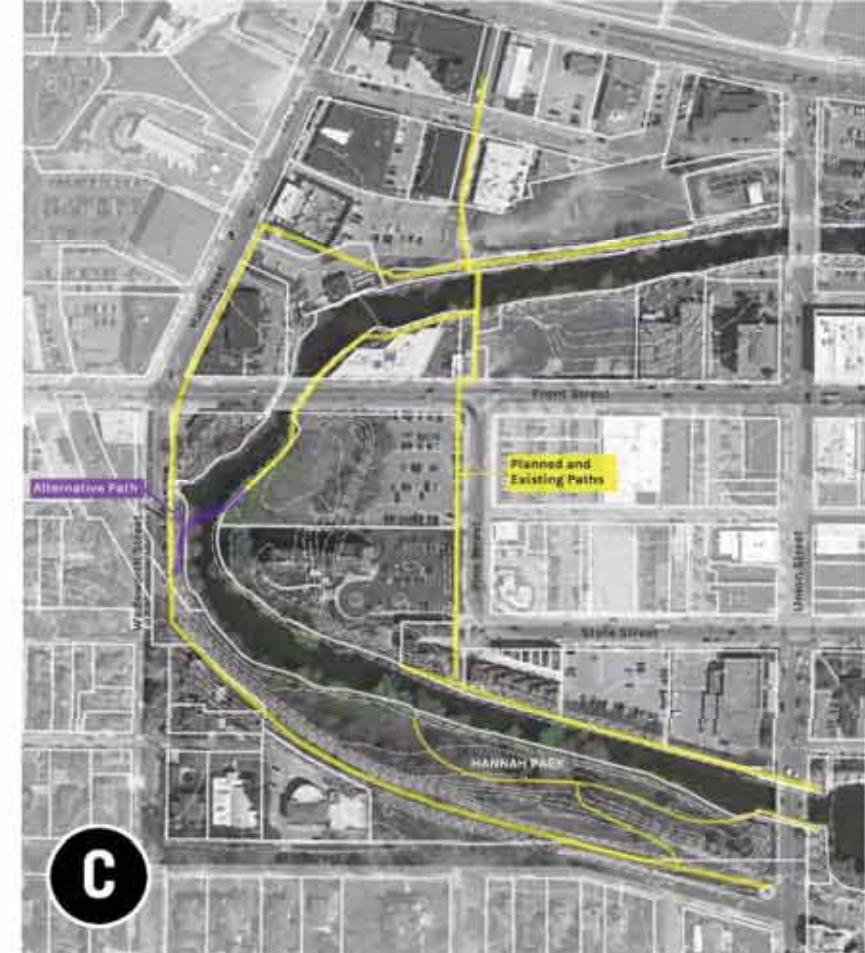
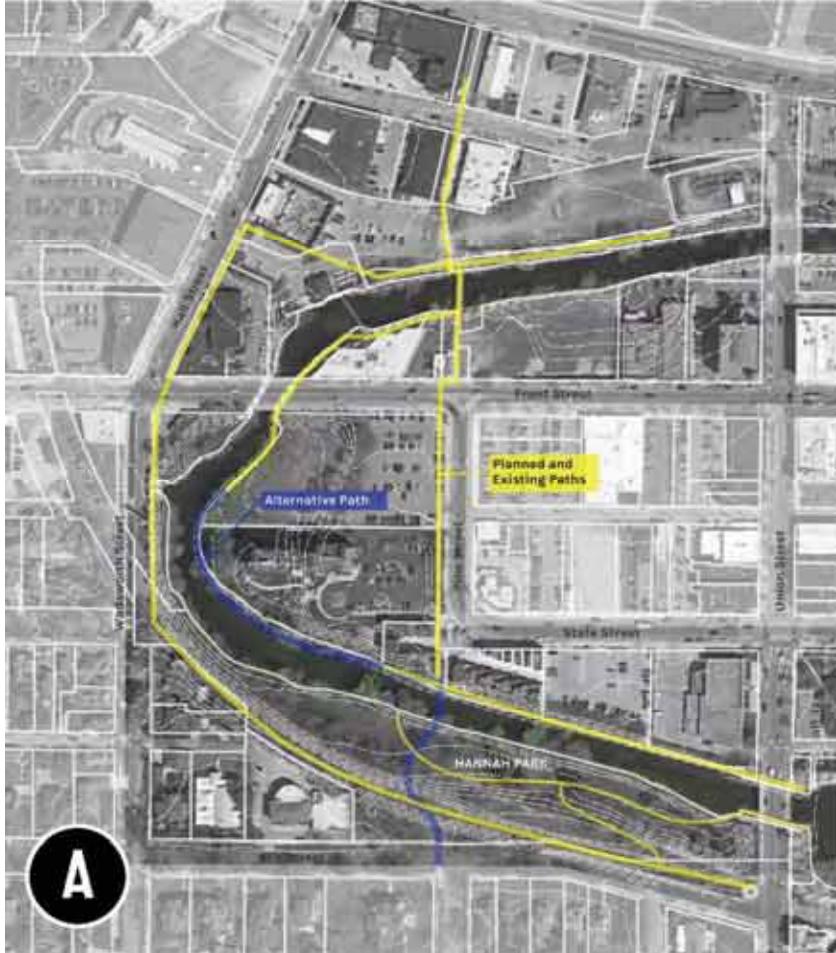
WEST BEND/HANNAH PARK

- Do you support opportunities to improve pedestrian connections in the West Bend/Hannah Park area?



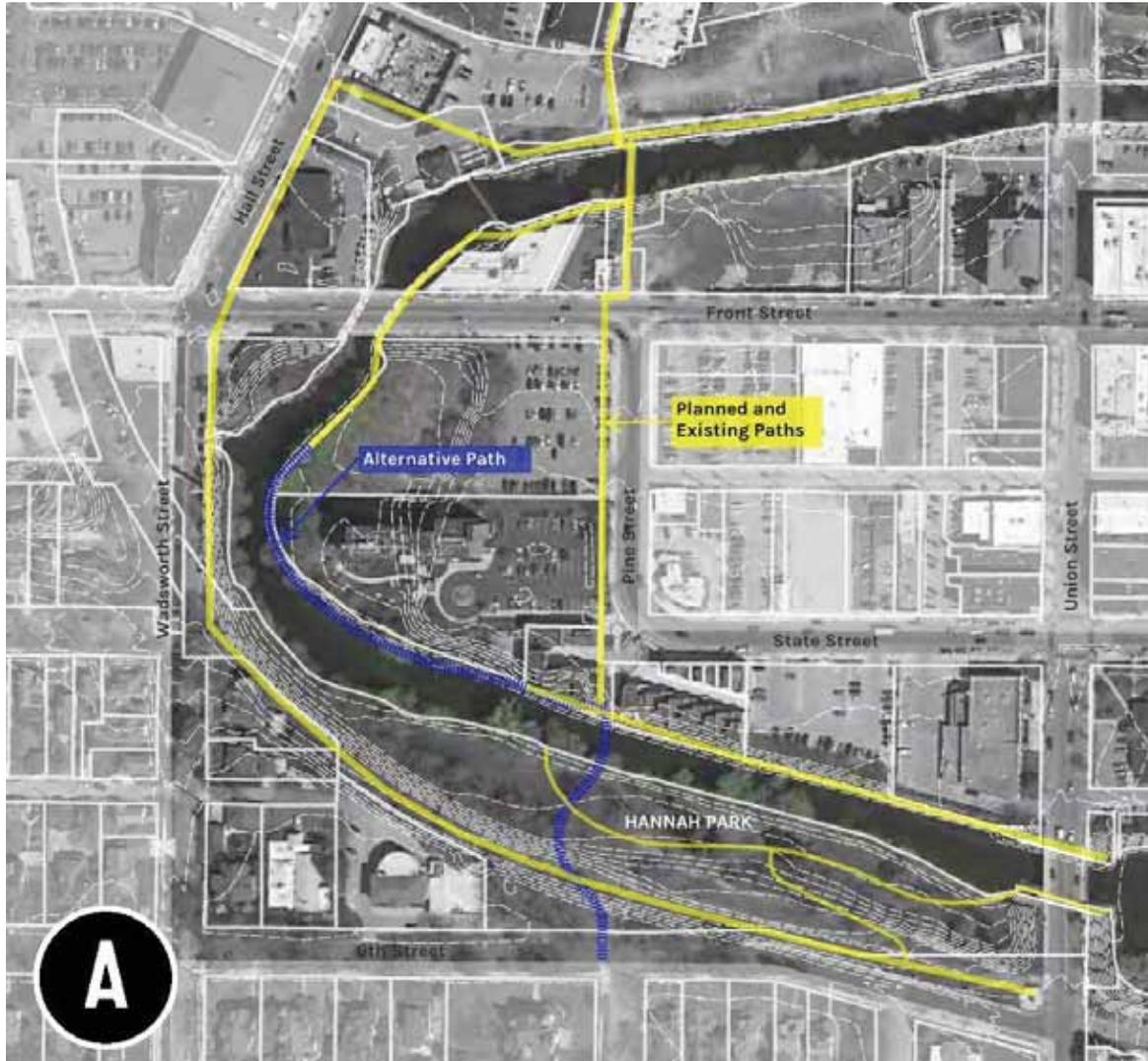
WEST BEND/HANNAH PARK

- Which option do you prefer?

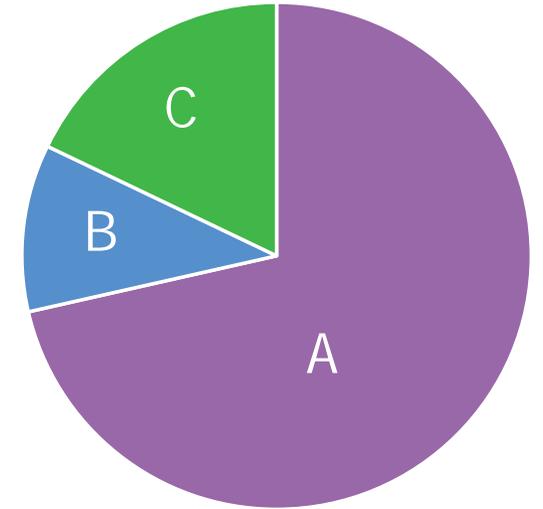


WEST BEND / HANNAH PARK

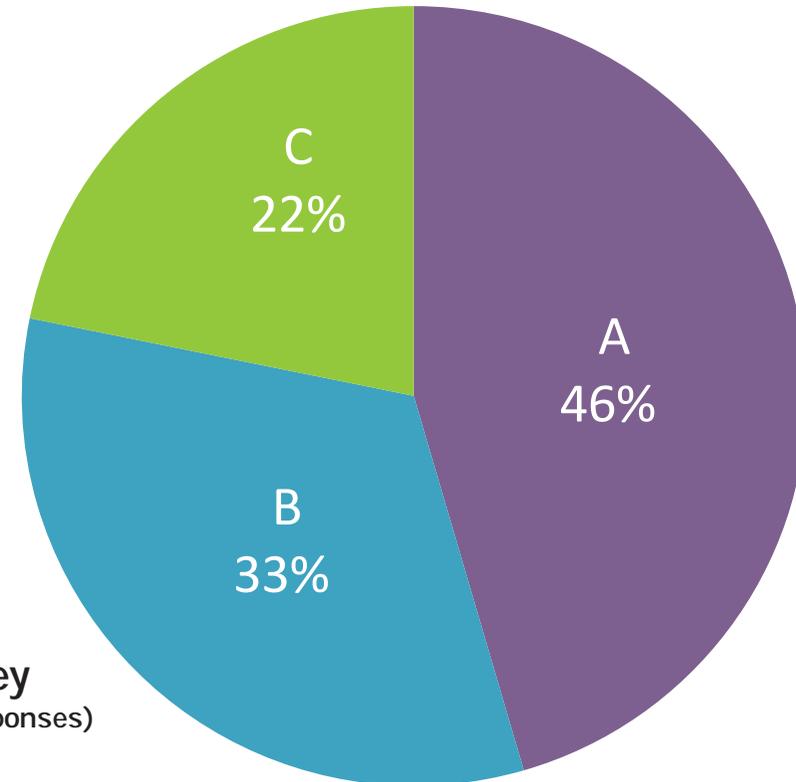
- Which option do you prefer?



Workshop
(28 responses)



Survey
(55 responses)



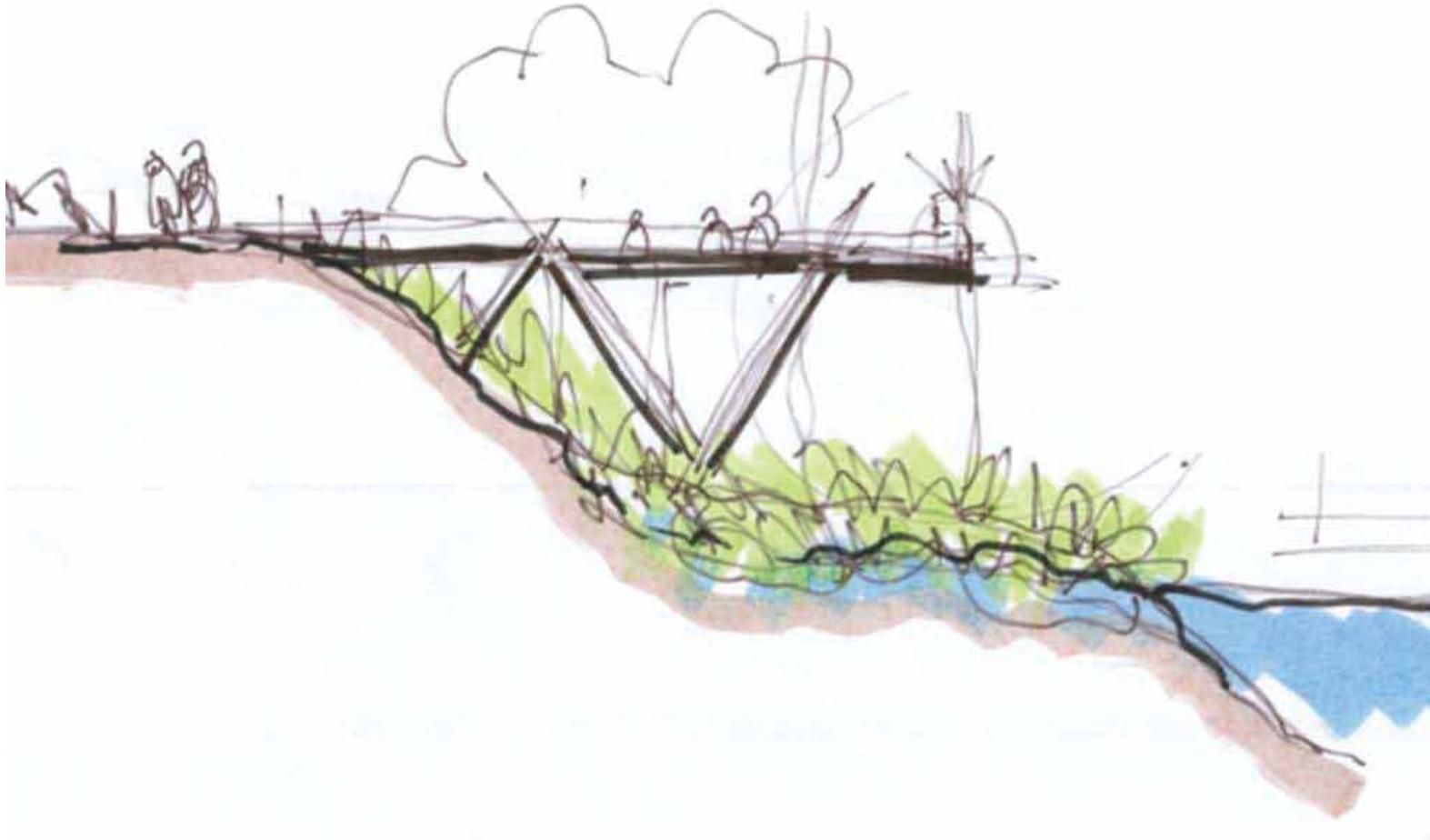
WEST BEND / HANNAH PARK

Do you have any additional comments on the proposed access options for the western bend of the river?

- Only as long as this pedestrian connector can be added here with minimal tree-cutting and removal of natural vegetation, option A would be best. DO NOT compromise the berm on the southwest edge of this river bend with option B. How could that be anything but a precarious and expensive disaster?
- Ignore the complainers in the Central Neighborhood who don't want a pedestrian bridge over the river at Pine St. They never like anything good and this is a really, really good idea for community connectivity.
- Care should be given to monitoring runoff into the river especially by Kids
- Creek. In Myers parking lot huge mountains of snow and salt are piled up near the creek they should push that snow to the other side of the parking lot.
- Improve existing boardwalk and leave remaining areas as green space.
- More discussion and information
- Again, difficult to visualize here. Conceptual drawings instead of dotted lines on a map would have perhaps been a better choice.
- Add a restaurant that has a waterfront deck with outdoor seating that still allows the path to go along the East bank (use a parking lot or building along the river
- Do not prioritize the privacy of river residents.
- I don't understand how high a priority this is...would worry about the cost
- This is another one where the most utilitarian approach could work, vis a vis construction and any easements needed, etc., especially since the tree top idea could be incorporated into any of them.
- Keep Hannah Park as it is.
- Submarine

TREE TOP WALK

- Do you support this Tree Top Walk project?



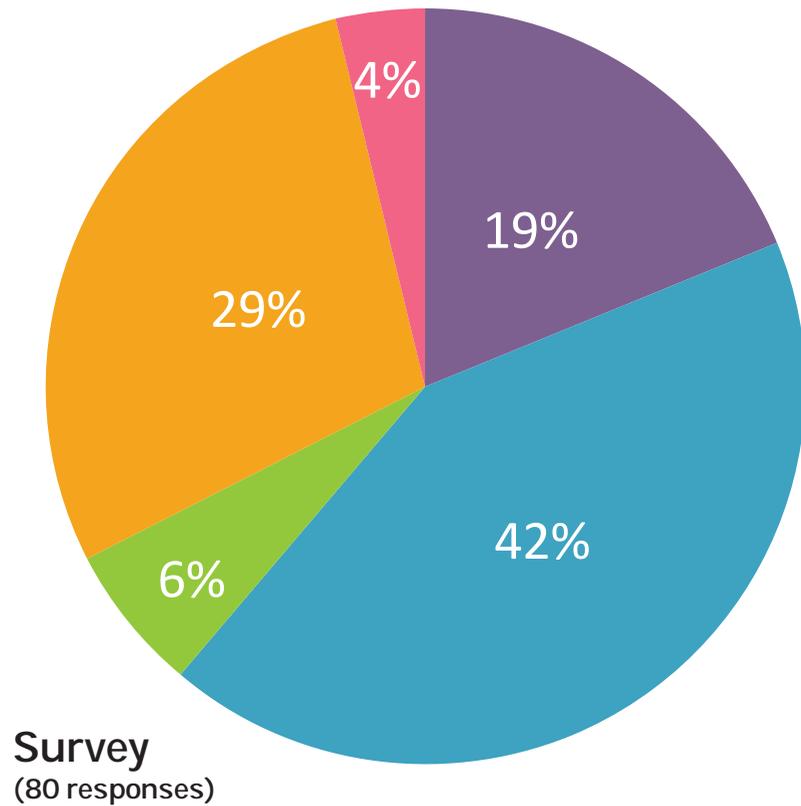
Canopy Walk in Midland, Michigan



Canopy Walk in Midland, Michigan

TREE TOP WALK

- Do you support this Tree Top Walk project?



- Yes, I would like to prioritize this project
- Yes, I support this project
- Yes, I would support this project with modifications
- No, I do not support this project
- No opinion

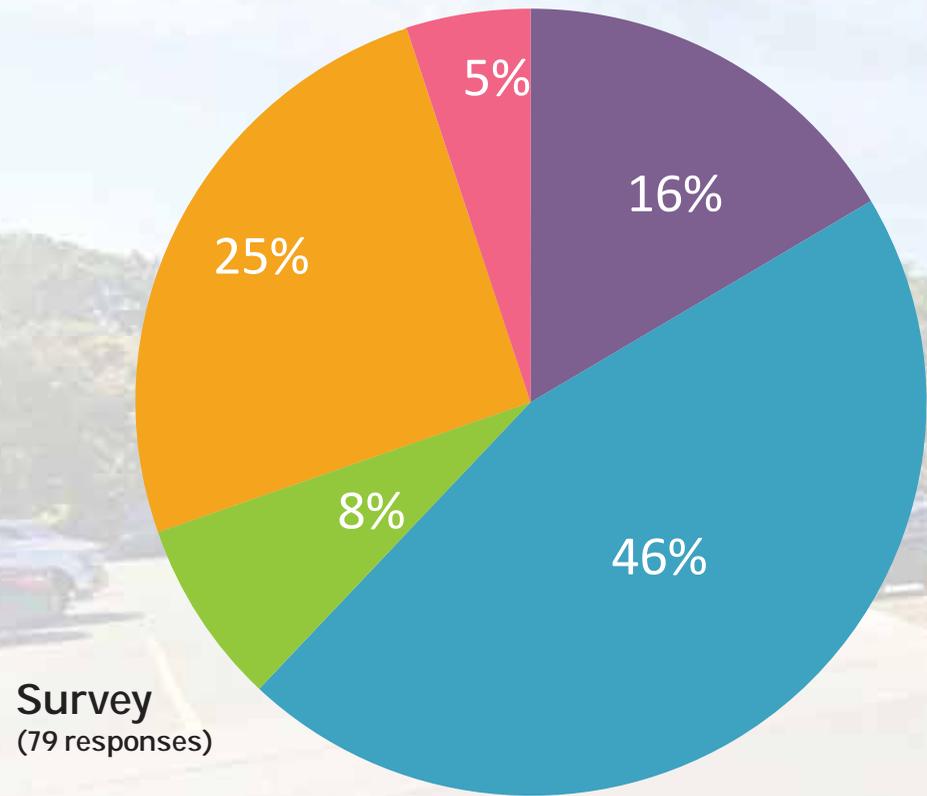
TREE TOP WALK

Do you have any additional comments on the Tree Top Walk project?

- Wonderful idea! That's a neat amenity, and would make a beautiful addition to Hannah Park.
- Nope
- Excuse the placement of this comment. Cordia is puddling warmer than natural water into the kids creek area which is harmful.
- love it
- It looks fun but, sadly, the seclusion of the area, the pictured open (and covered) deck areas and the number of homeless who tend to gather near the river (I've been there and have seen discarded trash and belongings) may result in a "hangout." Perhaps not a politically correct statement, but my opinion
- Seeing raised areas like this elsewhere, it would end up a detriment to wildlife and habitat as trash will just be thrown over the edge of the overlook
- I think the Boardman River is too narrow for this. It would feel like you are just looking into the buildings on the other side of the river instead of enjoying a view of the river.
- It doesn't seem like it should be a priority, but it's an interesting concept for the future that I would support.
- Too much long term maintenance
- All these new social places are going to be used day and night and will need some 'policing' by officers on foot or bike to help reduce noise, drinking, litter and graffiti.
- What is the Midland experience re cost, usage and unintended consequences?
- Seems unnecessary to disturb and add that much trail infrastructure on one of the only natural areas left along the river.
- Sounds really cool, but concerned about insurance liability to the city and need to disincentivize jumping or diving from the platform.
- leave existing vegetation along the river and remove as few trees as possible

STATE STREET PARKING LOT

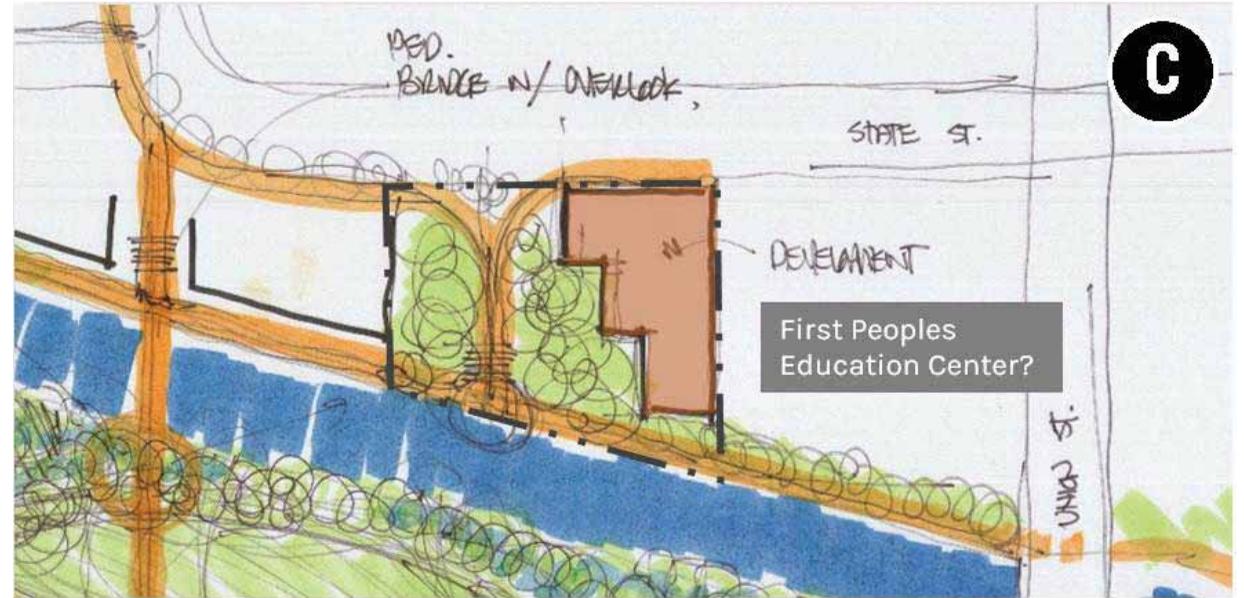
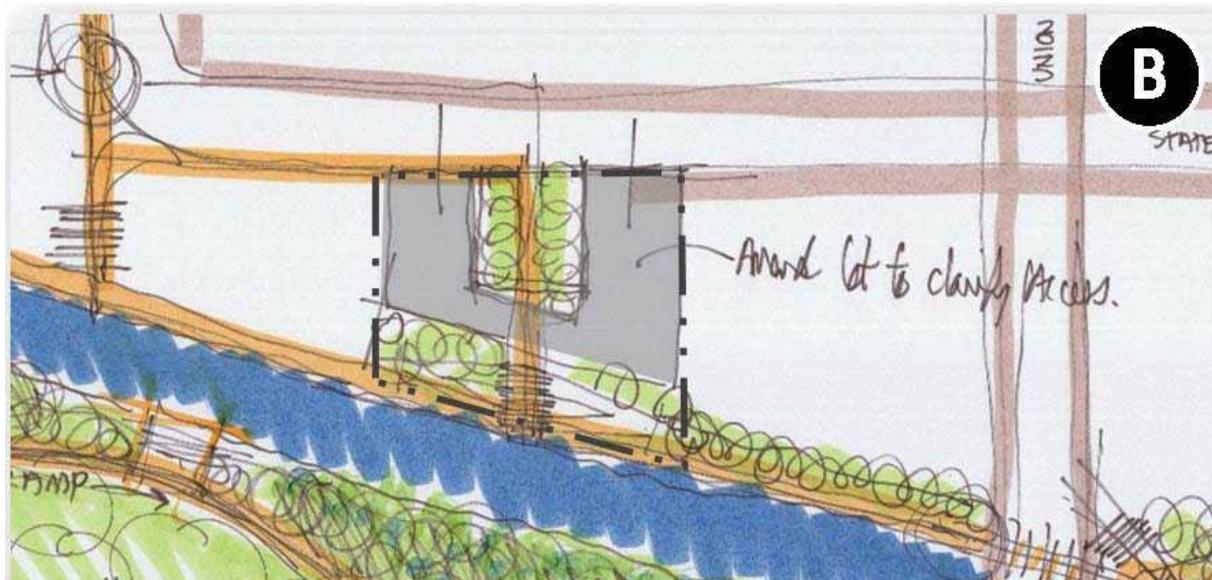
- Do you support reimagining the State Street Parking Lot?



- Yes, I would like to prioritize this project
- Yes, I support this project
- Yes, I would support this project with modifications
- No, I do not support this project
- No opinion

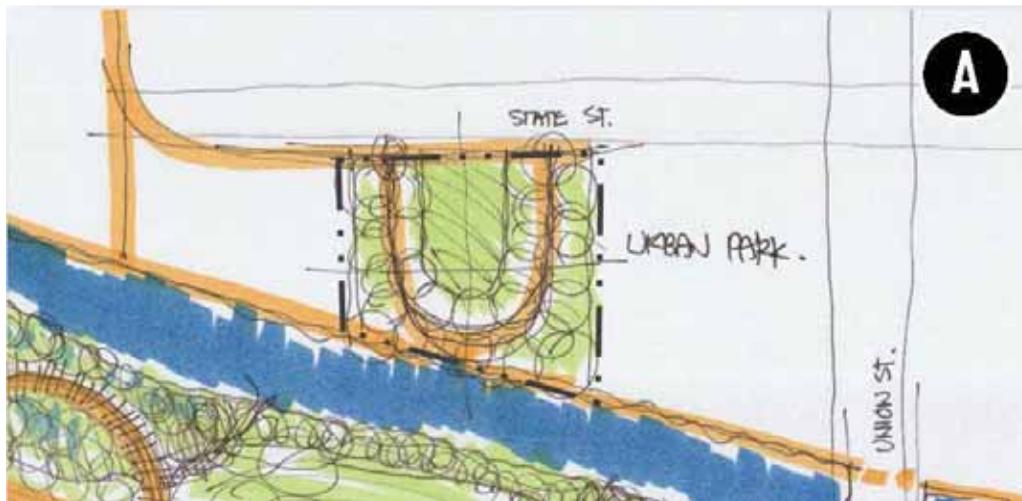
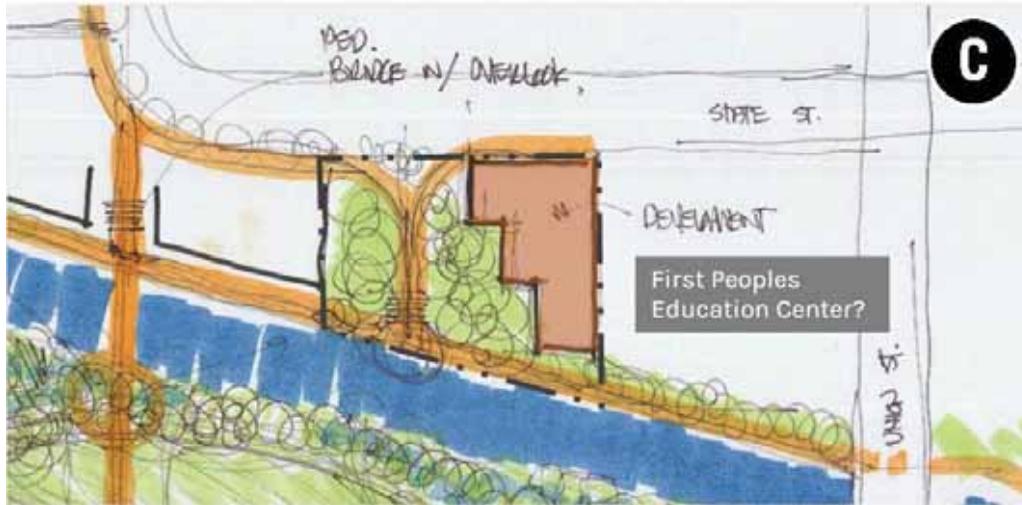
STATE STREET PARKING LOT

- Do you have a preference for which State Street Parking Lot alternative you like best?

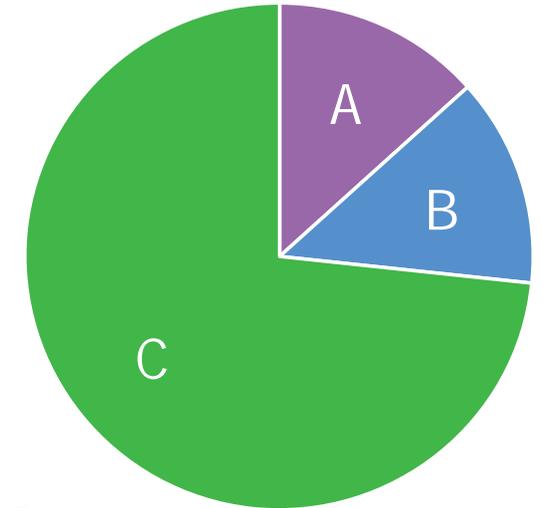


STATE STREET PARKING LOT

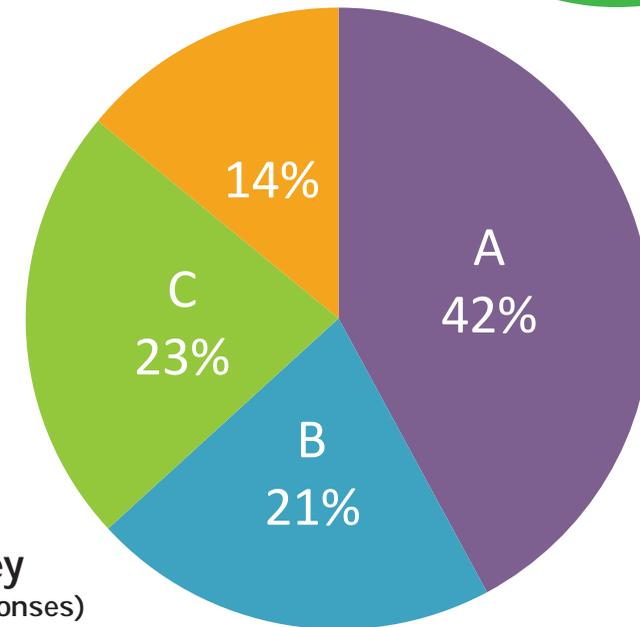
- Do you have a preference for which State Street Parking Lot alternative you like best?



Workshop
(15 responses)



Survey
(57 responses)



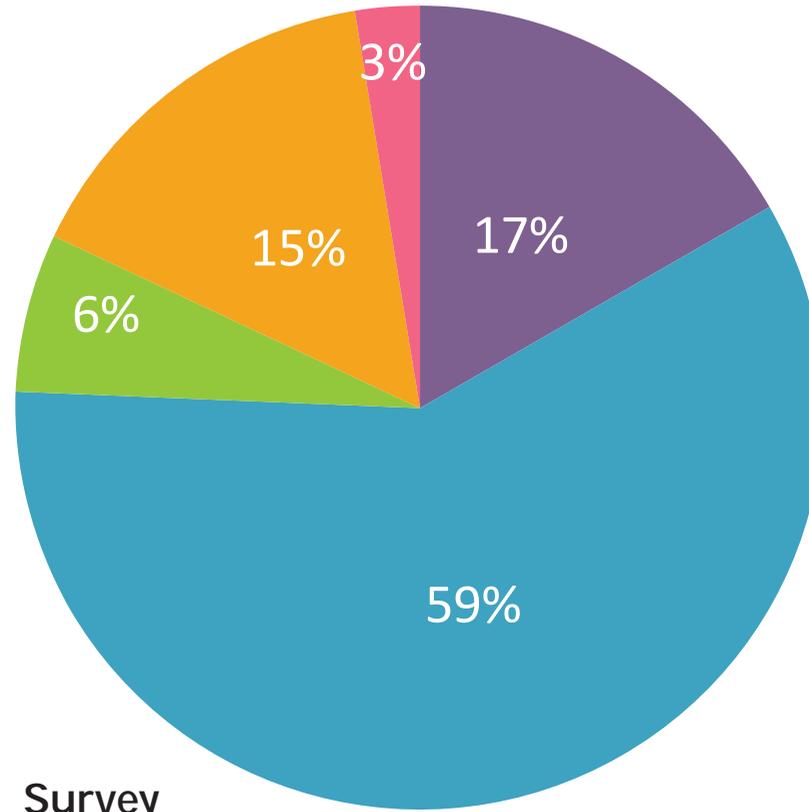
STATE STREET PARKING LOT

Do you have other ideas for the State Street Parking Lot project?

- Just do whatever is least expensive to building and maintain. This particular parcel is okay as it is.
- Too many questions
- Build up to preserve land. Put in three charging stations for electric vehicles
- Leave it alone. It is one of the few remaining parking lots my truck fits in.
- Let's focus on a bypass
- Education center should be part of fish pass. We don't need two education centers.
- Keep as off street parking for downtown access
- A First Peoples Education Center is a fantastic idea. The preservation of parking should be the very last priority in all cases.
- Keep it as a parking lot
- Leave it a parking lot
- I love A or B. I like the idea of park and community/education center, but if that didn't work, then A is ideal. This is one of the most important areas to use the entire lot as a park. Adjacent (sic) to Hannah park is fantastic and it connects well to the proposed park at Union and State.
- I would make this a second-tier project to see if this will be needed for parking if some of the other parking areas are reclaimed in the downtown area for the improvements. Multi-level parking structure with First Peoples Educational Center on ground floor.
- Make the river front section have water access (add a public path) and add a waterfront restaurant with really nice outdoor seating. That's one thing we miss since moving here from WI. There's barely any water front restaurants in the area with good outdoor seating with actual views of the lake or river, which is surprising given how much lakes and rivers there are in Michigan.
- WE still need some parking downtown. Would like to see a buffer between the lot and the river of some sort but not sure we need a full blown park there when Rotary Park will be steps away. Love the idea of a First People's Education Center but it seems offensive to tuck it away in a seldom accessed area of town on a hard to access one-way street. We have done a pretty good job of ignoring Native history in the area. Let's not put a center focusing on their history in a tucked away location. How about in Clinch park behind the Bijou? Or the new Rotary Park. the information is important and deserves higher billing.
- Until the west end parking structure is built the city should not give up any more parking spaces. As a resident in town, you are just pushing the parking problem out to our neighborhoods.

CASS STREET BRIDGE

- Do you support expanding universal access to the boardwalk beyond the Cass Street Bridge Boardwalk?



Survey
(78 responses)

- Yes, I would like to prioritize this project
- Yes, I support this project
- Yes, I would support this project with modifications
- No, I do not support this project
- No opinion

CASS STREET BRIDGE

- Do you have a preference for which Cass Street Bridge Boardwalk alternative you like best?

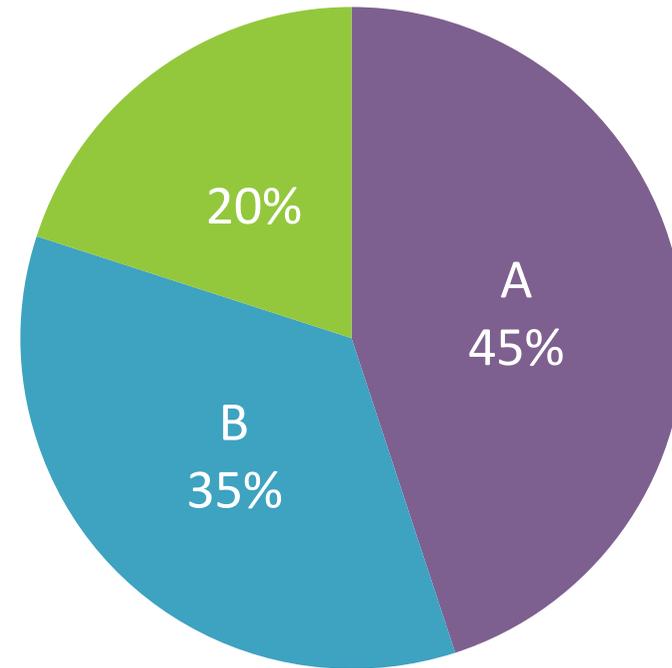
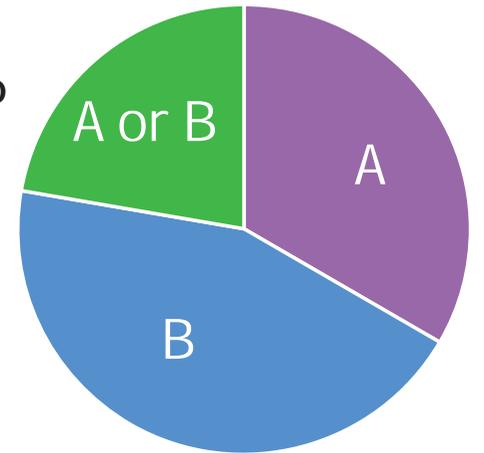


CASS STREET BRIDGE

- Do you have a preference for which Cass Street Bridge Boardwalk alternative you like best?



Workshop
(8 responses)



Survey
(60 responses)

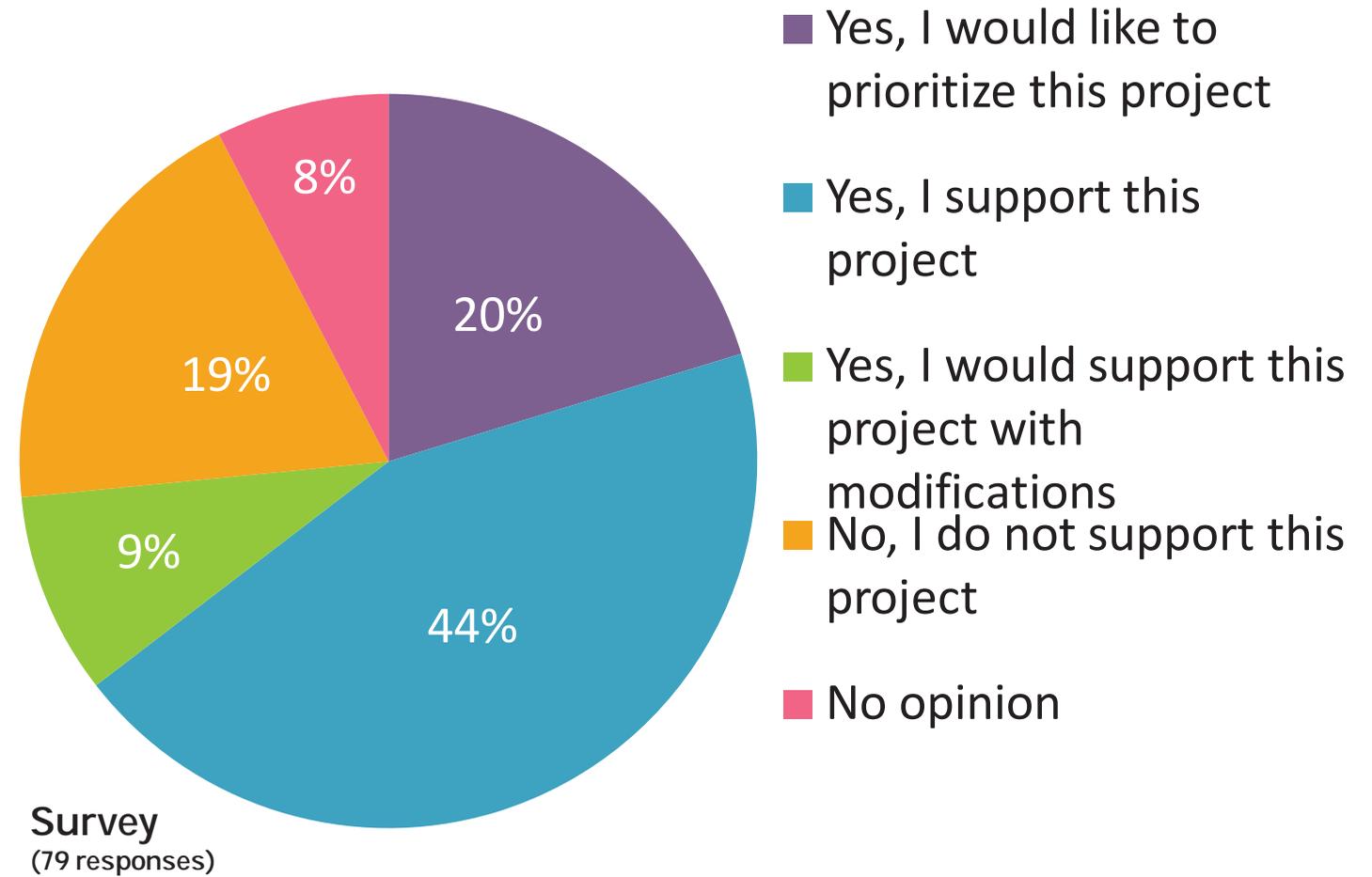
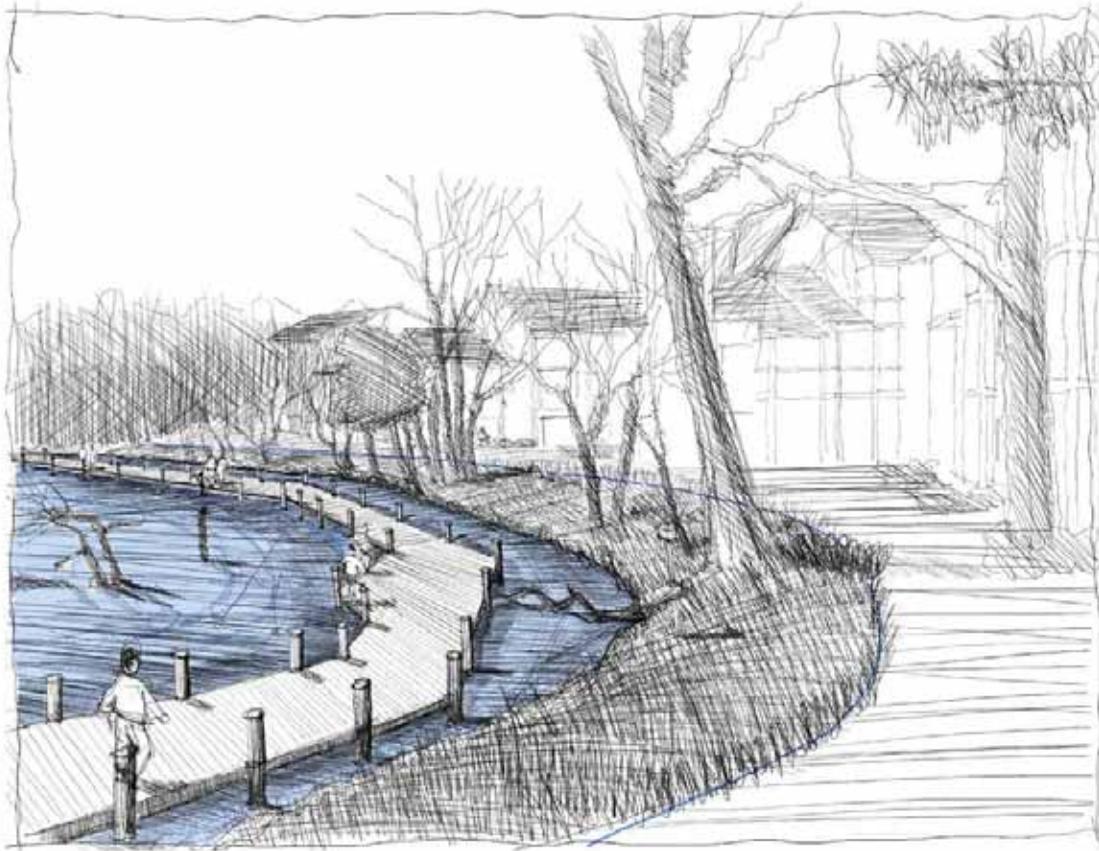
CASS STREET BRIDGE

Do you have other ideas for the Cass Street Bridge area?

- how would this tie in with fishpass
- Option B looks awesome! Option A, not so much. Floating docks usually are unsightly, and I don't believe they add much value from a usage standpoint, as they're really only good for fishing off of, and there are already plenty of places in the downtown part of the river to fish from.
- Nope
- Keep as many mature trees as possible along the riverbank
- I would like A and B together
- Both submerged or floating walkways seem rife with foreseeable and unforeseeable complications.
- I like both these options. Pollutants (plastics especially) would be noticeable spurring better stewardship of the river.
- I assume you are talking about the North side? It's not really clear. However, a connector on both sides of the river, all through town would be lovely. The south side in that stretch will be in need of repair soon.
- Need more information on option B.

BOARDWALK SOUTH OF 8TH STREET

- Do you support expanding universal access to the boardwalk south of 8th Street?



BOARDWALK SOUTH OF 8TH STREET

Do you have any additional comments on the boardwalk south of 8th Street project?

- Keep the trees.
- Allow biking
- Preservation of trees should be a priority. The privacy of residences along the river should NOT be a priority.
- Preserving the banks is a priority while providing as much access as funding (including maintenance) will permit. River walks bring a sense of peace especially in busy, high anxiety urban environments. Thanks for your work on these wonderful options.
- I don't think it is needed on the West side as the TART trail is there. On the East side, a connector to the TART trail before the the (sic) sewage treatment plant would be nice but 8th street works well for connecting too. Maybe have a better connector off of 8th instead of that small stretch of river.
- Leave the trees - trim where needed only.

PROJECT SUPPORT AND PRIORITIZATION

PROJECT	PRIORITIZE PROJECT	YES, or SUPPORT PROJECT	SUPPORT WITH MODIFICATIONS	TOTAL AFFIRMATIVE
Do you believe the setback should restrict new parking adjacent to the river?	NA	85	NA	85
Recreational use restrictions for riparian buffer	NA	57	17	74
Address noise levels and excessive drinking on the river.	NA	73	NA	73
Do you support a Fish Wier Kayak Portage?	21	52	10	83
Do you support a Union Street Overlook?	20	58	8	86
Should walks connect on both sides of the river where possible?	NA	72	NA	72
Do you support redeveloping the riverbank and alley along the 100 Block of Front Street	43	35	10	88
Do you support expanding open space on the north side of the river and pedestrianizing the alley along the 200 Block of Front Street?	26	41	14	81
Do you support creating a walking loop along the East End of Front Street?	18	61	7	86
Do you support opportunities to improve pedestrian connections in the West Bend/Hannah Park area?	12	57	11	80
Do you support reimagining the State Street Parking Lot?	16	46	8	70
Do you support expanding universal access to the boardwalk beyond the Cass Street Bridge Boardwalk?	17	59	6	82
Do you support expanding universal access to the boardwalk south of 8th Street?	20	44	9	73

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