Appendix H

Riverworld Concept Plans

- TVGA Planning and Feasibility Report (2011 excerpt)
- Niawanda Development - University at Buffalo Graduate Studio (2011 excerpt)
- Team Orange | Planning | Survey | Design - University at Buffalo Graduate Studio (2011 excerpt)

PRELIMINARY PLANNING & FEASIBILITY REPORT
NIAGARA RIVERWORLD
4000 RIVER ROAD,
TONAWANDA, ERIE COUNTY, NEW YORK

Prepared for:

Town of Tonawanda Development Corporation (TTDC)
169 Sheridan Parkside Drive
Room 120
Tonawanda, New York 14150

Adopted by:

TVGA CONSULTANTS

620 Main Street
Buffalo NY 14202

(716) 849-8739
(fax) (716) 856-0981

2011.0015.00

MAY 2011

NIAGARA RIVERWORLD

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1. INTRODUCTION

The Town of Tonawanda Development Corporation (TTDC) commissioned TVGA Consultants (TVGA) to conduct a preliminary planning and feasibility study for the redevelopment of the Niagara Riverworld site located at 4000 River Road in the Town of Tonawanda, Erie County, New York (See Figure 1). The project site is privately owned by Niagara Riverworld, Inc. and was formerly occupied by a large industrial complex. The study was comprised of the following three major tasks:

1. Analysis of development constraints and opportunities;
2. Preparation of three conceptual redevelopment plans; and
3. Formulation of an implementation strategy.

A steering committee comprised of representatives from the TTDC, Town of Tonawanda, Erie County Department of Environmental and Planning, Erie County Industrial Development Agency and Niagara Riverworld were heavily involved in formulating the conceptual redevelopment plans and implementation strategy. The committee participated in a design charrette on March 22, 2011 to assist the consultant team with the selection of the type and desired character of the redevelopment concepts. Additionally, a round table meeting was held with the committee on April 26, 2011 to solicit input on the implementation strategy.

The following sections provide a description of the subject property; summarize the site analysis conducted by the consultant team; describe the three conceptual redevelopment plans generated; and address critical issues associated with the implementation of the redevelopment plans.

2. SITE DESCRIPTION

The Niagara Riverworld site encompasses approximately 62-acres situated between River Road to the east and the Niagara River to the west (See Figure 2). The site is bounded to the south by a petroleum storage facility operated by the Marathon Petroleum Company and largely vacant land owned by the Tonawanda Coke Corporation. Vacant land owned by Matthew Duggan and a ready-mix concrete plant owned by Lafarge Corporation abut the project site on the south. Active and former Industrial properties that include a concrete recycling plant operated by Swift River Associates, Inc. and the foundry coke production facility operated by Tonawanda Coke Corporation are situated to the east of the site, on the opposite side of River Road.

A steel sheet-pile bulkhead wall extends approximately 650-feet along the western site boundary, forming the shoreline of the Niagara River. The Riverwalk recreational trail extends along the former Erie Canal corridor that bounds the site to the east.

The site contains a 200,000 SF warehouse building that is located on the southeastern corner of the property and is actively utilized by a number of businesses that lease space from Niagara Riverworld, Inc. There are several other smaller structures situated in the vicinity of the warehouse that are also leased to tenants for various businesses. These buildings and the remnants of other industrial structures (i.e., buildings, foundations, retaining walls, railroad embankments, etc.) that occur on the remainder of the site were originally part of a steel manufacturing complex that operated on the site

from 1907 until the 1980s. While much of the former steel mill has been demolished and removed from the site, a large, dilapidated brick building that functioned as a boiler house remains in the central portion of the site and is flanked on the east and west by extensive foundations and retaining walls.

The site is currently accessed from River Road via an asphalt driveway located near the warehouse facility. An easement providing access to the site from River Road farther to the north also exists, but has not been improved. A network of gravel roadways exists within the site. Additionally, a small building that houses a groundwater treatment facility is located near the northwestern corner of the site.

3. SITE ANALYSIS

a. Zoning

As depicted on the zoning map included in Appendix A, the project site is located within a Waterfront Industrial District (WID). The Town of Tonawanda has indicated that the purpose and intent of the WID is to provide for a planned district for industrial development of a manufacturing, processing and/or assembly nature, as well as wholesale and warehousing activities and to encourage water-dependent or water-enhanced industrial or commercial uses on lands that are located along the Niagara River. This zoning district requires that the character and integrity of the surrounding land uses and the waterfront region be maintained and that appropriate design standards be applied within the Tonawanda waterfront region. The WID zoning regulations list the permitted uses, use restrictions, dimensional requirements, design requirements, and performance standards (i.e. noise, odor, smoke, etc.).

The project site is also located within the Town's River Road Overlay District. The regulations for this district are designed to supplement the zoning regulations for the WID and are to be used in conjunction with the zoning regulations and other performance regulations in the Town code. Where conflicting requirements are encountered, the overlay requirements shall supersede any other regulations. Developed in accordance with the goals and objectives of the Town of Tonawanda, the 2002 Waterfront Land Use Plan and the Town's Local Waterfront Revitalization Program, this overlay district is designed to better manage and accommodate business growth along the River Road corridor through the implementation of guidelines to regulate development and redevelopment. This district is divided into three separate areas with objectives and requirements applicable to the district as a whole as well as those applicable to the individual areas. The project site is located in the "industrial corridor area" of this district. Included in Appendix A are copies of the zoning regulations for both the Waterfront Industrial District and the River Road Overlay District.

b. Infrastructure

The project site is bordered to the east by River Road (NYS Route 266) which contains several public utilities that could be harnessed for development. The following is a listing and brief description of each utility:

- **Potable Water** – There is a 20-inch potable watermain on the east side of River Road that is owned and maintained by the Town of Tonawanda (TOT). The available capacity would need to be verified with the TOT technical support department, however, given its size, it is assumed that the capacity is sufficient.

  Note that there is also an Erie County Water Authority (ECWA) transmission main in the River Road right-of-way, however it is unlikely that it would be able to be utilized as the project site is outside of ECWA's service area.

- **Sanitary Sewer** – There is a 15-inch sanitary sewer on the west side of River Road that is owned and maintained by the TOT. The available capacity would need to be verified with the TOT technical support department and the NYSDEC.

  The existing sewer is approximately nine feet deep at River Road. Given that the project site slopes down to the west and a proposed sanitary sewer would need to flow east, it is likely that a pump station and forcemain would need to be installed.

- **Storm Sewer** – There are two options for storm sewer installation on the project site. The first is discharging to River Road, however, information on the existence of a storm sewer was not available at the time of the study. NYSDOT would need to be contacted to verify the existence and available capacity of that storm sewer. Discharges to this system would also require approval of the Municipal Separate Storm Sewer System (MS4) that has jurisdiction over that closed system.

  The second option is to discharge stormwater directly to the Niagara River. That discharge would require permitting through the US Army Corps of Engineers (USACOE). However, it would present the advantage of eliminating the requirement for the retention of stormwater runoff.

  Note that both options would require State Pollutant Discharge Elimination System (SPDES) permitting. This would entail the installation of Green Infrastructure Systems and Water Quality Treatment Systems that are compliant with the NYSDEC Stormwater Management Design Manual.

- **Natural Gas and Electric** – Natural gas and overhead electric service exist on-site per the Niagara Boundary ALTA map. National Fuel and National Grid would need to be contacted to determine the available capacity of natural gas and electric service, respectively.

c. Transportation

The project site is located in close proximity to major regional transportation systems, including roadway, rail, water and air. There are two existing access points to the project site from River Road located at the south end of the site that generally serve the existing warehouse facility. The study area offers excellent access to interstate highways (i.e. New York State Interstate Highway's 190 and 290) at multiple entrances and exits. The closest regional highway to the project site is the I-190 and the nearest interchange with the I-190 is located approximately 1 mile north of the project site at River Road.

The project site is also in close proximity to two major US/Canada truck bridge crossings including the Lewiston-Queenston Bridge, located approximately 16 miles north of the project site in the Town of Lewiston, New York and the Peace Bridge located approximately 7 miles south of the project site within the City of Buffalo, New York.

Rail lines in the vicinity of the project site are owned and operated by CSX. A single line is located southeast of the project site crossing Sheridan Drive and paralleling Kenmore Avenue and Grand Island Boulevard. Additionally, several spurs run toward River Road, providing access to companies south of the project site.

The Niagara Falls International and the Buffalo-Niagara International Airports are both located in close proximity to the project site. The Niagara Falls International Airport is located approximately 12 miles from the project site and the Buffalo Niagara International Airport is approximately 15 miles from the project site, in the Town of Cheektowaga, New York.

The Niagara River, which bounds the project site to the west is actively used by several industrial facilities in the vicinity of the project site as a mode of shipping, as well as by numerous recreational boaters in the area. The presence of the bulkhead wall that extends approximately 650-feet along the river shoreline on the project site, poses the potential to take advantage of this adjacent water transportation/shipping network.

d. Environmental

This project site, formerly the Roblin Steel complex (NYSDEC Site No. 915056), is identified as a Class 4 NYSDEC Superfund site. Class 4 sites have been properly closed but require continued site management. Roblin Steel reportedly disposed of an estimated 1 to 2 million gallons of spent pickle liquor at this property during the late 1960s. Also, the Wickwire Steel Plant (former site occupant from the early 1900s to the mid 1940s) used the site for disposal of excess slag. Within the boundaries of the Roblin site is a second site known as the Envirotek II facility, which consists of a 2.5-acre parcel that was operated as a solvent recovery facility during the 1980s. An Interim Remedial Measure on the Envirotek property was implemented in 2003 and 2004 and

consisted of the removal of waste in the boiler house and a disposal pit and removal of contaminated soil. A long-term groundwater monitoring program is in place for the Envirotek property. A remedial investigation of the portions of the Roblin plant site not impacted by Envirotek activities was completed in 2007. Minor contamination was documented; however, no hazardous waste was identified.

An environmental easement has been filed for the entire project site to address residual contamination occurring thereon. The Environmental Easement:

- Requires compliance with the approved Site Management Plan (SMP), which contains provisions for:
  - Addressing residual soil contamination that may be excavated from the site during future development
  - Future development of the site, which may include buildings, support structures, roadways and parking lots. Under such development, a vegetative cover should be provided beyond the building foot print and paved areas.
  - Managing, characterizing, and properly disposing of soil/fill that is excavated and is intended to be removed from the site in accordance with NYSDEC regulations and directives.
  - The reuse of soil/fill excavated at the site as backfill material on-site provided it contains no visual, olfactory or evidence of gross chemical contamination.
  - Ensuring that vapor intrusion (VI) mitigation techniques will be designed for new buildings constructed on the Site. These techniques will include the use of sub-slab vapor mitigation systems, designed into the foundation of the buildings, and installation of a vapor barrier between the building foundation and the lowest concrete slab flooring. The NYSDEC and NYSDOH will be provided with vapor intrusion mitigation design drawings for comment and approval prior to construction. After the building construction is complete, an indoor air sample will be collected to verify the effectiveness of the VI mitigation. Results of the sampling will be provided to the NYSDEC and NYSDOH.
  - Routine groundwater monitoring consisting of annual monitoring for three years starting in 2008, then every five years until 2025 (i.e. 6 sampling events).
  - Limits the use and development of the property to commercial or industrial uses only;
  - Restricts use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Erie County Department of Health; and,
  - Requires the Site owner to complete and submit to the NYSDEC IC/EC certification.

There are no engineering controls on the Site as there are no active remedial systems.

e. Building and Foundations

The review of historic aerial photos and facility site plans indicated that the site was historically occupied by extensive industrial buildings and supporting infrastructure. Much of the former steel plant has been demolished and removed from the site, however, site observations confirmed that a number of vacant structures remain, including the large boiler house located in the central portion of the site. In addition to this structure, the remnants of many other buildings and structures are still present on the site. This includes reinforced concrete foundation walls, concrete building pads, retaining walls and process piping. If the demolition and removal of these remnants is necessary to facilitate the redevelopment of the site, site preparation and development costs would reflect these efforts.

Information provided by Niagara Riverworld indicated that asbestos containing material (ACM) is present within the Boiler House. Therefore, asbestos abatement is a prerequisite to the demolition of the Boiler House and possibly other remaining vacant structures.

4. CONCEPT PLANS

The scope of the consultant team's assignment included the preparation of three conceptual redevelopment plans. The range of uses to be depicted in the concept plans was prescribed in the TTDC's *Request for Proposals* and the agreement for consultant services, but was slightly modified following a design charrette conducted with the Steering Committee on March 22, 2011. As a result of the charrette, the consultant team advanced the following three concepts:

a. Traditional Office Park
b. Clustered Office Park
c. Mixed Use Development with "Town Center" Feature

All three of these concepts incorporated a number of common design elements that surfaced as a result of the design charrette. The following bullets summarize the design elements common to all three concept plans:

- Provisions for green space along the Niagara River shoreline and interior of the site reflective of a higher quality development;
- Creation of a recreational trail connecting the existing Riverwalk to the waterfront green space;
- Utilization of the existing bulkhead wall for seasonal boat docking facilities;
- Preservation of Niagara Riverworld's existing warehouse facility as well as the existing groundwater treatment building;
- Creation of a zone of light industrial development around the existing warehouse facility to buffer the new development from this operation;
- Provisions for an entrance feature at River Road reflective of a higher quality development; and
- Use of the Niagara River as an aesthetic focal point of the development.

The resulting Concept Plans A-C are presented in Appendix B and described in the following paragraphs:

Concept A – Traditional Office Park

This concept plan reflects a traditional suburban office park development that is based on a 2-acre typical lot size. The site is subdivided into 12 lots and a new landscaped entrance road extends westward from River Road from the point of the current easement toward the river and branches into two segments that maximize the number of waterfront lots. The office building footprints depicted on this concept each encompass 10,000 SF. The layout provides the flexibility to combine lots should the demand exist for larger development parcels.

This concept also incorporates a light industrial development zone around the existing warehouse building that is served by a separate new access road. The new access road would loop around the existing warehouse building and connect with the existing access road located along the southern boundary of the site, which would also be improved. The buildings in this zone encompass 40,000-60,000 SF.

A central green zone extends from the eastern site limits to the waterfront, providing a connection from the existing Riverwalk trail to a waterfront green zone. The central green zone also incorporates the area of the boiler house and surrounding foundations. Following the demolition of the boiler house, fill would be placed in this area to cover the foundations and an elevated overlook with views of the river would be created. This approach would avoid the cost of removing subsurface foundations and other obstructions.

An order of magnitude cost estimate for Concept A was compiled by TVGA and amounts to $7.5M as detailed in Appendix C. This estimate accounts for the rough costs of site preparation, including asbestos abatement and building demolition, and construction of site roadways, utilities, trails and landscaped amenities.

Concept B – Clustered Office Park

Concept Plan B is based upon a clustered development approach where buildings are concentrated in several "pods" and are served by common parking areas and amenities. Three development pods containing multiple office/mixed use buildings of varying heights and square footage are shown. These pods are accessed by a new access road that extends westward from River Road from the point of the current easement toward the river and branches into two segments. Each of the pods contains shared surface parking facilities, but could also incorporate some first level enclosed parking.

Like Concept A, this concept incorporates a light industrial development zone around the existing warehouse building that is served by a separate new access road. Additionally, a waterfront banquet facility has been included on the northwestern corner of the site to address the demand for such a facility identified by the Steering Committee.

As a result of the clustered development approach, nearly 50% of the site is available for green space and natural park areas and Concept B features an extensive network of

recreational trails that link the existing Riverwalk trail to the waterfront as well as the development.

As detailed in Appendix C, the order of magnitude cost estimate for Concept B is $10M. As with the previous concept plan, this estimate accounts for the rough costs of site preparation, including asbestos abatement and building demolition, and construction of site roadways, utilities, trails and landscaped amenities. Additionally, the estimated cost of constructing the common parking facilities is included in this figure.

Concept C - Mixed Use Development with "Town Center" Feature

The third concept plan is the most ambitious and seeks to create a self-sustaining mixed use development that is focused on a "Town Center" feature. The mixed use development encompassed in Concept C is centered on a central corridor that extends westward to the river and contains a pedestrian plaza, focal pond/water feature, natural park area, recreational trail network and outdoor amphitheater. Site access under this scenario would be via a new parkway from River Road that is centered within the development area and branches out toward the river from the central corridor. Tiered, mixed use buildings of varying configuration and square footage extend along both sides of the central corridor and are served by shared parking facilities.

This concept retains the banquet facility depicted in Concept B, and also includes a twin pad ice rink facility to address the demand for such a facility identified by the Steering Committee. Like Concepts A and B, this concept also incorporates a light industrial development zone around the existing warehouse building that is served by a separate new access road. However, the extent of this zone is reduced to accommodate the parking requirements of the ice rink facility.

Green space consisting of natural buffer areas and landscaped roadway and parking areas occurs throughout the development. A natural park area and sloped lawn amphitheatre are focal points of the central corridor leading to the river. Additionally, a focal pond/water feature is located in the center of the development to anchor the "Town Center".

The order of magnitude cost estimate for Concept C is $13M, as detailed in Appendix C. This estimate accounts for the rough costs of site preparation, including asbestos abatement and building demolition, and construction of site roadways, utilities, trails and landscaped amenities. Additionally, the estimated cost of constructing the common parking facilities is included in this figure.

5. STATE ENVIRONMENTAL QUALITY REVIEW

In New York State, most projects or activities proposed by a state agency or unit of local government, and all discretionary approvals (i.e. permits) from a NYS agency or unit of local government, require review under 6 NYCRR Part 617 State Environmental Quality Review (SEQR). Based on the nature and scale of this development project, SEQR review will be required. The basic purpose of SEQR is to incorporate the consideration of environmental factors into the existing planning, review and decision-making processes

of state, regional and local government agencies at the earliest possible time. The following summarizes the process to be undertaken as part of the SEQR review:

- The first step in the process is to classify the proposed action. There are three classes of actions under SEQRA including: Type I, Type II and Unlisted Actions. The proposed project would be classified as a Type I Action based on the fact that it involves the physical alteration of more than 10 acres of land (6NYCRR Part 617.4(b)(6)(i)).

- Part 1 of the Full Environmental Assessment Form (EAF) will need to be completed by the project sponsor for the proposed action and submitted to an involved agency together with any other applications that are required. The lead agency (see next step) is responsible for completing Part 2 of the EAF, and as needed, Part 3.

- The involved agency initially receiving an application for approval circulates the completed Part 1 and any other information to the other involved agencies identified by the applicant on the EAF. If only one agency is approving, funding or directly undertaking an action, that agency is automatically the lead agency. If there are two or more involved agencies, the involved agencies must agree on a lead agency within 30 calendar days.

- The lead agency has 20 calendar days to make its determination of significance. If the lead agency finds that it does not have sufficient information to make this determination, it may request that the applicant provide it. The lead agency must make its determination within 20 days of receipt of all the information it reasonably needs.

- Under a Type I action, the determination of significance will result in either a Negative Declaration (i.e. will not have a significant adverse impact on the environment) or a Positive Declaration (i.e. may have a significant adverse impact on the environment).

- In the event of a Negative Declaration, the lead agency must identify the relevant areas of environmental concern; thoroughly analyze the relevant concerns; and document the determination, in writing, showing the reasons why the environmental concerns that were identified and analyzed will not be significant.

- If a Positive Declaration is issued, the preparation of an environmental impact statement is required.

Based on the nature and scale of the proposed action, it is anticipated that potential issues that may be identified during the SEQR process could include but may not be limited to the management of increased stormwater runoff from impervious roof and parking systems; traffic to be generated by the new development corresponding potential impacts to the adjacent highway network; the capacity of existing utilities to

service the development; and potential impacts to human health and the environment associated with residual contamination on the site. These issues and the anticipated magnitude of the impacts will be identified in Part 2 of the EAF. Part 3 of the EAF can be utilized to evaluate the importance of the identified impacts and, if applicable, describe how the impacts could be mitigated. If these issues are adequately evaluated in part 3 of the EAF and the Lead Agency determines that they will not result in adverse impacts, a Negative Declaration could be filed, concluding the SEQR process. Conversely, the Lead Agency could issue a Positive Declaration requiring the evaluation of potential natural and human resource impacts within the context of an environmental impact statement.

6. IMPLEMENTATION STRATEGY

As a result of the round table discussion conducted by the consultant team with the Steering Committee on April 26, 2011 elements of an implementation strategy, including flow of ownership, funding, construction phasing and SEQRA compliance were identified and are summarized below. Consensus on the development of an action plan and schedule, however, was not achieved as Niagara Riverworld requested additional time to digest the potential redevelopment scenarios and select the approach that best suits their goals and objectives.

a. Flow of Ownership

Niagara Riverworld has expressed an interest in undertaking the development of the light industrial zone adjacent to their existing warehouse operation and partnering with, or otherwise divesting the remainder of the site to, a private developer that would advance the redevelopment project. In order to pursue this strategy, it was suggested that a rendering or 3-dimensional visual simulation of the potential development be created to market the site to developers and gauge developer interest. Additional site preparation work to remove the boiler house and other remnants of the former steel plant and improve the aesthetics of the site is another measure that could assist in the marketing process.

The committee agreed that the redevelopment project would likely follow a private development model with some level of public sector infrastructure investment likely. The potential for a public/private partnership via a local development corporation was also identified.

b. Funding

Potential funding sources and/or mechanisms identified for the project include:

- Niagara River Greenway Commission - Grant funding is available from this organization for projects that advance the vision of the Niagara River Greenway. Project components that will provide public access to the river; create scenic, recreational and interpretive opportunities along the river corridor; and preserve natural, cultural and heritage resources may be eligible for NRGC funding. NRGC Program funding information is provided in Appendix D. This program was identified as a potential funding source for roads and trails providing public access to the

river, as well as for the establishment of a waterfront green zone, parks and other public riverfront amenities.

- US Department of Commerce, Economic Development Administration (EDA) - EDA's Public Works and Economic Evelopment Facilities Program is a potential source of funding for new infrastructure (e.g., roads, utilities, etc.) related to the project. Eligible applicants include special purpose units of a State or local government engaged in economic or infrastructure development activities or consortiums of political subdivisions, as well as public or private non-profit organizations acting in cooperation with officials of a political subdivision of a State. Eligible applicants must meet one or more of the economic distress criteria established by EDA and can receive grants in the amount of 50-80% of the total project cost. Summary information concerning this program is provided in Appendix D.

- Community Development Block Grant (CDBG) - Low interest loans available under the CDBG program could be utilized to fund site preparation activities.

- The formation of a Special Assessment District and/or use of the PILOT Increment Financing model could also assist in financing the redevelopment project.

- NYSDEC Brownfield Cleanup Program (BCP) - The project site may be eligible for tax credits relating to the cleanup and redevelopment of the property under the BCP. Said tax credits could apply to site preparation activities and the costs of new buildings and infrastructure. A summary of the tax credits available under the BCP is provided in Appendix D.

- Restore New York Communities Initiative - Applications for future funding under this grant program are not currently being accepted, but should additional funding become available, the program could be a source of grant funding for site preparation activities inclusive of asbestos abatement and building demolition.

- Other potential funding sources can be identified as the redevelopment project becomes better defined.

c. Construction Phasing

Many options for the phased construction of the redevelopment project are available and the actual phasing plan to be implemented will be determined based upon many project-specific factors including funding availability and constraints. As a result of the round table meeting conducted by the consultant team with the Steering Committee on April 26, 2011, the following conclusions were reached regarding phasing of the development:

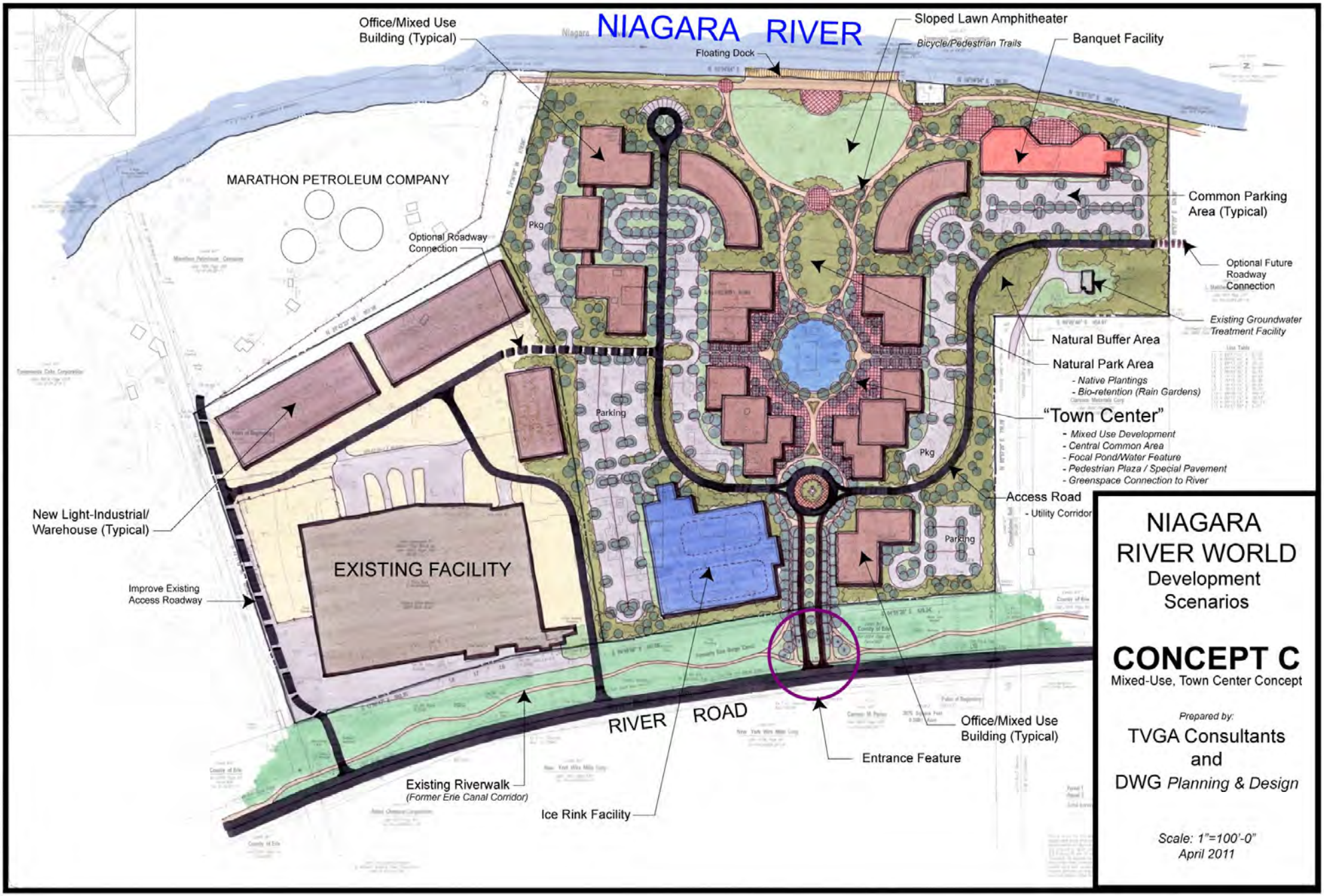
- The development of a public waterfront amenity during the initial phase of development would help to create an image for the site and reinforce its unique waterfront attributes as a selling point for developers and future occupants. This may also create an opportunity to construct access to the waterfront that can accommodate some portion of future site development.

- Subsequent staged infrastructure construction that promotes development flexibility and the ability to respond to evolving market demand was also defined as a critical element of the project.

- Given the long term timetable for the transition of the River Road corridor from heavy industry to one that would support higher uses that are more complementary and compatible with the corridor's waterfront setting, the phasing of the development should also support corresponding potential future uses.

d. State Environmental Quality Review

Based upon the type and magnitude of the redevelopment project, it is likely that the Town of Tonawanda will assume the role of Lead Agency under 6 NYCRR Part 617 once site plan approval is sought. Therefore, it was suggested that the Steering Committee meet with the Town familiarize them with the results of this study and introduce them to the redevelopment concepts.

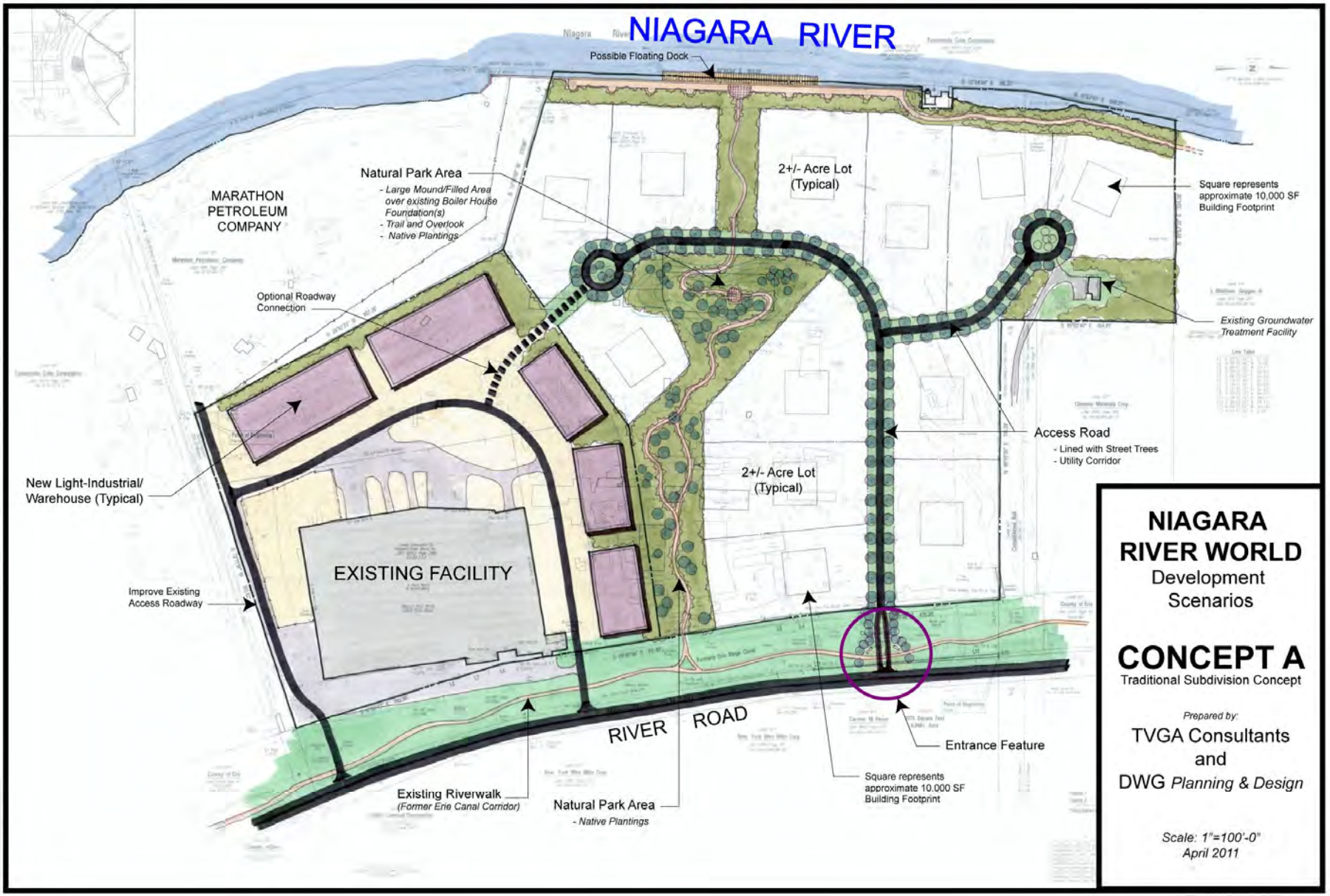


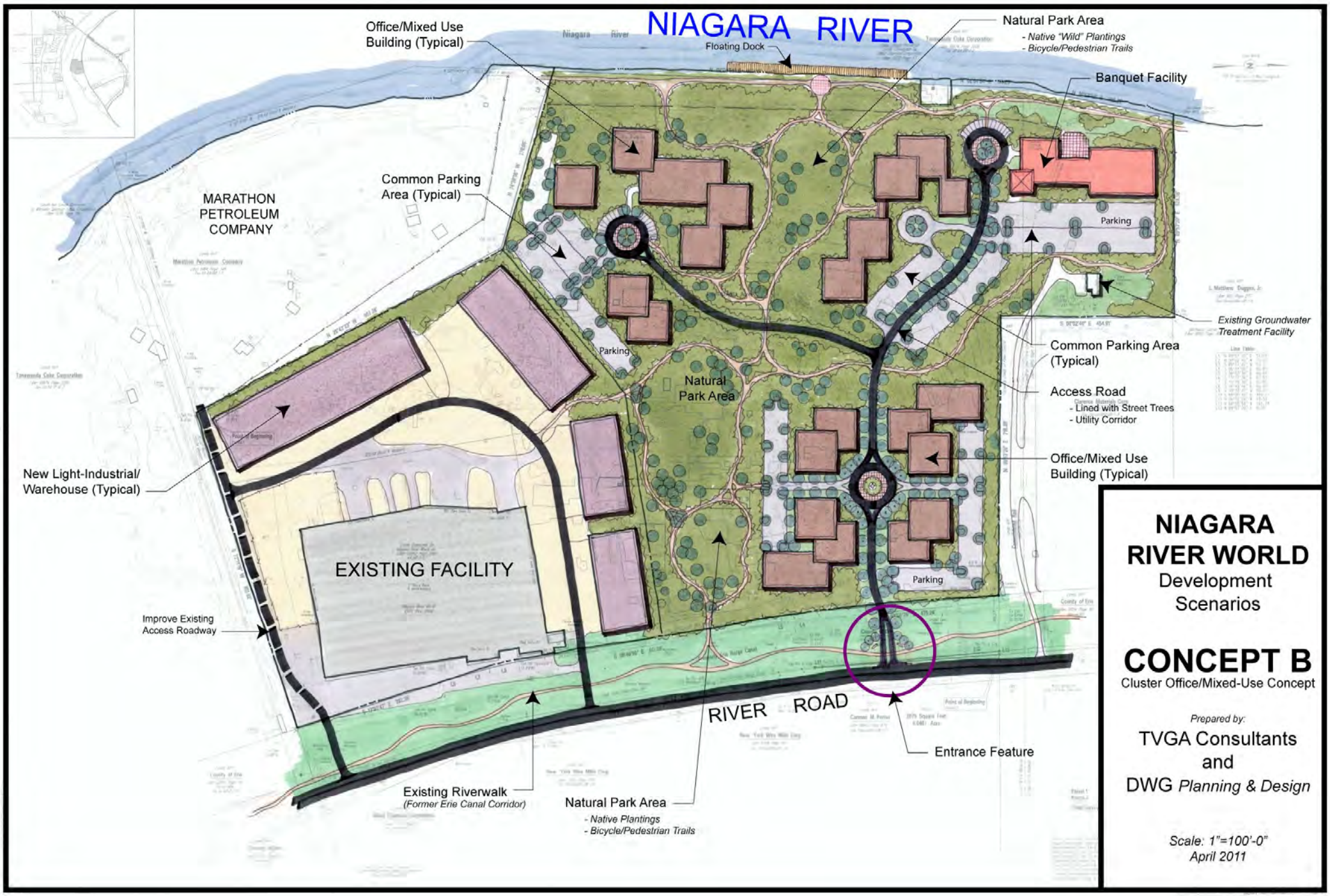
NIAGARA RIVER WORLD
Development Scenarios

CONCEPT C
Mixed-Use, Town Center Concept

Prepared by:
TVGA Consultants
and
DWG *Planning & Design*

Scale: 1"=100'-0"
April 2011


NIAGARA RIVER
Possible Floating Dock
MARATHON PETROLEUM COMPANY
Natural Park Area
- Large Mound/Filled Area over existing Boiler House Foundation(s)
- Trail and Overlook
- Native Plantings
2+/- Acre Lot (Typical)
Square represents approximate 10,000 SF Building Footprint
Optional Roadway Connection
Existing Groundwater Treatment Facility
Access Road
- Lined with Street Trees
- Utility Corridor
New Light-Industrial/ Warehouse (Typical)
2+/- Acre Lot (Typical)
EXISTING FACILITY
Improve Existing Access Roadway
RIVER ROAD
Entrance Feature
Square represents approximate 10,000 SF Building Footprint
Existing Riverwalk
(Former Erie Canal Corridor)
Natural Park Area
- Native Plantings
NIAGARA RIVER WORLD
Development Scenarios
CONCEPT A
Traditional Subdivision Concept
Prepared by:
TVGA Consultants and DWG Planning & Design
Scale: 1"=100'-0"
April 2011


NIAGARA RIVER
Office/Mixed Use Building (Typical)
Floating Dock
Natural Park Area
- Native "Wild" Plantings
- Bicycle/Pedestrian Trails
Banquet Facility
MARATHON PETROLEUM COMPANY
Common Parking Area (Typical)
Parking
Existing Groundwater Treatment Facility
Natural Park Area
Common Parking Area (Typical)
Access Road
- Lined with Street Trees
- Utility Corridor
Office/Mixed Use Building (Typical)
New Light-Industrial/ Warehouse (Typical)
EXISTING FACILITY
Improve Existing Access Roadway
RIVER ROAD
Entrance Feature
Existing Riverwalk
(Former Erie Canal Corridor)
Natural Park Area
- Native Plantings
- Bicycle/Pedestrian Trails
NIAGARA RIVER WORLD
Development Scenarios
CONCEPT B
Cluster Office/Mixed-Use Concept
Prepared by:
TVGA Consultants and DWG Planning & Design
Scale: 1"=100'-0"
April 2011

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NIAGARA RIVER WORLD

Redevelopment Plan

NIAWANDA DEVELOPMENT

Niawanda Development
3435 Main Street
Buffalo, New York 14214
May 10, 2011

Professors Gillert and Swanekamp
Instructors, PD 574
University at Buffalo
3435 Main Street
Buffalo, New York 14214

To Professor Gillert and Professor Swanekamp:

Niawanda Development is pleased to submit the finalized site redevelopment plan for Niagara River World for your review. As requested, we have completed a thorough study of the parcel, the surrounding areas, and all existing conditions and have included them in the following document in order to assess the proper future development on the site.

The report consists of a brief summary of the physical and environmental elements of the River World site, as well as the socioeconomic conditions of the surrounding community, and other pertinent plans and programs. After exploring Niagara River World's circumstances and the Town of Tonawanda, our analysis suggests that the assets of the 62-acre site provide an opportunity to both reflect the community's desires as well as become an economically beneficial, innovative development for the local and regional community. We have incorporated our aligning vision of sustainability, low impact development, and placemaking into our site recommendations, with suggetions that any development on the site will capitalize on the natural assets of the land and the community as well as minimize any negative environmental impacts. Our proposal for an Entrepreneurial Park and alternative energy production is a viable and exciting prospect for your site.

We at Niawanda are confident that our analysis is a thorough and complete representation of the Niagara River World site. We have completed this phase of the River World project on time and under budgets. We continue to be excited about working with you in developing the Niagara River World site in order to maximize its potential for the local and regional community.

If you have any questions or concerns, please let us know.

Sincerely,

Tyler Mekus Darren Cotton Margaret Best

Niawanda Development

4. REDEVELOPMENT PLANS

After close reexamination of the Niagara River World site characteristics, as well as the socio-economic conditions and demographic features of the Town of Tonawanda and the region, Niawanda Development has concluded that it is in the best interest of all parties to redevelop the site within an innovative and original scope, combining the assets of the region and the Town with sustainable vision for economic productivity. In aligning the Town of Tonawanda Comprehensive Plan's vision and goals with the capabilities of the site, we propose the development of a state-of-the art entrepreneurial park complimented by open space and alternative energy sources, such as water and steam power.

4.1 Entrepreneurial Park

Niagara River World is a viable site for the development of an entrepreneurial park in the Town of Tonawanda because it supports the Town's vision for economic development along the waterfront region (Town of Tonawanda Comprehensive Plan 2005). Entrepreneurial parks are centers for innovation, or organizations that allow for entrepreneurs to develop their ideas from inception, through commercialization, to the launching of a new venture (Kirby 2004). These "incubators" provide hands on management assistance, access to financing and orchestrated exposure to critical business or technical support services that can relieve the prevalent pressures of start-up companies (US National Business Incubation Association 2001). The entrepreneurial park assists new business ventures by providing a space for ideas to develop and form with unprecedented accessibility to services such as management training, technological and communication services, accounting and back office support. The proximity to other new businesses also creates an atmosphere of innovation and encourages knowledge spillover and the pooling of resources, which are similar characteristics to some of the most successful regional economic cluster strategies within the United States. The economic climate has dramatically shifted in the United States and has impacted the Greater Buffalo Niagara Region significantly. Government sector jobs are being trimmed and nationwide layoffs have leave employment rates at a consequential low, creating a window for increases in individual responsibility and reinventing the role of small businesses in the United States as a prospect for the creation of new and innovative employment opportunities.

Niagara River World is a viable site for a new entrepreneurial park for multiple reasons. The location of the site makes it desirable because of its access and proximity to downtown Buffalo, the Town of Tonawanda, the Niagara River, Grand Island, Niagara Falls, and Canada. It is situated along many transportation routes and access points and has a waterfront view that is an asset in itself. This land once provided for some of the nation's most prominent and successful industries. Niagara River World is also located within a region with an abundance of colleges and universities that graduate educated, talented, and capable young minds who unfortunately often leave the region in search of better career prospects and opportunities. The retention rate of college graduates within the area is essential for the growth of this demographic and, thus, for the region as a whole. Furthermore, the educational aspect of the venture provides for opportunities for the park to create potential partnerships with educational programming via local colleges and universities.

The entrepreneurial park answers to some of Town's and the region's major issues. The chance for networking and knowledge overspill provides for an innovation-friendly atmosphere that would attract talent and new economic ventures. The encouragement for new small enterprises would potentially add to college graduate retention rates within the area, supplementing the traditionally decreasing population. The retention of talent, skill, and innovation would create a growing demographic of educated, business-savvy entrepreneurs that are known to compliment the vision of economic development. Furthermore, the park would be an asset to the surrounding community, as a local business culture would provide for new services and products available to consumers and potentially create a consumer destination within the Town.

The entrepreneurial park is a state-of-the-art development that will comply with the U.S. Green Building Council's LEEDS standards for new construction and major renovation projects. The 60-acre park will contain nine new structures, all designed with eco-friendly materials, features, and fixtures. Solar panels will be installed on some of the buildings. Complimented by a district heating system harnessed by the Huntley Power Plant and power generated from hydrokinetic turbines installed within the Niagara River, the development itself is surrounded by green space. The building will implement fixtures and fittings that aid in the reduction in water use. It will also utilize renewable energy sources by way of daylighting and solar panels in order to reduce the development's carbon

footprint and heighten its caliber as an economically and environmentally sustainable site. These elements will set the development apart and highlight the site and the Town as fresh, environmentally conscious, and innovative destinations.

Utilizing Niagara River World as a space for an entrepreneurial park will spark the economic development that the Town of Tonawanda seeks to achieve, harnessing local talent and ambition in order to output profitability and growth. The project aligns with the Town's major goals of economic development as well as the mitigation of environmental concerns within the area. It provides economic opportunities, goods and services for high quality of life for consumers, and addresses the issue of blight along the wasted waterfront lands. An entrepreneurial park will invigorate the commercial and industrial areas of the Town and help to grow and retain a young and talented demographic that will help to revitalize the Town and ensure sustainable investment in the future (Town of Tonawanda Comprehensive Plan 2005).

4.2 Alternative Energy Sources

The Town of Tonawanda can also take this opportunity to fulfill some of its goals in an environmentally and economically sustainable manner. By sourcing and selling alternative energy out of the Niagara River World site, both profit and prominence will be generated within the area. In utilizing innovative techniques in order to power and heat the entrepreneurial park would not only make the site a self-sufficient entity, but also a destination.

4.2.1 Hydrokinetic Turbines

Although hydropower has been helping to advance human society for centuries, only in recent decades have technologies begun to be developed to take advantage of water through applications outside traditional hydroelectric dams. One of those technologies currently under development is hydrokinetic turbines, which seeks to harness the kinetic power inherent to all bodies of water in motion. The specific technology that would be sought for installation at the Niagara River World site is in-river hydrokinetic turbines. Using the Niagara River's swift moving current, underwater turbines anchored to the river bed would spin and generate power that would then be converted to useable electricity to be fed into the existing infrastructure via underwater transmission lines ("In-river Hydrokinetics - Frequently Asked Questions.")

While hydrokinetic power can produce electricity at costs competitive with non-renewable sources, this requires a commercially sized array of turbines to become cost effective because of the associated capital and maintenance cost. Estimates from an analysis of the Tacoma Narrows in Washington State put the cost of an in-river commercial array somewhere in the region of $100 million. The same study has shown the cost of electricity able to be produced is inversely proportional to the number of installed turbines (Polagye and Previsic 2006). However, many hydrokinetic projects have their beginnings in the pilot stage of production with an ability to scale up to a commercial development if financing is made available. Many of the existing pilot projects around the country involve 35KW to 100KW turbines. This is the course of action recommended for the Niagara River World site. A hydrokinetic pilot license, which is obtained from the Federal Energy Regulatory Commission, is required before developing small-scale demonstration project with an option to scale it up.

Before initiating this pilot project license, extensive testing to evaluate the site's suitability for hydrokinetic power will be required. Some of this testing will include average river velocity, both surface and underwater currents. The velocity of the water can greatly affect maximum power generated, turbine efficiency, and amount of annual maintenance required. Other test would focus on the sea bed

consistency and make-up to determine what sort of foundations/moorings will be required to steady the turbines against the current and at what depths they may have to be drilled. It would also be beneficial to initiate in-river monitoring to determine the turbines' impact on and interaction with marine life, both the direct impact of turbine blades on fish, and the potential for bio-accumulation such as seaweed, kelp, and barnacles. This evaluation will also include examining existing utility easements which may be used to route power cable and shore crossing, the availability of utility tie-ins, and the accompanying reduction in capital costs these may potentially entail. This project, being only one of a handful in the nation, would draw an incredible amount of positive public exposure to the River World site as well as the Town of Tonawanda as a regional locus for green and sustainable industry. The benefits associated with in-river hydrokinetic turbines as a renewable source of energy not only distinguish them from finite fossil fuels like coal and oil, but also from other renewable that have certain negative externalities.

4.2.2 District Heating

District Heating is a system that distributes heat in the form of water of steam generated in a centralized location for multiple buildings. The system works to distribute steam or hot water to multiple buildings for space heating or water heating. Heat Sources for district heating can include geothermal, cogeneration plants, waste heat from industry, solar installations, and purpose-built heating plants. The key to a district heating system is that heat normally generated through either power creation, or industrial processes is collected and sent through a system of pipes that can feed numerous buildings and structures. Each facility is then equipped with a heat exchanger which is used to draw energy from the water, and provide heat and hot water for the building.

As stated before, District Heating is usually developed around a heat generation source such as a power plant. Electrical Plants or other industries create steam to turn turbines or other machinery, and often this steam is released in the environment and never used. A district heating system can recover this waste heat, and are often developed with a boiler station to create a reliable source of heat 365 days a year. Once the heated water or steam leaves the source of heat generation, the heat is carried in a network of insulated pipes to the numerous buildings and customers that are served. This network is usually designed in a loop system, and as the water passes through each building the heat energy is exchanged within the building with the waste steam returning to the heating plant to be reheated and redistributed through the network. The size of these networks can range from a small campus such as a college or office park, to a city such as Helsinki Finland where over 1,230 kilometers of pipes criss-cross the city. Overall, District Heating has numerous benefits ranging from a reduced carbon foot print for urban areas heating with district heat; higher energy efficiencies and reduced pollution control in comparison to individual heating systems; and reduced heating and investment costs for building owners (http://www.nrgenergy.com/pdf/thermal.pdf).

The C.R. Huntley Generating Station located south of the RiverWorld site on River Road in Tonawanda is owned and operated by the NRG Company. This coal fired power plant was originally constructed in 1942, yet has expanded five times to its present generating capacity of 816 megawatts (http://www.sourcewatch.org/index.php?title=Huntley_Generating_Station). This plant in recent years has also undergone discussions of expansion with the implementation of gasification processes that would help clean the coal burning plant. However, these plans were canceled in 2008 due to the financial burden that an Integrated Gasification Combined Cycle power plant would cost New York State to subsidize.

With the inability to expand the Huntley Power Plant through clean coal technologies, this electric generation facility has the ability to use a waste product that could still help clean the local air while helping increase the company's bottom line. The implementation of a

cogeneration district heating system for the nearby River Road corridor and industrial tenants, would provide NRG an ability to reuse normal thermal waste and sell it to local customers to heat their facilities. With the amount of large scale manufacturers and facilities that exist near the Huntley Power Station, the implementation of a district heating system would be financially beneficial to both NRG and the local consumers. Sites such as the River World property, along with nearby manufacturers including DuPont, GM, and Dunlop could utilize the district heating system to help reduce facility costs and environmental impacts.

The expansion of district heating from the NRG Huntley Power Station would allow consumers such as the RiverWorld property to utilize this heating source for many uses. With the ideal expansion of an entrepreneurial office park at the RiverWorld site, district heating would be utilized for heating and cooling purposes. This low cost source of power would provide tenants with an environmentally friendly heating source, which would help heat and cool the buildings throughout the year. The district heating system could be used for facility and water heating, along with cooling for air conditioning of buildings during summer months. This system at RiverWorld would provide tenants with a source of heating and cooling that would rival any office location in the region for costs and environmental footprint. A district heating system would help continue the green energy and low impact theme of the RiverWorld site, as it would allow business tenants to help grow their companies through low utility costs and little environmental impact.

The utilization of a district heating system along the River Road corridor would have little impact on the aesthetics of the area. The system would most likely feature a dual network of pipes underground which would feed each facility consumer, and heat exchangers would be located within each building. The district heating pipes would be located underground at the RiverWorld site, and would feed off the main River Road line as they supplied each of the properties structures with compressed steam or water. Within each facility on the site would be a heat exchanger to convert the district heat into facility heating or hot water. The heat exchangers are relatively small and can often fit within a utility room, and help reduce maintenance and installation costs of traditional building heating systems. Overall, district heating at the RiverWorld site would lead to an overall low physical impact on the site, while allowing for no costly heating or cooling systems to be installed in individual structures.

4.3 Access and Parking

The Niawanda Redevelopment Plan creates access for pedestrians, bicyclists, automobiles and trucks. Constructing essential passages, including transit roads, sidewalks, and bike paths will be conducted during Phase 1 of development. The transit system within your site will be fluid and easily manageable with proper signage and access from all points of Niagara River World, from River Road to the Niagara River.

4.3.1 Site Entrance Access

There will be two entrance/exit points on Niagara River World. Access onto the site will be by way of an entrance point on River Road towards the center of the site. A two-lane road will allow traffic to enter and exit and travel in both directions. The other access point will be located on the southern side of the site, redeveloped from an existing driveway that provides access. This will also be a continuation of a two-way traffic road that will loop around the interior, connected to the eastern access point by way of a roundabout.

4.3.2 On-site Access

The eastern access point (located on River Road) will connect to the interior loop via roundabout. The 130,848 square foot two-way traffic loop located within the interior of the site will allow automobile access to all of the proposed nine structures within the area. Pedestrian walkways will line both sides of the interior loop as well as the access points for walking accessibility. Sidewalks and bike

paths will also connect the roadway to the exterior of the retention ponds on site. A sidewalk along the Niagara River will also be implemented, providing space for public access to the waterfront. The river vista serves as one of the site's greatest assets and can be highlighted with this boardwalk.

4.3.3 Parking Areas

A total of nine parking lots will serve each of the structures and the site as a whole, totaling in about 376,728 square feet of black top lots. These lots can accommodate up to 2,354 automobiles at any given time. This parking includes access for employees of the entrepreneurial park as well as customers, clients, and other visitors.

4.4 Open Space and Recreation Areas

One of the objectives of the Niawanda Redevelopment Plan is to incorporate green space and natural assets of the site into the entrepreneurial park. The value of open space and area for recreation creates a development in a new light that appreciates the setting and highlights the environment. The sites landscaping is designed to fit zoning codes for the Town of Tonawanda.

4.4.1 Open Space

The open space within the site totals up to 1,151,348 square feet. This leaves ample space in between structures within the site suitable for walking and other outdoor activities. It also implies a low-impact theme that incorporates the natural environment of Niagara River World within the park. Directly north of Niagara River World, the proposed Cherry Farm Park will serve as an public park for the community. Niawanda Development seeks to maintain that sentiment along the waterfront within the borders of the site by providing open space throughout the site.

4.4.2 Recreation Areas

The recreation areas within the site at present are restricted to the pathways and open space within the site which allow for public access and the utilization of the waterfront. Future development of space dedicated to recreation within the site would have to be specially permitted by the Town Planning Board.

Niagara River World Entrepreneurial Park

NIAWANDA DEVELOPMENT

KEY TO FEATURES

- Hydrokinetic Turbine
- Solar Array
- District Heating Lines
- Landscape Buffer
- Sidewalk
- Road

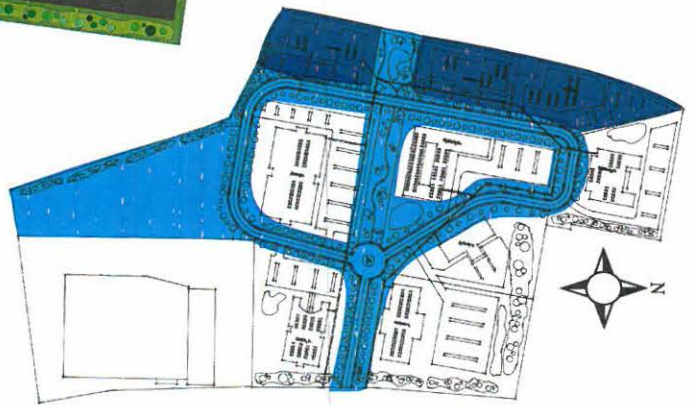
Niawanda Development - River World Redevelopment Plan May 4, 2011

Phase I

- Streets
- Sidewalks
- Landscaping
- Solar Panels
- Turbines
- Solar Panels
- District Heating
- Demolition

Phase II

- Waterfront Office Buildings
- Parking



District Heating

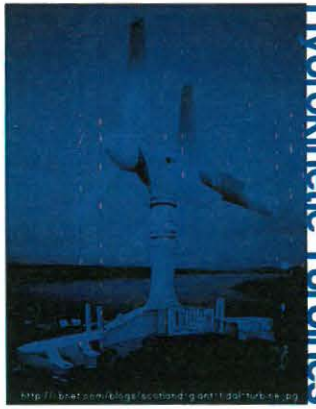
The expansion of district heating from the NRG Huntley Power Station would allow consumers such as the RiverWorld property to utilize this heating source for many uses. With the ideal expansion of an entrepreneurial office park at the RiverWorld site, district heating would be utilized for low cost environmentally friendly heating and cooling purposes.

Eastern View

Solar Panels

The town of Tonawanda is taking solar power seriously in the hopes of becoming a hub for the renewable energy source. The town has made a push toward promoting solar power, especially since the designation this year of the Riverview Solar Technology Park on River Road by Kenmore-based TM Montante Development. The commerce park is being billed as New York's first solar ready park.

Hydrokinetic Turbines



Using the Niagara River's swift moving current, underwater turbines anchored to the river bed would spin and generate power that would then be converted to useable electricity to be fed into the existing infrastructure via underwater transmission lines

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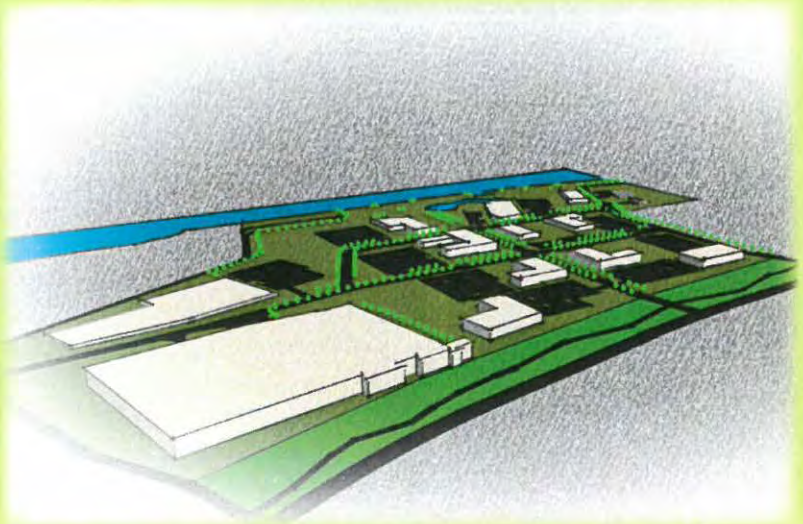
SITE DEVELOPMENT PLAN

NIAGARA RIVERWORLD

TONAWANDA, NY



PREPARED BY
TEAM ORANGE
[PLANNING] [SURVEY] [DESIGN]
MAY 2011

May 12, 2011

Eric Gillert
Director of Planning
Town of Amherst
5583 Main Street
Williamsville, NY 14221

Kenneth Swanekamp
Chairman, Town Planning Board
Town of Tonawanda
2919 Delaware Ave.
Kenmore, NY 14217

Dear Professor Gillert & Professor Swanekamp:

This site development plan is submitted from the collective semester long effort of team orange in the Projects in Physical Planning course in the Department of Urban and Regional Planning at the University at Buffalo. This four member team, consisting of Yi Chen, Michael Godfrey, James Kistner, and David Kruse have researched, evaluated, and designed a site development plan for Niagara Riverworld on River Road in the Town of Tonawanda, New York. The plan seeks to take advantage of the opportunities that the site offers while mitigating its constraints. The proposal seeks to create a campus-like commercial and light industrial development over the course of several phases dependent on economic constraints and market demand. What follows is a detailed plan that consists of a goal and vision statement, an assessment of the current condition, a master development plan, and desired outcomes and expectations.

Regards,

Yi Chen

James Kistner

Michael Godfrey

David Kruse

Executive Summary

This site development plan proposes a development of office space, medical research and light industrial on an approximately 62 acre site. The area is an industrial corridor that includes a coke processing and coal generating electrical plant. However, it is situated along the waterfront of the Niagara River with great views of Grand Island and the water.

Upon reviewing local land use plans and the Town of Tonawanda's 2005 Comprehensive Plan, a proposal was drafted that conforms with the vision of Tonawanda's waterfront and its updated zoning provisions. A prequel to this document was a site evaluation report that described and analyzed the current conditions, revealing the assets and liabilities Riverworld has to offer. Based on the findings and approval of a conceptual site design, the work culminated with a site development report.

The proposed uses are designed to maximize the outcome of recommendations made in the Town's Local Waterfront Revitalization Plan and Comprehensive Plan. A phasing plan calls for the demolition of existing structures, proper cleanup and disposal of materials; preparation, including roadways and utilities; and a two-tiered construction phase. It is estimated that a full build-out could take 10 years to complete. The site has the potential to become a key component of the vision established community. It marks the transition from a heavy industrial history to a cleaner, greener, more adaptable development prepared for the future.

Master Development Plan

Project Description

The proposed site plan incorporates an office + business park development in the heart of an old industrial corridor. It provides a transitional piece for the area that is called for through the LWRP and Comprehensive Plan. A coordinated arrangement of office buildings with ample open space and a single light industrial facility make up the design of the Riverworld site. The northwestern part of the site, as well as part of the sea wall remain open to the public. A main entrance road faces towards Niagara River offering a scenic vista while approaching the various buildings. Each structure is designed to accommodate a mix of small and large businesses. The sizes of the buildings promote an office-flex atmosphere with the ability to move closer towards the waterfront should a company choose to pay higher rents.

The 2002 Land Use Plan pointed out a need for additional office space within the Town. Specifically, research was done that showed nearby Amherst had occupancy rates in their office structures at 92 percent. Based on their numbers, 494,000 square feet of office space was demanded over a two year period. However, it could be assumed that on the basis of the recent economic downturn, those numbers have been altered. Still, the plan relayed the need for an a plan to develop an office-park style development that provided a high level of amenities, visually appealing landscaping, and one to two-story buildings.

Figure 9: Site Plan. Source: Authors

The plan that this document calls for is a site that aims to protect the value of open space and the character of the land. Buildings are modestly designed for two to three-story spaces. Ample parking is available for each building on the "campus" and a priority was given towards enhancing the aesthetics of the land while providing views towards the waterfront. A retaining pond will act as a visually pleasing water feature along the waterfront. There are a total of 10 commercial structures and one light industrial, however five clusters of the proposed buildings can be combined should additional space be required. Located within two of the buildings are cafes for use of employees on site. A recreational component has been developed on the northwestern part of the site in the form of tennis courts. The current Riverwalk in front of the property will be connected to a path system that extends into the site and adjoins the water's edge. A connection is proposed to the neighboring Cherry Farm Park site towards the north.

Phasing Plan

Phase One: The current condition of the site is one to forget. There are old foundations that remain imbedded in the ground; soil contamination is still present; an old boiler house lies in the middle of the site; and circulation paths are nearly non-existent. One of the first steps to be taken to redeveloping the site, pending development approval, is the demolition of the remaining structures, and proper removal and handling of on-site materials.

Though the site has been cleaned based on New York State Department of Environmental Conservation (NYSDEC) efforts and standards, there are still a levels of pollution in the subsoil that warrant caution. An easement has been established on the site which outlines any removal of soil or debris must be done based on a permitting process. For this reason, where remediation is possible and/or needed, the first choice, based on cost concerns, is to test and recycle the material. When dealing with stone and concrete foundations, the reuse of material can be re-purposed as underground layers for constructing new roads and parking surfaces. The alternatives to demolition are untimely permits due to transportation off-site and the subsequent processing and handling efforts needed on the receiving end. Erie County lists on its website a contact list of companies that handle asphalt, brick, and concrete recycling. Those companies that can be solicited for hire are: Broad Spectrum, CID Refuse Service, CTS Crushing and Recycling, Metzger Removal Inc., and Swift River Associates Inc. Estimates for the demolition and preparation of the site for phase one are: $1,099,950.

Phase Two: The second phase of redevelopment deals specifically with the preparation of the site for construction. Based on the successful demolition, recycling, and removal of materials from the site, the next phase of redevelopment involves regrading any parts of the site that will contain buildable footprints and installing access and circulation paths.

The site is generally flat, based on topographic studies, however, there are local variations that will require the engineered supervision. Where possible, existing growth should be maintained. During the regrading process, focus should be given to channeling runoff

Appendix

SITE DEVELOPMENT PLAN | NIAGARA RIVERWORLD | TONAWANDA, NEW YORK | MAY 2011 | TEAM ORANGE

Sketch Rendering