

Niagara Greenway Habitat Conservation Strategy – Phase II Application Submission

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PART 1. PHASE II OVERVIEW

The Niagara Greenway Habitat Conservation Strategy is a two-phased project intended to deliver a strategic blueprint for conservation which supports, connects and advances previous, ongoing and new conservation efforts within the Niagara River Greenway. Use of the Conservation Action Plan (CAP) framework, coupled with on-the-ground field data collection, Geographic Information System (GIS) analysis and ongoing consultation with regional experts, community stakeholders and a detailed base of existing literature, will produce an end-result of specific conservation opportunities using all of the tools in the tool box: acquisition, protection, regulation, restoration and education.

As detailed in the original Phase I application, the Niagara Greenway Habitat Conservation Strategy directly supports implementation of the Niagara River Remedial Action Plan (RAP) and is listed within the Stage 2 RAP Addendum as contributing measurable targets and specific restoration opportunities towards delisting the loss of fish and wildlife habitat Beneficial Use Impairment (BUI). Significant progress towards this goal has been accomplished through the Phase I work of the Strategy, and conversations are ongoing with the New York State Department of Environmental Conservation (NYS DEC) regarding potential implications stemming from the results. During Phase II, RIVERKEEPER will continue to work with the NYS DEC on incorporating and applying emerging results of the Strategy into the Niagara River RAP, and will continue to support the following RAP objectives:

- Develop measurable targets for habitat types within the AOC;
- Create and implement long-term management plans and programs for priority habitats; and
- Identify additional Habitat Improvement Projects eligible for Niagara Greenway assistance.

In addition to the RAP, the Niagara Greenway Habitat Conservation Strategy directly supports the goals and vision of the Niagara River Greenway Plan. Where the Greenway Plan gives priority status to projects involving “restoration of the Niagara River ecosystem,” it does not include sufficient guidance to help project sponsors and funders satisfy that criterion. The scientifically-based Niagara Greenway Habitat Conservation Strategy, with its wide stakeholder collaboration, assists in the organizing, prioritizing and assessment of conservation and restoration opportunities. By using the Conservation Action Plan model to detail the process for defining measurable targets, priorities and actions needed for Niagara River ecosystem conservation, the Strategy is already in use as a tool for leveraging the federal, state and private funding that will be needed to implement actions at the completion of Phase II. Phase I Strategy results have garnered interest from Federal agencies such as the US Fish and Wildlife Service and State and local entities such as the Erie County Soil and Water Conservation District and City of Niagara Falls. Several specific emerging opportunities are detailed in Part 5 of the Phase I

report. It is expected that the Phase II work of the Strategy will capitalize on these peaked interests and help secure the support of implementation dollars for priority projects in the Buffalo Niagara Region. The Niagara Greenway Strategy will also be supported by and benefit from RIVERKEEPER's concurrent Niagara River Habitat Conservation Strategy within the greater Niagara River watershed, funded by the USEPA. The latter is expected to be complete in August of 2013.

The Greenway Ecological Standing Committee awarded Buffalo Niagara Riverkeeper a grant to complete Phase I of the Niagara Greenway Habitat Conservation Strategy in July of 2010. The Phase I award funded 9 months of work (actual work completed in 15 months) on a specific set of tasks and objectives. Those tasks and objectives were met, and in some cases exceeded, as described in RIVERKEEPER's Phase I final report. The second phase of the project will complete development of the Strategy in keeping with the original tasks laid out in 2010, with additional field components and a strong emphasis on ensuring that emerging Strategy results are able to be implemented soon after completion of the project. In some cases, it is envisioned that implementation may occur simultaneous to the work of the Phase II Strategy by leveraging additional grant resources for the region.

RIVERKEEPER remains committed to completing the Phase II work within the confines of the original budget ceiling discussed with the GESC in 2010. Phase II funding for completion of the Niagara Greenway Habitat Conservation Strategy is requested in the amount of \$370,000 (\$185,000 per year) and is targeted for completion within a 2-year timeframe. A detailed budget overview is provided in Part 4.

In summary, the Niagara Greenway Habitat Conservation Strategy results in a community-based tool for approaching habitat conservation from a strategic perspective. Its strengths are the integration of existing regional goals and priorities into a strategic framework that brings Federal, State, and local partners to the table for immediate implementation. Led by Buffalo Niagara Riverkeeper, with technical assistance from Ecology and Environment, Inc. and Buffalo State College, the Greenway Strategy brings many layers of leveraged value to the project and region that our team is proud to highlight as a successful and inspirational investment of Greenway Commission funds.

PART 2. KEY OBJECTIVES AND TASKS OUTLINE

Major Tasks: Completion of baseline field-data gathering, Ongoing GIS Analysis, Technical Committee Engagement, Stakeholder Engagement, Development of Strategies and Measures, Site Assessment and Ground-truthing of opportunities, Development of final strategy document and supporting materials.

Task 1. Complete Development of Conservation Action Plan and Strategy Framework

- Formalize and finalize a set of key ecological attributes and indicators based on extensive meetings, conversations, technical review and scientific advice:
 - Introduce/educate public stakeholders and municipalities on attributes and indicators for feedback and additional insight;
 - Technical Advisory Committee (TAC) finalizes the set of attributes and indicators across all biodiversity features.
- Identify and assess critical threats to biodiversity features:
 - Stakeholder and TAC groups define direct and indirect factors affecting features;
 - Groups rank threats according to scope, severity and difficulty of reversing effects on features;
 - Threats are amalgamated across features to tease out overall highest threats (critical threats).
- Conduct ongoing GIS analyses in order to identify ecological, landscape and cultural linkages between biodiversity features.
- Convene the Technical Advisory group and sub-committees as necessary.
- Use TAC to develop conservation strategies, including identification of up to 30 best-bet opportunities, based on CAP assessments and significance to regional habitat goals.
 - Present draft conservation strategies and opportunities to public and municipal stakeholder groups;
 - Rank most effective and feasible options.
- Develop opportunity action plans on a municipal basis within the Niagara Greenway, based on a finalized set of strategies:
 - Present draft opportunity action plans to public and municipal stakeholder groups;
 - Finalize a set of opportunity action plans for Niagara Greenway/Ecological Standing Committee.
- Establish monitoring and management protocols to determine long-term success of strategy projects.
- Assemble draft final product (strategy document) and present for TAC comment.
- Hold final public stakeholder meeting for comment on Strategy.
- Finalize Strategy document.

Task 2. Complete Baseline Field Data Gathering

- Stream Visual Assessment
 - Partner with Buffalo State College stream experts to assess stream segments within the Niagara River Greenway;
 - Prioritize best-bet opportunities for conservation and restoration.
- Fish Barrier Analysis

- Assess 14 Perennial streams within the Greenway for second and third barriers to movement;
- Collect, identify and document data on type of barrier, targeted fish species and mitigation options;
- Identify best bet opportunities for restoration;
- Leverage local and municipal resources to remove or mitigate barriers.
- Mapping of Seeps in the Niagara River Gorge
 - Map the seeps along the American Falls Trail and the Great Gorge Railway Trail to the Whirlpool bridges;
 - Categorize data (e.g., perennial vs. intermittent vs. seasonal), take photographs; collect information such as predominant plant species, relative size, potential for the presence of sensitive species (e.g., rare, threatened, and endangered) and threat of invasive species presence;
 - Identify immediate opportunities for pilot projects to mitigate threats of invasive species to wetland/seep communities in the Gorge.

Task 3. Conduct Site Assessments for Up to 30 Best-Bet Conservation Opportunities

- Once potential best-bet opportunities are selected, perform an assessment of on-site habitat conditions for inclusion into action plan summaries in the final Strategy document.
 - Assess and map site features including but not limited to: predominant habitats onsite, predominant plant species, invasive species and potential mapping of priority patches, general soil/bank stability and surface runoff retention ability;
 - Perform evaluations of relative quality and function of existing habitats and potential threats at the site level including unstable stream banks, lack of riparian zone, etc.;
 - Develop action plan summaries for best-bet opportunities to include mitigation options, potential project partners, permitting considerations and identification of possible grant funds for implementation;
 - Conduct outreach to municipal stakeholders where best-bet opportunities are located to cultivate support for implementation.

PART 3. WORK PLAN DETAILS

TASK 1: Complete Development of Conservation Action Plan and Strategy Framework

Timeline: Ongoing throughout Years 1 and 2

This task completes the Conservation Action Plan process beginning with ecological attribute and indicator development. To pick up where Phase I left off, the project team will complete its assessment early in Phase II of ecological attributes and indicators that are usable and scientifically credible as measures of current and desired aquatic and riparian health within the Niagara River Greenway. An outline of the general CAP process is included as Appendix A.

Concurrent with the indicator development process, the project team will collect information about ecological threats, conduct personalized conversations with Greenway municipalities, consult with public stakeholder representatives and conduct a numeric and visual ranking exercise of threats relative to each of the biodiversity features in the Niagara River Greenway. This assessment will allow the team to strategically identify specific locations and opportunities where the most critical threats are affecting biodiversity features. This step lays the rails for identifying each location and/or specific concept that will emerge as a “best-bet” conservation opportunity. In the second half of Year 2, the ground-truthed and site-assessed best-bet opportunities will be included within the final Strategy document as snapshot-based action plans. It is envisioned that these action plans will contain the information necessary to assist an entity in applying for implementation dollars.

Also embedded throughout this task is project team coordination, extensive stakeholder meetings (over 50 in Phase I), conference calls, municipal outreach, literature-based research including continuous mining of existing and emerging documents, convening of Technical Advisory Committee (TAC) meetings and sub-group meetings as appropriate and planning/holding at least one large public stakeholder meeting. Based on the project teams’ experiences in Phase I, this task requires a significant investment of time and attention from multiple project personnel.

TASK 2: Complete Baseline Field Data Gathering

Timeline: Year 1

This task encompasses three distinct field-based data collection efforts. The specific efforts for Phase II were chosen because they fill important data gaps identified within Phase I, as well as produce the greatest “bang for the buck” relative to their utility for the Strategy. Further, two of the elements help to advance ongoing efforts of community partners who may be primed to implement opportunities at the completion of Phase II. Specific descriptions of each data collection effort are below.

Stream Visual Assessment

In partnership with Buffalo State College and Dr. Kelly Frothingham, RIVERKEEPER will incorporate the visual assessment of specific streams within the Phase II Niagara River Greenway Habitat Conservation Strategy. The visual assessment will follow the methodology of the US Department of Agriculture’s Stream Visual Assessment Protocol (1998, USDA) and will be used to collect in-stream and riparian habitat data. The data collection and statistical analysis will result in a comprehensive catalogue of water quality conditions for streams in the Niagara River watershed within the Greenway. The data will primarily be collected by students at Buffalo State College, under direct field supervision of Dr. Frothingham during the summer of 2013. Core elements to be assessed will at a minimum include channel condition, bank stability, riparian zone, nutrient enrichment, water appearance, in-stream fish cover, pools and canopy cover. RIVERKEEPER will work upfront with Dr. Frothingham to identify specific

streams and reaches to be assessed in order to fill known data gaps and/or collect critical information on emerging priority sites for conservation. Results of the visual assessment will feed directly into the Strategy as a decision making tool. A letter of commitment to this effort from Buffalo State College is included as Appendix B.

Fish Barrier Analysis

This task will directly build upon the work that was completed in Phase I by further evaluating some of the primary fish barriers identified in order to develop mitigation implementation plans. In addition, field reconnaissance to identify second and third fish barriers along the 14 perennially flowing tributaries in the Greenway will be conducted and documented. Recommended mitigation measures based on targeted fish species, property ownership and site-level conditions will be listed for each of the additional barriers identified in the same fashion as they were provided in Phase I.

Ecology and Environment, Inc. will be the principal agent for the field component of this effort under contract with RIVERKEEPER. It is expected that one E & E biologist will conduct all of the field reconnaissance efforts, which is anticipated to occur over a total of 11 field days. A senior fisheries biologist will then evaluate the data collected in the field and help to develop mitigation measures for each of the identified barriers. Once the field reconnaissance has been completed, E & E's GIS staff will incorporate geographic positioning system (GPS) data collected during the field reconnaissance effort and complete the queries to answer questions regarding potential numbers of stream miles restored with any given restoration project.

RIVERKEEPER's role in this effort will be to conduct municipal outreach, particularly in those municipalities where "best-bet" barrier mitigation opportunities exist in order to identify and solidify potential partnerships and leverage resources that can be used towards fish barrier mitigation. In addition, RIVERKEEPER will initiate conversations with appropriate DEC and FWS representatives to advance fish barrier removal opportunities to the "shovel-ready" stage by the end of the Strategy. Discussion of permits required and desired target species will require coordination among all entities to ensure identification of feasible implementation opportunities at the completion of Phase II. During Phase I, fish barrier removal is noted as one of the emerging "best-bet" opportunities, and while it is not a component of this grant, it is possible that implementation of specific opportunities for removal of these barriers could occur concurrently with the Phase II work through available grant opportunities and leveraged relationships that RIVERKEEPER can bring to the table.

Gorge Seep Mapping

During Phase I, the Niagara River Gorge was identified as a unique feature that should be included as its own biodiversity feature in the Greenway Strategy. Existing literature stresses the significance of the gorge based on several factors including its old growth tree species and unique natural communities often containing rare, threatened and endangered species. The presence of these species is often documented to occur simultaneously with unique gorge wetland communities, or seeps, which are being threatened by encroachment of invasive species. Despite the project's team's efforts to collect detailed land cover data through the LIDAR work completed in Phase I, the use of remote sensing tools to map resources such as seeps and wetlands within the Niagara Gorge is not possible due to the extreme topography that exists in this setting. Consequently, there is limited information available that accurately identifies, quantifies and characterizes key attributes and indicators within the gorge such as the presence and location of seeps, native vegetative communities and invasive species presence and extent.

Pairing the data gaps identified in Phase I with known priorities for conservation within the gorge, RIVERKEEPER proposes to partner with the State Office of Parks, Recreation and Historic Preservation (OPRHP) and Ecology and Environment, Inc. in a wetland/seep community mapping effort during Phase II. This effort would support the biodiversity feature and ecological attribute/indicator development process by mapping the “wetland” (e.g., seeps) communities within a portion of the Niagara Gorge.

The field mapping efforts will be conducted by biologists from Ecology and Environment, Inc., under contract and in consultation with RIVERKEEPER. Building on prior work within the Niagara Gorge, E & E will map the seeps along the American Falls Trail and the Great Gorge Railway Trail to the Whirlpool bridges. Each seep will be categorized (perennial vs. intermittent vs. seasonal), photographed and characterized. Information will be collected such as predominant plant species, relative size and potential for the presence of sensitive species (e.g., rare, threatened and endangered). Those areas that are simply rock seams that discharge water and have little in terms of organic/mineral substrate and plants will not be treated as “seeps”.

Information will also be collected on invasive species within the mapped seeps, including species identification and relative cover. The consultant team from E & E will build upon results of previous work conducted in the gorge, which include observations of some seeps, or portions of seeps, overrun with common reed (*Phragmites australis*) that are crowding out native and potentially rare, threatened and endangered species. Information on invasive species presence within the seeps will help to locate and quantify immediate threats to these important natural resources within the gorge system.

A letter of support from the New York State OPRHP in conjunction with the NYS Natural Heritage Program also describes the value of this effort in advancing regional conservation goals for the gorge through the Niagara Greenway Habitat Conservation Strategy. This letter is included as Appendix C.

TASK 3. Conduct Site Assessments for Up to 30 Best-Bet Conservation Opportunities
Timeline: Years 1 and 2

This task can be summarized as two major components; 1) Review and query of the GIS database developed in Phase I, and 2) Field-based site assessment for up to 30 best-bet conservation opportunities. For both components, RIVERKEEPER will work with Ecology and Environment, Inc., as a consultant for technical consultant services.

Phase I work established a foundation of landscape-level biodiversity features and ecological attributes that guide the Strategy towards site-level results in Phase II. This process included creating a Niagara Greenway GIS-based database containing LIDAR-derived, precision mapping of land use cover types for wetlands, grasslands and shrublands and forested areas. Shoreline conditions describing soft versus hard shoreline areas and locations of documented fish barriers were also included in the database.

The information derived from this effort includes landscape level environmental data that will be used to run iterative queries, factoring existing conservation goals against known baseline conditions and known critical threats. By using the database in this manner, the Strategy quickly arrives at potential locations on-the-ground as answers to the queries. As potential opportunities arise, RIVERKEEPER will conduct extensive municipal outreach to educate and engage potential implementation partners. Stakeholder input will have a direct influence on the eventual outcome of the finalized best-bet opportunities within the Strategy.

The second component of this task moves the project team from the landscape level to the field in order to conduct ground-truthing of potential opportunities and perform detailed site-level assessments. The detailed site-level assessments will be conducted primarily by Ecology and Environment, Inc., and will consist of up to 30 sites within the Greenway. This effort will involve an inventory that will include a combination of physical (e.g., topography, soils and geology), biological and surface water features. The field assessment process will involve the following:

- Description and verification of existing onsite habitats (e.g., old field, agricultural land, woodland, wetland, etc.). As relevant, habitats within sites will be mapped using GPS units.
- Lists of the predominant and common plant species observed at each site will be completed to form an understanding of the existing vegetation community composition. Invasive species observed on site will also be documented, and if present in large enough patches, will be mapped using handheld GPS units. Invasive species occurring offsite, but near the boundaries, will be noted in order to document the potential threats to the ecological function and productivity of each of the sites.
- Evaluation of the relative quality and function of existing habitats and potential threats to aquatic habitat health such as unstable stream banks, unstable stream channels, presence of invasive species, degraded wetlands, lack of riparian zone, etc. Site vegetative community information will be used to determine bioengineering retrofits to support aquatic ecosystem health, soil stability, stream bank stability, improved water quality and surface runoff retention.
- Identification of site-specific restoration or enhancement measures, with input from stakeholders.

Information gathered from the site assessments will be added to the Niagara Greenway Habitat Conservation Strategy database to support enhanced monitoring of aquatic health conditions and the completion of the CAP process within the Greenway.

Once the site assessments have been completed, summarized action plans to provide stakeholders with direction for implementing restoration projects will be developed. The action plans will offer a checklist of activities that stakeholders such as municipalities and the Niagara River Greenway Commission can follow to implement on-the-ground projects.

PART 4. BUDGET DETAILS AND NARRATIVE

PHASE 2: NIAGARA GREENWAY HABITAT CONSERVATION STRATEGY

| PROPOSED BUDGET | | |
|--------------------------------------|-------------------------|------------------|
| Category | Sub-Category | Total |
| Personnel | | |
| | Salary | \$144,872 |
| | 25% Fringe | \$36,218 |
| TOTAL PERSONNEL | | \$181,090 |
| Contractual | | |
| | Ecology and Environment | \$145,000 |
| | Buffalo State College | \$25,000 |
| | Design | \$2,700 |
| TOTAL CONTRACTUAL | | \$172,700 |
| TOTAL SUPPLIES AND EQUIPMENT | | \$2,500 |
| TOTAL TRAVEL | | \$1,500 |
| TOTAL INDIRECT OVERHEAD COSTS | | \$12,210 |
| TOTAL EXPENSES | | \$370,000 |

| BUDGET DETAIL | | |
|------------------|------------------|-----------------|
| Year 1 | Year 2 | In Kind Match |
| | | |
| \$72,436 | \$72,436 | \$9,600 |
| \$18,109 | \$18,109 | |
| \$90,545 | \$90,545 | \$9,600 |
| | | |
| \$72,500 | \$72,500 | |
| \$25,000 | | |
| | \$2,700 | |
| \$97,500 | \$75,200 | |
| | | |
| \$1,250 | \$1,250 | |
| | | |
| \$750 | \$750 | |
| | | |
| \$6,105 | \$6,105 | \$49,684 |
| | | |
| \$196,150 | \$173,850 | \$59,284 |

BUDGET NARRATIVE

Buffalo Niagara Riverkeeper is requesting \$370,000 to complete Phase II of the Niagara Greenway Habitat Conservation Strategy over a two-year period. As previously mentioned, the proposed budget is in keeping with the ceiling outlined in the Phase I award letter (Appendix D). Of the total budget, \$181,090 is allocated to personnel (\$90,545 per year), which is expected to fund three people to work on the grant for two years. This format is consistent with the number of project personnel utilized in Phase I, and is the minimum amount of personnel resources required in order to functionally complete the project work. The personnel budget also includes a 25% fringe rate, which is required of RIVERKEEPER in order to comply with Federal and State tax laws.

The contractual budget as proposed is broken down into three contract lines, for a total contractual budget of \$172,700. The Phase II request will fund Ecology and Environment, Inc., as a consultant under contract with RIVERKEEPER, to provide technical expertise and biologic assessments relative to the tasks described under the fish barrier analysis, site assessment and gorge seep mapping tasks of the work plan. In addition, Ecology and Environment, Inc., will provide continued GIS assistance in order to help complete the strategic project approach, finalize the GIS database and create maps and metrics for the final Strategy document.

A second contract budget line will fund Buffalo State College under contract with RIVERKEEPER to conduct the stream visual assessment work as detailed in the work plan. This portion of the contractual budget will fund 3 undergraduate students and one PhD-level professor over the summer of 2013, and will provide valuable detailed aquatic habitat information to the project that will be used to help focus emerging strategies and to deliver a comprehensive dataset of water quality assessments within the Niagara River Greenway.

The third component of the contractual budget is for a small design contract intended to assist with the finalized Strategy layout and overall design elements. Given the anticipated inclusion of maps, charts, action plan summaries and text into the final Strategy report, hiring of a graphic designer will help to ensure that a professional grade product is delivered to the community.

The supplies and equipment budget line is proposed to be \$2,500 over the two year project. This budget item funds outreach related expenses such as food for public meetings, costs associated with newspaper or web service postings of meeting announcements and anticipated office supply needs such as paper, printing costs and binders.

The travel budget is calculated based on the anticipated numbers of individual, small group and large public meetings that RIVERKEEPER will conduct over the course of the Phase II grant. The Federal mileage rate is currently \$0.565 per mile. Based on the 50+ meetings that RIVERKEEPER staff conducted during Phase I, the proposed \$1,500 budget over two years permits extensive local travel by the core project team over the life of the grant.

The remaining budget allocation is listed as indirect overhead and is proposed at \$12,210 over the two-year period of the grant. In general, organizations use overhead to compensate for the unaccounted costs of supporting any given individual or project within the organization. Indirect overhead rates are calculated based on all budget expenses with the exception of contractual funds. For a non-profit organization such as RIVERKEEPER, indirect overhead expenses cover items like technical support services for computer problems, office space and operational expenses. While indirect overhead rates vary by organization, as a not-for-profit, RIVERKEEPER uses a Federally-approved 33.44% provisional rate when creating grant budgets. In the case of the Phase II Greenway grant, 33.44% of the budget (excluding contractual) is \$61,894. However, in order to remain under the budget ceiling as detailed in the Phase I award letter, RIVERKEEPER has proposed only the \$12,210 allocation for indirect overhead expenses. This represents an indirect overhead rate of 6.6%.

Matching Resources

RIVERKEEPER proposes to contribute \$59,284 in matching funds towards the Phase II Strategy request. Specifically, the project teams' experiences in Phase I demonstrated that a significant amount of resources were contributed to the Greenway Strategy through the work of two unpaid interns who worked on the project. While there was no funding to support the interns during Phase I of the project, RIVERKEEPER was able to work in partnership with 2 academic institutions (Daemen College and Erie Community College) to award course credit for the students' work. During Phase II of the grant, RIVERKEEPER proposes to continue leveraging our relationships with academic institutions to provide the services of 2 interns for each year of the Phase II grant, valued at \$9,600 over two years. While there are several methods for calculating the value of interns, RIVERKEEPER has utilized a regionally-accepted volunteer rate of \$20 per hour, per intern. The interns utilized in Phase I contributed 255 hours to the grant.

A significant portion of the proposed matching resources is contained within the in-kind funds RIVERKEEPER will contribute to the project via the reduced overhead rate. In the proposed budget, RIVERKEEPER is capturing \$12,210 in overhead funds (6.6%) rather than the \$61,894 (33.44%) that is the organization's Federally-approved standard rate. For a not-for-profit organization, this contribution is significant, as there is no profit margin to draw upon for compensation of the rate difference. Rather, RIVERKEEPER will raise additional funds from outside sources to adequately cover the operational expenses associated with project. RIVERKEEPER is therefore proposing \$49,684 of in-kind contributions towards the Phase II grant award.

A final resource that is not being claimed as match, but which will be contributed to the project, is the use of RIVERKEEPER's fleet of kayaks to assist in completion of the site assessments and stream visual assessments where portions of streams are not wadable.

Appendix A: Conservation Action Plan Process and Steps

Conservation Action Plan Process and Steps

Define the Project

- Identify project participants, including project team, TAC and stakeholders;
- Define project scope conceptually and spatially;
- Develop *biodiversity features*: select for ability to represent full suite of biodiversity within project area including species, ecosystems and natural communities.

Develop Strategies and Measures

- Assess viability
 - Evaluate current “health” status and desired future status of each biodiversity feature by developing *key ecological attributes (KEAs)* and indicators:
 - Attributes tell the “how” of how to measure viability;
 - At least one attribute for each biodiversity feature;
 - A measurable indicator for each attribute; in some cases, the indicator will be the attribute itself;
 - Best available info as to what constitutes an acceptable range of variation for each attribute;
 - Current and future desired status for each attribute;
 - Brief documentation as to how you arrived at viability assessments including references, experts consulted, assumptions, and suggested research needs;
 - Attributes include size or abundance, condition (measure of biological composition, structure, and biotic interactions.)
- Identify Critical Threats
 - Stakeholder and TAC groups define factors directly and indirectly affecting selected biodiversity features;
 - Groups rank threats according to scope and severity and difficulty of reversing effects on features;
 - Threat ranks amalgamated across all features:
 - Threats with highest overall rank form subset of *critical threats*, the ones on which most conservation efforts such be focused.
- Develop Conservation Strategies
 - Based on understanding of how *critical threats* affect *biodiversity features* and the *viability* of the biodiversity features;
 - Strategies identified along with direct and indirect threats they address;
 - Rank strategies based on most effective and most feasible
 - Develop goals and objectives for best bet strategies
 - Objectives should be specific, measurable, achievable, relevant, and time limited
- Establish Measures
 - Establishment of measures determines success of conservation strategies;
 - Measurement of effectiveness of strategies (process) and status of biological features (outcomes) is needed for adaptive management.

Implement Strategies and Measures

- This step involves including strategic goals and actions (last step of developing strategies and measures) into work plans of organizations.

Using Results to Adapt and Improve

- After implementation begins, systematically evaluate actions to update and refine knowledge of biodiversity features and to review results from monitoring efforts;
- Learn as ecosystem adapts and responds and adapt practices and actions accordingly.

Appendix B: Buffalo State College Letter of Support

Ms. Kerrie Gallo
Director of Ecological Programs
Buffalo Niagara Riverkeeper
1250 Niagara Street, Buffalo, NY 14213

Dear Kerrie,

I am writing to confirm the participation of SUNY Buffalo State in Riverkeeper's proposed Niagara River Greenway Habitat Conservation Strategy Phase II project. Our role will be to collect baseline stream data using the Natural Resources Conservation Service's (NRCS) Stream Visual Assessment Protocol (SVAP). The SVAP is a qualitative multidisciplinary assessment used to perform rapid visual assessment of several elements of overall stream corridor conditions. We anticipate assessing a number of core SVAP stream elements, including channel condition, bank stability, riparian zone, nutrient enrichment, water appearance, instream fish cover, and pools. Numerous stream reaches within the Niagara River Greenway will be assessed during the summer 2013 field season by trained Buffalo State undergraduate students. Thus, in addition to meeting the goals of the Niagara River Greenway Habitat Conservation Strategy project, this work will provide an excellent opportunity for students to apply some of the concepts they have learned in the classroom to a real-world situation.

We look forward to working with Riverkeeper on a very successful project.

Sincerely,



Kelly M. Frothingham, PhD
Chair and Associate Professor
Geography and Planning Department

Appendix C: New York State Office of Parks, Recreation and Historic Preservation

Letter of Support



New York Natural Heritage Program

A Partnership between the New York State Department of Environmental Conservation and the
State University of New York College of Environmental Science and Forestry

625 Broadway, 5th Floor Albany, NY 12233-4757 (518) 402-8935 Fax (518) 402-8925 www.nynhp.org

Kris Erickson
Chief Scientist
Ecological Restoration Services
Ecology and Environment, Inc.
368 Pleasant View Drive, Lancaster, NY, 14051

January 22, 2013

Dear Mr. Erickson:

I am writing in support of the Niagara Buffalo Riverkeeper (Riverkeeper) proposal to map the seeps in the Niagara Gorge Park as a part of their grant for Phase 2 of the Niagara River Regional Conservation Strategy. The work would be facilitated Ecology and Environment, Inc. (E&E) – Riverkeeper's consultant under the grant. It is my understanding that Riverkeeper hopes to be awarded the grant from the Committee early this spring in time to initiate the field and mapping effort.

Mapping of the seeps is an important step towards protecting these sensitive habitats. This information would be valuable to the New York Natural Heritage Program (NYNHP) in our partnership with State Parks (OPRHP). The seeps mapping is beyond our capability at this time, so we support Riverkeeper's proposal.

I will be conducting surveys and aerial photo interpretation of the Niagara state parks this year to create wall-to-wall ecological maps of these parks, to complete our statewide coverage of state park mapping based on the NYNHP classification. NYNHP does not classify seeps as a distinct natural community at this time, but often describes them as valuable features of the associated cliff or forest communities. The locations and any additional data on the seeps would be a valuable contribution to our State Parks mapping effort and to the NYNHP ecology program to further develop our classification.

Including maps of the seeps in public documents may not be a problem unless the park managers have other concerns. NYNHP made its statewide significant natural communities maps/GIS layer public several years ago, improving the use for research and protection goals. We do recommend that locations of rare or sensitive species not be included in public documents and that descriptions of the seeps can be generalized in publications so as not to call attention to point-specific locations of rare or species vulnerable to collection. I work directly with OPRHP's Environmental Management Bureau so can assist with any additional guidance on that issue. The park managers can be given the detailed maps and site information, a critical tool for management and conservation.

I support your project and would like to work with you or field staff at E&E to coordinate NYNHP mapping on parks and E&E's work in Niagara county this year. Several NYNHP staff have worked with E&E in the past on botany and invasive species projects, so I look forward to further building this collaboration.

Sincerely,

Julie A. Lundgren, State Parks Ecologist
New York Natural Heritage Program
in partnership with Office of Parks, Recreation and Historic Preservation
Julie.lundgren@parks.ny.gov

Cc: Pam Otis, Tom Lyons, David Szuba, Evyn Costanza, Karen Terbush - OPRHP

Appendix D: Phase I Greenway Ecological Standing Committee Award Letter

19 July 2011



NY State Department of
Environmental Conservation
U.S. Fish & Wildlife Service
Niagara Relicensing
Environmental Coalition
Tuscarora Nation
Tonawanda Seneca Nation
Seneca Nation of Indians
New York Power Authority

Ms. Jill Spisiak Jedlicka
Director of Ecological Programs
- and -
Mr. Larry Brooks
Watershed Restoration Project Manager
Buffalo Niagara Riverkeeper
1250 Niagara Street
Buffalo, NY 14213

RECEIVED
JUL 20 2011
Buffalo Niagara Riverkeeper

RE: Niagara Greenway Regional Habitat Restoration Strategy and Niagara
River Riparian Restoration Program

Dear Jill and Larry,

On behalf of the Niagara Greenway Ecological Standing Committee
(GESC), I am please to inform you both of the following:

- 1) That the GESC has decided to fund Buffalo Niagara Riverkeeper's
project proposal "Niagara Greenway Regional Habitat Restoration
Strategy."

During the proposal review process it was requested that the project be
split into two phases for funding, which was agreed to per a letter and
supplemental project scope dated May 18, 2011. Enclosed is a check that
includes \$137,785 to fund the first phase of the project. Upon the
succesful completion of the first phase and approval of the GESC, the
funding for the second phase will be released for an amount yet to be
determined, but estimated to be between \$300 and \$375 thousand
dollars.

Please contact me as you near the end of the first phase to arrange for a
GESC review of the project progress. We look forward to the results of
the project as they will be important for guiding the future of habitat
restoration efforts in the Niagara watershed, and therefore the work of
the GESC.

- 2) That the GESC has accepted the annual project update for the Niagara
River Riparian Program that was presented to the Committee on June
23, 2011, and approves the issuance of the third year of funding for the
project in the amount of \$105,478.66. This funding is likewise included
in the enclosed check.