

CHAPTER 4: ACTION PLAN

4.0 ACTION PLAN

The Action Plan represents the recommendations and implementation concepts for the Niagara River Greenway Plan. It establishes a methodology for realizing the vision outlined in the previous chapter. Implementing the Greenway is a massive undertaking that will take the cooperative efforts of a wide range of groups and people. The Vision, the Principles and the Goals will set the compass in the right direction, but it will take hundreds of incremental steps and individual actions to make the Niagara River Greenway a reality. The Action Plan sets forth the framework to guide collective decision-making for the Greenway, so that all stakeholders will have a sense of how their specific actions contribute to the whole. It will guide planning efforts of local and State agencies throughout the Greenway, and form the basis for moving toward a consistent vision.



Paddles-Up Event, Beaver Island State Park

This section of the report addresses criteria for evaluating and forming projects and activities proposed within the Greenway. It also identifies potential funding sources; strategies for operations and maintenance; key partnerships and potential linkages. It addresses system-wide transportation issues that will have an impact on the Greenway, as well as a series of Implementation Concepts that illustrate system-wide recommendations. It concludes with a

summary section that illustrates the Vision for the Greenway in graphic terms.

A. Criteria:

The Niagara River Greenway will be comprised of many individual actions, under the sponsorship of various municipalities, non-profit groups, neighborhood organizations, cultural institutions and others. Many of these actions will be site specific projects. Others will constitute

Criteria

1. Consistency with Principles
2. Priority Status
3. Focus Area
4. Environmental Soundness
5. Implementable
6. Economic Viability
7. Local Sponsor or Partner
8. Matching Funds/ Leveraging
9. Consideration of other Planning Efforts
10. Clear Benefits

system-wide improvements, such as signage; while another category of projects will include programming, such as the use of “Greenway Guides” and the scheduling of special events. This plan must set clear criteria for the evaluation of these activities, not only so the Commission can determine whether an action is consistent with the Plan, but also to help guide and inform project development.

The criteria are evaluative, but they are also intended as a planning tool. Above and beyond their use as a means for advancing project proposals, the Greenway Commissioners can use these criteria in discussions with municipalities and other project sponsors to help them improve their proposals. They can also be used as a tool in the initial design of projects, to help project sponsors improve the quality of their submissions. In other words, the criteria are also normative, in that they strive to

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establish a standard. In this sense, the criteria can be used to help improve the quality of projects and activities throughout the Greenway.

For example, these standards can be applied by municipal planning boards to assess private sector development within the Greenway, and make recommendations regarding potential revisions the sponsor could adopt to improve how the project integrates into the Greenway. These adaptations would be entirely voluntary, but it has been shown that quality of life factors, such as proximity to trails, access to recreational amenities and availability of cultural activities are becoming significant marketing factors for both commercial and residential private development.



Isleview Park, Tonawanda

These standards can also be used to evaluate projects being forwarded for grant funding, whether through the Relicensing Greenway Settlement funds or through other funding sources. In regard to the Settlement Funds, the Niagara River Greenway Commission does not have control over which projects will be funded, which falls under the jurisdiction of the Standing Committees created as part of the contractual agreements with the New York Power Authority. (See Appendix C). While the Standing Committees have the sole responsibility for selecting projects to be funded in whole or

in part, project applicants must provide documentation evidencing consultation with the Niagara River Greenway Commission. The following criteria can be used to facilitate this consultation. Projects do not need to meet all 10 criteria, and all proposed projects would be evaluated based on the totality of the project. It is possible that in the future, other potential funding agencies will adopt these standards as a means to evaluate projects forwarded for funding within the Greenway.

The criteria, which were built from previous planning efforts and extensive public input, are intended to provide stronger guidance for project sponsors as to the types of projects that would help promote the Greenway. The Niagara River Greenway Commission will not itself undertake any projects, and no projects will be evaluated except upon request by a project sponsor.

1. Consistency with Principles

The most basic consideration is whether a proposal is consistent with the Principles that have been established for the Niagara River Greenway (see Chapter 3). While there is clearly a quantitative element of consistency in terms of the number of principles that are met by a particular proposal, there is also an equally important qualitative element. A project that makes a significant contribution toward one or two specific principles may be preferred over a project that is simply consistent with a number of principles. Although this determination is inherently subjective, it provides a baseline assessment that encourages vision for the Greenway to be explicitly considered in project development.

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2. *Priority Status*

As noted previously, a number of concepts consistently emerged during the public input process as key elements of a Niagara River Greenway. These concepts, articulated as goals in Chapter 3, form the basis of initial priorities for the Greenway Commission. These goals highlight the activities that will advance the Niagara River Greenway over the next decade. The priorities listed here have been developed to ensure proposed activities will take positive steps toward implementing the Greenway goals. As progress is made in achieving this initial list of priorities, there will be revisions and additions to the substantive priority list. Initial priorities for the Greenway are as follows:

▪ ***Improved access to waterfront resources***

For many years, the Buffalo-Niagara region has neglected its waterfront. Historically, heavy industry, transportation and the infrastructure necessary to support these uses have been sited along the waterfront. As a result, opportunities for public access to the water were limited and those that were available were compromised in overall quality.



Black Rock Canal-Squaw Island

The decline of heavy industry and shipping has opened new possibilities for redevelopment. Municipalities and their residents are now beginning to take full

advantage of the waterfront for its recreational, scenic and aesthetic uses. Waterfront redevelopment is also an integral feature of the revitalization of the urban centers of this region, which were built from the water's edge out.



Fishing near the Niagara Power Project

Improved access includes a wide range of elements and may include physical, visual and experiential factors such as:

- Gateways
 - Trail connections,
 - Boat launch sites, particularly for canoes and kayaks,
 - New open spaces, parklands and conservation areas,
 - Opportunities for scenic overlooks,
 - Interpretive signage,
 - “Greenway Guides” and other interpretive programming
 - Recommended design standard for public and private development near the waterfront that encourage easements for public access, maintenance of sight lines, and avoidance of sensitive lands.
- ***Development of an integrated trail and park system***

One of the highest priorities for the Niagara River Greenway is the completion of an integrated trail system throughout the Greenway. This trail system will be a regional asset for residents and potentially increase tourism in the region. The central

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spine of this trail system will be a “Lake to Lake” Trail extending along the River from Lake Erie to Lake Ontario. The Implementation Project on Accessing and Experiencing the River illustrates its potential alignment. A system of spurs and loops extending from the Greenway spine will connect into residential neighborhoods and provide access to near-by attractions, parks or connecting trail systems, such as the Erie Canalway. A parallel system of water-based trails will enhance opportunities for paddlesports and increase the number of ways to enjoy the River. Elements of this trail system are already in place, although certain segments are in need of rehabilitation or other improvements.



“Bicycles Prohibited”

An integrated trail and park system will improve local access to the River, increase recreational opportunity and foster a greater appreciation for the natural resources throughout the Greenway. It will also encourage healthy and environmentally friendly transportation alternatives. As trails advocates have shown, the trail system will likely result in economic development benefits ranging from improved housing sales, increased real estate values, increased tourism, and quality of life factors that can be used as recruitment tools for business investment and the attraction of top quality talent to support these investments. With the growing popularity of eco-tourism, an integrated system of land- and water-based

trails and parks can have strong economic benefits in addition to the intrinsic value for recreation and access.

Creation of an integrated trail and park system must also look at the condition of the existing trail system. There are areas where the existing trail is not well maintained, well-designed, appropriately aligned or user-friendly. It is a priority to rehabilitate and improve the existing trails to ensure consistently high standards throughout the trail system.

■ *Restoration of Niagara River Ecosystem*

To realize the full potential of the Niagara River Greenway, the Greenway needs to be an attractive, healthy and appealing corridor. Projects that preserve or restore natural habitats, remediate past environmental damage, and/or encourage revitalization and reuse of brownfield sites should receive priority consideration.

In terms of ecosystems, priorities include restoration, enhancement, improved water quality, healthy habitats, improved access, control of invasive species, reintroduction of indigenous species and bio-diversity. Wherever feasible, there should be public ownership and stewardship of critically sensitive lands. Projects designed to promote stewardship for or awareness of the unique environmental features of the River and its natural resources (shoreline, gorge, islands, rapids, tributaries) are also valuable.



Site of Proposed Cherry Farm Park
(brownfield site)

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Concept Plan for Proposed Cherry Farm Park

Emphasis should be placed on the following:

- **Degraded Natural Shorelines:** focus on erosion protection projects that will restore natural values with the highest priority given to projects that employ state of the art bio-engineering techniques. Projects that reverse the adverse impacts of armored or hard shoreline edges and restore natural conditions are encouraged.
- **Gorge:** restoration of the geological integrity of the gorge environment including groundwater resources and the replanting of native indigenous species that were known to exist historically within the river gorge.
- **Wetlands:** restore, enhance or reestablish wetlands including urban wetlands along the main river corridor, associated islands and the principal tributaries to the Niagara River. Priority will be given to projects that restore lost ecosystem functions and values and contribute to the overall quality of the Niagara River ecosystem.
- **Buffers:** establish vegetated buffer zones along tributary stream corridors and the Niagara River shoreline to protect water quality and enhance riparian habitat values; discourage development in these sensitive areas and encourage the use of set backs to preserve habitat values.
- **Brownfields:** prioritize projects that will yield environmental improvements and beneficial end uses that foster the goals of the Niagara River Greenway.

- ***Interpretation and education about the region's cultural, natural and historic resources***

Interpretation and education helps the public understand and appreciate the value of the variety of resources along the Greenway. Interpretive signage, programming, brochures, websites, Greenway “guides,” events, and other interpretive opportunities help enrich people’s experience of the Greenway.



Interpretive Signage in Youngstown

They can also help underscore themes and relationships that personalize the experience and make it easier to understand. Using interpretive themes can also help with packaging and marketing of the Greenway to highlight connections between sites that are not immediately obvious. Interpretive and educational projects can also build an appreciation of the value of the ecological resources of the region.

- ***Revitalization of Urban Centers***
In terms of urban centers, revitalization of traditional downtown centers and promotion of vital neighborhoods will improve the character of the area, promote tourism, curtail sprawl and improve the overall quality of life. Redevelopment in appropriate locations will help alleviate development pressures on natural sites. It is a priority to promote greater activity in traditional downtowns, in neighborhood centers and on brownfield sites.

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Village of Lewiston

Redevelopment should avoid important open space areas within urban centers that are often the only natural areas available to urban populations and which serve important environmental functions. Such areas include but are not limited to major urban wetlands, such as Tiff Nature Preserve and corridors of open space, such as those following the Buffalo River.

3. Focus Area

The boundaries of the Greenway have been mapped along municipal boundaries. However, projects close to the River and its immediately adjacent assets should be elevated. Progress on improving this core area will create discrete, visible results that will have a local, regional and even international impact. As activities in the core area are completed, this momentum can then be shifted to areas that link to the greenway or further enhance its definition. Projects within the focus area, as shown in Figure 8, are elevated.

There will be important and valuable projects that fall outside the focus area boundary. Projects outside the focus area should help establish strong linkages between the Greenway focus area and the surrounding area.

In addition, several municipalities do not control their waterfront lands or their waterfront lands are already developed. It is anticipated that these municipalities and

other stakeholders will develop projects consistent with the Greenway plan, but not necessarily along the River's edge. Projects away from the River should help establish physical and/or interpretive connections between the River and the surrounding area.

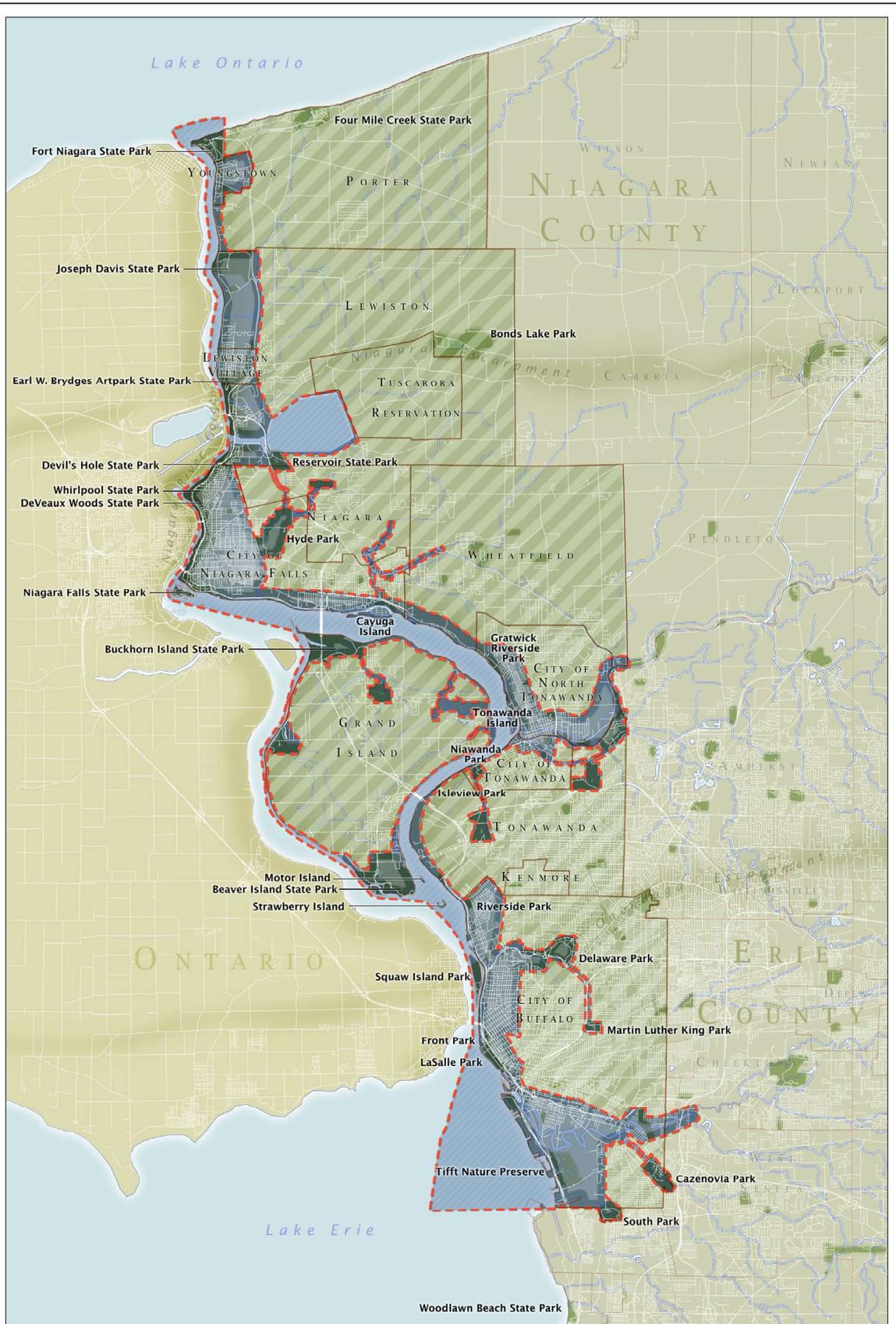
4. Environmental Soundness

The intent of this criterion is to encourage activities to consider environmental soundness in their design and implementation. Projects should strive to enhance the environmental quality of the region. This does not mean that all projects must have an environmental focus, but all projects should undertake a serious evaluation of potential impacts associated with the development, and take a creative approach to how any negative impacts can be reduced or removed.



Niagara River

Environmental soundness should be incorporated into project design for built projects. Energy-efficiency and other "green" design features should be encouraged. Projects that involve a higher density or intensity of use should be encouraged to locate in existing developed areas, reinvesting in the region's urban centers and revitalizing underutilized areas. Projects on waterfront lands should be water-dependent or water-enhanced uses, as defined under the Coastal Zone Management program. The sustainability of the project should also be considered, encouraging use of products that reduce



NIAGARA RIVER GREENWAY
 Greenway Focus Areas
 Niagara River Greenway Area

FOCUS AREAS
 MARCH 20, 2007



Figure 8

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operations or maintenance costs. Project sponsors should avoid projects which result in the disturbance, modification or permanent destruction of Greenway resources that serve the needs of the public interest.

5. *Implementable*

Projects need to be clearly thought-out. Sponsors need to identify the specific actions and steps necessary to complete their proposed projects. Proposals should include a schedule and a realistic assessment of the expected costs associated with the project. This analysis needs to include an assessment of not only capital costs, but also the costs of management, operations and maintenance that can be reasonably expected to occur over the life of the project. The prospective project sponsor must show evidence of having researched the types of permits and regulatory approvals that will be needed to bring the project to fruition, and what strategies and steps will be required to move the proposed project through the various regulatory approval processes. There should be general public support for the project. Public support can be shown through municipal resolutions, public record or correspondence.

Many projects will be too large to accomplish in one step. For these projects, there should be a logical phasing plan. Where feasible, the project should be broken into discrete, coherent “sub-projects,” with each sub-project having independent value and benefit. In the case of a trail project, each sub-section should be a logical length, with termini at reasonable locations. However, phasing shall not be used for the sole purpose of expediting the review of smaller components of a larger discrete project. The level of detail should be commensurate with the level of project consideration. Projects that are at an early conceptual or planning stage will not have specific, firm dates and costs, whereas

projects moving toward construction need to provide greater documentation and justification of the estimates.

6. *Economic Viability*

As a corollary to the concept of “implementable,” each project should have a realistic assessment of anticipated economic viability. The intent of this criterion is to ensure that project sponsors have considered projects’ on-going operation and maintenance costs, as is required under the legislation. The level of effort should be appropriate to the proposed plan, with less information needed for a project, such as a trail, that has more limited operations and maintenance costs than would typically occur for a more ambitious project with potentially long-term costs for personnel, utilities, marketing, and overall management. Projects should be encouraged to incorporate sustainability by using such options as energy-efficient design that will demonstrate a green approach to resource conservation and will reduce on-going operational costs. The economic viability assessment should identify potential revenue streams that will cover expected project costs. If the project has a municipal sponsor, it may be possible to substitute in-kind services consisting of items such as labor, materials or technical services for cash support. If cash support is proposed, the source of funding should be identified.

Projects will not be required to demonstrate economic impacts, and the Niagara River Greenway Commission will not require economic feasibility analyses from project sponsors. However, project sponsors should identify dedicated funding sources, whether through a municipal budget or other source, to cover any on-going shortfalls. Projects that are not self sustaining will become a drain on the region, and will not help advance the purposes of the Niagara River Greenway.

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7. *Local Sponsor or Partner*

The Niagara River Greenway must meet a level of quality that enhances the region. Therefore, projects need a sponsor that will assume the long-term responsibility for continued operation and maintenance. A trail that falls into disrepair is not an asset to the region and a facility or project that cannot meet operational cost obligations will not be sustainable. There should be a preference for projects that have a sponsor or partner that will continue to champion the project after it is completed.



LaSalle Pride/ Buffalo Niagara Riverkeeper

The role of the sponsor is to oversee the long-term viability of the project: continued funding needs, operations and maintenance efforts, oversight of management and condition, stewardship into the future. A municipal sponsor is preferred for a number of reasons: municipalities have the institutional capacity to ensure long-term oversight for a project. They have clear sources of revenues, through their taxing authority. They have personnel who can take on responsibility for oversight, maintenance and other functions. Municipalities generally have the capacity to make provisions for public safety and security. Municipal leaders also have the visibility and stature to build support and provide advocacy. Other forms of sponsorship or partnerships are feasible. Non-profits, volunteer groups, or “friends” groups that possess the necessary fiscal and organizational capability can also sponsor

projects. Each case must be considered on its merits, but the stronger the capacity of the sponsor, the more likely the project will be successful.

Research has demonstrated that the most successful Greenways are those that are able to establish strong partnerships. Where it makes sense, joint sponsors are encouraged, to provide more than one supporter, and to help build a wider base of support. Joint sponsorship also facilitates intermunicipal or system-wide projects, such as trails. While the development of partnerships is encouraged, roles should be clearly defined.

8. *Matching Funds/ Leveraging*

The projects and activities that can be undertaken under the Niagara River Greenway umbrella vastly exceed the amount of resources that will be available. The region is fortunate to have a dedicated funding source, through the NYPA Relicensing Agreement funds, to help achieve the purpose of the Greenway. The various Greenway funds total approximately \$9 million per year for the 50-year term of their license (see Appendix C), for a net present value of an estimated \$145.7 million. While these funds represent a significant investment, they are insufficient to fund all of the worthwhile programs, proposals and projects that have been and will continue to be forwarded.

Municipalities and other sponsors will need to look to other sources in addition to NYPA Greenway funds to fully realize the vision for the Greenway. Potential funding sources are discussed later in this chapter.

The Niagara River Greenway Commission has no direct role in allocating funding for projects within the Greenway and cannot set specific funding limits or matching fund requirements. However, it is good policy to try to leverage the funds dedicated to Greenway purposes to the maximum amount possible. Dedicated Greenway funds should

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be seen as seed money, employed as “gap” financing, used to leverage other investments, or to match grants obtained from other sources (See Appendix D). They should not be used to substitute for existing funding sources.

9. *Consideration of other Planning Efforts*

There has been a great deal of effort and thought put into various plans for each of the municipalities along the Niagara River Greenway corridor, as well as many planning efforts that cross municipal boundaries. These range from Local Waterfront Revitalization Programs (LWRPs) that focus on local waterfronts, to municipal comprehensive plans, to the two federally sponsored heritage area studies: the Niagara National Heritage Area Study and the Erie Canalway National Heritage Corridor. Local Waterfront Revitalization Programs (LWRPs) seek a balance of economic development and natural resource protection and are, therefore, important mechanisms for communities to use in implementing the Niagara River Greenway Plan. An important feature of a LWRP is that once adopted, state and federal actions must make an effort to comply with the LWRP. In partnership with the Department of State, Division of Coastal Resources, all Niagara River Greenway communities are encouraged to prepare a Local Program. Existing LWRPs should be amended to incorporate the Niagara River Greenway. Topic specific studies, including those dealing with stormwater management, remedial action plans, brownfields studies, heritage tourism and other plans should also be taken into consideration. Proposals for projects should be built upon the work that has been completed, and be consistent with local goals, values and vision, while meeting best practices and models set forth in federal, state and regional documents, including advances in new technology.

10. *Clear Benefits*

All projects that are endorsed by the Niagara River Greenway Commission should demonstrate clear benefits to the Niagara River, the Niagara River Greenway and the stated vision of the Greenway as a world-class corridor. The intent of this criterion is to ensure project sponsors think about how to structure their proposals to maximize the beneficial impacts to the environment, to the economy and to the region. Projects that fall outside the Greenway boundary need to make a more compelling case for how they benefit the purposes of the Greenway. Priority should be given to a project that fills a critical gap, improves a highly visible site, results in significant improvement in environmental conditions, or has some other significant positive benefits.



Sculling Black Rock Canal

B. *Funding Sources*

The Niagara River Greenway is unusual, in that there is a dedicated funding source for the effort that preceded its legislative establishment. The Niagara River Greenway Commission recognizes that several interests have secured Greenway related settlement dollars in relation to the re-licensing of the Niagara Power Project. In particular, the Commission recognizes, acknowledges and congratulates the Niagara Host Communities, the Erie County Settlement Partners, the Greenway Ecological Standing Committee and the State Office of Parks, Recreation and Historic Preservation on their agreements with the New York Power Authority. The

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Greenway Commission looks forward to working within the process outlined in those settlement agreements and anticipates consulting on all projects as required by those agreements.

The NYPA Greenway funds are a significant and important source of funding for the Greenway. As noted earlier in this document, however, the NYPA funds will be insufficient to fund all the worthwhile projects that are known or may be proposed in the future.

Additional sources of funding will be necessary to fully realize the vision of the Niagara River Greenway.

This point merits emphasis. Other potential sources of funds for Greenway-related activities include federal, state, and local funds, as well as private sources, such as foundations. There are a variety of grant programs available from other New York State and federal agencies to assist local governments, community groups, and other organizations achieve important environmental protection and community revitalization goals. These programs encompass a wide range of priority issues including natural resource preservation and restoration, water quality protection and pollution prevention, historic preservation and interpretation, community revitalization, land acquisition and open space protection, and greenway and trail development. Appendix D provides an extensive discussion of additional potential sources for projects associated with the Niagara River Greenway.

C. Operations and Maintenance

Implementing and sustaining Greenway-related projects will entail one-time construction and implementation costs as well as annually recurring operational and maintenance (O&M) costs. The term O&M refers to the day-to-day upkeep as well as the smooth and safe functioning of the greenway project. These tangible O&M costs will be offset by economic benefits derived from the Greenway and associated development and by increased quality of life for residents and visitors to the region. Since the proposed Greenway-related projects are only conceptual in nature at this point, it is difficult to perform a detailed analysis of the annualized O&M costs.

In place of an analysis using actual O&M costs, a “level-of-magnitude” analysis is provided to measure typical recurring costs that would be expected to occur as a result of implementation of the demonstration concepts. When actual projects are identified and reviewed, a more detailed analysis on the O&M costs should be required. The analysis provided here is for informational purposes, and each project sponsor is responsible to make their best estimate of the on-going O&M costs of their projects.

The following discussion of O &M costs is organized around the implementation concepts as identified and discussed separately in this Plan. Given the wide range of potential projects that could be funded under the Niagara River Greenway Plan, even under each implementation concept, basic examples will be discussed.

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▪ Implementation Concept #1 – Gateway Identification

The overall operation and maintenance costs associated with the gateway identification concept will be relatively small. This concept primarily ensures that a unifying theme is used throughout the Greenway. Once the initial design phase is completed, relatively little costs will be required to continue the use of the planned color schemes, graphics, and signage. Similarly, the design and use of a unifying architectural treatment, landscapes and plantings will also have limited long-term costs.

If, however, landscape and horticultural projects are included under this concept, additional O & M costs will be required to maintain these areas. While these costs are not anticipated to significant, they would need to be evaluated on a project-specific basis.

According to the 2006 budgets for Erie and Niagara Counties, the following table presents the total amount budgeted towards operations and maintenance of public parks and green space. In both counties, the total amount to be spent on park O&M costs represented less than 0.5% of the total county operating budget.

Per Capita Park Expenditures by County (Erie and Niagara Counties for 2006 Budget)

	2006 Budget for Park O&M	Total Population (2005)	Per capita spending on parks in 2006
Erie County			
Parks	2,652,303	-	-
Parks – City of Buffalo	2,670,671	-	-
Total Erie County	5,322,974	898,981	\$5.92
Niagara County	753,975	212,573	\$3.55

Source: Erie and Niagara County CAFR 2005

For Erie and Niagara Counties, \$5.92 and \$3.55 were collected and spent for operations and maintenance of the parks in each respective county per person. With the addition of the Greenway funded projects in each county, the incremental increase per person for O&M costs related to these projects will be minimal. If residents are only required to pay \$5.92 per person to currently run all the parks in Erie County, any addition resulting from the funded Greenway projects would be minimal. It should also be noted that this per capita spending is at the very low end of spending for O&M on parks when compared with other “benchmark” cities. See the table below for other cities and their spending on park related maintenance.

Benchmark Cities Comparison

City	Total Parks	Total Acres	Operating Budget	Capital Budget	Total Budget	Per Capita Income	Population	Per Capita spending on Parks
Chattanooga, TN	57	1,495	\$10,445,220	\$3,753,000	\$14,198,220	\$12,332	159,000	\$89
Jackson, MS	52	1,250	\$5,600,000	\$1,725,000	\$7,325,000	\$12,216	180,600	\$41
Louisville, KY	276	10,274	\$22,633,000	\$11,967,500	\$34,600,500	\$11,527	269,000	\$129
Minneapolis, MN	133	5,694	\$44,200,000	\$10,000,000	\$54,200,000	\$14,830	353,000	\$154
Norfolk, VA	42	NA	\$10,500,000	\$0	\$10,500,000	\$11,643	225,000	\$47
Salt Lake City, UT	126	1,914	\$5,700,000	\$1,500,000	\$7,200,000	\$13,482	171,000	\$42

* Per capita incomes taken from the 1990 census; 2000 numbers were not available at the time of comparison

Source: Little Rock, Parks Master Plan - <http://www.littlerock.org/ParksRecreation/masterplanmap.aspx>

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▪ Implementation Concept #2 - Assessing, Experiencing and Connecting to the River

The implementation of projects under this concept is expected to result in potentially substantial O&M costs to local, county and state agencies. The majority of the projects expected to be completed under this concept are related to providing and maintaining river access and recreational trail development. Given the large scale of the proposed trail system network with different options and alternatives, precise O&M estimates are not provided at this time. However, estimates developed by the American Trails Association show that annual operation and maintenance costs per mile for an urban trail system run between \$2,500 and \$10,000 per year (American Trails 2005). A variety of factors such as climate, facilities, and complexity of the system all impact the annual costs.

To further breakdown the expected O&M costs associated with trail management, the following table has been included. This table shows the total maintenance hours per mile of trail required to maintain the Schuylkill River Trail in Pennsylvania during 2000. The trail is a macadam trail that is 11.5 miles long with widths that range from 12 to 16 feet. As shown on the table trimming/pruning and safety/security were the two most labor intensive categories.

Total Maintenance Hours per Mile by Category and Month Required to Maintain the Schuylkill River Trail, PA in 2000

Maintenance Categories	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Mowing	0.0	0.0	0.0	3.1	6.8	3.6	3.9	5.6	3.3	2.5	0.0	0.0	28.8
Trimming/Pruning	1.8	0.0	8.2	5.6	17.0	8.3	7.1	14.2	8.0	7.1	2.6	0.3	80.0
Safety/Security	0.6	0.5	0.6	5.4	3.4	3.0	4.2	6.7	1.4	2.4	5.3	0.2	33.6
Trash Removal	0.6	0.7	1.6	3.7	1.3	1.7	1.8	1.3	2.0	1.8	1.6	0.8	18.8
Erosion/Stabilization	0.7	0.6	1.8	2.0	1.0	0.0	1.0	1.5	5.6	6.4	2.3	1.2	24.1
Storm Damage	1.5	7.4	3.0	2.4	0.9	2.4	0.8	0.7	1.4	0.5	0.5	0.3	21.9
Miscellaneous	1.8	1.3	3.0	2.7	2.1	2.1	1.8	2.5	1.7	4.3	1.5	0.5	25.2
Total	6.9	10.5	18.2	24.9	32.5	21.0	20.6	32.5	23.4	24.9	13.9	3.3	232.4

Source: American Trails 2006.

Note: Totals may not add due to rounding errors.

It should be noted that while the costs of trail maintenance identified above are significant, they do not all need to be borne solely by the host community. Many of the successful greenways and trails developed throughout the region have community groups that provide at least a portion of the required manpower to properly maintain their trails. Also these trails will have a region-wide impact on the economy and quality of life, therefore some of these costs could be borne by the community at large.

▪ Implementation Concept #3 – Protecting, Preserving, and Restoring Important Ecological Resources

The majority of the total costs associated with projects under this concept would tend to be the initial up-front capital and construction costs. However, some on-going monitoring and O&M costs may be required. For projects such as wetlands restoration, these on-going costs would include monitoring to ensure the effectiveness of the restoration and maintenance to remove any invasive species that may grow in the newly restored wetland. For projects that improve and create terrestrial or aquatic habitat areas, seasonal monitoring would be required to ensure that the

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project is effective and to ensure that it is not damaged by storms or other causes (i.e. terrestrial areas or by driftwood and debris flowing down the river in the case of aquatic areas).

Acquisition of conservation easements and land banking projects would have virtually no direct long-term operation and maintenance costs associated with them. All maintenance costs occurring on these properties would remain the responsibility of the land owner or operator. Since it is not anticipated that large tracts of lands would be transferred to non-taxable entities, the local fiscal impacts of these projects would be at a minimum.

The O&M costs associated with various brownfield remediation programs and the restoration of former landfills could be significant. Routine on-going monitoring and ongoing sampling may be required to ensure that there is no migration of contamination from the proposed project areas. These monitoring costs, however, should not be additional costs, since contaminant monitoring should already be occurring apart from the greenway implications.

Finally, projects such as the correction of combined sewer overflows, repair of malfunctioning culverts to restore natural drainage and the removal of vacant commercial or industrial uses should have little or no long-term operation and maintenance costs assuming the initial work was designed and constructed effectively.

- **Implementation Concept #4 – Linking Special Places and Destinations – “Telling the Story”**

Similar to the Gateway Identification concept, many of the project costs related to this concept will be one-time in nature and involve initial design and construction. For example, landscape design, as well as the design of lighting fixtures, street furniture,

and planting materials would all be upfront capital expenditures.

However, other aspects of projects that would fall under this concept would tend to be ongoing in nature. For example, implementation of outreach/education activities, such as websites, would involve ongoing costs associated with ensuring that the information on the site was still accurate and up-to-date. Advertisements, handouts, and bulletins would have to be paid for on a continuous basis. It should be noted that these costs are not typically considered maintenance costs, which are associated with built facilities or structures.

- **Implementation Concept #5 - Heritage Tourism and Economic Revitalization**

Projects such as the development of cultural and heritage centers and interpretive centers would all fall under this concept. Operation and maintenance costs associated with these facilities could be significant as driven by a project-specific basis. However, most of these proposed facilities would have to develop a separate revenue stream to cover the large O&M costs. Entrance fees and other sources would have to be identified during the planning and design stages. Given the large nature of these projects, any future government support would be analyzed before the funding was supplied so that local representatives could make an informed decision as to the overall fiscal impact of the projects.

- **Operations and Maintenance Recommendations**

Because Greenway funding is ear-marked for capital cost improvements, an implementation plan for the operations and maintenance (O&M) costs associated with each project must be established. For example, some projects will have associated user fees that will fund or offset the annual O&M costs associated with that particular project. These include such items as a

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visitor's center, nature/heritage centers, museums, youth camps, educational programs, commerce parks, aquariums, and marinas. Proposed projects such as these should be sustainable once the capital costs are spent for construction out of the Greenway funds. Projects that do not have user fees will be expected to meet the criteria set forth in the Greenway Plan and to be as sustainable as practical. For example, preference will be given to projects that have a local sponsor or partner such as a municipality, non-profit or volunteer group(s); that leverage/identify matching funds through local, state, federal and private funding sources; and that demonstrate economic viability, i.e., identify potential revenue streams or dedicated funding sources to cover costs.

In developing a framework for measuring and evaluating the potential, long-term O&M costs from the proposed projects, several limitations were encountered. These limitations primarily included the difficulty in applying typical 'rules of thumb' to the annual cost of these projects, because the specific details of the project, such as area of development, the combination of projects, overall size and construction costs, are unknown at this time.

To address this uncertainty, a conceptual framework of O&M costs are presented herein for evaluating typical projects proposed for the Greenway funding. These estimates are conceptual and project sponsors must develop their own estimates based on project specifics. Project applicants should prepare an O&M budget that considers the following costs:

- Maintenance: Routine and Remedial
- User Safety and Risk Management
- Programming and Events
- Resource Stewardship and Enhancement
- Marketing and Promotion
- Oversight and Coordination

Maintenance - For developed parkland, the sponsor or partnering organization should project an average of \$3,000 per year for a maintenance budget per acre¹ If a park is 10 acres and is 60% developed, this assumes that 6 acres would require maintenance at a price of \$18,000 annually. Utilizing the funding mechanisms described above, the sponsoring agency or partnering organization will administer the proper funds to maintain the long-term sustainability of the park.

Similarly, according to an article on the American Trails website *Trail Maintenance and Management*, an urban trail system can experience O&M costs of between \$2,500 and \$10,000 per mile, but can vary greatly due to conditions, climate and complexity (there are some quotes of only \$300-500 per mile for more primitive trails). If a 20-mile trail system is established through the Greenway funds, this would result in an estimated \$50,000 and \$200,000 annually for O&M. This is an example where it would be prudent for municipalities and organizations to develop partnerships and cooperative public-private ventures that would ease the financial burden of funding these O&M costs. Since a 20-mile trail system would most likely cross multiple municipal borders, there should be a coordinated effort in maintaining the trail by local governments within all of the host municipalities.

Again, there are multiple local, state and federal funding agencies that would aid in covering O&M costs associated with these projects. The sustainability of any particular project will be dependent on no single municipality being burdened with excessive annual O&M costs.

¹

<http://www.littlerock.org/ParksRecreation/masterplanmap.aspx>

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User Safety and Risk Management - For projects requiring safety precautions and basic patrolling and risk management, the sponsoring agency (in most cases the municipality) should consider adopting and outlining a safety program to this new feature of their community. This could include patrolling a new stretch of a bike trail or a park, or the enforcement of fishing regulations in certain areas along the Niagara River corridor. Some agreement should be in place to ensure that public safety services will be provided, by whom and how these costs will be covered.

Programming and Events - Projects that involve ongoing programming and multiple events are in most cases those that would charge a user or entry fee to experience the event. The cost of O&M related to programming and events should be absorbed by these associated fees and should not impact the local municipality. Examples of programming and events include special presentations at visitor or nature centers.

Resource Stewardship and Enhancement - Resource stewardship is the long-term care and oversight of the natural or ecological resource. This, along with enhancement of the resource, would be under the management of a local sponsor or partner. Ensuring the ongoing stewardship of a natural resource would become the responsibility of the applicant (or their designee) to monitor, to ensure the longevity of the resource, and to monitor the resource following the project construction. Additional O&M funding for these projects would be available through local, state, federal, and other grant programs.

Marketing and Promotion - Marketing and promotion are essential components of the success of a project and are a part of the O&M associated with a resource. Agencies such as local, county, or state Parks Departments, Convention and Visitors

Bureaus, local Chamber of Commerce organizations, and economic development entities generally provide funding for the purpose of informing and attracting people to an area or project to experience the amenities an attraction(s) has to offer. Partnership or sponsorship programs with these types of organizations in applying for Greenway fund should be strongly encouraged.

Oversight and Coordination - Similar to maintenance and stewardship, oversight and coordination will be important to the effective ongoing management of Greenway-funded projects such as trails, parks, or other waterfront facility or attractions. Achieving long-term project-specific goals and partnerships with other organizations and agencies can provide the framework for the ongoing effectiveness of Greenway implementation that will be valued by the community.

D. Key Partnerships/ Organizational Framework

The Niagara River Greenway Commission has a leadership role in Greenway planning. It is the visible manifestation of the Niagara River Greenway, and serves as the primary advocate for the Greenway.

Research on Greenways has underscored the importance of partnerships in building a successful Greenway. Because they inherently cross jurisdictional lines, building partnerships and cooperative relationships is an important element of the planning process. As noted in the introduction, the process of developing the plan itself, through meetings, discussions, debates and consensus building, has been extremely useful. This process sparked discussion, brought out inconsistencies and highlighted areas of broad consensus. More importantly, the process has helped build

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partnerships and has developed a greater capacity to move the program forward.



**Niagara River Greenway
Citizens Advisory Committee (CAC) Meeting**

Much of the institutional positioning that has occurred throughout the Greenway planning process has been partly due to the NYPA Greenway funds. Having a dedicated funding source gives the plan an immediate relevancy, since NYPA Greenway funds must be spent in a manner that is consistent with this plan.

Figure 9 illustrates the interrelationships among the many participants that fall under the Niagara River Greenway umbrella. The shaded area on the left side of Figure 9 represents the umbrella of the Niagara River Greenway Commission and the Niagara River Greenway Plan. Participants include local governments; federal and state agencies; stakeholders, non-governmental interest groups, such as non-profits and volunteer organizations, private enterprise and the general public at large. All of these stakeholders are important contributors to the Greenway. The policies and priorities established by the Commission will help define the course for all of these entities so that their combined efforts will make this a world class Greenway.

Outside the umbrella of the Greenway, Figure 9 illustrates funding sources, both from the NYPA Greenway funds and other competitive funding sources. Currently, the NYPA Greenway funds represent the only

dedicated funding available for Greenway projects. However, it is possible that additional dedicated funding could emerge. The source of these funds could be the State of New York, as it is for the Hudson River Valley Greenway, or the funds may be contributed by a private foundation or conservancy organization. One of the goals of the Niagara River Greenway Commission will be to move forward with an effort to obtain or assist others in obtaining additional funds for Greenway projects. Funding could also be obtained through the competitive grants described in Appendix D.

The NYPA Greenway funds were created by contractual agreement as part of the federal relicensing process (see Appendix C: Summary of Niagara Power Project Relicensing Settlement Agreements). Some of the funds are compensations required as part of the federal relicensing process. Others are contributions offered by NYPA as compensations at the State or local level. Each fund was negotiated with the beneficiaries independently, and each is subject to the terms of the agreements signed with NYPA. These agreements establish a Standing Committee for each fund and specify what organizations sit on each committee. The Standing Committees are contractually responsible for selecting, administering and overseeing the projects financed by each Relicensing Settlement Fund.

Proposals for Greenway Funds may be forwarded by municipalities, stakeholders or private entities, either under the sponsorship of the Commission or independently. The Steering Committees have the sole responsibility for the allocation of the Relicensing Settlement Greenway Funds, provided that the proposed project is consistent with the Niagara River Greenway Plan. The Niagara River Greenway Commission does not have control over the allocation of Greenway funds or the decisions of the Standing Committees, but

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there is a clear requirement that projects help to achieve the goals of the Niagara River Greenway. Project sponsors are obligated to consult with the Niagara River Greenway Commission, and the Standing Committees must evaluate the consistency of each request with the Niagara River Greenway Plan. It is expected that this process will be interactive, as indicated by the two-way arrow between the Commission and the Standing Committees in Figure 9.

The Niagara River Greenway Commission can also be an important partner for project sponsors who are applying for other sources of funding. The Commission anticipates establishing a process for consultation and support of competitive grant funding. The Niagara Greenway Commission will also establish a more informal process of voluntary review, to enable project sponsors to obtain feedback on the types of revisions that would improve their concepts.

The Niagara River Greenway Plan is a policy document which contains considerable flexibility in its application. It is advisory in nature, and does not mandate specific projects or regulations governing the actions of local governments. The role of the Plan and the Commission is to set general guidelines; it is up to the individual municipalities and other stakeholders to present projects and actions that will help further the vision and goals set forth in this document.

While gathering information on which to base the draft plan, the Commission heard repeatedly of resident concerns in relation to the use of eminent domain. While the Niagara River Greenway Commission has no power of eminent domain, nor may it hold real property, residents are fearful that a municipality, a state agency or other public authority would use eminent domain to achieve the purposes of the Greenway.

The Commission has no ability to limit the powers of local government, state agencies or public authorities. The State Land Acquisition Policy which guides the acquisition programs of the State Office of Parks, Recreation and Historic Preservation and the Department of Environmental Conservation frowns upon the use of eminent domain and requires such agencies to demonstrate the absolute need to acquire through such an adversarial process. In fact, since the enactment of this provision, neither DEC or Parks have used an adversarial eminent domain procedure to acquire lands for open space or recreation.

The Niagara River Greenway plan is a cooperative undertaking which among its purposes is intended to improve the quality of life for area residents. It would appear inconsistent with the plan for any level of government to use eminent domain against residential property to undertake a Greenway project without exploring and exhausting any and all alternatives to the taking of private property.

The Niagara River Greenway Commission will not seek the power of eminent domain, nor seek the use of it by its partners for implementation of the Niagara River Greenway Plan.

The plan is intended to remain relevant for years into the future. As such, it is important to assess the public's perception of the plan; periodically revisit the document to assess whether the concepts included in the plan remain valid or whether a shift in emphasis is needed in order to remain consistent with the intent and substance of Article 39 and the plan. Changes in conditions or objectives, shifts in priorities and unforeseen changes in circumstances may create instances where changes to the Plan are appropriate. Therefore, the Niagara River Greenway Commission will establish

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procedures for making amendments to the document.

The Local Government Advisory Committee (LGAC) and the Citizens' Advisory Committee (CAC) are two standing committees established under the enabling legislation for the Greenway Commission. These committees can be used to oversee the process of conducting periodic reviews of the Niagara River Greenway Plan to ensure that the plan remains a dynamic and useful document. The Commission also recognizes that there should be procedures established allowing citizens to raise potential issues, and a mechanism for soliciting public input on any proposed changes to the Plan. The CAC and LGAC will be used to facilitate that input. These committees will report to the Greenway Commission at least annually on the status of the plan and convey information and comments received in relation to the need or lack thereof for amendments to the plan.

The Niagara River Greenway Commission will review the information and comments received from the CAC and LGAC and make a determination as to the need to proceed with a plan revision. Significant changes in policy or content will be submitted to those cities, towns and villages within the boundary for approval prior to their submission to the Commissioner of Parks, Recreation and Historic Preservation for approval.



Peace Bridge

E. Linkages

One of the mandates of the Niagara River Greenway legislation is to recommend how the Greenway can be linked to upland and interior communities in order to promote linkages to the River. There are a number of existing features and assets that intersect with the Niagara River Greenway system, serving as junction points for interconnections with upland and interior communities.

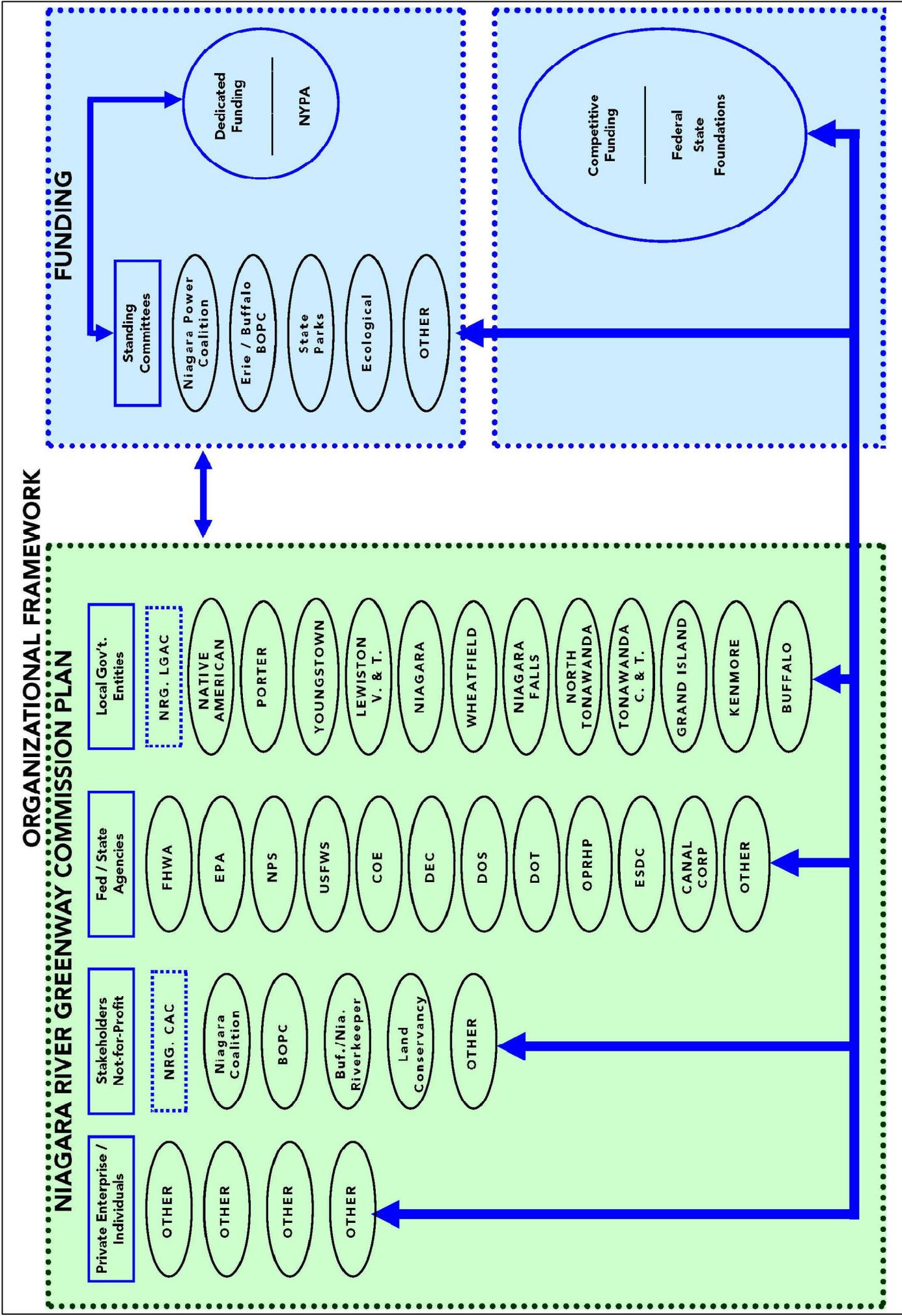
These interconnection points include the following:

- Lake Erie and Lake Ontario shorelines
- Seaway Trail
- Gateways established by the Bridges at the International Border with Canada
- Niagara escarpment
- Niagara Wine Trail
- Cayuga Creek corridor
- Erie Canalway National Heritage Corridor / Western Erie Canal State Heritage Corridor (Tonawanda Creek)²
- Ellicott Creek corridor
- Lower Reach of Scajaquada Creek
- Buffalo Olmsted Park System
- Buffalo River

These connecting features represent an opportunity for creating both physical and conceptual linkages between the Greenway and the rest of the Buffalo-Niagara region. They have the potential to draw both residents and visitors to the Niagara River corridor.

Beyond the specific physical linkages, the success of the Niagara River Greenway will depend on how well the various layers and elements are interwoven and integrated.

² These are the same geographic feature, but separate organizational entities. The Erie Canal joins Tonawanda Creek and follows the same alignment as the Creek within the Niagara River Greenway.



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The development of different types of centers along the corridor provides places for interpretation and “telling the story,” or building an appreciation for the ecological resources and environmental setting of the Greenway. The wayfinding system needs to be integrated into the trail system, which will be enhanced by interpretation. The more the various elements of the Greenway can be linked and connected, the deeper and more satisfying the experience will be for the users of the Greenway.

F. Transportation Issues

The transportation facilities that provide access to the Niagara River Greenway are essential to its overall success. Roads can provide access but they can also serve as barriers to public access and enjoyment of the Niagara River. Achieving a balance between providing ease of access to the properties and uses along a transportation route and facilitating traffic movement through the region is difficult. People want to be able to get to their destinations easily and without delay. However, the focus within the Greenway is to create a climate in which people can comfortably navigate through the system and enjoy all of its assets, activities and attractions, not to promote the rapid movement of vehicles through the area.

A recurring issue in the development of this Plan has focused on the future of specific transportation facilities like the Robert Moses Parkway. Transportation projects are planned and evaluated under a very specific and fairly lengthy process that can take years to complete. This process incorporates requirements that provide for intermunicipal notification and cooperation.

The planning process that is being used to develop the Niagara River Greenway Plan cannot provide the level of analysis and detail that is not only necessary but legally required for specific transportation projects.

The Niagara River Greenway Plan is a long-term, policy document, and is ill suited for the review of site specific transportation projects, and the Niagara River Greenway Commission does not have the legal authority to dictate how governmental agencies undertake transportation projects.



Bicyclists along the River

There are a number of ongoing and proposed transportation projects that could have a significant impact on the physical environment of the Niagara River Greenway. Between the source of the Niagara River and its mouth at Lake Ontario the following projects are ongoing or under consideration:

- Reconstruction of the Skyway
- Erie Street realignment
- Peace Bridge Plaza Alternatives, Buffalo
- Ambassador Niagara Signature Bridge and plazas, Black Rock
- Realignment of I-190 between north Buffalo and Tonawanda
- Extension of the Metro Rail (light rail rapid transit line)
- Pedestrian Accommodations Grand Island Bridges
- Replacement of the Grand Island Bridges
- West River Parkway Alternatives, Grand Island
- LaSalle Expressway Alternatives
- Robert Moses Parkway Alternatives (South and North)

As noted previously, this Plan cannot replace the independent planning processes and engineering functions that are associated with major capitol investment transportation

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projects, which must incorporate a range of factors. However, these projects should strive to be consistent with the goals and policies established in this Plan. The enabling legislation for the Greenway requires each State agency to review its actions within the Greenway, and assess the consistency of those actions with the approved Niagara River Greenway Plan. While local, county and federal agencies are not under this mandate, consistency with the Niagara River Greenway Plan should be encouraged in planning at all governmental levels. In communities with an approved LWRP, federal agencies are required to follow certain procedures for any activity they undertake, fund or approve. State agencies are required to follow certain procedures for funding actions and for any action, including permits, for which they are an involved or lead agency pursuant to the State Environmental Quality Review Act. State agency activities listed in an approved LWRP are also subject to consistency procedures. Additionally, state agencies are required to follow the federal consistency requirements if they require federal approval of their activity or if the activity involves federal funding. At the local government level, cities, towns, or villages with adopted LWRPs enact similar consistency provisions applicable to their decision-making. As such, all Niagara River Greenway communities are encouraged to prepare a LWRP, and existing LWRPs should be amended to incorporate the Niagara River Greenway. Proposed projects would need to demonstrate consistency with the LWRPs - and the (inclusive) Niagara River Greenway Plan.

Many elements of transportation infrastructure along the waterfront are obsolete— the products of earlier patterns of land use or assumptions about future transportation needs. In general, the Greenway should facilitate rethinking of the transportation needs along the river corridor, and encourage projects to fit future transportation infrastructure to new uses anticipated under the plan. The greenway

should facilitate alternative transportation along the river corridor, while always respecting environmental sensitivities in areas like along the Niagara Gorge. These steps will improve access to the natural resources and other assets along the Greenway corridor.



Pedestrian Walkway on Rainbow Bridge

Incorporating greater balance and choice into the transportation network also increases access for youth and seniors who do not drive. The nature of these accommodations should extend beyond the basics. Pedestrian accommodations need to be user-friendly, safe, and inviting. For example, there are sidewalks on the Grand Island Bridges, but their design discourages usage. These sidewalks are narrow, intimidating and lack a sufficient buffer zone to separate vehicle traffic from pedestrians and bicyclists. Due to ongoing maintenance on these bridges, only one sidewalk on each bridge is available for public use and both have unsafe linkages to connecting trails. In contrast, the accommodations across the Rainbow Bridge are more inviting. As a general rule, excess pavement should be discouraged, and design should reflect a greater emphasis on pedestrians, bicyclists and other non-motorized traffic.

Transportation projects within the Greenway should avoid creation of barriers between the water's edge and the neighborhoods surrounding it. Interstate 190 in the City of Buffalo cut off physical and visual access to the water's edge. To the extent that future

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transportation planning and improvements can mitigate this damage, they should be encouraged. Removal of the I-190 and building an alternative (non-interstate) route away from the Niagara River is obviously a very ambitious, expensive and long-term project. However, if redesign or relocation is able to go forward, it would be an important enhancement to the Greenway.

Transportation projects should seek to maximize access to the resources along the River. The realignment of Erie Street as proposed by the City of Buffalo, will re-establish viewsheds from downtown Buffalo to the waterfront, recreating a stronger connection between the City and the waterfront that helped create it. The City of Niagara Falls has endorsed the downgrading of the Robert Moses Parkway to provide better connections between City neighborhoods and the River. For routes near the water, the focus should be on access by alternate transportation modes, including non-motorized traffic, rather than a singular focus on the efficient movement of traffic.



I-190 impedes access to the Niagara River

Transportation projects within the Greenway should also prioritize land use over efficiency of traffic movement. Where there is overbuilt

capacity, there should be a preference for returning excess pavement to another use. For example, on Grand Island, the West River Parkway area has parallel roadways; some of that pavement could be converted to open space, scenic overlooks, and/or passive parkland without impairing the function of the overall traffic corridor. The City of Niagara Falls has identified a number of roadways with excessive pavement width that could be used for bicycle paths, wider sidewalks or greenspace.

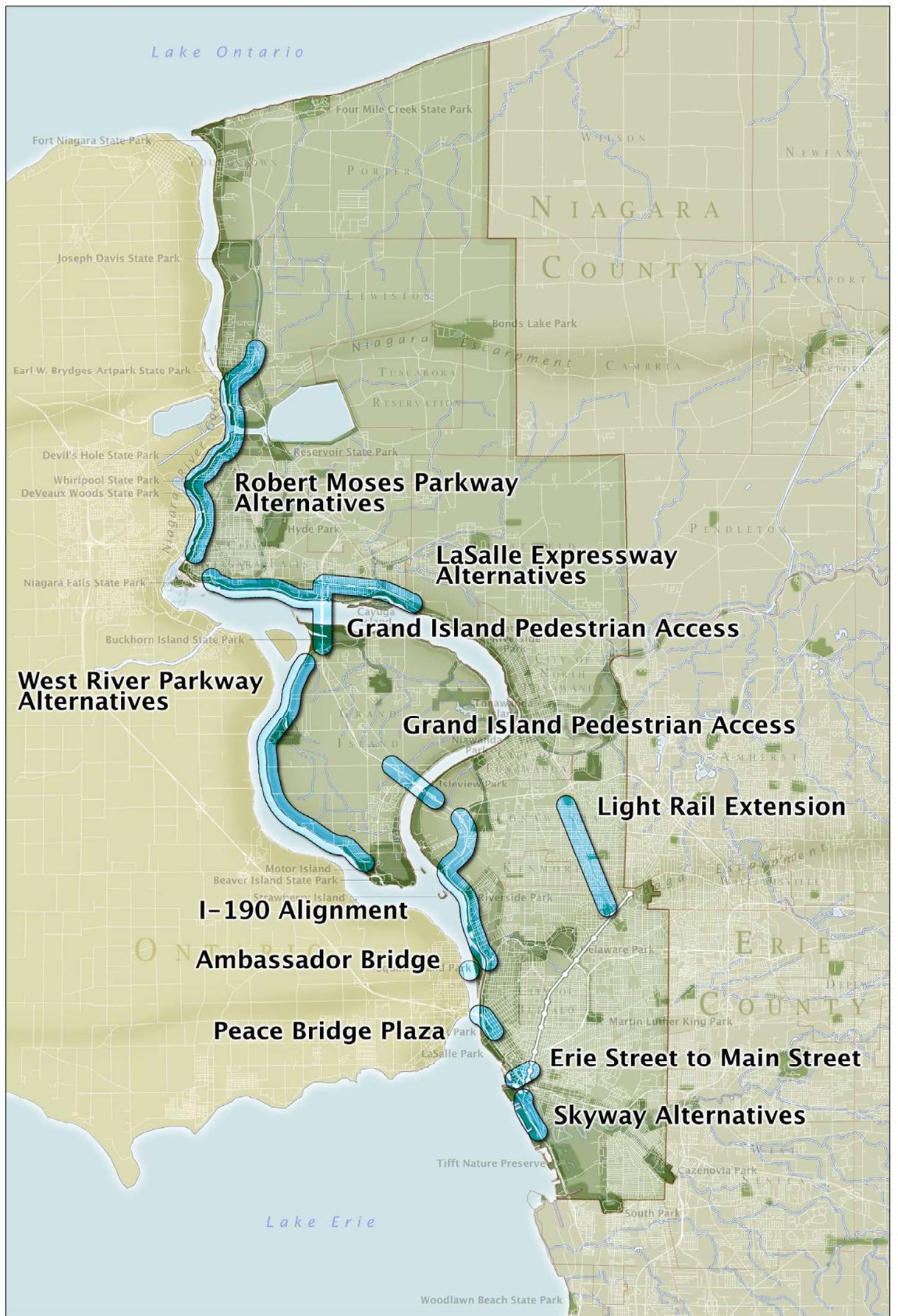


Accommodations for pedestrians, bicyclists

Transportation projects should seek to minimize their intrusiveness. More than ten years of intensive planning for the Peace Bridge expansion project has been complicated and faced with many constraints. Selection of a preferred alternative must be made within the context of a comprehensive evaluation process. However, there should be a preference for an alternative that complements Front Park, that helps restore the connections between the City and the waterfront, and is true to Olmsted's vision. Figure 10 illustrates these transportation issues.

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NIAGARA RIVER GREENWAY

-  Niagara River Greenway Area
-  Opportunity for Transportation Enhancements

TRANSPORTATION OPPORTUNITIES

MARCH 20, 2007



Figure 10

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G. Greenway Implementation Concepts

Greenway development is inherently a long-term enterprise. It is a process that requires time-consuming activities including building public support, forming partnerships, assembling land, design, engineering and construction. Typically, all of this occurs while making the most of limited resources. For this reason, conceptual greenway master plans must be considered living documents that allow flexibility for unanticipated changes and opportunities. This effort is broader than typical master plans, which makes specific proposals for property that is under ownership of a single entity. It is even broader than a municipal Comprehensive Plan that sets a vision for a single community, and makes recommendations regarding general land use and zoning. This Greenway Plan is a long-term *conceptual* plan that looks for opportunities across a wide spectrum of publicly and privately held land, across more than a dozen municipalities, and for a wide range of activities. Unpredictable changes in the regional economy, environment, political climate and lifestyle trends over the long-term require a flexible greenway plan and an equally flexible implementation strategy.

Beyond these constraints, the Niagara River Greenway Commission, a duly constituted body charged with the development of the Greenway Plan, has limited control over any of the activities or projects that will ultimately make up the Greenway. The Commission cannot control land use or zoning, it cannot own or hold property and it does not have direct control over the distribution of funds. The role of the Commission is to develop this Greenway Plan as a framework for realizing the greenway vision. The framework guides implementation by addressing individual goals, responding to unanticipated

opportunities and fostering partnerships among private citizens, interest groups, government and the business community. In fact, the conceptual plan will, by necessity, evolve over time as the Niagara River Greenway takes shape and as the issues facing implementation change. Widespread support for the greenway vision is, therefore, needed to ensure that implementation has the public and private sector champions needed to maintain enthusiasm and momentum for decades to come.

Throughout the planning for this project, certain priority issues kept emerging. These priorities, which formed the basis for the Greenway Goals in Chapter 3, were derived from public participation, the enabling legislation and input from the Niagara River Greenway Commission. The following five Implementation Concepts were identified based on these priorities. The intent is that these concepts will help jumpstart near-term projects.

The Implementation concepts are centered on the following concepts:

- Gateway identification
- Accessing, experiencing, and connecting to the Niagara River
- Restoring, preserving, and enhancing unique and sensitive environmental resources
- Linking special places and destinations to “tell the story” of the Niagara River
- Heritage tourism and economic revitalization

These Implementation Concepts are conceptual in nature. They are intended to illustrate possibilities, and they do not preclude other concepts and solutions which could be proposed in the future. Specific sites and priorities will be determined by a variety of factors, including timing, funding, site control, activity level and partnerships. In all cases, implementation of individual

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projects are expected to be conducted in a spirit of making positive contributions to the overall Greenway vision.

1. Gateway Identification

Gateways are physical or spatial devices that celebrate a transition from one distinct place to another. In the landscape, gateways are meant to be experienced dynamically, by movement through space—from one side of a gateway to the other. Within the Niagara River Greenway, gateways will be developed as entrances into the Greenway and as transitions through the Greenway, from one side to the other. More specifically, the use of gateways can be targeted to communicate particular messages, themes or attributes of the Greenway. This can be accomplished through a variety of methods, such as distinctive graphics, landscapes, plantings, architectural treatment, signage, lighting, color schemes or other methods.

▪ *Lake-to-Lake Gateways* (See Figure 11)

The shorelines of Lake Erie and Lake Ontario are linear landscapes that transition into the upper and lower Niagara River. These transitions are landmark opportunities to anchor the ends of Niagara River Greenway, reinforcing its physical and symbolic definition as a *lake-to-lake* greenway. Not only do these gateways serve the linear movement along the shoreline of each lake into the Greenway, they also provide an opportunity for a water-based gateway, entering the Niagara River by boat from either Lake Erie or Lake Ontario. Conversely, moving from the upper or lower stretch of the river into either of the lakes is an equally significant transition.



Mouth of Niagara River, Porter

▪ *Destination Gateways* (See Figure 12)

Every land-based point along the Niagara River corridor that provides access to the Greenway represents an opportunity for a destination gateway. These gateways ensure that visitors, by foot, bicycle or automobile, have the sense that they have arrived at a special place. These destination gateways serve to welcome visitors to the Niagara River Greenway. Furthermore, destination greenways could fulfill an orientation function, providing directions for river and lake access points. Their mere presence indicates proximity to water and underscores the relationship between the River and its upland areas.



Niagara Falls

Destination gateway devices could be designed to relate specifically to their context, but should incorporate a consistent palette of graphics, architecture or landscape to project a consistent visual message throughout the Greenway. A hierarchy of

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destination gateways could be applied to the various access points along the corridor, based upon a site's visibility, popularity, significance and character. For example, simple landscaping and signage may be suitable for the majority of the numerous and frequent gateways, while other areas may require a more distinctive treatment. Significant architectural features, trailheads and interpretive features could be combined to establish major gateways in particularly strategic locations.

It is important to note that since gateways will occur throughout the Niagara River Greenway corridor, they will inevitably be located within rural, suburban and urban contexts. The creative use of similar design elements will ensure consistency throughout the Greenway while responding appropriately to the corridor's diverse landscape context. In a similar manner, these design elements should be sensitive with signage and symbols of other, intersecting systems, such as the Erie Canalway. The goal is to integrate the various systems, while respecting their unique characteristics.



Lewiston Landing

▪ **Transition Gateways** (See Figure 13)

The purpose of destination gateways is signifying arrival. Transition gateways, on the other hand, highlight passage *through* the Niagara River Greenway, from one side of the Greenway to another. In this manner, a transition gateway conveys visitors through a cross section of the Greenway,

delivering the experience of passing over a river or stream and through its associated riparian or even urban environment. Often transition gateways are associated with a bridge, either over the Niagara River or one of its tributaries. Bridges offer existing opportunities to celebrate the pinnacle of this experience at its center.

Bridges traversing the Niagara River at Grand Island are clear examples of this opportunity. As a communication tool, these bridges are the easiest way to introduce exceptionally large numbers of people to the beauty of the Niagara River Greenway, and emphasize the special nature of the Greenway as a location.



Grand Island Bridge

Photo by Clayton Eley- Isledgrande.com

Transition gateways can also perhaps pique the interest of some visitors to learn about, explore and appreciate other aspects of the Greenway. Bridges that cross tributaries of the Niagara River, such as Tonawanda Creek (Erie Canal) or the Buffalo River perform similar gateway functions.

Gateways at the tributaries also present the opportunity to highlight the fact that the communities and natural environments along these water bodies are linked to the Niagara River and important elements of the Greenway.

Another transition gateway opportunity is unique to the Niagara River. As the boundary between the United States and Canada, it is one of the few examples in the

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country where an international greenway is possible. There is already a successful tradition of open space planning and preservation on both sides of the river, and New York can easily look to Province of Ontario as a precedent for the types of activities that may be most appropriate for the Niagara River Greenway. Furthermore, the bridges between New York and Province of Ontario are very significant as international transition gateways. They offer the opportunity to celebrate each country's relationship with the river, as well as to emphasize international cooperation and the mutual intent to protect the natural and cultural resources of this watercourse.



Peace Bridge

- ***Aquatic Gateways*** (See Figure 14)

A number of users of the Niagara River Greenway will access it by boat. There may not be large numbers of water access points, but these aquatic gateways are quite symbolic and should be effective in encouraging new users. Unlike other types of land-based gateways, aquatic gateways are more likely to depend upon the landscape and water than signage and architecture to evoke the gateway senses of transition and arrival, although these gateways should be clearly identifiable. These gateways also offer the opportunity to create water-to-land access points: places where boaters can tie up and take advantage of landside opportunities.

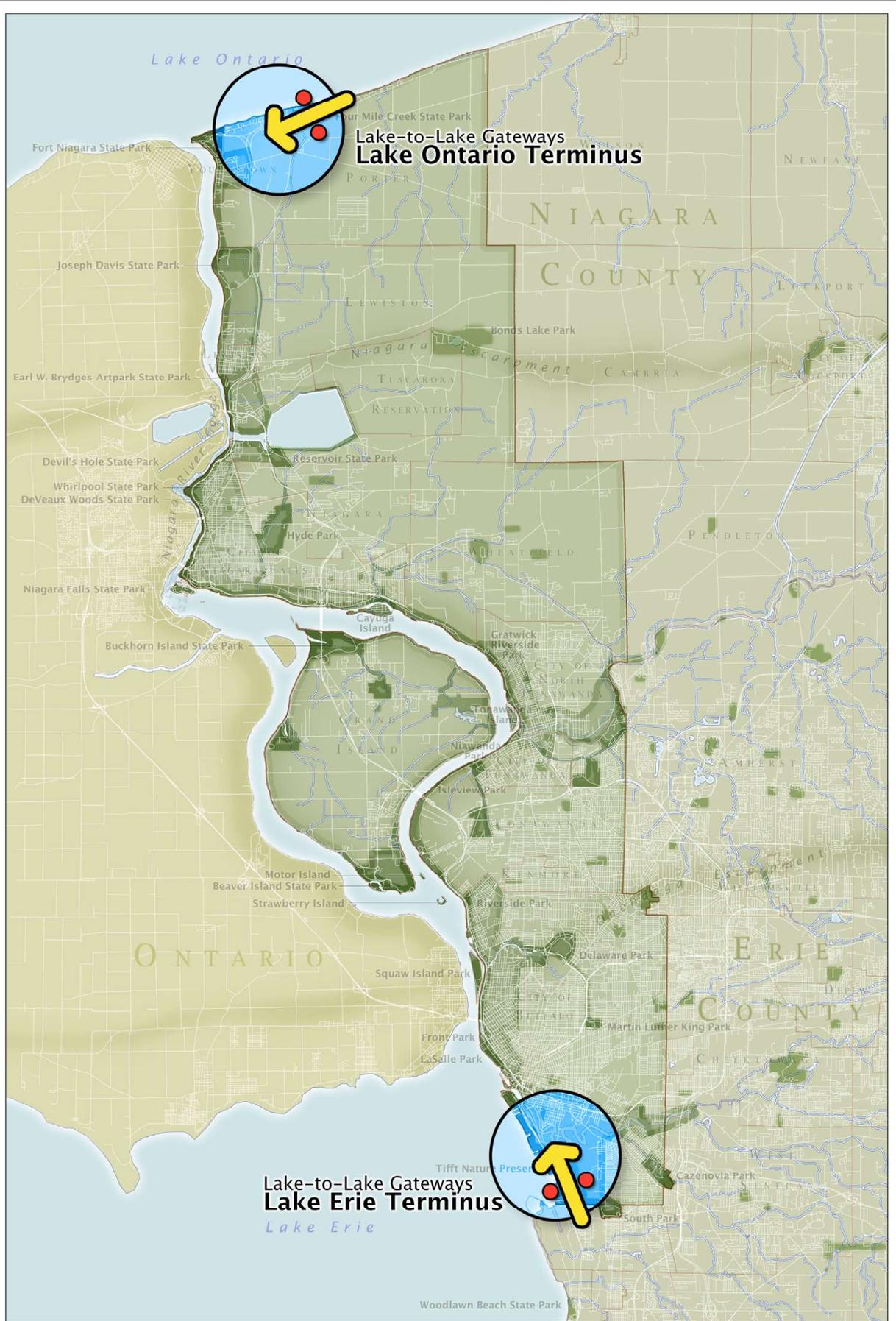


Scajaquada Creek

In addition to water access points, other features such as confluences, islands and other river features could be conceived as aquatic gateways.

- ***Gateways Network*** (See Figure 15)

Taken as a whole, the collection of many types and hierarchies of gateways would be developed as a coordinated network. Ideally, this network of Gateways will enhance the user experience throughout Niagara River Greenway while reinforcing the importance of notable hubs of activity. The implementation of a full gateway network would be coordinated with other system-wide programs including signage and graphics, interpretation and the development of multi-modal access to the Greenway, including trails, bridges, bikeways and roads. The gateway system for the Niagara River Greenway must also be coordinated with systems in place or planned under other initiatives, such as the Erie Canalway and the downtown Niagara Falls wayfinding system.



NIAGARA RIVER GREENWAY
 **Niagara River Greenway Area**
 **Opportunity for Lake-to-Lake Gateway**

LAKE-TO-LAKE GATEWAYS
 MARCH 20, 2007



Figure 11

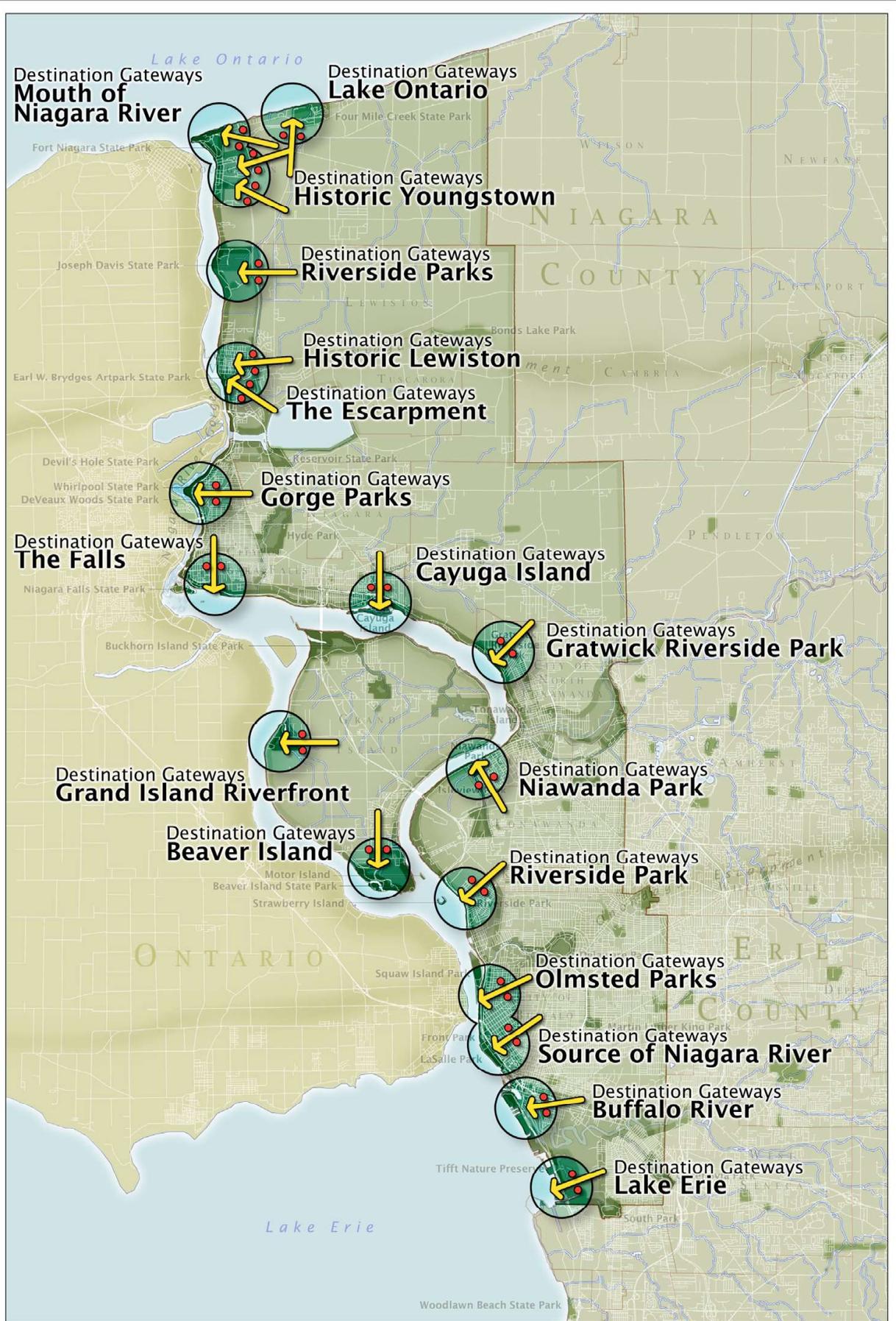
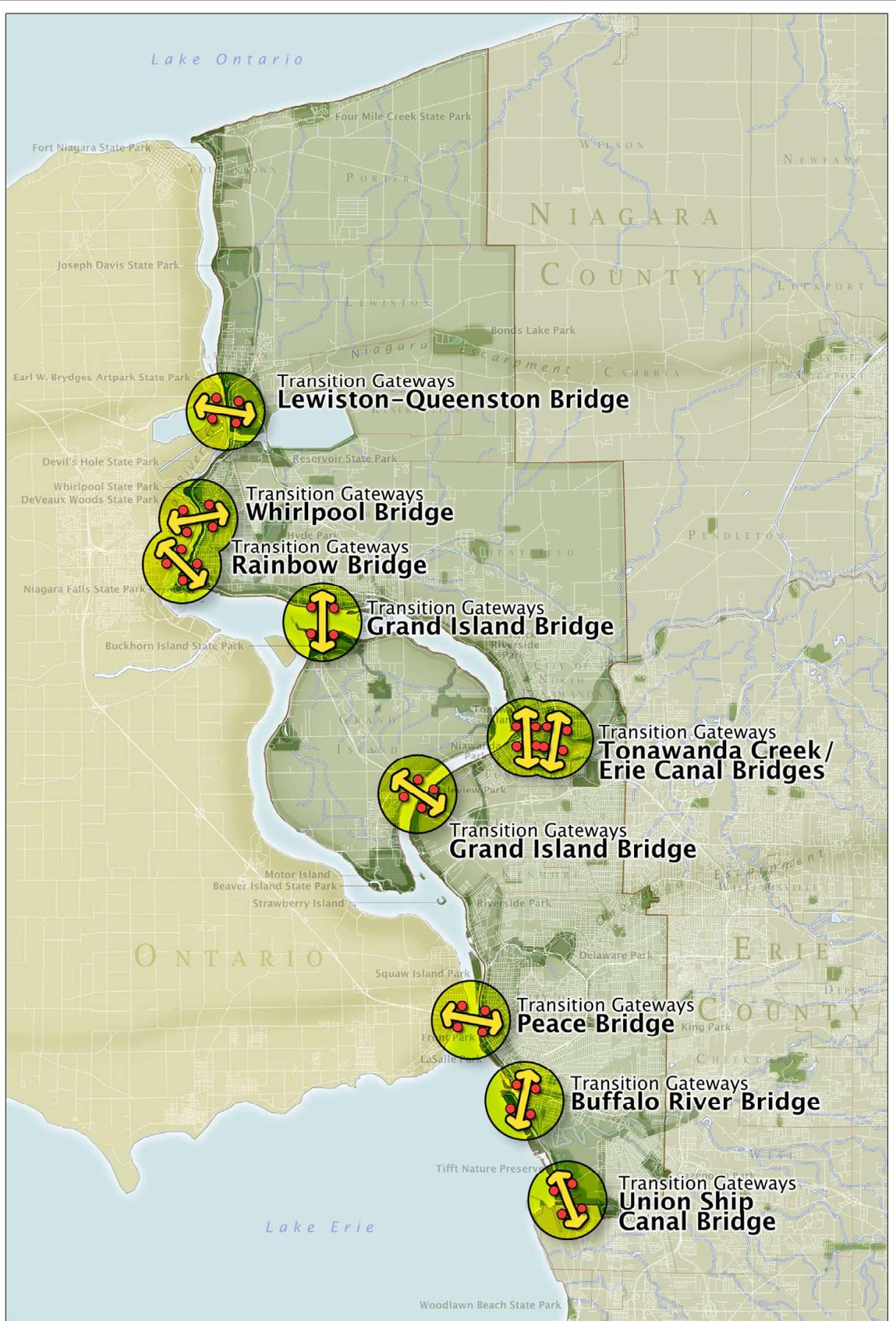


Figure 12

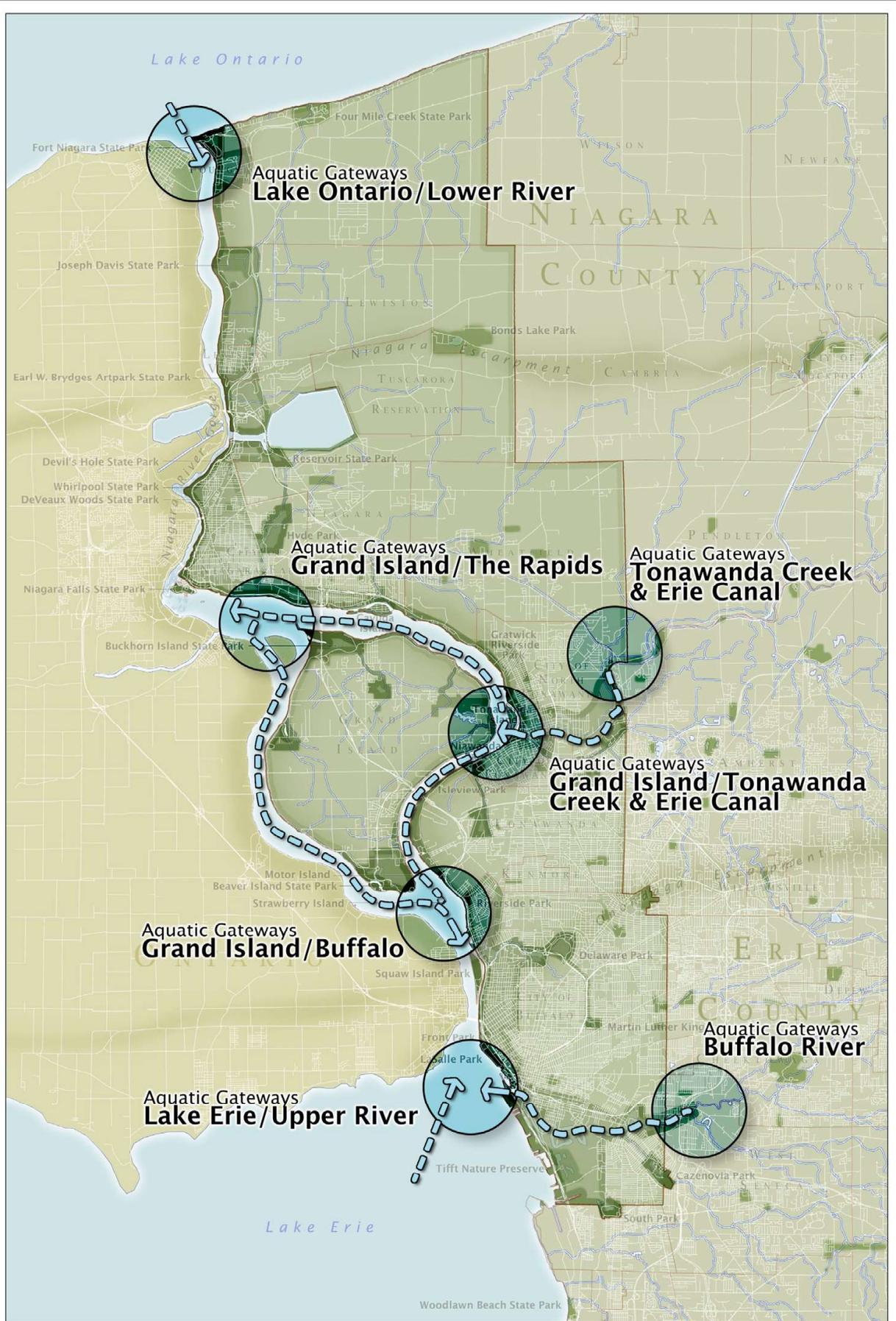


NIAGARA RIVER GREENWAY
 **Niagara River Greenway Area**
 **Opportunity for Transition Gateway**

TRANSITION GATEWAYS
 MARCH 20, 2007



Figure 13



NIAGARA RIVER GREENWAY
 **Niagara River Greenway Area**
 **Opportunity for Destination Gateway**

AQUATIC GATEWAYS
 MARCH 20, 2007

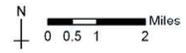
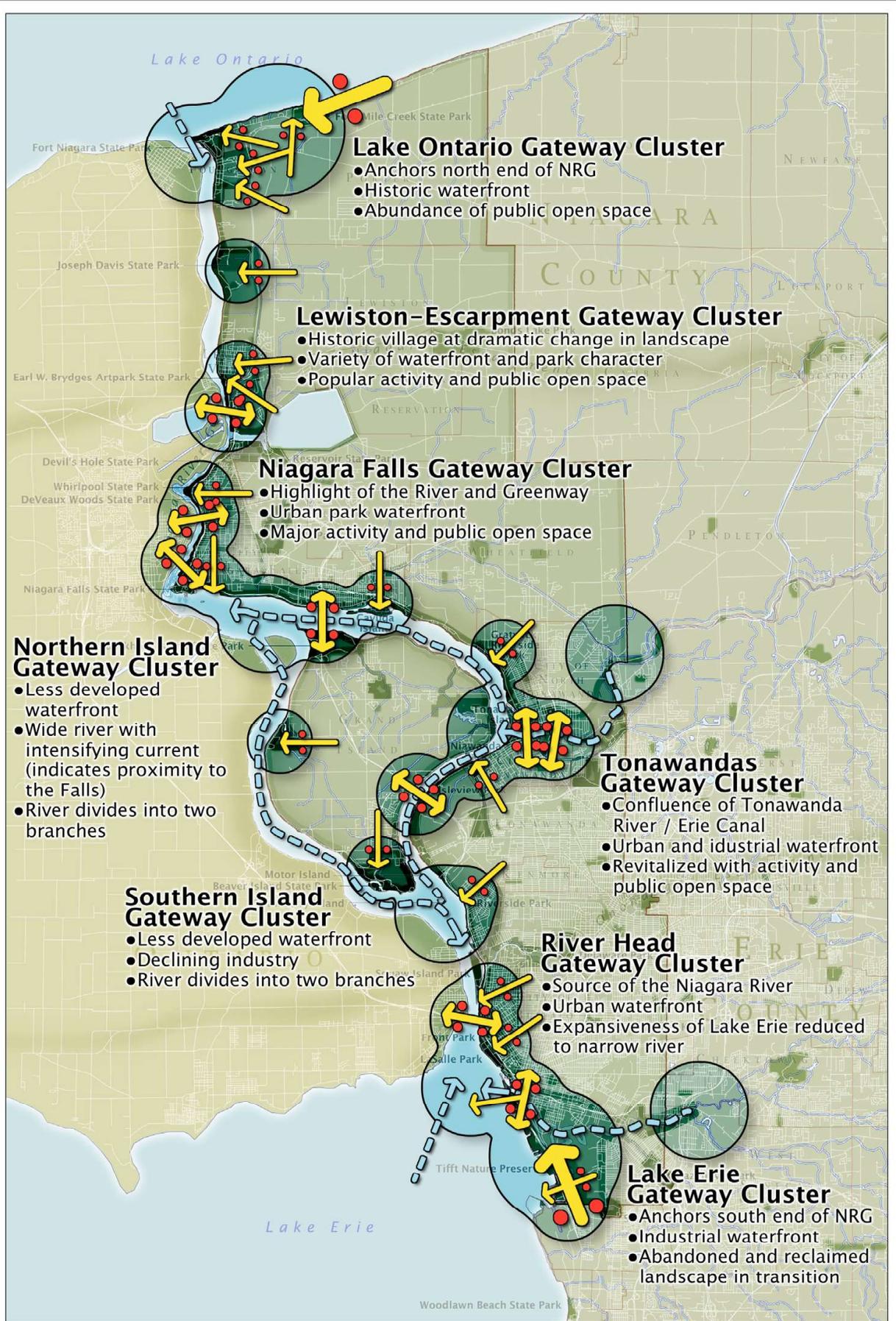


Figure 14



NIAGARA RIVER GREENWAY

Niagara River Greenway Area

Opportunity for Gateway Development

GATEWAYS NETWORK
MARCH 20, 2007



Figure 15

CHAPTER 4: ACTION PLAN

2. Accessing, Experiencing and Connecting to the River

There are many ways to access, experience and connect to the River. These include scenic overlooks, water access sites (boat launches, marinas), “blue line” or water-based trails, parks, and recreational trails.

Currently there are several gaps in the current trail system as identified on the multi-use trail map (Figure 16). As this map demonstrates, there is a need to further develop and take advantage of the many opportunities to access, experience and connect to the river, whether by multi-use trail, canoe and kayak or merely offering an opportunity to experience the countless viewsheds along the Niagara River corridor from Lake Erie to Lake Ontario.

Improved access can take many forms. For example, a Scajaquada Creek kayak and canoe launch would improve access to the Scajaquada Creek, the Black Rock Canal and the upper Niagara River. This access provides an opportunity to experience the juxtaposition of the naturalized setting of the creek within a very urban setting.

Access is also related to multi-use trails and improved facilities for non-motorized use. Numerous municipal and stakeholder recommendations make it clear that local residents place a high priority on the

completion of a “lake to lake” trail system. As part of the Niagara River Greenway Plan Implementation Concepts, a trail gap analysis was performed on five existing gaps in the existing network of trails. These analyses demonstrate potential trail alignments to fill the gap, as well as potential opportunities and/or constraints relative to each trail gap alignment. They are conceptual, and other alignments or solutions would be consistent with the Plan. The main point is that development of these trails would improve access to waterfront resources, providing the users with an enhanced physical and visual experience while simultaneously achieving the objective of a “lake-to-lake” trail system.

- **Area 1: Buffalo-Black Rock Channel Area** (see Figure 17)

The proposed route is along the west side of I-190, adjacent to the Black Rock Channel. The southern tie-in point would be the existing multi-use trail adjacent to the Interstate 190 Porter Avenue/Peace Bridge off-ramp where the trail crosses from the west side to the east side of the highway. The northern limit would cross the West Ferry Street Bridge and tie into the existing Riverwalk on the south side of Squaw Island. The following pictures illustrate conditions along the proposed trail segment:



Southern Tie-in Point at Existing Multi-use Trail

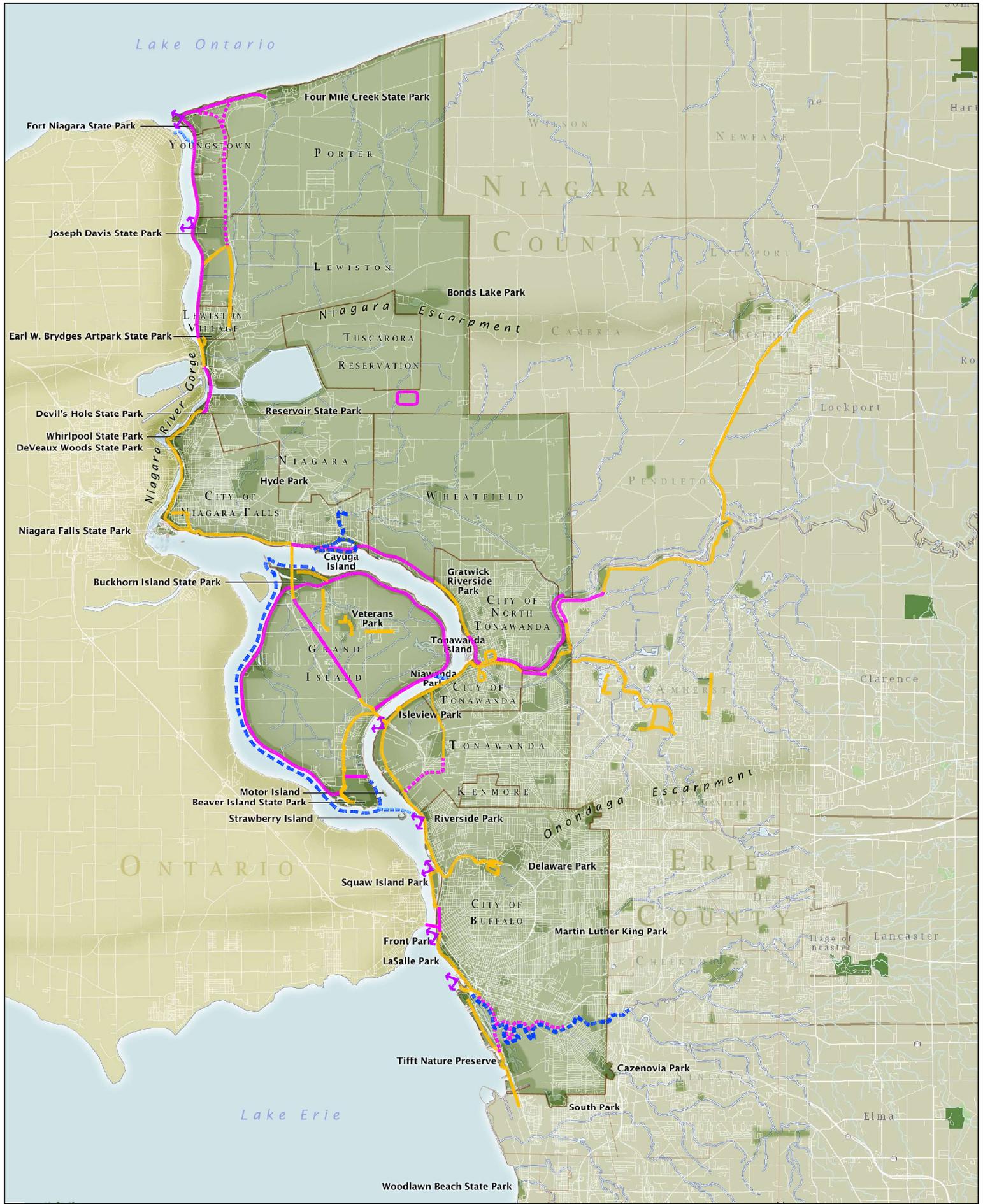
CHAPTER 4: ACTION PLAN



Existing Multi-use Trail at Southern Tie-in Point (Looking North)



Stacked Stone Retaining Wall under W. Ferry Street Draw Bridge

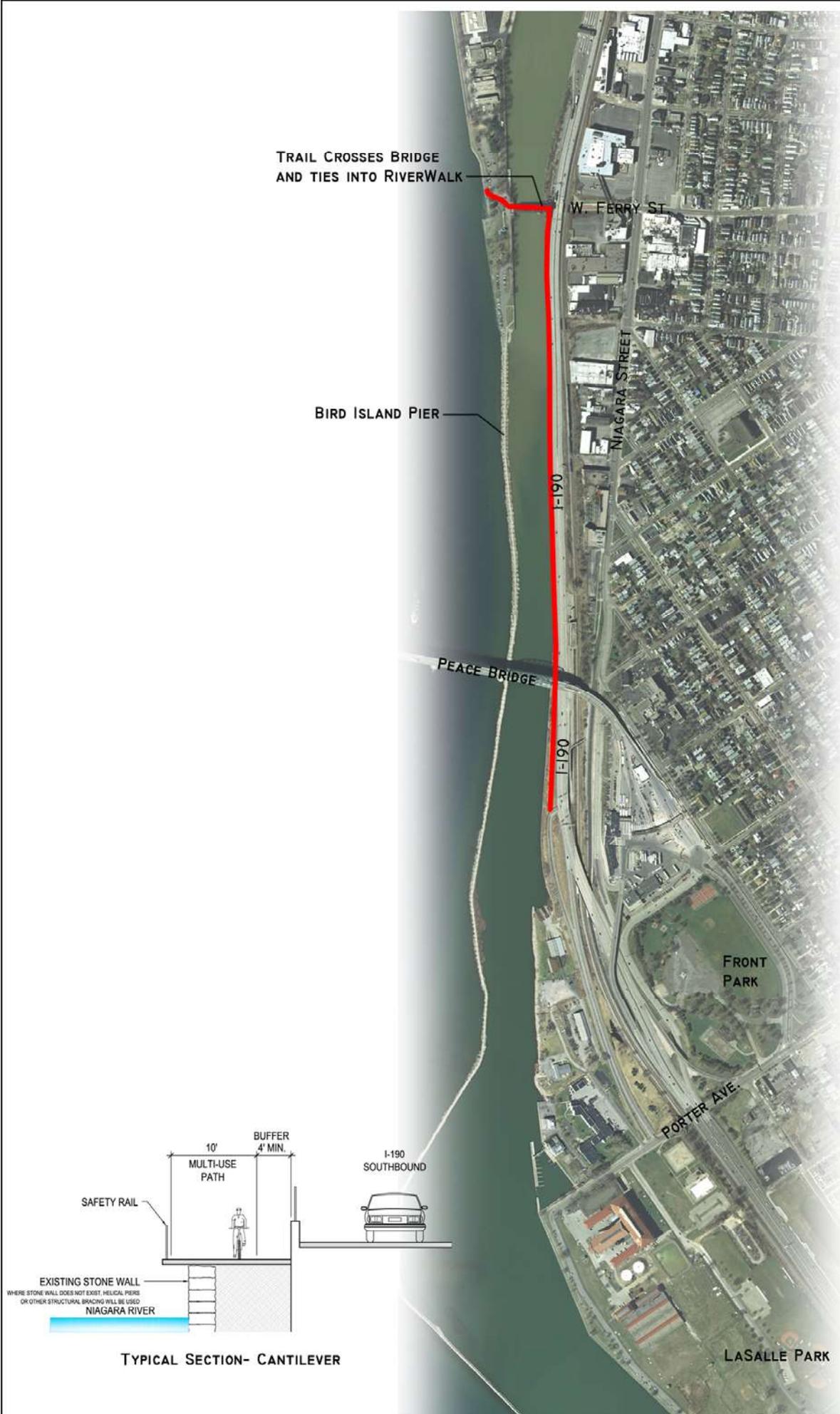


Niagara River Greenway

Multi-Use Trails

- View
- Existing
- Proposed
- Proposed Spur
- Proposed Ferry
- Canoe/Kayak

Figure 16



NIAGARA RIVER GREENWAY

IMPLEMENTATION CONCEPT BUFFALO- BLACK ROCK CHANNEL AREA



Figure 17

CHAPTER 4: ACTION PLAN



**Stacked Stone Retaining Wall and Sheet Piling South of W. Ferry Street Draw Bridge.
Also shows Concrete Retaining Wall for I-190 in this area.**



**Stacked Stone Retaining Wall
Looking South toward the Peace Bridge**

CHAPTER 4: ACTION PLAN



Stacked Stone Retaining Wall South of the Peace Bridge



Water Level View of Stacked Concrete Retaining Wall South of the Peace Bridge

CHAPTER 4: ACTION PLAN



**View of Area between I-190 SB and the Black Rock Channel
Looking North at Peace Bridge**



**View of Area between I-190 SB and the Black Rock Channel
Looking North under the Peace Bridge**

CHAPTER 4: ACTION PLAN



View of I-190 and Black Rock Channel under the Peace Bridge Looking North

OPPORTUNITY:

To provide a multi-use trail along the Black Rock Channel to connect the two existing trails at the north (Scajaquada Creek) and south (existing Multi-use trail) tie-in points.

CHALLENGES:

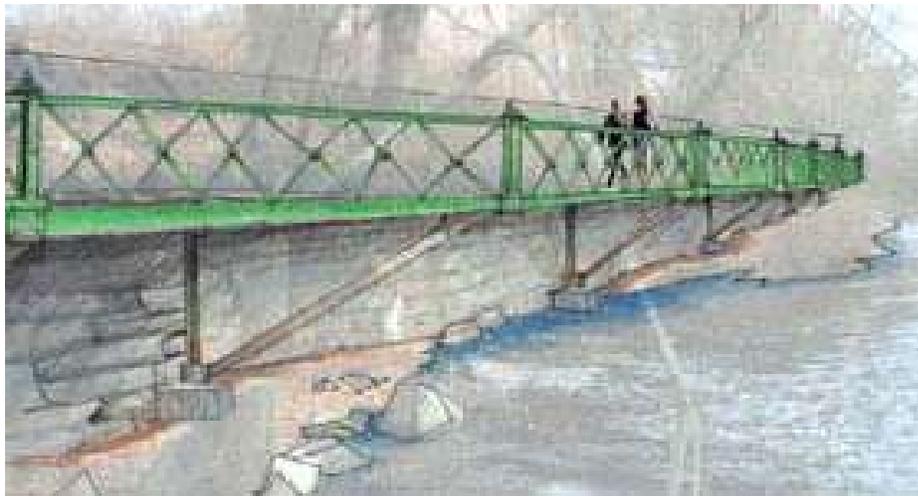
1. Need to determine type of trail to be constructed, i.e. a cantilevered trail off a retaining wall, a paved trail supported by a retaining wall or a combination of the two.
2. Access for construction. Construction equipment would most likely have to work from the water in some locations.
3. Security under the Peace Bridge
4. Crossing over or under the W. Ferry Street Draw Bridge and the safety/security issues at this location. If the trail met W. Ferry Street at grade, this could be a good location for access since parking is available at Broderick Park. Individuals would have to cross the bridge to access the trail from the parking lot.
5. Trail alignment at the former I-190 SB Toll Plaza; i.e. cantilevered walkway or at-grade. This could be a good place to access the trail by SB traffic since there is an existing pull-off area.

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OPTIONS:

- 1. From the Scajaquada Creek tie-in point southerly to the area near the former I-190 SB toll plaza:** The trail could be constructed at grade but would require some sort of retaining wall on the Channel side to provide support for the trail and an anchor for fencing. Once it reaches the existing concrete retaining wall at the widening for the toll plaza, the trail could either rise to meet the existing grade and run along the wall. With the recent removal of the tolls, additional land has been made available for this purpose, and the trail could pass by on the west side. As an alternative, the trail could be cantilevered off the existing concrete wall, over the water.
- 2. From the area near the former I-190 SB Toll Plaza to the West Ferry Street Draw Bridge:** It appears that the trail could be constructed at-grade with the support of a retaining wall, either away from the water or by replacing the stacked rock wall that currently exists at water's edge. At West Ferry Street, the trail would either have to rise to meet the grade of the bridge deck if desired, or pass beneath the bridge deck. Another option that may be available is to cantilever the trail off the existing concrete retaining wall supporting I-190 SB. This would allow the trail to stay at an elevation that would allow it to be tied in at grade to the West Ferry Street Draw Bridge deck.
- 3. From the W. Ferry Street Draw Bridge to the Peace Bridge:** The trail could be constructed at-grade with the replacement of the existing stacked stone retaining wall at the water's edge. It could also be cantilevered off the I-190 SB concrete retaining wall while there is sufficient exposure. It appears the wall is eliminated somewhere near the Peace Bridge.
- 4. From the Peace Bridge to the existing multi-use trail:** The trail could be constructed at-grade and then in a cut section to meet the elevation of the existing multi-use trail. Retaining walls would have to be constructed for support of the trail and the embankment back to I-190.

The following is an artistic rendering of a cantilevered walkway:



CHAPTER 4: ACTION PLAN

- **Area 2: Niagara River Parkway (West River Parkway)**
(See Figure 18)

The proposed route would be from Beaver Island State Park at the southern terminus to the Buckhorn Bikeway at the northern terminus along the West River Parkway. Right-of-way is not an issue since private property along the roadway is limited to the east side of West River Road. It should be noted that West River Road used to be the northbound lanes of a former, 4-lane parkway, but is now utilized as a service road for the residences along its length. The southbound lanes of the parkway have been converted to the two-way West River Parkway. Although the initial thought was to utilize the median area between the West River Parkway and West River Road for the alignment of the trail, it is suggested that the alignment be shifted to the west side of the West River Parkway, adjacent to the water. This alignment would allow access to the two existing pull-off areas, as well as scenic rest areas that could be provided adjacent to the Niagara River.



Multi-use Path entering Beaver Island State Park on the South Side of the Traffic Circle



**View of West River Parkway North of Traffic Circle at Beaver Island State Park
(Multi-use Trail would begin in this area)**

CHAPTER 4: ACTION PLAN



West River Parkway Looking South at Traffic Circle at Beaver Island State Park



West River Parkway Looking South from Southern Pull-off Area

CHAPTER 4: ACTION PLAN



West River Parkway Looking South from Staley Road



West River Parkway Looking North from Staley Road

CHAPTER 4: ACTION PLAN



West River Parkway Looking North at Northern Pull-off Area

The West River Parkway becomes East River Road at the I-190 overpass. A portion of the bridge deck would have to be utilized by the trail to connect to the Buckhorn Bike Path on the east side. The existing bridge has adequate shoulder width for bicyclist and pedestrian use.



East River Road Looking West of Overpass over I-190

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**East River Road Looking East at Buckhorn Bike Path Crossing–
Northern Tie-in Point for West River Parkway Multi-use Trail**

OPPORTUNITIES:

1. Provide a connection between the existing multi-use trail at the South Grand Island Bridge and along the South Parkway to the existing Buckhorn Bike Path and the North Grand Island Bridge along the Niagara River, taking advantage of its natural beauty and scenic vistas.
2. Use existing pull-off areas along the west side of the West River Parkway to allow access to the trail.

CHALLENGES:

1. Crossing drainage ditches/structures where there is currently limited width between the existing West River Parkway and a drainage ditch (See picture above of the West River Parkway Looking South from Southern Pull-off Area)
2. Reconstructing the overpass over I-190 to provide sufficient width for the trail and two vehicular travel lanes.

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- **Area 3: Grand Island Boulevard**
(See Figure 19)

The proposed route would be along Grand Island Boulevard from the current terminus of the Buckhorn Bikeway north of Long Road south to the terminus of the trail from the South Grand Island Bridge north of Staley Road. It should be noted that, although there is no separate bike path or trail, there is a signed Bike Route along Grand Island Boulevard. Pavement markings for this signed Bike Route have not been installed.



Grand Island Blvd Looking North at Terminus of Buckhorn Bikeway and On-Ramp to I-190 N.



Terminus of Buckhorn Bike Path at Grand Island Blvd.

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Grand Island Blvd. Looking South from Terminus of Buckhorn Bike Path



Grand Island Blvd. at Industrial Drive Looking South (note Bike Route sign)

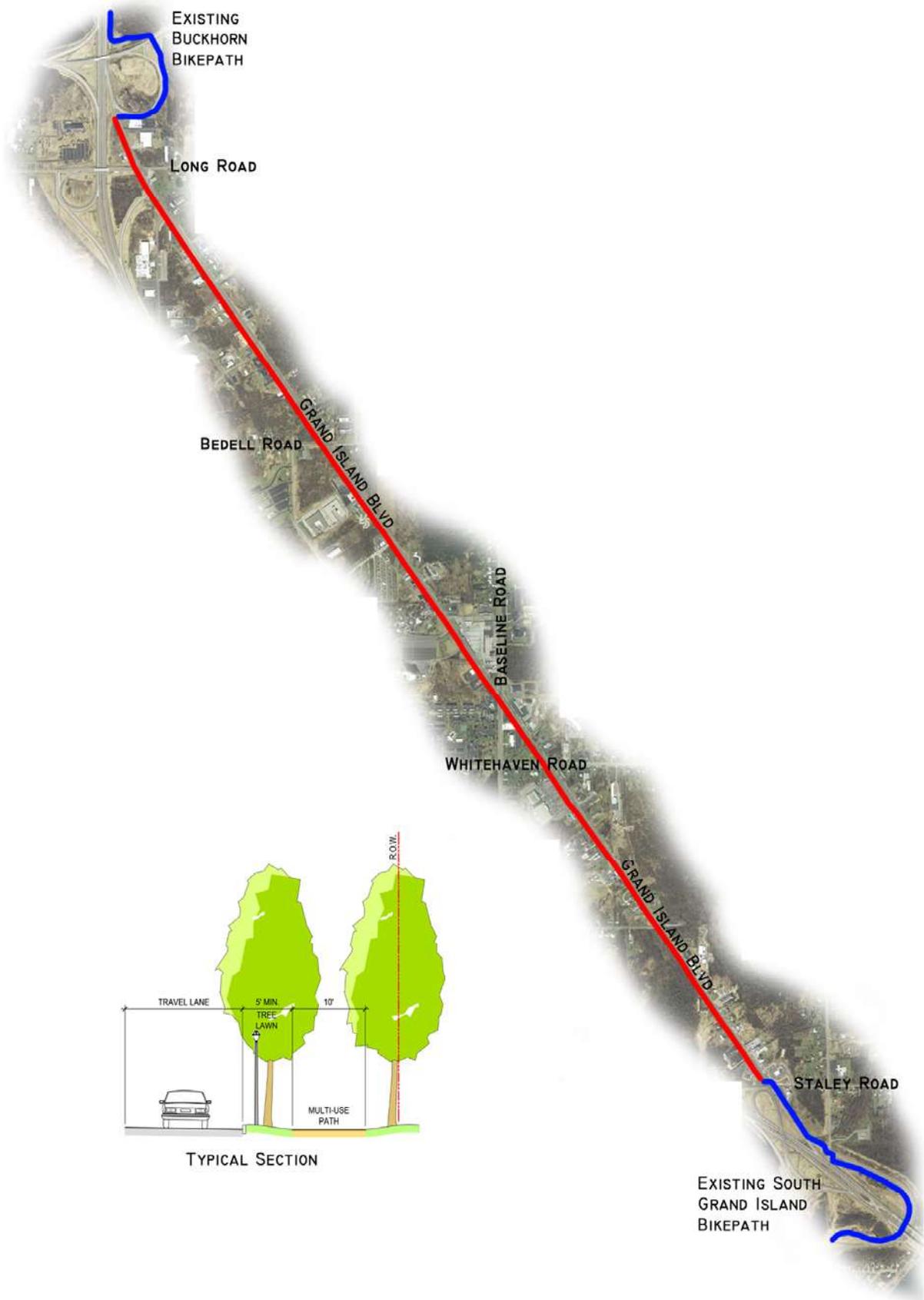


Figure 19

CHAPTER 4: ACTION PLAN



**Terminus of Paved Bike Path at Grand Island Blvd. North of Staley Road Looking North
(note Bike Route sign)**



Bike Path along Grand Island Blvd. at Tim Horton's Drive just North of Staley Road

CHAPTER 4: ACTION PLAN



Bike Path along Grand Island Blvd. Looking North approaching Staley Road



Bike Path under South Grand Island Bridge

CHAPTER 4: ACTION PLAN

Grand Island Boulevard has a 100-foot right-of-way for the majority of its length, providing what appears to be adequate width to provide a trail. However, there are safety concerns involved with providing a multi-use trail across the numerous commercial driveways and intersecting roadways. The current design for the Bike Route on the shoulders of the roadway is actually a safer design for the bicyclists. There are no sidewalks along Grand Island Boulevard, presumably due to the commercial nature of the roadway. Other challenges include the open drainage ditches and utility locations.

OPPORTUNITIES:

1. Provide a direct link between the Buckhorn Bike Path (and the North Grand Island Bridge) and the multi-use trail at the South Grand Island Bridge along Grand Island Blvd.

CHALLENGES:

1. Safety issues crossing the intersecting roadways and commercial driveways.
2. Existing open ditch drainage systems that would have to be traversed.
3. Existing utility locations.

CHAPTER 4: ACTION PLAN

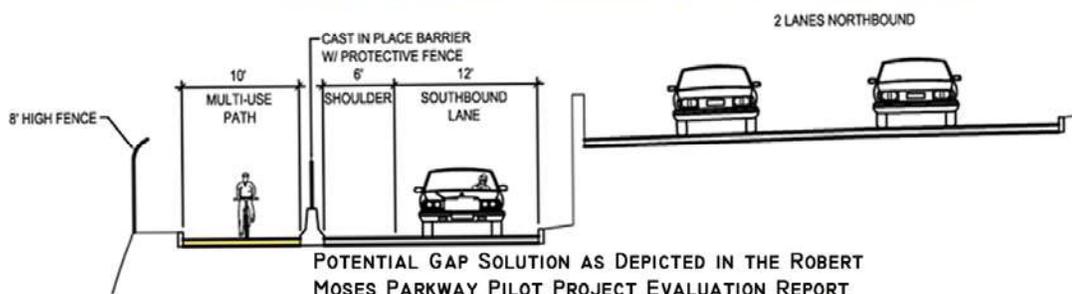
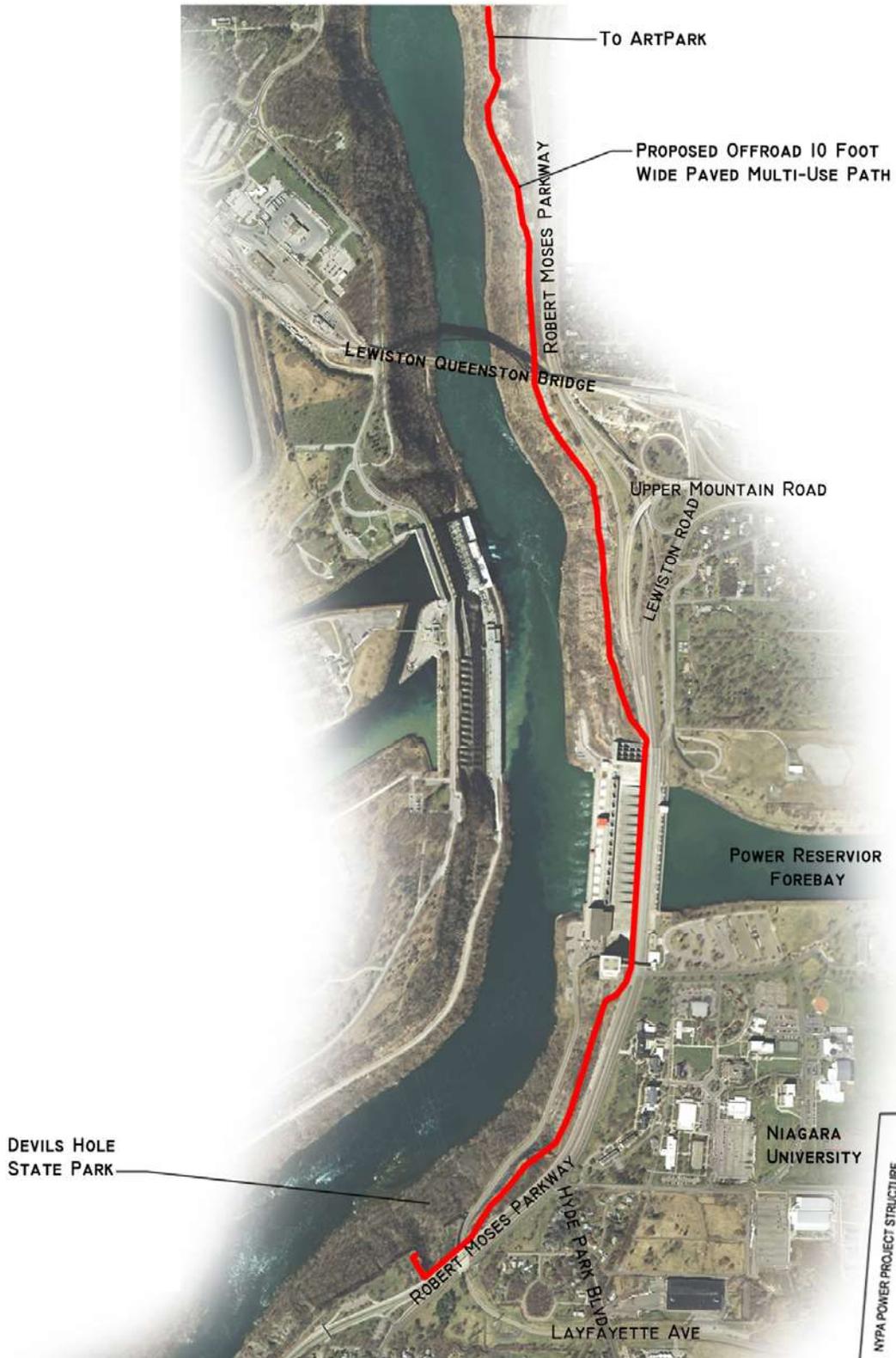
- **Area 4: Devil's Hole/Power Project Area**
(See Figure 20)

New York State is currently initiating a scoping process for the Robert Moses Parkway in this location. The preferred bike lane route, under any scenario for the Robert Moses Parkway, would be to cross the Power Authority structure on the west side of the former southbound lanes of the parkway. The entire southbound lane is closed at this time for reconstruction work being done by the Power Authority. There appear to be no capacity issues with the current traffic pattern utilizing the former northbound lanes for two-way traffic. The design set forth under the Pilot Project by NYSDOT and NYS OPRHP provides for two northbound lanes and a single southbound lane separated from the trail by concrete barrier (see attached rendering from the Pilot Project Evaluation Report). If the traffic pattern remains as is under the current conditions, the entire width of the southbound lanes could be used for the trail and observation area. Security concerns at the Power Authority structure may be an issue.

The southern limit would be the current terminus of the trail at the Devil's Hole observation area, as indicated in the following pictures:



Current Trail Terminus at Devil's Hole Looking SB



POTENTIAL GAP SOLUTION AS DEPICTED IN THE ROBERT MOSES PARKWAY PILOT PROJECT EVALUATION REPORT

NIAGARA RIVER GREENWAY IMPLEMENTATION CONCEPT
DEVILS HOLE & POWER PLANT AREA

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Current Terminus at Devil's Hole Looking NB



**North View of Robert Moses Parkway SB Lanes
In the vicinity of Devil's Hole**

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**North View of Robert Moses Parkway SB Lanes
In the vicinity of Devil's Hole & Niagara University**

The northern limit of the trail segment would be a connection to Artpark and its trail system. Although there are existing trails along the gorge to the south of the Artpark facility, the condition and location of the trails would preclude connecting a multi-use trail to them. This trail would pass highly scenic areas.



Signage at Entrance to Gorge Trail south of Artpark

CHAPTER 4: ACTION PLAN



View of Rock Outcropping of Escarpment along Gorge Trail



Southern Terminus of Gorge Trail

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A trail at this location would create safety issues, as well as constructability questions with the difference in grade between the Robert Moses Parkway and the Gorge Trail.

A possible tie-in point would be at the north end of the access road from Portage Road in the vicinity of the Artpark maintenance building, as shown in the following pictures:



Access Road to Artpark from Portage Road looking at Robert Moses Parkway

CHAPTER 4: ACTION PLAN



**Access Road to Artpark at Drive to Maintenance Building
In vicinity of Robert Moses Parkway**



**Access Road to Artpark
Looking north at Drive to Maintenance Building and Robert Moses Parkway**

CHAPTER 4: ACTION PLAN

This approach would require extending the trail along the current Robert Moses Parkway right-of-way, either in or adjacent to the southbound lanes. While the future configuration of the parkway is currently under study, a trail could be accommodated under various proposed alternatives. The existing northbound lanes could be converted to two-way traffic with little difficulty in this area, if the southbound lanes were converted to a trail. Another option would be for a single southbound lane in this area, adjacent to the trail. Locating a trail at the grade of the Robert Moses Parkway is also conducive to tying the trail in to Artpark.

OPPORTUNITIES:

1. Provide connection in trail system to allow pedestrians/bicyclists to travel between Artpark in Lewiston and Devil's Hole (and on to Niagara Falls) and to enjoy the natural beauty and scenic vistas within this section.
2. Provide a viewing opportunity of the gorge at the Power Authority structure for pedestrians and bicyclists.
3. Provide a pedestrian and bicycle friendly means of access between the upper and lower escarpment in Lewiston.
4. Provide a multi-use trail separate from the vehicular travelway.

CHALLENGES:

1. Accommodating trail system in existing right-of-way, and possible need to re-route traffic.
2. Security issues at Power Authority structure.
3. Impact on the existing Robert Moses Parkway/ I-190 Interchange.
4. Power Authority acceptance of project.
5. Access point to Niagara University.

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- **Area 5: Lower River Rd. – Lewiston to Youngstown**
(See Figure 21)

The proposed route is, in general, along the Niagara River corridor from Lewiston to Youngstown along State Route 18F. The southern terminus would be Artpark in Lewiston and the northern terminus would be the entrance to Fort Niagara in Youngstown, with the option of continuing it northerly through the Fort to the Robert Moses Parkway.

It seems the most direct route from Artpark to Lower River Road within the Village of Lewiston would be to follow 4th Street from the entrance to Artpark, northerly, crossing Center Street where it would follow State Route 18F northerly to Oneida Street. From this point, the trail would turn west and finally north again on Lower River Road. The Village Streets have 99-foot rights-of-way with stone or concrete sidewalks on one or both sides, depending on the location. Village streets are lined with mature trees. There is sufficient shoulder width on 4th Street to allow on-street parking.



4th Street Looking South at Artpark Entrance

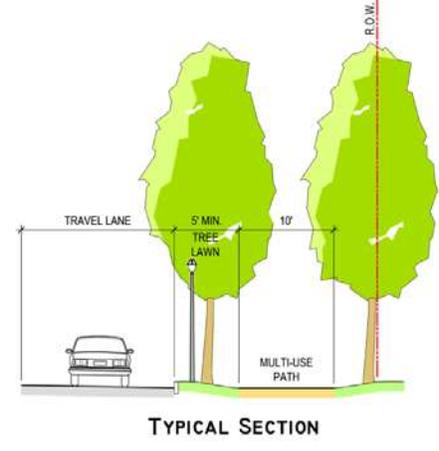
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4th Street Looking North at Center Street



4th Street Looking North at Oneida Street



WITHIN VILLAGE OF YOUNGSTOWN AN OFF ROAD MULTI-USE PATH WOULD NOT BE POSSIBLE. THEREFORE A COMBINATION OF DESIGNATED BIKE LANE AND/OR SHARED ROADWAY WOULD APPLY.

PATH CROSSES BACK TO EAST SIDE OF ROAD

*NOTE: PATH GENERALLY FOLLOWS ALIGNMENT OF EXISTING 4 FOOT WIDE PATH ALONG LOWER RIVER ROAD.

PATH CROSSES FROM EASTSIDE OF RIVER ROAD TO WEST SIDE



NIAGARA RIVER GREENWAY

IMPLEMENTATION CONCEPT LOWER RIVER AREA

Figure 21

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Oneida Street Looking East from Lower River Road



Lower River Road Looking North from Oneida Street

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Concrete sidewalk is located on the east side of Lower River Road along the section from Oneida Street to Dutton Drive. At Dutton Drive, a cross walk is provided on the south side of the intersection to connect the concrete sidewalk to the asphalt path on the west side of Lower River Road.



**Lower River Road Looking North
In the vicinity of Morgan Drive**



Lower River Road Looking North at Dutton Drive

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Limited right-of-way (66 feet), physical constraints caused by erosion of the embankment along the Niagara River, existing bridge structures, on-street parking, mature trees and Village business centers, as well as driveway and roadway crossings, all create design challenges for providing sufficient width for a multi-use trail in this section.



Lower River Road Looking North, north of Dutton Drive



Lower River Road Looking South at Stella Niagara

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**Lower River Road at Pletcher Road Looking North
(Trail crosses to east side of roadway on the north side of the intersection)**



**Lower River Road at Youngstown Estates Looking North
(existing path crosses to east side of Lower River Road on north side of this intersection)**

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Lower River Road at Swain Road in Youngstown Looking South



Main Street, Village of Youngstown Looking North

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Main Street, Youngstown Looking North at Jackson Street and Entrance to Fort Niagara



Entrance to Fort Niagara State Park Looking South

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OPPORTUNITIES:

1. Provide a connection between the Villages of Lewiston and Youngstown with a multi-use trail along the Niagara River, taking advantage of the natural beauty and scenic vistas.
2. While the primary trail should run along River as proposed above, a potential additional route would be to continue the multi-use trail along the Robert Moses Parkway from its present terminus at Pletcher Road in Lewiston north to Fort Niagara in Youngstown. A connection from the Portage Road entrance to Artpark to the existing trail would have to be established either along Center Street and Academy Park from Portage Road to the Robert Moses Parkway or down 9th Street to Mohawk Street and the current southern terminus of the trail. The grade on 9th Street to the north of Center Street would seem to preclude this option.

CHALLENGES:

1. Finding sufficient right-of-way to provide a 10-foot wide trail separated from the roadway by a minimum of 5 feet. If 5 feet can not be provided, then some sort of positive barrier, such as a Jersey Barrier, should be constructed.
2. Location of the trail within the Villages of Lewiston and Youngstown where parking is allowed on the streets. The multi-use trail should not take the place of sidewalks.
3. Safety issues with residential and commercial driveways. It is actually safer for bicyclists to have designated bike lanes on the shoulders of the roadway in areas with significant numbers of driveways than to have the trail located away from the roadway. The bike lanes should be a minimum of 5 feet wide in each direction.
4. Physical constraints exist laterally to the roadway. These constraints include erosion from drainage ditches, guide rails, existing bridge structures, utility poles, mail boxes, signs and mature trees.

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3. Protecting, Preserving and Restoring Important Ecological Resources

Implementation of restoration, protection and preservation projects involving sensitive ecological habitats and resources associated with the Niagara River ecosystem, including adjacent upland areas and tributaries, is of critical importance. One of the primary goals of the Greenway Plan is to provide a framework for evaluating, funding and implementing future projects that are intended to benefit or enhance the unique and special environmental and ecological resources within the Greenway.

The objective of this Plan is not to identify specific projects to be funded, but to provide the foundation and standard by which proposed projects will be considered and evaluated. The intent of this section of the Greenway Plan is to identify the types of ecological and habitat improvement projects that would be considered appropriate, effective and consistent with the Plan. The projects identified serve to illustrate the scope and magnitude of activities that are intended to complement Greenway Plan goals and objectives.



Wetlands along the Greenway

It is important to note that this is neither an endorsement of such projects nor is this list intended to be limiting in any way. The Niagara River Greenway Commission

recognizes that there are many ways to devise appropriate ecological projects that benefit the Niagara River ecosystem.

The goal of the ecological and habitat improvement concept is to recognize elements of the Niagara River ecosystem that are in need of protection or preservation. These fragile areas are in need of enhancement, improvement or restoration due to the current impairment of their natural functions and values. The Greenway Plan will draw attention to the terrestrial and aquatic elements of the Niagara River ecosystem, recognizing the habitat and functional importance each element plays in the overall health and vitality of the ecosystem as well as the educational opportunities provided to increase public understanding of ecological issues.



Aerial view of Motor Island and Strawberry Island: both contain sensitive and important habitat for many species of fish and both resident and migratory birds.

Sustainability must be a critical element of all future ecological enhancement proposals as well as any other proposal that is put forth within the Niagara River Greenway. Funding of projects that are sustainable or lead to a more sustainable ecosystem will be strongly encouraged.

While the Greenway Commission cannot acquire or own property, local municipalities may use Greenway funds for land acquisition or for the purchase of

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conservation easements or development rights. While natural resources inventories and educational research projects are appropriate efforts for funding, all funded activities should be action-oriented and result in advancing physical improvements, operational practices, or land use controls aimed at ecological enhancements or the restoration of compromised or lost functions and values.

One priority is removal of invasive species and use or establishment of previously extirpated native flora; therefore, any ecological restoration project must make use of native species to the maximum extent practical. Proposals to propagate native species for use in restoration projects along the Niagara River and western New York could be eligible for funding in that they would foster sustainable ecological, economic, and educational benefits within the Niagara River Greenway.

Some projects will be focused on a particular sensitive habitat type such as wetlands, while others will involve overlapping habitats consisting of submerged aquatic beds, emergent wetlands, riparian woodlands and forested uplands.



**Lower Niagara River,
looking northward from Artpark.**

Although projects with overlapping and multiple benefits may be seen as having greater overall value to the Niagara River ecosystem and may be more cost efficient,

other site-specific projects may also result in significant benefits to the overall ecosystem. Beneficial projects could be in diverse areas ranging from undeveloped natural areas to remediation and reuse of a brownfield site. Under each of the habitat types listed below, the Plan describes relevant issues and opportunities and the types of projects that would be considered appropriate and consistent with the Greenway Plan. A representative listing of potential sites and locations for each category are provided based on public and agency input received during public meetings and correspondence collected during the Niagara River Greenway planning process. This list is not intended to be complete nor is it intended as an endorsement of a specific project; rather, it identifies representative sites and locations to provide a better understanding of the types of projects that would be most beneficial to the Niagara River Greenway.

This ecological implementation concept recognizes the following habitat types as having critical importance to preserving, protecting and enhancing the ecological value of the entire Niagara River ecosystem:

Upland Areas

Importance - Upland areas adjacent to or in close proximity of the Niagara River provide important habitat that benefits the use, function and value to the Niagara River ecosystem by other wildlife. Upland habitats may provide nesting and shelter to birds and other wildlife that depend on the Niagara River and its tributaries for food or migratory pathways. Upland areas are often critical in controlling and assimilating non-point source discharges and stormwater runoff that enters the Niagara River, and thus are important in maintaining and improving water quality. Upland areas may contain threatened or endangered species or unique forested habitats that are not found elsewhere along the Niagara River or in the western New York region. In addition,

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these upland areas are typically the first to be identified for development due to their location, water views, scenic value and the general lack of regulatory controls. Often, such land use changes result in the permanent loss of the habitat functions and values.

Types of Projects - Upland areas suitable for protection, preservation or enhancements include unique woodlands or old growth forested areas, upland areas in various states of succession, important bird nesting or feeding areas, unique wildlife habitats, grasslands, or islands that provide unique or critical habitat values.

Open Space or recreational areas that provide habitat or ecological value would also be considered, provided existing or planned uses do not compromise these values over the long and short term. In particular, upland areas that are important as buffer areas to other sensitive habitats but are threatened due to development pressure are also considered eligible for protection.



**Shoreline along Riverfront Park,
Tonawanda**

Upland areas should have some proximity or ecological connection to the Niagara River. At a minimum, protection or enhancement of upland areas should result in a tangible or measurable ecological benefit to the Niagara River ecosystem. Scenic value and public access are important to the community as a whole, but ecological restoration of the

affected resource area should be given primary consideration under this concept.

Representative Project Listing – Representative projects that were identified during the public and agency involvement process included the DeVeaux Woods Old Growth Forest, Lewiston Plateau, Niagara Gorge, Niagara Escarpment, Nine Mile Island, Tiff Farm Nature Preserve, northern end of Squaw Island, “Old” White Oak forested areas on Grand Island, Cherry Farm area, Ferry Landing south of Grand Island Holiday Inn, and Times Beach on the Buffalo Harbor waterfront.

Riparian-Floodplain Areas

Importance - Riparian areas are those natural transitional ecosystems typically found along a stream, river or watercourse. Habitat values vary depending upon slope, saturation gradient, soil type, topographic relief, potential for recurrent flooding or inundation and the extent of human intrusion or disturbance. These areas are considered critical to the health and vitality of river systems in that they often provide food, shelter, and nesting habitat for a wide variety of species that depend on the Niagara River or its tributaries for completion of their lifecycles. A key feature of the riparian setting is the functional floodplain. This natural landscape feature stores and slowly releases flood waters, filters and assimilates pollutants in surface water runoff and protects adjacent uplands from the erosive forces of fast moving water. In addition to the ecosystem functional values, natural floodplains also serve to protect property and contribute substantially to the health, welfare and safety of the general public.

Types of Projects – Project areas are typically found along land/water interface associated with the Niagara River and its tributaries. Some areas may include both upland and wetland habitats, or may contain

CHAPTER 4: ACTION PLAN

undeveloped areas that have been surrounded by development. Potential projects may include correction of point and non-point source discharges, repair or restoration of manmade and natural barriers that protect riparian habitats from erosion, minimizing development that encroaches on floodplains through the establishment of easements or land acquisitions by responsible authorities or stewardship groups, tributary watershed studies and improvements to prioritize areas for protection or restoration, shoreline restoration projects, or restoration of natural hydraulic functions caused by improperly placed or sized culverts.



Outfall on the Niagara River

Representative Project Listing – Woods Creek, Gun Creek, Big Six Mile and Little Six Mile Creeks, Spicer Creek, Ellicott Creek, Cayuga Creek Flood Control Project, Hyde Park Shoreline Restoration Management, Scajaquada Creek Improvements, Erie Canal, and LTV Shoreline restoration.

Wetlands

Importance – Historically, wetlands were found along much of the course of the Niagara River. Settlement along the Niagara corridor and subsequent industrial and transportation development have resulted in the loss of considerable wetland acreage. These losses have made the remaining wetland resources even more critical to the

function and value of the Niagara River ecosystem.

The body of research on wetland functions and values has documented their importance to both the natural and built environments. Wetlands play a vital and well documented role in the function and health of the Niagara River ecosystem. Both the Federal and State governments have recognized that wetlands perform functions that are important to the interests of the general public. These include wetlands that:

- Perform significant natural biological functions including food chain protection, general habitat and nesting, spawning, rearing and resting sites for aquatic and terrestrial species;
- Are valuable as sanctuaries or refuges or serve as demonstration sites for the study of the aquatic environment;
- Facilitate natural drainage functions, control sedimentation, promote water flushing and circulation and ameliorate the effects of water currents;
- Shield other areas such as riparian zones or uplands from wave action, erosion and storm damage;
- Serve as storage areas for storm and flood waters;
- Are essential for the recharge of groundwater resources or are necessary to establish and maintain the base flows that are essential for certain aquatic species;
- Serve to protect water quality by filtering and assimilating dissolved and suspended solids typically entrained in surface runoff;
- Contain unique assemblages of species of flora or fauna or represent characteristics that are representative of natural condition prior to anthropogenic modification or influence.

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Types of Projects – Wetland enhancement projects, restoration of natural flows and drainage, removal of invasive species, creation of open water habitats, removal of previous fill material, stormwater runoff control improvements, erosion control projects, educational trails and the enhancement or restoration of fish and wildlife nesting and rearing sites.



Wooded Wetland Complex along Spicer Creek, Grand Island

Representative Project Listing – Spicer Creek Restoration and Enhancement, East River Marsh Restoration, Buckhorn Island and Beaver Island enhancements and restoration, Motor Island Restoration, Strawberry Island, Bird Island Wetland Restoration, Klydell Wetland, Mudd Creek Wetland Enhancements in Tonawanda, northern tip of Tonawanda Island, Joseph Davis State Park Wetland Connection project.

Aquatic Habitat Areas

Importance - The aquatic ecosystem of the Niagara River provides a wide range of critical features including food, shelter, migratory routes; and spawning habitats for various species, including rare, threatened and endangered aquatic species residing in the Niagara River. In addition, maintaining water quality, aquatic habitats, and viability of the food chain is critical. Internationally, the Niagara River is recognized as an Important Bird Area (IBA) of international

significance for the large concentrations of gulls and waterfowl that stage in the area during migration and as a wintering site. The River is also valuable to other water-dependent avian species which utilize the river as a migration corridor; and as an overwintering area for waterfowl, particularly in the vicinity of Strawberry Island. Maintaining the health and vitality of the shallow water and adjacent deeper water habitats is critical to protecting species diversity; ensuring the continued value for hunting and recreational sport fishing; and ensuring the use and enjoyment of the natural river systems by members of the public. Maintaining high water quality is important not only for fish and wildlife, but also for humans as the River is a source of drinking water.

Types of Projects – Installation of fish habitat/attraction structures; submerged vegetation enhancements; shallow water habitat improvement projects; remediation of contaminated sediments; identification/protection of sturgeon spawning habitats; protection of waterfowl habitat; and public fishing access points.



Old Submerged wharf structures along the eastern shore of Grand Island at the mouth of Spicer Creek.

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Representative Project Listing – Motor Island Habitat Improvement Project; Frog Island Restoration; Cayuga/Bergholtz Creek confluence enhancements; Mudd Creek spawning habitat protection; Ellicott Creek Enhancements; Bird Island Submerged vegetation protection; shallows between Strawberry and Motor Island; Bell Slip spawning habitat protection; enhancement of the shallow water habitat in the vicinity of the mouth of Spicer Creek.

Impaired Habitats

Importance - Sites and areas that have experienced impairment due to past human activities or neglect may provide an opportunity to restore ecological productivity to the Niagara River corridor. While these areas are not, in their current state, ecologically sensitive or unique, they may provide an opportunity to benefit the Niagara River ecosystem or a particular habitat component if returned to a more natural condition. Returning these sites to a more natural condition may not restore its original undisturbed ecological value, but may improve habitat value and environmental functions, provide educational opportunities or provide waterfront access.

Projects within developed areas should utilize best management practices to minimize potential impacts to the River.

Types of Projects – Brownfield redevelopment, remediation of contaminated sediments, invasive species removal or management projects, removal of vacant commercial or industrial buildings, restoration of former landfills, remediation or correction of combined sewer overflows.



Buffalo Outer Harbor

Representative Project Listing -102nd Street Landfill grasslands restoration, Buffalo Outer Harbor, NYPA Ice Boom lands, Squaw Island landfill, Cherry Farm, repair of malfunctioning culverts to restore natural drainage, Zebra Mussel removal programs, control of invasive species at Buckhorn Marsh and Tiff Marsh, cultivation of native species for local introduction.

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4. Linking Special Places and Destinations- “Telling the Story”

The diverse and unique aspects of the Niagara River Greenway suggest an effort to interpret and share this rich heritage with others. The many fascinating stories that emerged during the creation of the Niagara River Greenway Plan acknowledged the uniqueness of this area and underscored the necessity of celebrating that heritage. The formula for gateways and reaches, described in the next section, establishes a rationale for the evolution of the Greenway, and also articulates how “Telling the Story” will contribute to an unforgettable user experience.

For both wayfinding and tourism reasons, it is advantageous to distinguish the sites where stories can be told in a detailed interpretive sense from those attractions that provide entertainment and/or information. The former sites provide richer opportunities for creating connections between people and place, and place and history.

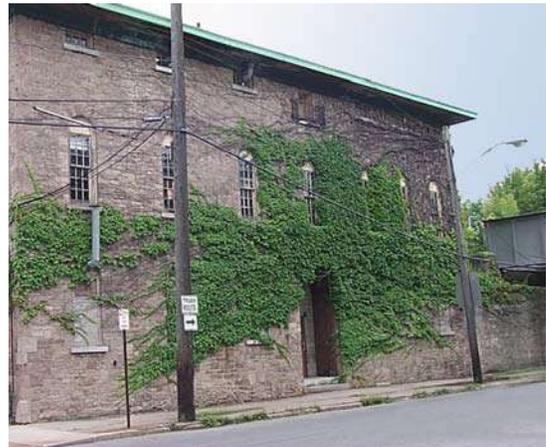
Distinguishing what constitutes a story from other attractions has been difficult in some cases. The rationale that was used generally follows the recommendations contained in “Revealing Niagara: A Citizen Vision for Heritage and Cultural Tourism in the Bi-National Niagara Region” developed in 2002 by the Urban Design Project at the State University of New York at Buffalo. This report recommended the division of interpretive venues into these five categories:

1. The Landscape
2. The Bounty of Nature
3. Stories of War, Peace and Freedom
4. The Wealth of a Region
5. Enterprise in the Arts

These category descriptors, themselves, are highly suggestive of the kinds of sites that can be selected for interpretive treatment. Yet, for the purpose of distinguishing

“Stories to be Told” from other attractions in the Greenway, it became necessary to further define the criteria for inclusion as a story. For the purposes of this discussion, a “Story” is defined as *an historical landmark, piece of art or architectural treasure or a point from which a geologic, ecological or significant man-made enterprise may be interpreted.*

In many cases, the specific location of the interpretive venues may be arbitrary. For instance, the importance of the Michigan Street Corridor in the City of Buffalo to the Underground Railroad or the designation of the Niagara River by the Audubon Society as an Important Bird Area of International Significance defies the selection of a single point to represent the larger area each represents. The final selection points will inevitably become apparent as the interpretation of each site develops.



Customhouse in Niagara Falls- Heritage Site

Most importantly, and from a heritage tourism perspective, the stories to be interpreted represent what is special about this area. The array of interpretive sites can capture the imagination of the out-of-town visitor and regional resident alike. By distinguishing the stories to be told, they can be highlighted in both promotional efforts and in the landscape with signage.

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General Recommendations

There are two fundamental aspects associated with this implementation concept. From a content standpoint, the best approach is to distinguish the interpretive sites where the “Stories” will be told from those attractions that are exclusively of an entertainment nature or have relatively little interpretive foundation. There are many destinations that are important to the character of the Greenway, but that do not fulfill an interpretive function. The sheer quantity of attractions and interpretive sites within the Greenway effectively mandates some manner of division. Consequently, the recommended approach has been the development of a dual indexing methodology that visually separates the depiction of interpretive site locations from other attractions.

The second aspect involves the development of a uniform map graphic and legend that conveys the location and names of the interpretive sites in a standardized format. Figure 22 illustrates such a map graphic. The graphic development of a map is a key consideration in its uniform application. It involves continuity of format, colors, typographics and graphic imagery. This continuity will enable the same graphic to be used on signage, web site and print applications. It also promotes a high level of image continuity in all communication modes in which it is used.

Another important aspect of the map and legend is the color-coding of the five fundamental story categories. This strategy can have several advantages. First, it facilitates the visitor’s search for the legend items on the location map. The color references can also help communicate the relative density of similar categories in a particular area of the map. Moreover, it can provide image and message continuity between the map graphics and signage the visitor will encounter en route to the sites.

Wayfinding Implications for “Telling the Story”

There are many signage and wayfinding implications for “Telling the Story”. Presumably, there will be at least one interpretive sign in the vicinity of each interpretive site. The design of these elements should include graphics, materials and construction detailing that is similar to other Greenway signage, so that a strong and consistent image is reinforced throughout the system. Figure 23 illustrates an interpretive sign that was prepared to help tell the story of the Underground Railroad.

Much of the message content and visual design created to present information on interpretive signage can be utilized in other forms of communication relating to or promoting the Greenway. For instance, the text, photographs and graphics that are presented on these elements can also be utilized in:

- General brochures for the Greenway
- Informational brochures specific to the point of interest
- Educational material
- Print and broadcast media used to promote the Greenway
- Web site

If consistency of this content can be identified as a criterion at the onset and formatting established for all known applications, two important benefits can be realized. First, there will be a high degree of visual identity born of the fact that there are compatible graphic standards for multiple modes of communication. Secondly, there will be significant cost savings as the formatting (as well as a good deal of content) will be generated at the onset.

Similarly, map graphics will likely be generated for use on Orientation Signs at key Greenway gateways, trail heads and interpretive sites. These graphics can be created in a layered format, such that certain

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kinds and quantities of information may be presented for different purposes. For instance, the general orientation map used at trail heads and at key Greenway gateways may be adapted to convey more specific information about the interpretive sites and attractions for brochures or a web site.



Map Graphic on Orientation Sign, Genesee Riverway

Another consideration for “Telling the Story” is the identification of these interpretive sites within the Greenway. The keying device used on those maps and orientation signs that depict site locations can be reinforced on signage devices that are visible to passing vehicular traffic. These signs could reference the coloration used to distinguish the various categories on orientation signage in addition to the description of the interpretive site.

Wayfinding

Wayfinding refers to the experience of orientation, and how a person is able to negotiate through the natural and built environment. A number of architectural and/or design elements can be used to aid orientation, including signage, other graphic tools and the physical design of the landscape.

The Niagara River Greenway offers some unique challenges to the development of wayfinding. The signage used to identity its bounds and attractions needs to attempt to

project a **singular image** in an environment where businesses, urban neighborhoods and municipalities are striving to distinguish themselves from one another. The streetscape environment, especially in more urban areas, is already inundated with a variety of business and facility identification, traffic control, regulatory, street identification and route marker signage. Moreover, the long and narrow configuration of the Greenway suggests a considerable number of identifiers along its length, both for the eastern, land-based boundary as well as for water-based gateways.

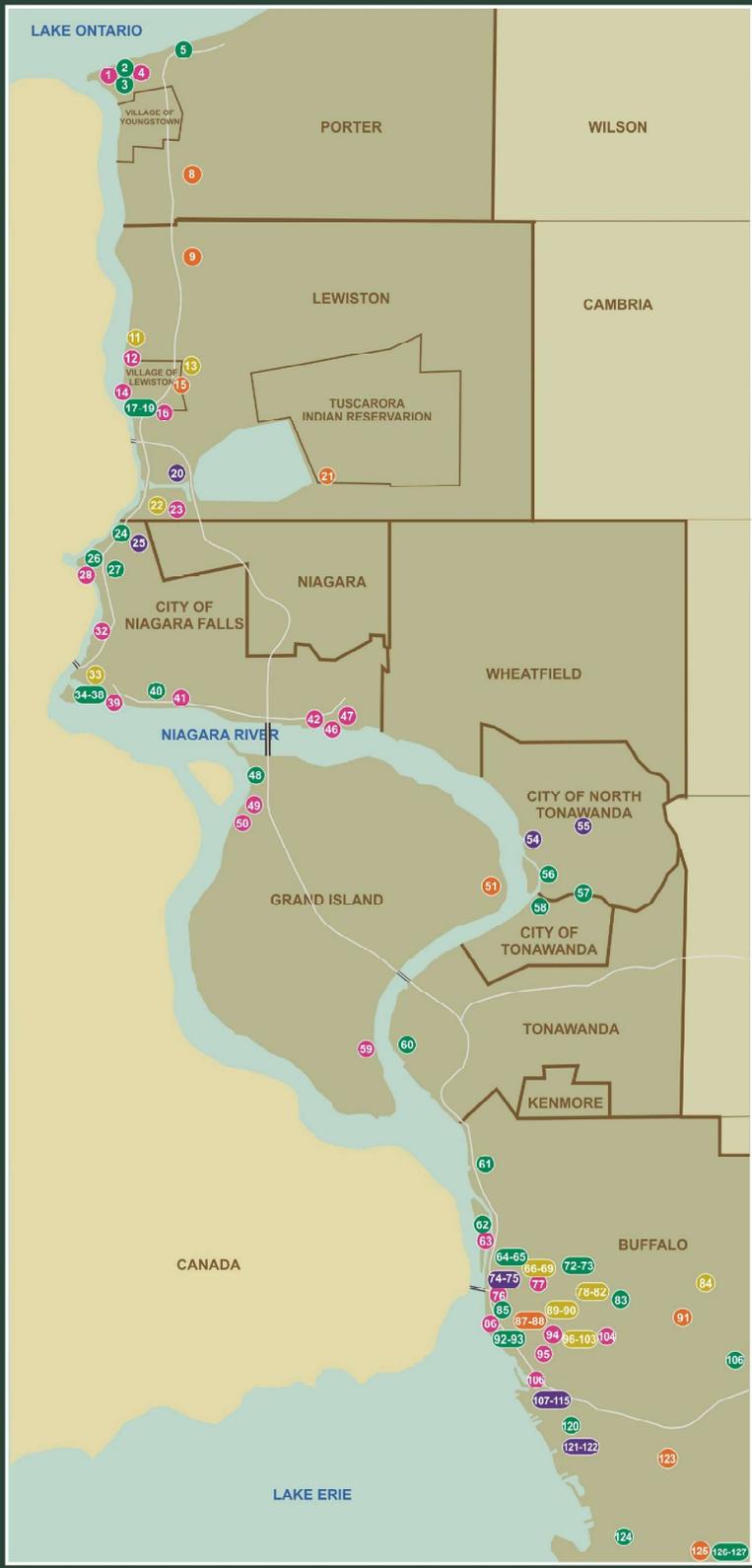


Use of Consistent Logo System Buffalo Olmsted Parks System

Another area of potential conflict involves the communication of a **consistent message**. There is an overlap of regional, state, organizational and commercial wayfinding efforts within the Greenway that creates the potential for numerous and varied identifiers and routing approaches. This is already apparent among the various promotional devices used to describe points of interest in this region.

Multi-Discipline Efforts

Wayfinding systems that are implemented in large or complex environments, such as the Greenway, often involve multi-discipline



NIAGARA RIVER GREENWAY

TELLING THE STORY

STORIES OF WAR, PEACE AND FREEDOM

A Country Develops	Stories of War
1901 Pan American Exposition 74	Buffalo/Erie County Naval and Military Park 106
Roosevelt, Theodore, Historic Site 84	Burnt Ship Creek 108
President William McKinley Assassination 85	Capture of Fort Niagara 114
River Lea 86	Devil's Hole Massacre 114
	Fort Niagara 114
	Fort Schlosser 116
	Historic Lewiston 116
	Manhattan Project, Niagara Falls Storage Site 122
Age of Exploration	
Cayuga Island 48	
LaSalle Park 68	
Father Louis Hennepin 39	
Griffon Park 47	
	Underground Railroad
	Broderick Park 62
First Nations	Lewiston Crossing 104
Native American Cultures 42	Michigan Street Corridor 104
	Underground RR Interpretive Center (Castellani Art Museum) 23
Peace & Friendship	Whirlpool Bridge 28
Navy Island 40	
Peace Bridge Dedication 78	

THE LANDSCAPE

Ecological/ Wildlife Parks/ Waterways	Historic Recreational Parks/ Cemeteries
Buckhorn Island State Park 48	Artpark 118
Duffalo River 29	Broderick Park 62
DeVeaux Woods State Park 27	Buffalo & Erie County Botanical Gardens 126
Ellicott Creek 58	Buffalo Olmsted Park System
Lake Erie 92	Cazenovia Park 104
Lake Ontario 2	Delaware Park 72
Niagara River 34	Front Park 85
Niagara River, United Nations Recognized Bird Area 58	MLK Jr. Park 65
Scajacquada Creek 69	Riverside Park 61
Tift Nature Preserve 24	South Park 126
Tonawanda Creek 57	
	Devil's Hole State Park 119
Landscape	Forest Lawn Cemetery 3
Niagara Escarpment 17	Fort Niagara State Park 3
Niagara Gorge 88	Gateway Harbor Park 56
	LaSalle Park 63
	Niagara Falls 37
Pedestrian/ Vehicular Trails	Whirlpool State Park 26
Riverview Trail 60	
Riverwalk Trail 9	
Seaway Trail 9	
Scajacquada Pathway 64	

THE WEALTH OF A REGION

Canals	Hydroelectricity
Erie Canal 74	Niagara Power Project Visitors Center 20
Erie Canal Junction 84	
Crain/ Buffalo Crain Elevators	Shipping
ADM-Great Northern 108	Buffalo Harbor 107
Cargill Superior 110	Erie Canal 106
Concrete Central 111	
General Mills 112	Transportation
Lake and Rail 113	Automobile Manufacturing 127
Marine A 114	Aircraft Manufacturing 127
Spencer Kellogg 115	Black Rock Boat Works 126
Manufacturing	
Herschell Carousel Factory 58	
Museum 25	
Highbanks Area 25	

THE BOUNTY OF NATURE

Agriculture/ Farmers Markets	Dining & Cuisine
Broadway Market 81	Italian Festival 87
First Nations Hunter-Gatherers 21	Peach Festival 15
Hydroponics 81	Taste of Buffalo 88
Lumber 81	
Pioneer Agriculture 81	Horticulture
Viniculture 81	South Park Conservatory 128

ENTERPRISE IN THE ARTS

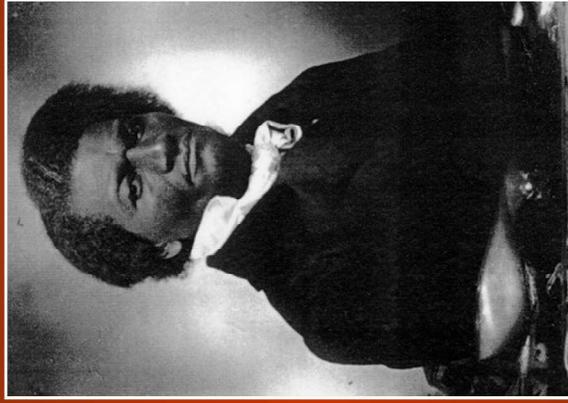
Architecture	Art
Fellheimer, Alfred & Wagner, Steward 64	Slawinski, Josef
Central Terminal 64	Baptism of Mieszko 108
Rapp, George L. & C.W. 87	St. Joseph's Cathedral 108
Shea's Performing Arts Center 87	Buffalo's Polonia 108
Richardson, Henry Hobson 87	Erie County Medical Center 108
Buffalo State Hospital 87	Canticle of the Sun 108
Saarinen, Eiel and Eero 87	Daemon College 108
Kleinman's Music Hall 87	Copernicus-Frederic Chopin 108
Sullivan, Louis 87	Villa Maria College 108
Guaranty Building 87	Last Supper Sisters of St. Francis, Stella Niagara 113
Wade, John J. 87	Maid of the Mist - 125 Buffalo 113
Buffalo City Hall 87	Avenue, Niagara Falls 113
Wicks, William Sydney & Green, E.B. 87	Monte Cassino - St. Stanislaus Church 113
Goldome 87	Peace Mural - Our Lady of Fatima Shrine 113
Albright Knox Art Gallery 87	Scenes from the Life of the Blessed Virgin - Church of the Assumption 113
Wright, Frank Lloyd 87	Seal of the City - Katyn Memorial 113
Blue Sky Mausoleum, Forest Lawn Cemetery 79	Buffalo City Hall 113
Darwin Martin House 87	
William Heath House 87	Landscape Architecture
Walter Davidson House 87	Frederic Law Olmsted 126
	(Buffalo Olmsted Park System)

Niagara River Greenway

Linking Special Places and Destinations
Telling the Story

UNDERGROUND RAILROAD

The upriver ports of Carthage and Kelsey's Landing were stopping places for boats bound for Canada. Escaped slaves arrived in Rochester via the "Underground Railroad" and looked for a friendly captain to take them across the lake and deliver them to freedom.



Frederick Douglass

In 1892, a number of notable visitors came to the village of Charlotte for breakfast at the Cottage Hotel. Among them was Honorable Frederick Douglass, President Benjamin Harrison, the mayor and the governor. Over 800 bicyclists accompanied the entourage from downtown Rochester to the lake. The dignitaries were on their way to dedicate the Soldiers' and Sailors' Monument in Washington Square Park in downtown Rochester.

Lake Ontario was the terminus for the railroad and the last leg of a long and dangerous journey. Harriet Tubman was a "conductor" and Frederick Douglass was a "station master." Both arranged safe passage routes through western New York to Rochester and north along the Genesee River.

Many sympathetic Northerners would help in this cause- men like Myron Holley at Carthage and a free black family that lived at Kelsey's Landing. (A historic marker in Maplewood Park shows the location of Kelsey's.) At the mouth of the river, there was ferry operator, Richard Murphy, and in Charlotte there was the ardent abolitionist, Benjamin Barney, who ran the meat market on River Street.



Kelsey's Landing
Courtesy Local History Division of the Rochester Public Library

The religious revivals of the 1830s solidified anti-slavery sentiment in the Rochester area. Strong abolitionist sentiments favored the runaway slaves, and Rochester's marshals were uncooperative with the Fugitive Slave Act.

The journey to the boats would often end at Charlotte. A house on the east side of Lake Avenue (just south of Denise Road) is rumored to have been a "safe house." The riverfront at "Skunk Hollow" was far enough upriver from the river mouth to allow ships to be boarded unnoticed and in the darkness of night.

George Ruggles came to Charlotte from Orleans County. He was an inventor and ship captain who would eventually become President of the Village of Charlotte. His descendants believe he took "precious cargo" to Canada on the schooner **H.M. Ballou**.

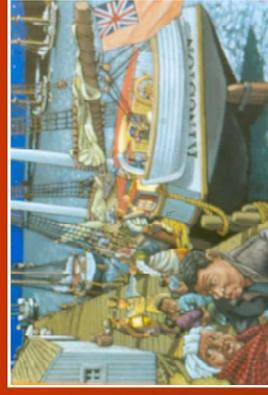


H.M. Ballou and the tug Onida - Courtesy Jack Kemp

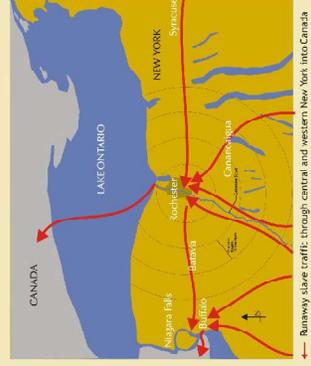
According to New York's 1860 gazetteer, the population of Charlotte was 400 people. Many of her native sons answered the call to join the Union Army. In the summer of 1862, soldiers were summoned to act as port sentries to prevent anyone eligible for military duty from leaving for Canada in order to evade the draft.

Since England was sympathetic to the Southern cause, it was feared that Charlotte's proximity to British Canada might make it vulnerable to attack. A company from the 26th New York Cavalry arrived in Charlotte on the steamer Cataract. They remained for several weeks to guard the port and pitched their tents at the triangle of River Street and Lake Avenue.

It was also suggested that the lighthouse and pier beacons be extinguished as a precaution to hamper a night invasion from the lake.



Artwork Courtesy of John Kestner



← Runaway slave traffic: through central and western New York into Canada

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reinforcement. The flow chart on Figure 24 illustrates the many levels and avenues for providing wayfinding information.

This approach encompasses a multitude of communication media as well as the corroboration of identification and directional cues through various visual design disciplines. Although signage is historically the **primary** wayfinding tool, several other modes of communication and design elements can contribute to a large extent. These include:

- **Print Graphics:** This includes brochures, maps and other print media used to convey the location of the Greenway and its points of interest as well as detailed circulation information as to how to approach and move about within the Greenway.
- **Web Site:** This tool may also contain maps and other wayfinding information that may be downloaded and printed by a prospective visitor. Web sites can provide a great deal more information regarding points of interest than is usually practical in print graphics.
- **Verbal Communications:** Reinforcement in this realm typically involves a documented protocol for site approach and circulation that is distributed to key personnel who routinely interface with the visiting public either face-to-face or over the telephone.
- **Landscape Design:** When used to enhance identity, such elements as paving surfaces, lighting fixtures, street furniture and planting materials can effectively reinforce wayfinding objectives.

The goal of the Niagara River Greenway Wayfinding Program should be to consolidate the form and content used to convey information pertaining to the Greenway and its attractions. Although this effort may initially involve signage devices, the protocol for content should be extended

to all means by which wayfinding information can be rendered.

Signage Issues

From an identity perspective, signage must be highly visible in order to identify the Greenway, distinguish its bounds and route visitors to its attractions. Functionality, it needs to convey information as accurately and succinctly as possible.

The Consistency of Identity

From an image perspective, there are several key elements that need to be integrated within signage design to promote a singular identity for the Niagara River Greenway. These are:

- **Consistent Logo Usage:** The Greenway logo or logotype should be used consistently on all signage devices. The scale of the image may be altered (larger for gateway and trailblazer signs, smaller for pedestrian directional and interpretive signs) but its positioning relative to other graphics should be consistent.
- **Forms and Colors:** Signage needs to promote a singular image but, at the same time, stand out in the streetscape. This is particularly important in an area the size of the Greenway. This can be achieved by capitalizing on a unique shape or form and color usage that is similarly applied to all categories of signage.
- **Posts, Supports and Mountings:** There should be a similar level of consistency in the detailing of posts, brackets and support devices. This consistency should involve the material and coloration used for these devices.
- **Format:** To further distinguish Greenway signage, consistency should be applied to type styles, graphic layouts, rules and other graphic devices used to organize or convey information.

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The systems approach to signage design is illustrated in Figure 25. The signage system developed for the Greenway should convey a high degree of consistency. To ensure a common vocabulary, one of the products that will need to be created is a Wayfinding standards package or manual that details these image-related elements and articulates how they will be utilized for each kind of sign that comprises the system.

The Consistency of Content

There is no more important element in wayfinding than message consistency. The large-scale and complex nature of the Greenway suggests **formality** in establishing its wayfinding standards. An effective Wayfinding Program is predicated upon accuracy and consistency in three important areas:

- **Nomenclature Standards:** This includes the formal terminologies used to describe such elements as trail heads, points of interest, streets and byways of approach, parking facilities and services. These standards are usually formalized in a Standards Manual and shared with all personnel who are involved with communicating wayfinding information.
- **Circulation Strategies:** This includes the documentation of preferred circulation approaches and pathways. The articulation of the pathways utilizes the terminologies established in the Nomenclature Standards.
- **Communication Protocol:** This involves the process of conveying wayfinding information, and especially changes in wayfinding information, to those individuals in an organization that communicate directly or indirectly with the visiting public. This group may include information technology personnel, marketing and communication directors, receptionists, telephone greeters and information providers, security personnel, in-house

signage fabricators as well as designers and other consultants that may be involved with the planning or production of wayfinding devices.

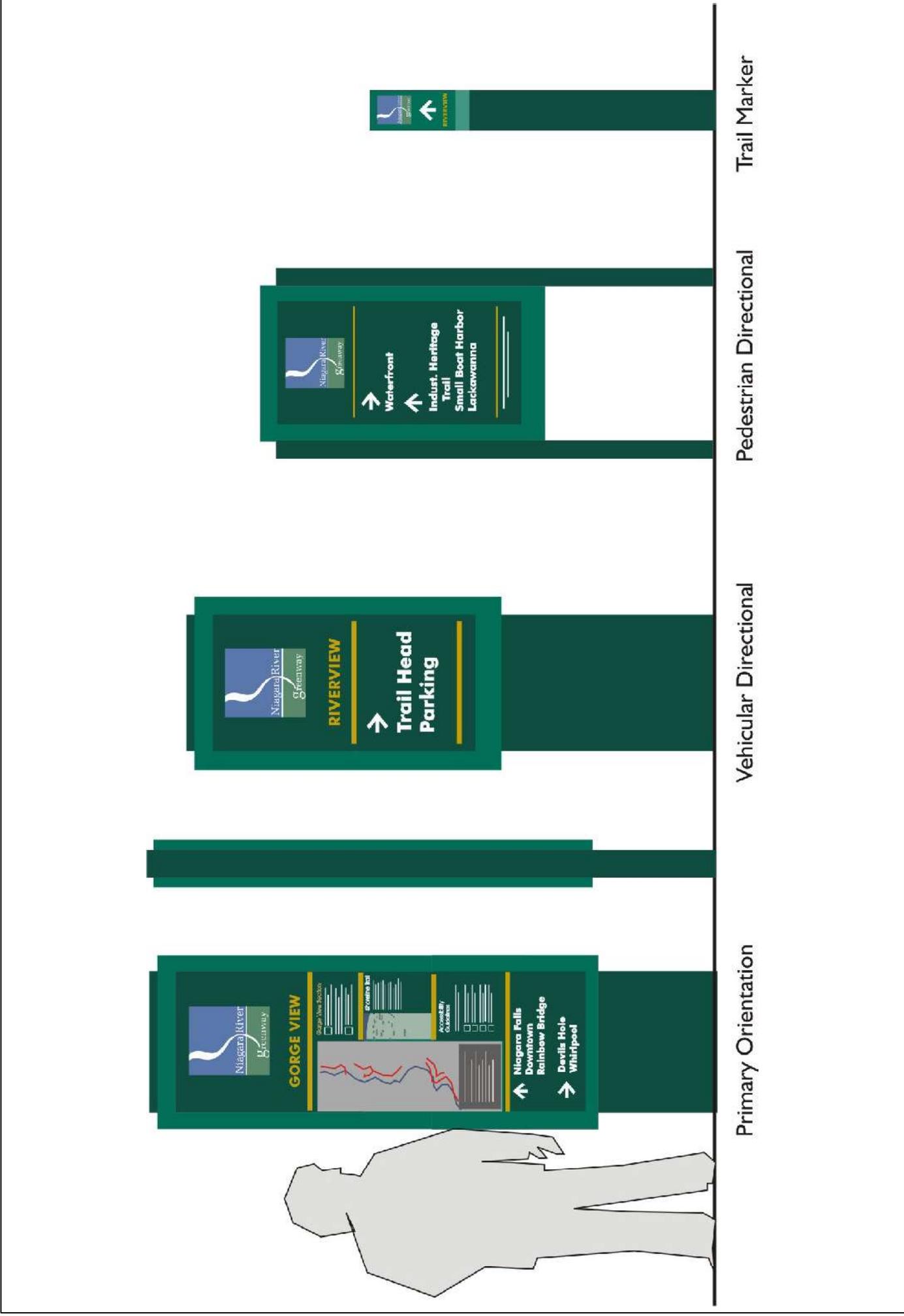
For consistency of content across the Niagara River Greenway, a Wayfinding Standards Manual should be developed that articulates these standards and protocols for entire Greenway. The process for integrating changes should also be carefully mapped out to guarantee that any changes in nomenclature or circulation strategies will be conveyed uniformly in all expressions of wayfinding.

Signage Categories

The application of identity and message consistency should be reflected in a hierarchy of signage categories that function interdependently to orient, direct, identify, and inform. There are several basic signage categories that will be useful within the Niagara River Greenway, including:

- **Greenway Trailblazer signs:** To alert visitors that they are approaching the Greenway.
- **Gateway and Boundary Identification:** To identify the bounds of the Greenway at the primary node areas. This treatment may be similar to the gateway kiosks that are currently in use on Third Street in Niagara Falls.
- **General Identification:** To identify interpretive sites and attractions in the Greenway
- **Trail head Identification signs:** To identify trail heads and parking areas.
- **Vehicular Directionals and Destination Trailblazers:** To fine-tune visitor circulation to specific interpretive sites, trail heads, attractions and parking areas.
- **Orientation signage:** To provide map graphics and a directory of interpretive sites and other points of interest.





Niagara River Greenway

Linking Special Places and Destinations Systems Approach to Signage Design

Figure 25

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- **Pedestrian Directionals:** To fine-tune pedestrian circulation at interpretive sites and urban environments. Along trails, these signs can confirm distances to milestone destinations, attractions and upcoming trail junctions and spurs.
- **Hazard Warning:** Along trails, this category will alert users to such conditions as steep grades and blind curves.
- **Street Identification:** To identify streets and byways within the bounds of the Greenway. This treatment might simply include the addition of the Greenway logo to the street name in a fashion similar to that used in the Buffalo Niagara Medical corridor.
- **Interpretive signage:** At the interpretive sites, this category will enrich and enhance the visitor's experience of the Greenway. They will "Tell the Story" through imagery and text.



Vehicular Destination Trailblazer

The Melding of Identities in the Niagara River Greenway

There will be occasions where trail, municipal and regional identities will need to be represented on Greenway wayfinding devices. These include such entities as the Seaway Trail, Erie Canalway Trail, the Niagara Wine Trail, the Village of Lewiston,

the City of Niagara Falls and the proposed Shoreline Trail, a multi-use trail proposed by the Greater Buffalo Niagara Regional Transportation Authority that will eventually extend along the waterfront from Old Fort Niagara at the mouth of the Niagara River to the Town of Brant in southern Erie County. Melding the various graphic identities may be somewhat challenging and will require a graphic hierarchy as part of the proposed Wayfinding Standards Manual for the Niagara River Greenway. This usually involves a formal methodology for the treatment of nomenclature and graphic symbols. The Genesee Riverway Trail in the City of Rochester is a precedent for this graphic hierarchy. Wayfinding devices for the Genesee Riverway include reference treatment to the Canalway Trail and Genesee Greenway Trail.

The Niagara River Greenway will overlap a significant segment of the proposed Shoreline Trail. The identity of the proposed Shoreline Trail is unique in terms of both scale and autonomy. The greater scope (in length) of the Shoreline Trail, as well as the need to distinguish it from the many spurs and other trail systems it intersects, requires a high degree of autonomy for its signage and overall identity. Proposed signage concepts have not yet been applied to the Shoreline Trail, and it is recommended that its identity be melded with that of the Greenway to some extent (i.e. colors, materials, sizing and detailing of certain categories). It may be possible to incorporate a reference to the Greenway on signs identifying Shoreline Trail segments that fall within the Greenway. This might also include implementation of the Greenway logo in a reduced version.

The Shoreline Trail is a similar system that is being developed separately from the Niagara River Greenway, although sections of the two systems overlap. As part of the recommendations for wayfinding that were

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developed for the proposed Shoreline Trail, a concept for creating distinct zones evolved that aimed to divide the Shoreline Trail into five parts:

1. Gorge View (Lower Niagara River)
2. Riverview (Rainbow Bridge to Erie County Line)
3. Riverwalk (Erie County Line to Lackawanna Town Line)
4. Sunset View (Lackawanna south to Town of Evans Line) and
5. The Beaches (Evans to Erie County southern boundary).

This strategy was devised to reference these areas or zones as intermediate destinations on signage such that orientation and directional categories could be simplified. A similar system could be developed for the Niagara River Greenway. Directional elements will reference destinations within the zone and the location of other zones. When the trail user crosses into a neighboring zone, he or she will see the destinations specific to that zone.



Consistency of Identity across Zones

As an example from the Shoreline Trail, a directional sign in “The Beaches” zone can emphasize the destinations within this zone.

It will not, however, call out the specific destinations in the Riverwalk and other zones to the north. By limiting signage references to local zone destinations and neighboring zone names, signage can remain as simple and user-friendly as possible.

Coordination with the Proposed Shoreline Trail

As the Greenway encompasses the three northern-most zones of the proposed Shoreline Trail zoning strategy, there may be advantages to extending zonal references to the Greenway itself. The rationale for zoning the Greenway is just as relevant, if not more so. As such, it may be beneficial to either utilize the zoning strategy that has been proposed for the Shoreline Trail or, at the least, determine new zonal references such that they may be the same for both entities.

From an interpretive perspective, the identification of “Telling the Story” sites in the Greenway is entirely compatible with the regional representation of points of interest that the Shoreline Trail has determined to address. Consequently, the Shoreline Trail map graphic and orientation devices could be very similar in nature, content, and to some extent, even design to that which the Greenway would also seek to implement. Moreover, there can be many cost-saving benefits in an effort that aims to coordinate the map and orientation graphics produced for the Shoreline Trail and Niagara River Greenway. For instance, one elevation of a Shoreline Trail orientation unit could address trail-related information while the opposite face could promote the Greenway with its own specific maps and descriptions of points of interest. These units were originally designed to have a panel face dedicated to the trail and one that addressed regional attractions. As long as the Greenway components were compatibly designed, it could simply be inserted within the Shoreline Trail units.

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5. Heritage Tourism and Economic Revitalization

One of the most important outcomes of fulfilling the vision of a Niagara River Greenway is its potential to improve the quality of life for the region's citizens. Revitalizing the region's urban centers, celebrating the region's rich cultural and industrial heritage and protecting the region's natural resources are sound economic development issues that can directly improve the quality of life in both Erie and Niagara Counties. Environmental protection and redevelopment are not mutually exclusive endeavors, but work together to help promote economic activity. Collectively, these strategies lead to stronger neighborhoods, a healthier environment, a vibrant economy and increased tourism.

Urban Centers

(See Figure 26)

Historically, most of the urban and industrial expansion of the Erie-Niagara region was directly or indirectly tied to the region's water resources, specifically the Great Lakes, Niagara River and the Erie Canal.



City of Buffalo and Niagara River

Enhancing the water and land assets along the Niagara River will facilitate the region's ongoing economic transition, raising the value of urban waterfront property for residential, entertainment, recreational and water-dependent and water-enhanced uses. This strategy reinvests in the existing infrastructure, consistent with smart growth policies and a national trend toward revitalizing urban neighborhoods. Enhanced

quality of life features create a climate that is attractive to new business, encourages private sector investment, and helps build a market for new commercial opportunities.

Heritage and Cultural Centers

(See Figure 27)

Reinvesting in the existing infrastructure also promotes urban areas as appropriate locations for higher intensity greenway-related land uses such as heritage and cultural centers. These facilities are intended to draw large numbers of visitors, including local residents and tourists. They can be developed in coordination with an overall interpretive strategy to tell the stories of history, culture and industry in the Niagara River Greenway, as is discussed in the previous Implementation Concept on "Telling the Story".



Visitor Center, Niagara Falls

Historically, Lake Erie, Lake Ontario and the Niagara River were catalysts for industry and many industries developed along the water's edge due to manufacturing and shipping needs. Other industries required the affordable and abundant electricity provided by hydroelectric operations at the Niagara Power Project and its predecessors. It is important to celebrate the advancements in industry made possible by these resources and acknowledge the significant role that industry played in developing the region.

The area's rich industrial heritage is integral to the development of heritage tourism and industrial heritage initiatives will provide important tourism venues that will aid in the

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development of the Niagara River Greenway.

Among the most successful and innovative new cultural centers are those that blur the line between education and entertainment by combining learning activities with interactive experiences, and appealing to a range of ages and demographic groups. The proposed Niagara Experience Center in the City of Niagara Falls is an example of this type of center. These types of facilities are most appropriately located in urban locations, because they have good access to transportation infrastructure, utilities, hotels and commercial districts. This will also help alleviate development pressure in more sensitive undeveloped Greenway areas.

Ecological Centers

(See Figure 28)

Active heritage and cultural centers that attract large numbers of visitors are more adequately located in urban areas. Ecological centers are more ideally suited to a more natural setting, such reclaimed land where they are in contact with the types of natural resources, plants and wildlife they are intended to focus on. Tiff Nature Preserve is an example of an ecological center. Although these facilities may be open to the public as interpretive centers, they would be much more passive in nature, emphasizing education, research and conservation.

The design of ecological centers should combine landscape with architecture by incorporating the Greenway's natural features through minimal site impacts. Ultimately, the goal of these centers is to play a leading role in preserving, enhancing and restoring the natural environment of the Niagara River Greenway.



Buckhorn Marsh Nature Center
Photo by Nathan Cook- isledegrande.com

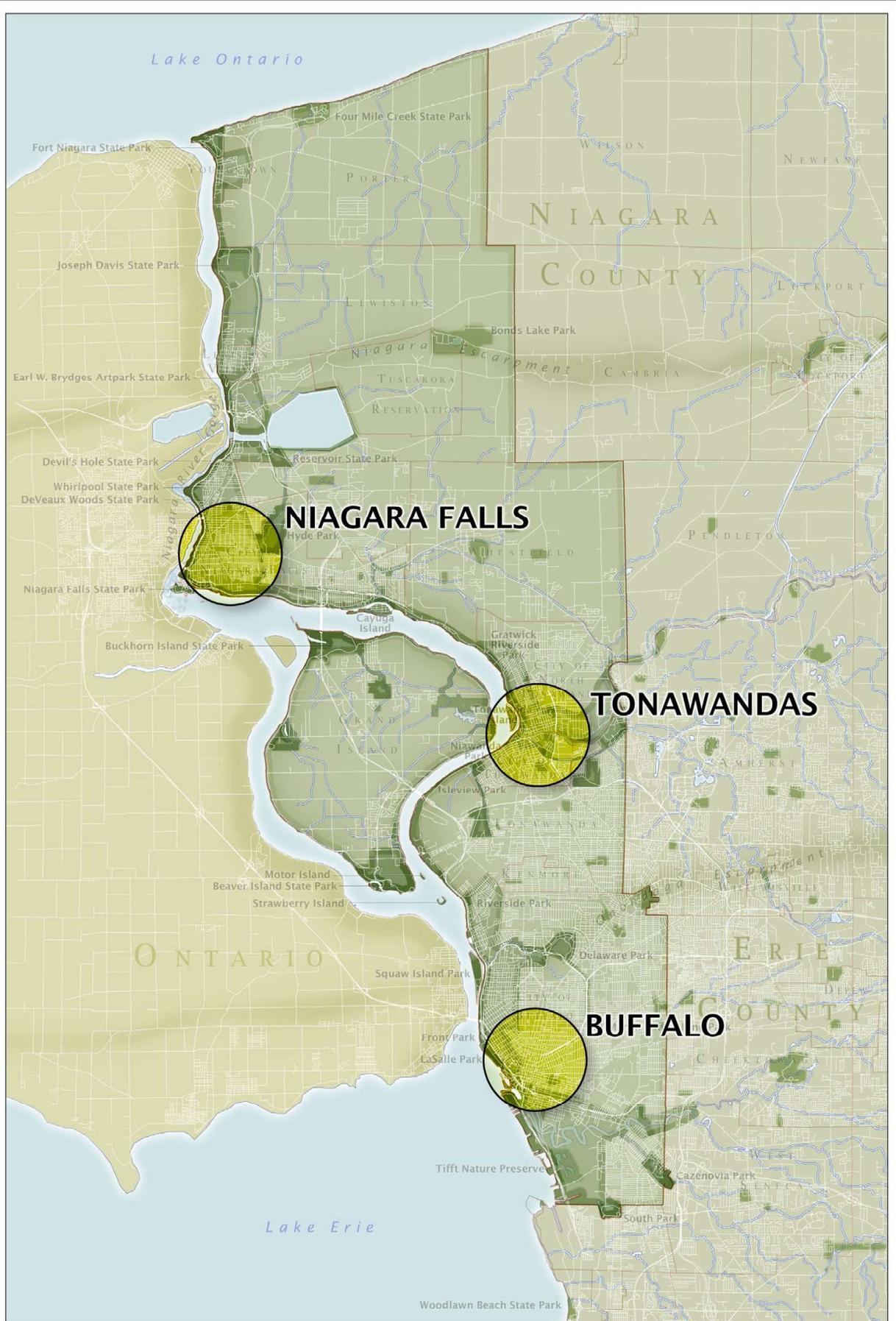
Interpretive Center Network

(See Figure 29)

Interpretive centers, trailheads, environmental graphics and interpretation programming are not isolated Greenway features. For these individual features to contribute to the overall Greenway vision, they should be coordinated under an overall Niagara River Greenway interpretation strategy, as discussed in the previous Implementation Concept. These features would be organized and located according to a strategic hierarchy that would promote a rich user experience. The diversity of activities and facilities will encourage visitors of all ages to visit the Greenway on a routine basis.



Naval Park



NIAGARA RIVER GREENWAY

-  Niagara River Greenway Area
-  Existing Hub of Urban Development & Activity

URBAN HUBS
MARCH 20, 2007



Figure 26



NIAGARA RIVER GREENWAY

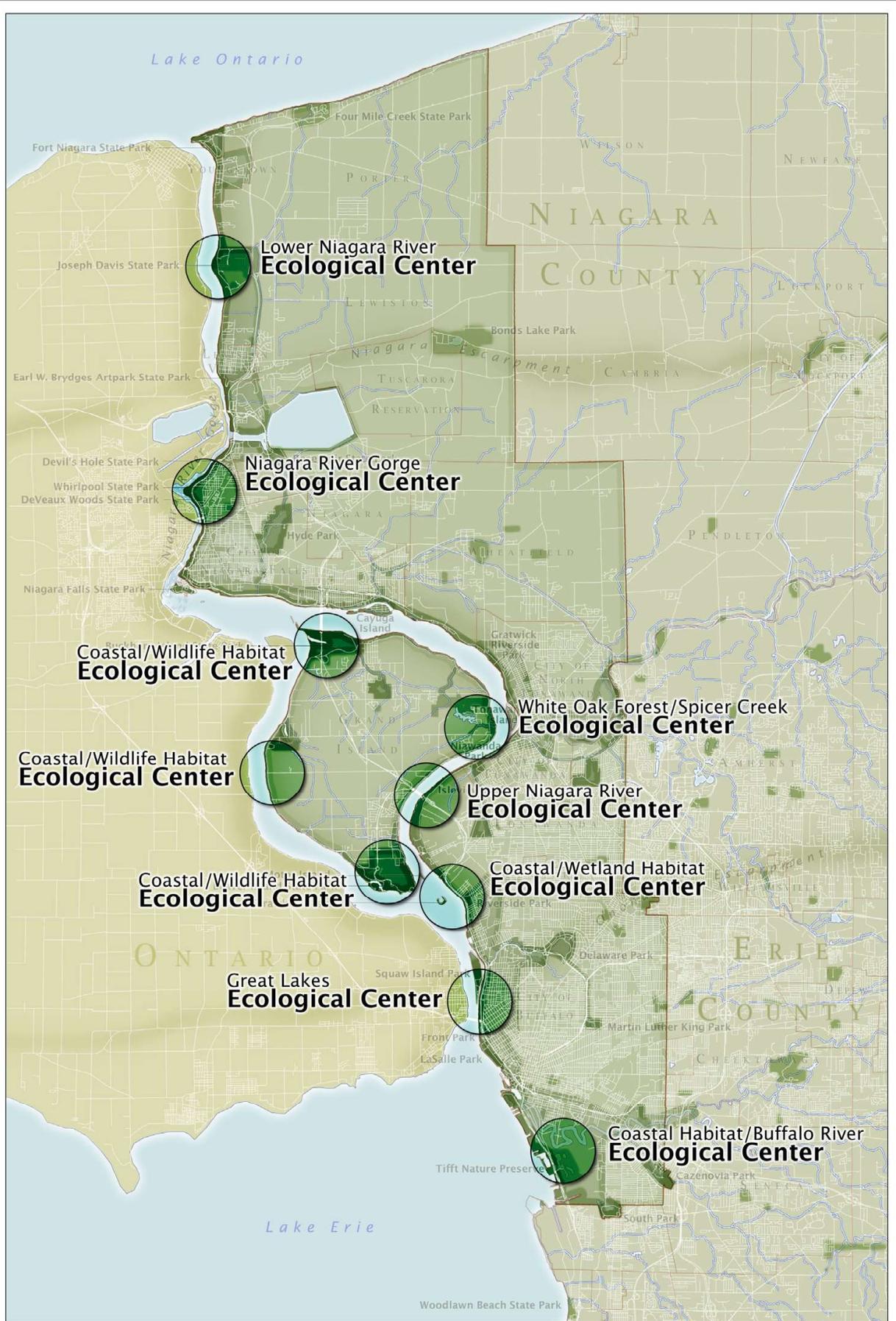
 Niagara River Greenway Area

 Opportunity for Heritage or Cultural Center

HERITAGE AND CULTURAL CENTERS
MARCH 20, 2007



Figure 27



NIAGARA RIVER GREENWAY
 **Niagara River Greenway Area**
 **Opportunity for Ecological Center**

ECOLOGICAL CENTERS
 MARCH 20, 2007

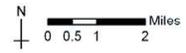
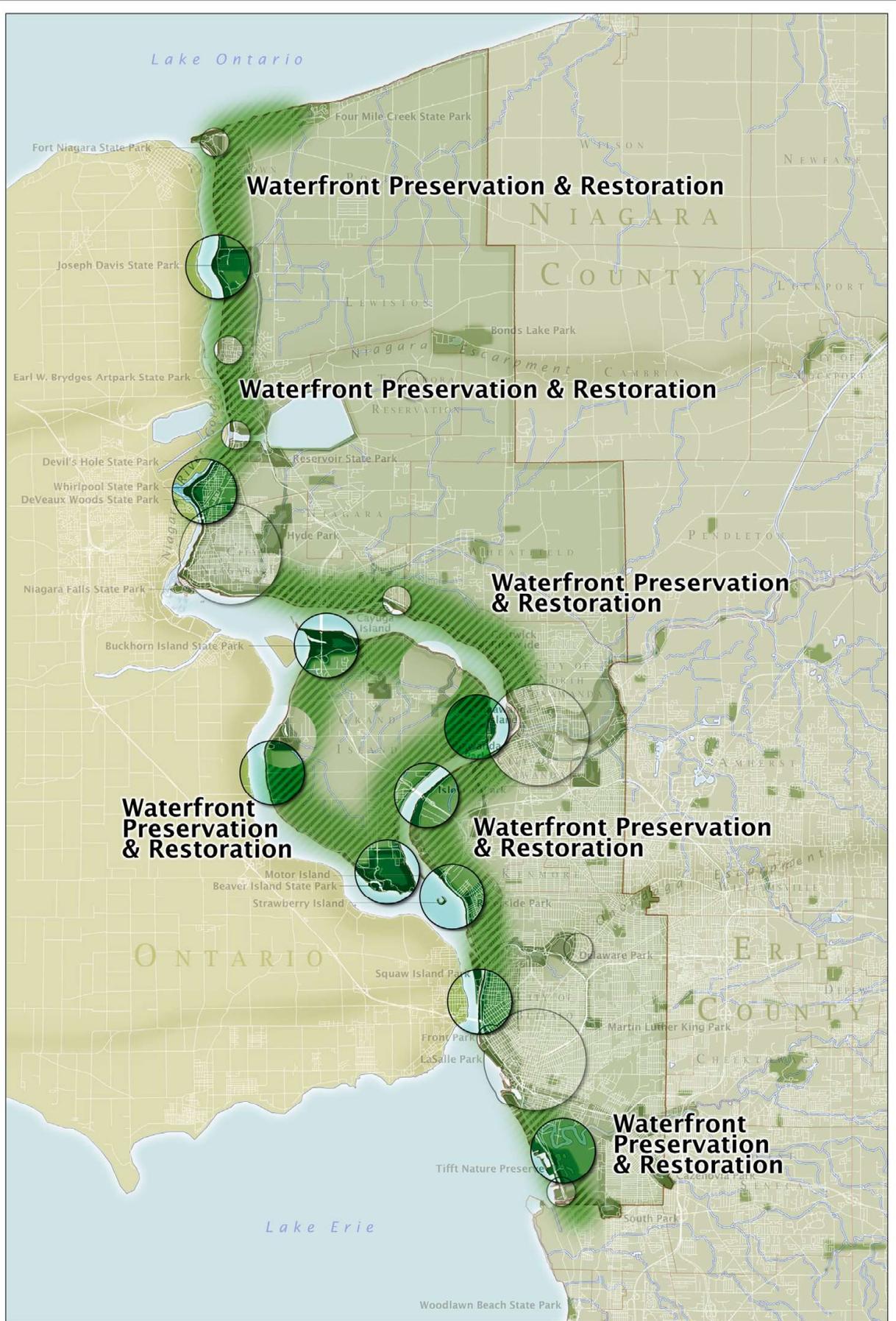


Figure 28



Figure 29





NIAGARA RIVER GREENWAY

-  Niagara River Greenway Area
-  Opportunity for Ecological Center
-  Priority Areas for Preservation and Restoration

RIVERFRONT PRESERVATION AND RESTORATION
MARCH 20, 2007



Figure 30

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Riverfront Preservation and Restoration (See Figure 30)

The fundamental goal of riverfront preservation and restoration is to fulfill the vision of continuous lake-to-lake access along the Niagara River. Arguably, the most important principle that the region's diverse government, private and business interests can agree upon is that public open space preservation is a powerful economic development tool. While much of the Niagara River shoreline is and will remain in private ownership, it is a priority to maintain public ownership, and increase public access where feasible, whether through trail access, conservation easements, or other means.



Riverfront Access, Squaw Island

There is no shortage of research that confirms the increased value created by the preservation of open space. From a house located along a golf course fairway to the skyscrapers that line Central Park, public open space creates value and provides opportunities for development. Indeed, a 2002 survey co-sponsored by the National Association of Home Builders and the National Association of Realtors cited trails as the second most important community amenity, second only to highway access, and sidewalks, parks and playgrounds ranked third.

Among the most valuable attributes of public open space, however, are size and quality. Quality of open space can be a relative value and varies according to the functions of the property. Similarly, size is a relative characteristic of a property, but its connectivity to other open space, particularly contiguous public land, is of major importance.

H. Capturing the Vision

The Niagara River Greenway is a world-class corridor of places, parks, and landscapes that celebrates and interprets our unique natural, cultural, recreational, scenic and heritage resources and provides access to and connection between these important resources while giving rise to economic opportunities for the region.

All of the concepts and recommendations within this Action Plan section of the report are designed to help capture this vision. However, the overall greenway vision is inherently somewhat abstract. The precise look and feel of Niagara River Greenway in 2057 is difficult to envision because there are many unknown and unpredictable variables. This is precisely why a plan with built-in flexibility and adaptability is necessary for success. The nature of this Plan is as a vision plan, to define the characteristics of the Niagara River Greenway and identify strategies that will transform the Greenway into its full potential as a world-class corridor. The five implementation concepts described previously (gateway identification; accessing, experiencing, and connecting to the river; restoring, preserving, and enhancing unique and sensitive resources; linking special places and destinations to “tell the story” of the Niagara River; and heritage tourism and economic revitalization) illustrate programs and policies with system-wide implications. Implementing these concepts will help ensure fulfillment of the Niagara Greenway goals, while maintaining a standard of consistency and quality throughout the Greenway. (See Figure 31)

The implementation concepts help capture a consistent visual and thematic message throughout the Greenway. Equally important

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is building upon the distinctive qualities at specific locations. The cataracts at Niagara Falls are clearly the centerpiece and jewel of the Niagara River Greenway. However, the diversity of experiences contained within the Niagara River Greenway also enriches its character and its uniqueness. They are critical components that contribute to its world-class status. The richness of the natural and built environment along the Niagara River is, in large part, due to the corridor's incredible variety of significant and unique spaces and experiences that occur in a surprisingly short linear distance (about 30 miles, from Lake Erie to Lake Ontario).

Capturing the vision for the Niagara River Greenway will simultaneously establish system-wide consistency and celebrate the unique qualities of each place along the length of the Niagara River Greenway corridor.

Figure 32 visually depicts the distinctive places that comprise the Niagara River Greenway. In keeping with the framework classifications introduced by the Implementation Concepts, these places are described as **gateways** and **reaches**.

Gateways. As described under the Gateway Identification Implementation Concept, *gateways* are transitions from one distinct place to another. In the context of the Niagara River Greenway Vision, gateways describe locations along the corridor that are both transitions between distinct river reaches as well as unique locations in and of themselves.

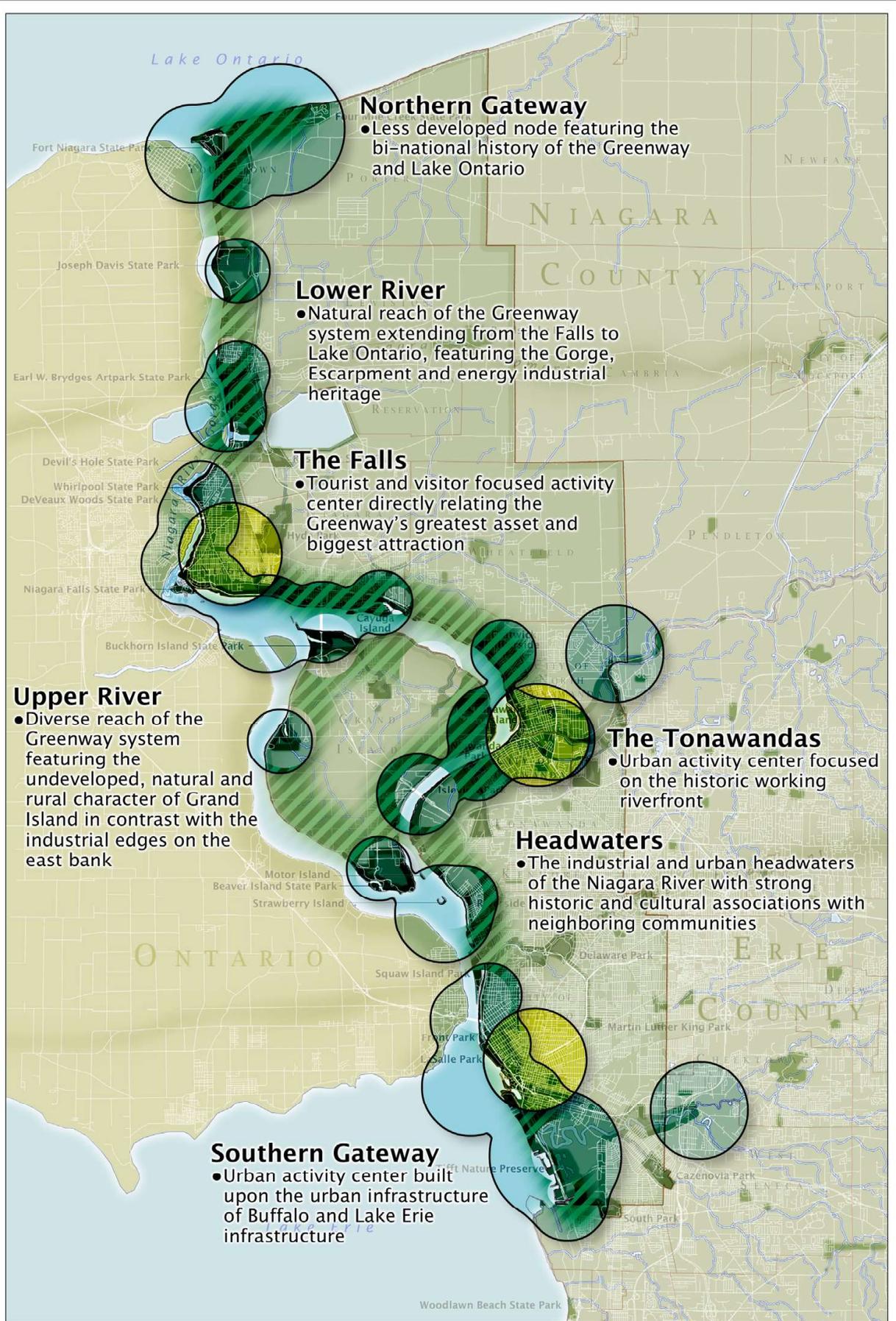
Reaches. Typically a *river reach* is defined as a segment of water that is visible between bends in the river. In the context of the Niagara River Greenway, a *reach* describes a distinctive segment of greenway that occurs between Gateways. These transitions, in turn, are prominent features in the landscape, nodes of activity or significant landscapes. The gateways and reaches combine to capture the vision of a contiguous series of special

events and places highlighting the Niagara River Greenway's "*unique natural, cultural, recreational, scenic and heritage resources.*" These include the following:

- Gateway: Four Mile Creek State Park
- Reach: Lake Ontario Waterfront
- Gateway: Fort Niagara / Mouth of lower Niagara River
- Reach: Youngstown-Lewiston
- Gateway: Niagara Escarpment
- Reach: The Gorge
- Gateway/Centerpiece: Niagara Falls
- Reach: West Grand Island
- Gateway: Buckhorn Island
- Reach: North Grand Island
- Gateway: The Tonawandas
- Reach: South Grand Island
- Gateway: Strawberry Island
- Reach: Squaw Island
- Gateway: Mouth of upper Niagara River
- Reach: Lake Erie Waterfront / Olmsted Park system
- Gateway: Tifft Nature Preserve / South Park

Many of these individual gateways and reaches already have distinct identities. Over time, as the vision for Niagara River Greenway is achieved through the myriad of projects and activities that are being and will be implemented along the corridor, the unique and distinct character of these locations will become even more apparent. A world-class user experience will emerge: an enchanting alternation of experiences between gateways and reaches that emphasize the variety of "*special places, parks, and landscapes*" from one end of the Greenway to the other.

Niagara Falls will always be considered the most significant and identifiable place within the Erie-Niagara Region. As the vision for the Niagara River Greenway is fulfilled, it will be understood as the highlight of Niagara River Greenway, but also as the transition between the upper and lower Niagara River—a remarkable piece of an extraordinary system.

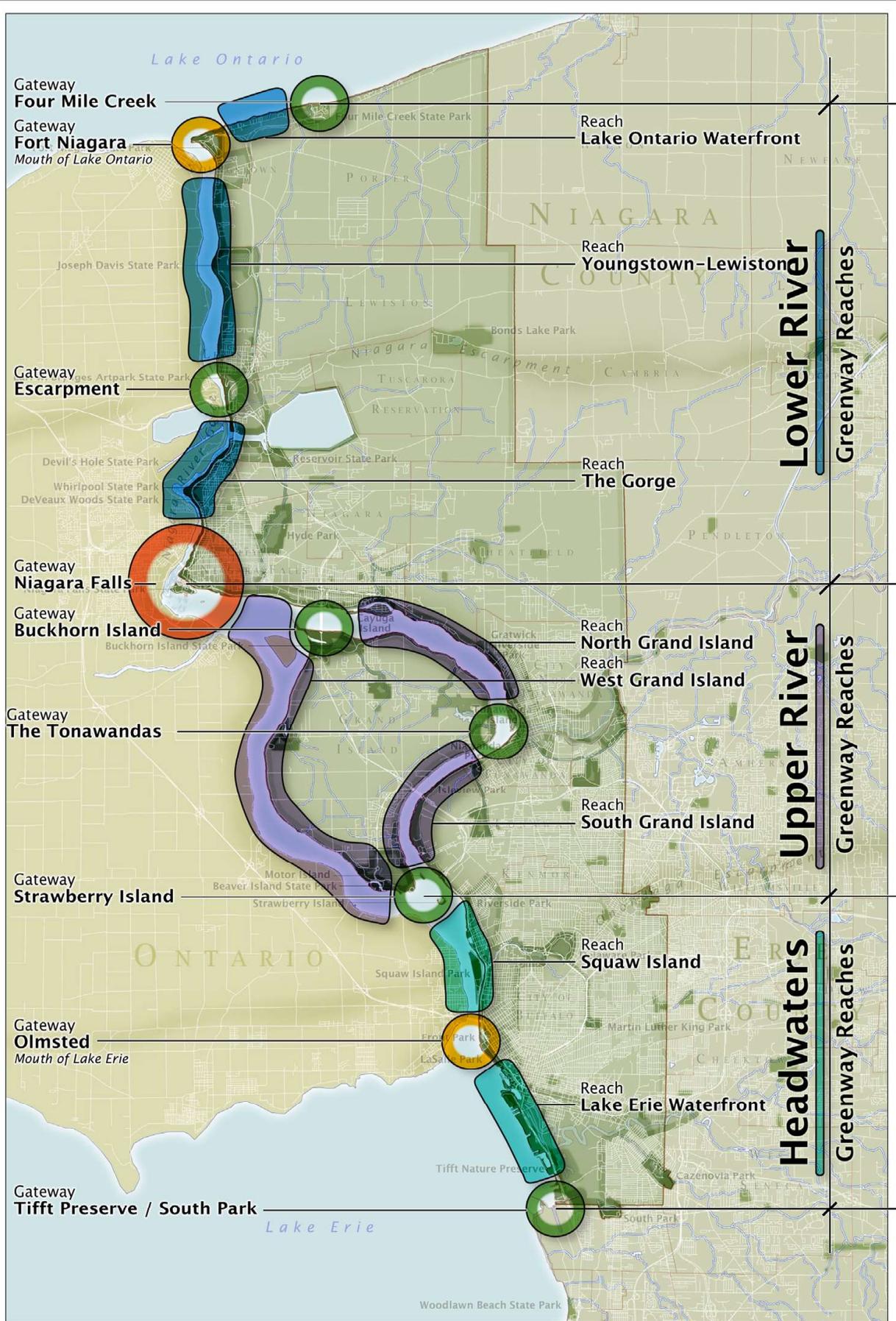


NIAGARA RIVER GREENWAY
 **Niagara River Greenway Area**

IMPLEMENTING CONCEPTS
 MARCH 20, 2007



Figure 31



NIAGARA RIVER GREENWAY

- Niagara River Greenway Area
- Greenway Reaches
- Greenway Gateways

CAPTURING THE GREENWAY VISION
MARCH 20, 2007

Figure 32

