NAVIGATIONS AIDS

COST ESTIMATE

PROPOSED PROJECT COST ESTIMATE
CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

NAVIGATION AIDS

ENGINEERING COSTS			
Planning/Permitting			$ 2,500.00
Bidding Engineering Costs			$ 1,000.00
Construction Oversight/Administration			$ 2,500.00
Subtotal - Engineering Costs			$ 6,000.00
CONSTRUCTION COSTS			
Item	Unit Rate	# Units	Cost
Lighted Solar Buoy	$ 750	16	$ 12,000.00
Non-Lighted Buoy	$ 200	32	$ 6,400.00
Lighted Solar Beacon	$ 400	12	$ 4,800.00
Non-Lighted Beacon	$ 150	12	$ 1,800.00
Notes:			
Costs above include procurement and installation			
Subtotal - Construction Costs			$ 25,000.00
Project Subtotal			$ 31,000.00
Contingency (25%)			$ 7,750.00
Project Total - Cost Estimate			$ 38,750.00

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
REMOVAL OF OBSTACLES FROM THE RIVER

Project Need

The stretch of the Chadakoin River between McCrea Point Park and the Basin currently provides recreational navigation and acts as a link between downtown Jamestown and Chautauqua Lake. However, the use of this resource is limited due to the presence of numerous obstacles within the river channel and the Basin. These obstacles largely consist of remnants of cribbing that was installed by the lumber industry over 100 years ago, as well as trees and stumps that were carried by the flow of the River from the Lake in more recent times. Although these obstacles do not appear to pose a significant threat during the early summer season when water levels are relatively high, later in the season water levels begin to decrease, resulting in the presence of the obstacles at or near the surface of the River and Basin and creating unsafe conditions for recreational users of the water.

Project Description

The project will include:

- The planning of the project with close coordination with the ACOE, US Fish and Wildlife, NYSDEC, and the Roger Tory Peterson Institute to plan the project in a manner that is sensitive to the native species populations, including the Eastern Spiny Softshell Turtle
- The creation of a permit application for submission to and approval by the US Army Corps of Engineers (ACOE) and the New York State Department of Environmental Conservation (NYSDEC)
- The preparation of a Request for Proposals for the removal of the obstacles from the River and Basin
- The selection of a contractor for the proposed project
- The performance of the obstruction removal, including:
    - Mobilization of small dive boat
    - Selection and careful removal of one or more logs or other important features that can be used for historical display purposes
    - Evaluation of logs for determination of potential salvage value and the careful removal of any logs with value
    - Use of hydraulic chain saws to cut longer horizontal or vertical obstacles at mudline
    - Hand removal of other protruding obstacles
    - Placement of removed material in bins
    - Proper disposal of removed material

Intended Outcomes

The project is intended to eliminate unsafe conditions within the River and Basin, which, consequently, is expected to increase the use of the River and Basin by both non-motorized and motorized watercraft. This increase is use of the water will generate economic benefits to the City of Jamestown through a variety of ways:

- Direct benefits will include the support the growth of existing and development of new businesses that rent, sell, and service watercraft
- Visitors to Chautauqua Lake will use the improved connection between the Lake and the Basin to visit Downtown businesses including restaurants, bars, retail shops, museums, and other organizations
- Visitors from outside of Jamestown will visit the City to rent watercraft or launch their own watercraft and will support new and existing businesses that cater to recreational users such as hot dog stands, food trucks, bars, and ice cream stands
- City residents will frequently recreate on the Chadakoin River rather than traveling outside of the City, allowing the City to retain more of its residents' spending

Implementation Strategy

This project will require funding for design and implementation. Potential funding sources include:

- Department of State Local Waterfront Revitalization Program
- NYS Boating Infrastructure Grant Program
- Federal Land and Water Conservation Fund

Cost Estimate

The estimated projects costs are $60,000. The attached table provides a breakdown of the estimated project costs which are also summarized below:

- Engineering fees for permitting, bidding, and construction observation - $10,500
- Construction fees - $37,500
- Contingency (25%) - $12,000

Feasibility

The primary issue in completing this project will be finding funding to complete the work. The costs of the project are relatively low and the work can be accomplished using readily available equipment. The scope of the project is feasible because it was developed based on conversations with Buffalo Industrial Drilling (BIDCO), who has experience working in the Basin and an understanding of site conditions. Based on conversations with the NYSDEC, the permitting of the project should be reasonably accomplished. The work can be completed in less than one calendar year.

Anticipated Schedule

The removal of the obstacles can occur within a one-year timeframe. The estimated schedule includes:

- Months 1-2: Planning and Permit Application Preparation
- Months 2-4: ACOE and NYSDEC Permit Review and Approval
- Months 5-6: Request for Proposal Preparation, Bidding, and Contractor Selection
- Months 7-8: Construction

REMOVAL OF OBSTACLES FROM THE RIVER

COST ESTIMATE

PROPOSED PROJECT COST ESTIMATE
CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

OBSTACLE REMOVAL

ENGINEERING COSTS				
Planning/Permitting			$	5,000.00
Bidding Engineering Costs			$	2,500.00
Construction Oversight/Administration			$	3,000.00
Subtotal - Engineering Costs			$	10,500.00
CONSTRUCTION COSTS				
Item	Unit Rate	# Units		Cost
Mobilization	2500	1	$	2,500.00
Basin Obstruction Removal	5000	5	$	25,000.00
River Obstruction Removal	5000	2	$	10,000.00
Notes:				
Costs above include removal of obstructions, placing material in bins, and proper disposal				
Subtotal - Construction Costs			$	37,500.00
Project Subtotal			$	48,000.00
Contingency (25%)			$	12,000.00
Project Total - Cost Estimate			$	60,000.00

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
OPEN-AIR SHOPS & BEER GARDEN

Overview

Retail and dining options are two critical industries that need to be well-established on the Chadakoin River to ensure high levels of activity and spending, particularly within the Basin. When people head outdoors for the summer months, they are looking for fun, friendship, and fresh air. Inspired by European destinations, open air markets have quickly grown in popularity in the United States popping up to support the work of local vendors and artisans while offering visitors a unique shopping experience. Similarly, with European origins, beer gardens are quickly becoming popular attractions nationwide. Therefore, identifying and developing space for open air shops and a beer garden along the north bank of the Chadakoin River Basin is an important offering in line with contemporary tourism trends. By offering local products and focusing on simple practices, this project will be a manageable aspect of Phase 2.

Project Description

The north shore of the Chadakoin River Basin offers the ideal space for establishing an open-air marketplace with adjoining beer garden that will complement the needs of visitors, appeal to a wide demographic, and build a greater sense of community. Since this project is focused on two separate but complementary features for the north basin, the needs and requirements will also be separate but complementary.

Beer Garden

The beer garden model is advantageous as it requires less overhead than a traditional dining amenity and can utilize services contracted out to a private company. This project has the potential to be scaled up over time, according to established demand, with the potential to operate during the shoulder seasons. When scaling up the beer garden could feature hanging lights, large game boards and lawn games, seating, and food services through vendors or food trucks.

Throughout the country, beer gardens have become popular places to cool off during the summer months while enjoying quality craft beer and time with friends and family. Trends in the beer industry indicate that craft beer could capture upwards of 20% of the total market in the next couple of years. Many beer gardens offer experiential features like fire pits, food trucks, music, and outdoor games. The longer an outdoor drinking space keeps guests comfortable, the more likely they are to stay and drink. A perfect scene of sun-drenched guests happily enjoying drinks is an instant advertising boost to potential guests who literally see the beer garden in its best light. Demographically, beer gardens check several boxes. Millennials are the first generation more likely to try a new beer garden than attend a nightclub. Since over 60% of millennials prefer to live in mixed-use communities found near urban centers, they also tend to be savvy, price-conscious consumers who put more value on experiences than objects. Additionally, Americans with dogs, approximately 44% of the country's population, enjoy the freedom of outdoor space when they can bring their pets along. In the middle of a city like Jamestown, beer gardens can create a sense of peace, amid hustle and bustle, where visitors can take a step back and enjoy a drink in the comforts of nature.

Beer Garden Infrastructure

The beer garden will need a small, roofed structure where servers can sell beverages and snacks. This structure will need access to electrical hookups for lighting and water hookups for cleaning and maintenance. Additionally, designs and renderings will be needed for several elements of the beer garden including a patio area using permeable and easy-to-maintain stone or gravel that delineates the boundaries of the beer garden; fencing to help enforce age restrictions while allowing for the ingress and egress of visitors; and seating space for guests to use including tables, chairs, and umbrellas. It will be important to focus on purchasing furniture and equipment that uses waterproof fabrics, modern recycled plastics, and repurposed elements to maintain and enhance the essence of sustainability critical to the project. Other considerations include adding elements of technology that enhance a visitor's experience like LED lights controlled by a smartphone, umbrellas with built in speakers, and multi-purpose furniture. By focusing on building a modern, high-tech beer garden from the onset of the project, maintenance requirements will be minimized, and fewer upgrades will be needed in the future as popularity of the space increases.

Beer Garden Amenities/Utilities

Should demand for the beer garden and open-air market grow, in conjunction with the other attractions on the Chadakoin, it will be essential to identify and install restroom amenities in close proximity. Initially, the need for restrooms can be met with temporary portable restroom facilities which can be rented and managed by a private company. However, over time, this project will look to design and identify space for permanent restrooms, a structure that will require water hookups, plumbing, a septic system, and electrical hookups. Additional amenities can be incorporated such as a water fountain system and public charging stations for electronics to help ensure that the technological features on the Chadakoin can be used as they were designed.

These new developments on the riverfront should not detract or harm the natural environment already present in the basin. Therefore, this project calls for identifying and designing a sustainable drainage system for any liquids or waste being produced at the beer garden that will ensure pollutants do not disturb the Chadakoin River. Additionally, this project requires taking steps to address the beer garden operations including security to enforce age restrictions, permitting for outdoor alcohol serving, purchasing and installing decorative, functional lighting, hiring and managing a maintenance staff, establishing a trash disposal and collection system, and purchasing outdoor games that patrons can use while at the beer garden.

Open-Air Shops

Trends in outdoor retail space indicate favorability for the installation of open-air shops near the beer garden. One popular type of open-air shopping experience is leisure and lifestyle space that creates a sense of community focusing on food, entertainment, and music. There is also an increasing popularity for farmers and artisan markets where consumers can shop for alternative, authentic and local products. Consumers want shopping to be complemented with experiences like dining out, people-watching, attending a concert, or looking at art. This model focuses on place-making, creating a destination that people are drawn to for multiple reasons. Entertainment options like museums, recreational activities, and family experiences are key draws since bored children can halt a family trip, in turn reducing their spending. As such, the addition of open-air markets at the Chadakoin represents is an ideal was to capitalize on current trends in shopping and consumer habits.

An open-air market can be created by focusing on practical, local offerings which appeal to visitors while supporting the Jamestown area business community. This project will include the design of an open-air market space where vendors can sell products. Once all vendors are established, there should be a focus on creating and promoting of a seasonal market calendar to attract visitors and shoppers. Initially, this aspect of the project could use simple practices, limiting the number of vendors and the scope of their needs, to establish a base consumer-market for the area and then build upon the momentum to launch a larger, more varied marketplace of local vendors.

Open-Air Shops Infrastructure

This space could include tenting, tables, lighting, electrical and water hookups, and signage. The market space will need to be designed in a manner to provide coverage from the weather. The infrastructure supporting this project could be scaled up over time and feature more civic-minded programming. For example, adding a rotating non-profit booth where organizations local to Jamestown could market their services and products to locals and visitors. Necessary equipment that will either need to be purchased and stored by the operator or brought by the vendors participating includes tenting, tables, signage, and payment systems via cash or credit intake.

Open-Air Shops Amenities/Utilities

Hookups to electrical outlets and water will need to be established for vendors to use when necessary. Once a vendor sign-up process and contract are established, a designated individual serving as a market manager will need to be tasked with contracting and communicating with seasonal vendors to sell their products.

Land Assembly

Seasonal, outdoor establishments have become increasingly popular over the past several years. This beer garden and open-air market will likely have capacity for less than 200 occupants and will likely be operational for more than 30 days but less than 180 days in a calendar year. Given the temporary nature of this project, land usage will not be year-round. Since the north shores of the Chadakoin River are owned by the City of Jamestown as well as the railroad company who leases land to the National Comedy Center, coordination and contracting with these entities will be necessary. In addition to use agreements, multiple approvals will be required for the beer garden and open-air market including permitting related to alcohol consumption, land use, noise, and city ordinances. A building permit is required for all structures occupied by the general public and they are evaluated as temporary structures.

Feasibility

This project will be most feasible if implemented in simple stages with manageable methods that do not require a lot of oversight or upfront costs. To do this, the open-air shops should be managed and coordinated by the same individual charged with managing the performance venue/ Great Lawn to limit wage and benefits costs for the project. Operations could be limited to the weekends to capture higher demand, while reducing overhead costs, expenses related to food and beverage purchases, and the wages of part time workers at the beer garden. Ideally, a third-party operator for the beer garden will allow the operations to be better coordinated under the management of an experienced business owner, for example an owner of a bar or brewery in or around Jamestown. The costs of infrastructure will be an important factor in determining how to scale the project. There are currently no existing utilities in the area, adding these will be expensive and time-consuming. Accessibility to an operational restroom is important in accommodating the needs of guests as is accessibility to utility hookups like gas, water, and electricity for the beer garden and the vendors at the open-air shops. Initially implementing strategies that do not require utilities is recommended before scaling up the project. For vendors at the shops, there will need to be a system for loading and unloading products. Operations will be limited by weather, assuming the infrastructure is not permanent or year-round.

Intended Outcomes

The project is intended to establish retail and dining amenities on the north shore of the Chadakoin Basin that complement the activities of the south shore and provide an enjoyable way to shop, congregate, and enjoy refreshments for visitors to the waterfront. A beer garden will encourage relaxation and people-watching on the banks of the Chadakoin while appealing to several demographics. An open-air market will benefit local vendors and Jamestown businesses, increasing their visibility, while also appealing to modern, urban consumers and tourists to the area looking

to shop locally and purchase keepsakes or souvenirs to remember their time in Jamestown. This increase in amenities on the water will generate economic benefits to the City of Jamestown through a variety of ways:

- Increase traffic on the river basin that will generate increased traffic for the downtown district within walking distance of the Chadakoin
- Provide patrons comfortable seating and the chance to socialize with family and friends like at the beer garden keeping them in the Chadakoin basin area for an extended period
- Create space for relaxation and socialization that requires minimal equipment and establishes less weather-dependent activities for locals and visitors
- Complement the events at the performance venue on the Great Lawn
- Offer local, homegrown products from farms which increases the local access to fresh, nutritious food, promotes sustainability, and supports a healthy community
- Attract younger visitors
- Maintain important social ties through local shopping, linking rural and urban populations
- Create new employment opportunities
- Increase repeat visitation as outdoor shopping markets tend to have a higher rate of shopper return as compared to traditional indoor shopping
- Allow City residents to frequently recreate on the Chadakoin River rather than traveling outside of the City, allowing the City to retain more of its residents' spending
- Provide a gathering place for community members, visiting can become a consistent, fun family activity and a chance to meet others in the Jamestown area

Implementation Strategy

Since this project will require long-term management and coordination of services and events on location, it would be prudent to contract out the operations to a third-party who can own and operate the beer garden and oversee the management of the open-air shops. With a third-party operator, they can invest time and money into expanding the project over time. For example, building permanent, year-round huts for businesses to sell goods and services out of, essentially creating a shopping marketplace along the water can support shopping during the summer as well as the holiday season.

Given the nature of the open-air shops, similar in scope and offerings as a farmer's market, there may be publicly sourced funding to offset costs of design and implementation for the project. Potential funding sources include:

- USDA Farmers Market Promotion Program (FMPP)
    - Funds projects that develop, coordinate and expand direct producer-to-consumer markets to help increase access to and availability of locally and regionally produced agricultural products by developing, coordinating, expanding, and providing outreach, training, and technical assistance to domestic farmers markets, roadside stands, community-supported agriculture programs, agritourism activities, online sales or other direct producer-to-consumer (including direct producer-to-retail, direct producer-to-restaurant and direct producer-to-institutional marketing) market opportunities.
    - FMPP Capacity Building projects range from $50,000 to $250,000. Community Development Training and Technical Assistance projects range from $100,000 to $500,000.
    - A 25% match is required.
    - Priority consideration will be given to projects that benefit communities located in areas of concentrated poverty with limited access to supermarkets or locally or regionally grown food.

Once the beer garden and open-air shops, as well as the other projects enhancing the Chadakoin, are implemented, marketing and advertising the projects will be essential to the success of all of them. As such, grant funding may be

available to help offset the costs of marketing, in particular the sense of agritourism, craft beverages, and special events. Potential funding sources include:

- Empire State Development Market New York Tourism Grant
    - Grant program that supports regionally themed marketing projects that promote tourism destinations, attractions, and special events, as well as tourism facility capital improvement projects. Other eligible projects include the hosting, coordination, and execution of special events new to New York State, and the promotion of agritourism and craft beverage tourism.
    - Each funded proposal will work to support the long-term strategic plans for economic growth as put forth by the Regional Economic Development Councils (REDCs).

Anticipated Schedule

The creation of a beer garden and open-air shops can occur within a one-year timeframe. The estimated schedule includes:

- Months 1-2: Engineering Design
- Months 2-4: Purchasing equipment
- Months 5-6: Construction
- Months 7-8: Hiring Staff
- Months 9-10: Promotion and Advertising

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
PERFORMANCE AREA/ THE GREAT LAWN

Overview

The development of an outdoor performance venue on the north bank of the Chadakoin River, behind the National Comedy Center, is an important element in the overall Chadakoin River Activation Strategy that can have an immediate impact on the Chadakoin Basin by attracting a variety of people into the area for diverse programming and events. Live performances in the Basin can complement events and programming in nearby venues such as the National Comedy Center, or they can be entirely stand-alone in nature. A steady diet of performances and events will appeal to residents, visitors, and individuals engaging in outdoor activities on or along the Chadakoin.

Project Description

The proposed performance venue would be developed on the "Great Lawn" space beyond the railroad tracks running behind the National Comedy Center on the north bank of the Chadakoin River. Establishing the venue will require both physical improvements and amenities and an organizational system to ensure project success. Physical considerations include staging, seating, and amenities for visitors like restrooms and food services. Organizational considerations include the establishment of a designated event planner, hiring of event staff, and engaging a maintenance crew to ensure successful planning and implementation.

Purchase of a mobile stage is an important first step in activating the Great Lawn as a Performance Area, yet it is important to note that a variety of performances and events can be conducted with nothing more than the open space, some bathroom arrangements, strong oversight and scheduling, and great marketing. The more events held at the great lawn, the more the community will come to expect, and look for, new activities and events and the more that vendors and sponsors will want to participate. Events and performances, form puppet shows to concerts can, and should, start immediately.

Management

The project will require skilled staff to ensure the proper management and oversight of the venue, including hiring, or otherwise identifying, an experienced event planner to coordinate recruiting, contracting, scheduling, and corresponding with performers; a skilled maintenance crew; and well-trained event staff tasked with manning stations during performances, collecting tickets, enforcing crowd control, and ensuring that proper clean-up procedures are observed. Ideally, the event coordinator would work in conjunction with the National Comedy Center to jointly schedule and advertise events to both residents and visitors to the area. If these positions can be combined, both attractions would benefit by sharing the salary expense and coordinating events for maximum impact. If staffing and administration of the outdoor venue can be implemented in collaboration with the National Comedy Center, the project will be more feasible.

Infrastructure

An essential aspect of this project would be the purchasing and installation of a mobile stage, which would be more cost-effective than constructing a permanent stage structure. Mobile stages can generally be assembled quickly and provide the needed stability for performers. There are a variety of mobile stages available for purchase, many of which are described in this mobile stage grid.

Complementary features and elements can be added to the stage over time to offer greater versatility. These features could include:

- A roof that adds shade and can be used for hanging lights, sound equipment, or signage
- Risers for instrumental elements which would typically measure 8’ wide x 8’ deep x 1’ to 2’ tall
- Stage wings to support the needs of the artists, the production company handling audio, lighting, and video, and quick changes when multiple bands perform
- Loading dock behind or to the side of the stage for easy access for vehicles to drop off or pick up gear

Utilities/Equipment

An evaluation of current and potential electrical hookups needed to support performances will be required. Required capacity and electrical hookups should be considered for a range of equipment including:

- Electric-based instruments
- Streaming or video technology
- Sound technology including amplifiers
- Microphones
- PA system and speakers
- Wiring including cables and cording
- Lighting and performance technology like spotlights and fog machines

For smaller scale performances, the purchase and usage of equipment like a Fender portable sound system would serve the needs of a low-tech artist or performances. When booking performers, other considerations include the distance of the power outlets to the stage as well as the necessary wattage capacity. A folk music performance at a small outdoor festival with 50 feet between the performer and the audience could require approximately 250 watts of power, while a rock music performance at the same size venue would need at least 1,000 to 3,000 watts. The types of performances, therefore, will be a critical consideration during the planning and contracting stage of this project.

Policies/Procedures

For purposes of liability and safety, this project should include the creation and implementation of emergency procedures and safety practices to ensure the wellbeing of visitors and safety of performers during events, and to address potential hazards like noise and trash, as well as parking requirements. Staff should participate in regular trainings on crowd control, hospitality practices, emergency management, and customer service. Policies related to consumption of alcohol, guest behavior, sale of merchandise, and other related practices will need to be established to ensure the venue is managed properly and guests are in a comfortable and safe environment.

Contracting Performers

The entity designated to operate the performance venue will need to develop a form of contract to be used when booking performers, which should address compensation, requirements for equipment, details on the duration and scope of the performance, and promotion of the event. The National Comedy Center or Northwest Arena may be able to provide sample agreements, but legal assistance will likely be required to create an appropriate form of contract.

Site Control and Logistics

The lawn space that is the proposed location for the performance venue is leased by the National Comedy Center from the railroad company that owns the parcel. Both parties will need to provide written permission to utilize the space for an outdoor music venue and appropriate terms will have to be negotiated. Additionally, a means of ingress and egress to and from the stage area will need to be identified for any vehicles needing access to the stage. A space for off-season storage of the mobile stage and equipment will be required, which could result in an added expense if the space has to be rented.

Seating

In order to ensure a positive experience for performance attendees, consideration should be given to the type and configuration of event seating (including capacity and handicap accessibility). In addition, plans should be developed to limit mud and erosion of the lawn and the impacts of any heavy machinery or transportation vehicles used in event set-up on and around the stage. While initial seating will likely involve attendees bringing their own chairs, as demand grows the establishment of “premium” seating near the stage which would be set up in advance and which would command a higher ticket price might be considered.

Marketing

This project will be unsuccessful without a well-branded marketing campaign. The need for an online social presence is a critical factor in determining the success of an event. Facebook shares can be worth about $4.15 in future sales and on average generate 15 views of the online event page. More than half of all festival goers upload photos of their experience and about a 1/3rd write reviews. Online event promotion pages like Eventbrite can be a low-cost but manageable method for sharing information. These types of websites also have their own algorithms to share relevant information to potential attendees. For example, the Eventbrite social notification emails automatically push events to interested ticket buyers when two or more people within their same social circle purchase tickets to the event. The marketing campaign should work in coordination with the other projects in and around the Chadakoin River and should include a modern, well-designed, optimized website that creates a memorable and strong online presence in the region. This recognizable brand should be cross-promoted by other organizations and attractions in the Greater Jamestown area. Establishing social media accounts, in addition to more traditional promotional materials, will also be crucial in attracting the attention of various demographics.

Feasibility

Establishing and managing an outdoor music venue can be a significant undertaking. Success of this project will depend largely on the ability to identify a designated event manager who can consistently and effectively contract, coordinate, and execute an extensive calendar of events at the music venue. This individual will need to be able to work closely with the National Comedy Center and other attractions in the area to capitalize on collaboration and marketing opportunities. This project can be scaled up over time with the option of developing more permanent guest seating, adding vendors for food and beverage, and implementing weekend-long signature festivals to attract a larger audience.

Intended Outcomes

This project is intended to establish a seasonal attraction at the Chadakoin River Basin that will appeal to diverse audiences, increase visitor spending in the area, contribute to the cultural environment of Chautauqua County, and help promote the talents of local performers in and around Jamestown. The development of an outdoor performance venue and implementation of a full-scale events calendar will generate economic benefits to the City of Jamestown in a variety of ways including:

- Providing increased performance opportunities for local performers while attracting their fans to the new performing venue
- Generating spending by attendees of the outdoor performance venue at nearby amenities like the beer garden, businesses in downtown Jamestown, and the signature restaurant on the south bank of the Chadakoin
- Generating spending by tourists who travel for live music events in Jamestown, including possible weekend festivals, on lodging, restaurants, bars, and other attractions in the area
- Extending length of stay of visitors transitioning from exclusively daytime activities like paddling and fishing to nightlife activities like dining and attending concerts
- Creating a new platform for marketing the City and a new means of engaging residents

Funding Opportunities

This project will likely utilize internal funding from local municipalities to purchase the outdoor stage and equipment. Funding through local organizations could be pursued to enhance and scale up the size, scope, and offerings at the outdoor music venue. There may be opportunities for grant funding that could offset a substantial amount of costs including:

- The Levitt Foundation, which focuses on reinvigorating public spaces through creative placemaking enabling everyone to experience performing arts across American
    - Offers a matching grant called the Levitt AMP [Your City] Grant Award
    - This opportunity empowers small to mid-sized towns and cities through the power of free, live music
    - Each year, the Foundation awards $25K matching grants to U.S. based nonprofits in small to mid-sized towns and cities
    - This grant funds the Levitt AMP Music Series, 10 free concerts to inject life into public spaces and community destination
    - Finalists for the funding are determined through online public voting

Over the past five years, the Levitt Foundation has awarded more than $2.3 million to 38 communities. Recent winners include the City of Utica. Their application, submitted by the nonprofit Utica Monday Nite (UMN), focused on Monday night entertainment and performances by artists, actors, dancers, and musicians. Kopernik Park in Oneida Square was presented as the ideal venue space, located in the city center and near a refugee center, minority-owned businesses, and working families. Upon receiving the funding, the music series became Utica's only ongoing summer event bringing

people of all ages, neighborhoods, and cultures together. Weekly attendance grew from 100 people to more than 1,000 over the course of three years.

Cost Estimate

The project costs will vary depending on a number of factors, and the following describes some of the costs and associated factors.

- Event Manager: If an existing entity is willing to take on the role of event manager or multiple entities are willing to share the role, no additional cash outlays would be required. However, a part-time event manager position could be created.
- Property access: If a formal legal agreement with the WNYPRR is required, legal fees may be required and would likely range from $5,000 to $10,000.
- Stage acquisition: Stages can be constructed, rented, or purchased. For use at Comedy Park, a temporary outdoor stage appears to be the simplest method to initiate a concert series. Crossfire Sound is located in Brooklyn, New York has provided the following rough estimates for a stage that is a typical size for outdoor concerts (33 feet by 20 feet):
    - Rental (including delivery and set up):
        - Day: $6,000-$7,000
        - Month: $20,000 to $25,000
        - Four months: $60,000
    - Purchase: $140,000 to $150,000
- Restrooms: If permanent restrooms are not available, provisions for rentals should be considered. Single portable toilets may be used, although restroom trailers may be a better application in this case.
    - Rental (including delivery and weekly cleaning):
        - Portable toilets (single): $350 per month
        - Two-stall restroom trailer: $2,000 per week or $4,500 per month
        - Three-stall restroom trailer: $2,250 per week or $6,500 per month
    - Purchase:
        - Two-stall restroom trailer: $33,000
        - Three-stall restroom trailer: $44,000
        - Six-stall restroom trailer: $60,000
        - Eight-stall restroom trailer: $80,000
- Electric Utilities:
    - The Jamestown Board of Public Utilities provided the Gebbie Foundation a cost estimate for supplying electric utilities to Comedy Park in 2018. Using that estimate with a slight increase for inflation the estimated costs are $150,000 to $160,000.
- Marketing:
    - $10,000 to $15,000

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
PARKING AND TRAFFIC STUDY

Project Need

With a significant increase in use of the Basin will come with an increase in parking demand. Although other multi-modal connections surrounding the River will be emphasized – one of the goals of the project is to increase tourism within the area with an expected need for an increase in automotive parking. In addition to parking for visitors, those with kayaks, paddleboards, and similar watercraft will need a place to unload their craft within close proximity to the launch site. Currently, such parking is not available so a Parking Study will be implemented. The Parking Study will likely lead to a Traffic Impact Analysis and subsequent Traffic Impact Study.

Project Description

The project will include both a Parking Study, Traffic Impact Analysis, and Traffic Impact Study. The Parking Study will review current parking supply surrounding the Chadakoin River, evaluate current and future demand, and provide an evaluation of alternatives to increase future parking supply to meet anticipated shortfalls and parking perceptions. The Traffic Impact Analysis will include conducting a trip generation assessment to determine if the project will exceed a threshold of 100 vehicles per peak hour which would then require a Traffic Impact Study (TIS). A TIS includes data collection, field analysis, development of scenarios, and reporting.

Parking Study:

- Inventory of existing supply and demand
- Review of parking policies including fees
- Projection of future demand using
    - Industry Standards (ITE Generation)
    - Local mode share
    - Anticipated share parking arrangements
- Make parking recommendations which may include but are not limited to physical changes which may include new or reconfigured parking lots, policies or policy changes, and a transportation demand model.

Traffic Impact Analysis:

- Trip Generation: Calculate trip generation analysis using ITE Land Codes based on the Trip Generation Manual

Traffic Impact Study:

- Data Collection:
  Complete reconnaissance level survey of study area transportation conditions including intersections, roadway widths, traffic counts, presence and condition of sidewalks and crosswalks, and other site conditions related to local transportation network. This should be completed for major roadway routes and intersections including:

    - Existing Major Routes Roadway Network
        1. Steele Street
        2. Washington Avenue
        3. W 2nd Street
        4. W 3rd Street
    - Existing Major Intersections:
        1. Washington Avenue at 2nd Street (signalized)
        2. Washington Avenue at 3rd Street (signalized)
        3. Steele Street at Sprague Street (signalized)
        4. Steele Street at Barrett Avenue and Glasgow Avenue
- Analyses:
    - Trip Distribution: Distribute project trips based on existing traffic patterns
    - Capacity Analysis: Conduct capacity/LOS analyses for the study intersections and roadways during the weekday AM or PM peak hours, or development peak, whichever has a resulting higher traffic volumes. The roadway capacity analysis will include the LOS and volume to capacity ratio. The intersection capacity analysis will include intersection operations, delays, and queues. The following scenarios are to be analyzed:
        1. Existing
        2. No Build
        3. Build: One build scenario, no phased development
        4. Build with Mitigation: Mitigation techniques can include but are not limited to: street extensions, installation or relocation of traffic signals, adjusted signal phasing and/or timings
- Draft and Final Reports
    - Stand-alone document that describes methodology, data collection, calculations, analyses, findings, and recommendations with all supporting documentation will be prepared.

Intended Outcomes

Intended outcomes stemming from both a Parking Study and Traffic Impact Analysis include knowledge of existing parking supply and potential demand, projection of future demands, recommendations for physical parking changes, and parking scenarios. The intended outcomes will help shape parking development surrounding the Chadakoin River and Basin that will increase accessibility and utilization of Jamestown's natural resources.

Implementation Strategy

Funding for the Studies can come from a variety of state resources. This project will require funding for design and implementation of recommendations. Potential funding sources include:

- Brownfield Opportunity Area Step 3 Implementation
- Local Waterfront Revitalization Program
- RESTORENY
- Empire State Development Strategic Planning and Feasibility Studies
- Green Innovation Grant Program
- Department of Transportation

Cost Estimate

The estimated project costs summarized below:

- Parking Study
  - $30,000
- Traffic Impact Analysis
  - $2,000
- Traffic Impact Study
  - $35,000

Feasibility

The Parking Study and subsequent Traffic Impact Study are highly feasible as they are planning documents that will assist in forming a site plan for construction of additional parking surrounding the Chadakoin River and basin. Currently, there are no formal public parking lots surrounding the Basin and only a handful located along the River. Other lots are available as you move farther away from the Basin but lack streetscaping and pedestrian connections.

Anticipated Schedule

The timeline for a Parking Study and potential Traffic Impact Study spans 1-4 months

- Months 1: Parking Study
- Months 2: Traffic Impact Analysis
- Months 3-4: Potential Impact Study
- Month 5-6: Completion and Distribution of Analysis and Studies

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
STREAMFLOW STUDY AND CONCEPTUAL DESIGN

Project Need

The northern bank of the Basin is currently experiencing significant erosion and concern exists regarding further loss of the streambank. As the Chadakoin River enters the Basin, streamflow primarily occurs along the north of the Basin, and this situation causes erosion of the north bank. Large picturesque, lakeside trees are imperiled by this erosion, and over time the paved walking paths may also be destroyed. Additionally, the southern portion of the Basin receives much less flow, creating stagnant water conditions as well as low flow conditions that result in sedimentation and shallowing of this portion of the Basin. Because this area will be the location of a future water taxi, limiting sediment build-up and reducing the need for ongoing dredging will be important.

Project Description

The proposed project entails the evaluation of options to alleviate the two issues described above. Methods to defect streamflow away from the north bank and increase flow in the southern portion of the Basin will be identified. In order to complete the study, topographic and bathymetric information will be gathered using existing LIDAR data. This information will be used as inputs for a hydrologic model that will help identify potential mitigation measures.

A critical part of the project will include coordination with the New York State Department of Environmental Conservation (NYSDEC) to obtain input on the project, which will play a significant role in achieving NYSDEC approval during the future permitting process.

Evaluation criteria will include the efficacy of the proposed methods to reduce erosion along the north bank and reduce or eliminate sedimentation in the southern portion of the Basin. The project is also anticipated to include the evaluation of improvements to the streambank above and below the defection structure to repair damage caused by previous erosional events. Following the evaluation, conceptual design will further flesh out the preferred solution.

Intended Outcomes

The project will result in the conceptual design of mitigation of two significant issues within the Basin. Once constructed, the mitigation measures will preserve the integrity of the north bank, and save the trees and paved path along the bank. The trees create an aesthetic that should be preserved, and the path is a relatively new amenity that is frequently used by residents and visitors to the City. Additionally, planning activities for increased activity along the north bank, including a beer garden and live music, which will make preservation of the trees and path even more critical. The project will ultimately increase revenues for businesses that cater to visitors to the area by allowing the City to attract more people to the area and to events.

Along the southern portion of the Basin, a planned water taxi will be a critical component to attracting people on Chautauqua Lake. Planned docks along the southern bank will require frequent dredging in order to maintain service for the water taxi unless this project is constructed. The high costs of frequent dredging would increase the water taxi operating budget and could inhibit its long-term viability. Therefore, this project would mitigate such issues and increase the water taxi's likelihood of success.

Implementation Strategy

This project will require funding for the performance of the survey and design. Potential funding sources include:

This project will require funding for design and implementation. Potential funding sources include:

- Department of State Local Waterfront Revitalization Program
- NYS Boating Infrastructure Grant Program
- Federal Land and Water Conservation Fund

Cost Estimate

The estimated costs for the survey and design are $37,500. The attached table provides a breakdown of the estimated project costs which are also summarized below:

- Information Gathering - $4,000
- Hydrologic Modeling - $8,000
- Alternatives analysis - $13,000
- Conceptual Design - $5,000
- Contingency (25%) - $7,500

Feasibility

The primary issue in completing this project will be finding funding to complete the work. The costs of the project are relatively low and the work can be accomplished using readily available equipment. Site access is expected to be granted by the City of Jamestown without delay.

Anticipated Schedule

The Streamflow Deflection Structure – Study and Design can occur within a two-month timeframe. The estimated schedule includes:

- Weeks 1-2: Gather existing information
- Week 3-6: Hydrologic modeling
- Weeks 7-10: Alternatives analysis
- Weeks 11-12: Conceptual design

STREAMFLOW DEFLECTION STRUCTURE STUDY AND DESIGN

COST ESTIMATE

PROPOSED PROJECT COST ESTIMATE
CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

STREAMFLOW STUDY AND CONCEPTUAL DESIGN

ENGINEERING COSTS		
Information Gathering	$	4,000.00
Hydrologic Modeling	$	8,000.00
Alternatives Analysis	$	13,000.00
Conceptual Design	$	5,000.00
Subtotal - Engineering Costs	$	30,000.00
Project Subtotal	$	30,000.00
Contingency (25%)	$	7,500.00
Project Total - Cost Estimate	$	37,500.00

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
SAFETY BARRIER UPSTREAM OF DAM

Project Need

The Warner Dam is located in the City of Jamestown on the Chadakoin River, approximately 3.5 miles from the outlet of Chautauqua Lake. The Dam is equipped with three electrically operated gates, capable of being remotely controlled. The Dam's primary purpose is to reduce flood damage to homes surrounding Chautauqua Lake by regulating flow down the Chadakoin River during the spring runoff season. The Dam presents a dangerous situation for anyone in the water near the Dam, as flow rates can be excessive during peak flow periods. Because the Dam is operated remotely, conditions immediately upstream of the Dam may change rapidly when the Dam is opened without warning to anyone in the water. Additionally, an increase in the use of the Basin for recreational boating (non-powered and powered) will result in a commensurate increased risk of the general public water inadvertently going over the Dam.

A related component to the protective barrier will be the collection and removal of floating debris. Currently, during periods of low flow, floating debris comprised of plastics and other garbage collect above the dam and create a visual and olfactory nuisance.

Project Description

To reduce the potential for anyone to enter the water immediately upstream of the Dam, a floating protective barrier consisting of two elements will be installed.

The first portion of the safety system will include a pipe-through buoy line that will direct kayakers away from the Warner Dam and provide a linear set of hand-holds in case anyone falls in the water and is being pulled toward the Dam. The buoy lone will be brightly colored and clearly visible form the waterline. As shown on Exhibit A, the pipe-through buoy line will be fastened on the north bank and angle towards the south bank near the foot of the pedestrian bridge. At the foot of the bridge, the land is sloped such that boaters can easily pull their kayaks and canoes out of the water at this spot.

A second piece of the barrier system will include floating pontoons that will trap floating debris prior to the material reaching the Warner Dam. The pontoons will be closely linked and include screens below the floating pontoons in order to reduce the potential for material to bypass the debris trap. The debris trap will be anchored to the south shore near the pedestrian bridge and angled downstream to the north shore. The intent of the design is to funnel the debris toward the north shore, which, due to its shallow slope, which will allow for workers to easily gather the accumulated debris from the shore.

The project will also include appropriate signage warning of the hazards of the Warner Dam as well as identify the location of the kayak/canoe pull out area.

Exhibit B contains details on the various elements of the proposed safety barrier system.

Intended Outcomes

The direct benefit of the project will be the significant reduction in the potential for the flow of the River to carry anyone in or on the water over the Warner Dam. This action has the potential to protect the public and limit the chance of severe injury or even the loss of life. This benefit applies to City residents as well as visitors to the area. An indirect impact of the barrier installation will be a likely increase in the use of the Basin by non-motorized boaters, as the barrier will improve a sense of security and safety.

Implementation Strategy

This project will require funding for design and implementation. Potential funding sources include:

- Department of State Local Waterfront Revitalization Program
- NYS Boating Infrastructure Grant Program
- Federal Land and Water Conservation Fund

Cost Estimate

The project costs are estimated at $43,274. The attached table provides a breakdown of the estimated project costs and are summarized below:

- Engineering fees for permitting, project coordination, bidding, and construction observation: $6,750
- Equipment and installation fees: $27,869.20
- Contingency: $8,654.80

Feasibility

The biggest challenges facing the project including funding the construction and long-term maintenance. Although the project costs are relatively low, funding is scarce despite this project's importance to safe use of the Basin. Maintenance issues include identifying which entity would be responsible for any repairs to the barrier system, as well as for the periodic removal of debris.

Anticipated Schedule

The design, bidding, and construction of the safety barrier can occur within a six-month timeframe. The estimated schedule includes:

- Month 1: Design of the safety barrier
- Months 2-3: Permitting
- Month 4: Bidding
- Month 5: Materials procurement
- Month 6: Construction

PROPOSED SAFETY BARRIER

COST ESTIMATE

PROPOSED PROJECT COST ESTIMATE
CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

SAFETY BARRIER UPSTREAM OF DAM

ENGINEERING COSTS			
Permitting/Coordination			$ 3,500.00
Bidding Engineering Costs			$ 750.00
Construction Oversight/Administration			$ 2,500.00
Subtotal - Engineering Costs			$ 6,750.00
CONSTRUCTION COSTS			
Item	Unit Rate	# Units	Cost
Vendor Engineering	$ 1,875.00	1	$ 1,875.00
Boom Barrier	$ 655.60	14	$ 9,178.40
Deflector Panels and Guides	$ 60.60	13	$ 787.80
Safety Floats	$ 139.10	20	$ 2,782.00
Connectors	$ 2.20	46	$ 101.20
Wire Rope	$ 819.00	1	$ 819.00
Wire Rope Thimble	$ 5.10	2	$ 10.20
Safety Shackle	$ 14.80	2	$ 29.60
Regulatory Buoy	$ 270.30	2	$ 540.60
Shoreline Anchor Group	$ 1,640.00	2	$ 3,280.00
Kayak Portage Sign	$ 370.00	2	$ 740.00
Safety Sign	$ 524.70	2	$ 1,049.40
Sign Posts	$ 100.00	4	$ 400.00
Delivery	$ 1,276.00	1	$ 1,276.00
Installation	$ 5,000.00	1	$ 5,000.00
Subtotal - Construction Costs			$ 27,869.20
Project Subtotal			$ 34,619.20
Contingency (25%)			$ 8,654.80
Project Total - Cost Estimate			$ 43,274.00

EXHIBIT A

PROPOSED BARRIER LOCATION

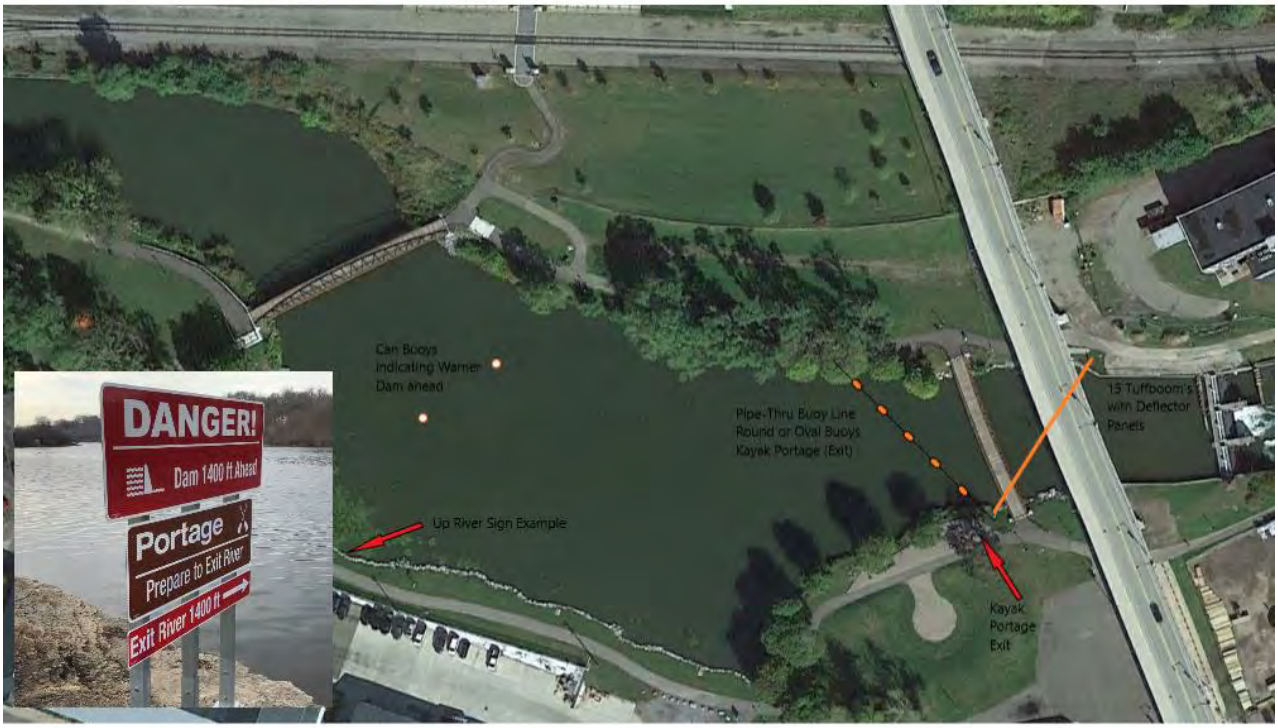

DANGER!
Dam 1400 ft Ahead
Portage
Prepare to Exit River
Exit River 1400 ft
Can Buoys
Indicating Warner
Dam ahead
Up River Sign Example
Pipe-Thru Buoy Line
Round or Oval Buoys
Kayak Portage (Exit)
15 Tuffboom's
with Deflector
Panels
Kayak
Portage
Exit

EXHIBIT B

PROPOSED BARRIER DETAILS

Worthington | TUFFBOOM®

TUFFBOOM - the world's first polymer log boom introduced 25 years ago in 1994. Today's **TUFFBOOM** is stronger, more durable and built with 25-years of lessons learned. Dam operators use TUFFBOOM to control surface debris, provide for public safety boat barriers and define zones of no-entry around dams and powerplants. Each 10' (3m) modular unit links together to form unlimited length boom lines. Our patented Zero Gap deflector system eliminates the spacing between units. Accessories include high visibility mold-in graphics, hanging debris skirts, boat gates, solar lights and more.

Shackle-Free Connections
No More Shackles = No More Hassles
130,000 lb Breaking Strength

Made from thick-walled, UV resistant resin, each boom includes a high load bearing internal steel channel through which all boom-to-boom connections are bolted. 100% closed-cell foam fill makes **TUFFBOOM** unsinkable.

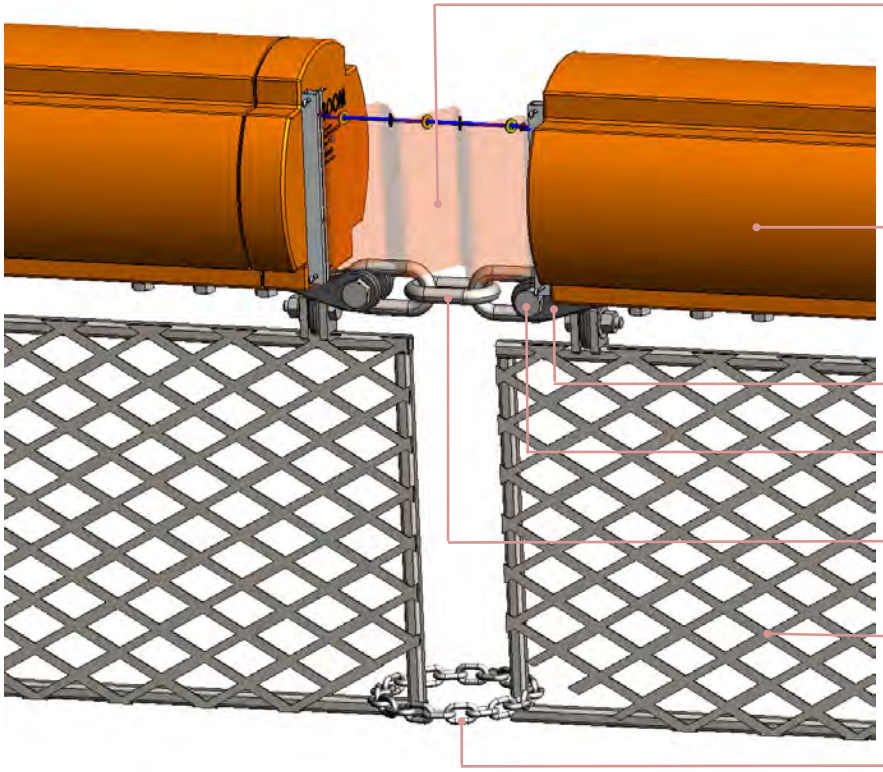
Whether your goal is to stop a 50' (15m) long tree or keep boaters a safe distance from your dam, the solution is simple. The solution is **TUFFBOOM.**

Features (At-A-Glance)

- **Shackle-Free Connections** for greater reliability and freedom of movement.
- Connection breaking strength exceeds 130,000 lbs.
- Heavy-wall impact resistant polyethylene with max. UV resistance.
- Unsinkable solid internal core of non-water absorbing foam fill. Maintains buoyancy even when punctured.
- High load bearing internal steel channel provides strength and ballast, resists horizontal and vertical loads.
- Zero Gap built in design between units.
- Connections designed for continuous motion and heavy loads.
- Mold-in Graphics™ with standard or customized warnings.
- Exceptional debris load capacity.
- Available in International Orange, Safety Yellow, Log Boom Brown, Forest Green, Black, White, Red, Navy Gray, Sand Tan.
- High Visibility, high buoyancy for maximum freeboard visibility.

Quick Specifications

Diameter: 16 in (40.6 cm)
Single Float Length: 120 in (305 cm)
Center-Center Length: 134 in (340 cm)
Weight (dry): 141 lbs. (64 kg)
Buoyancy: 700 lbs. (317 kg)
Freeboard: 12 in (30.5 cm)
Design Strength: 130 kips
Spacing Between Units: 14 in (35 cm)



Inter-boom flexible fine debris deflector panels (Patent Pending)

TUFFBOOM barrier float. Available in range of color and graphic options.

Shackle-Free connection assembly allowing design loads up to130,000 lb (59,000 kg). (Patent Pending)

High-Strength structural bolt assemblies with self-locking hot dipped galvanized nuts.

Interboom connection chain. No Shackles. Provides full freedom of motion and high load bearing capabilities.

Optional debris screens available in mesh and solid panel construction.

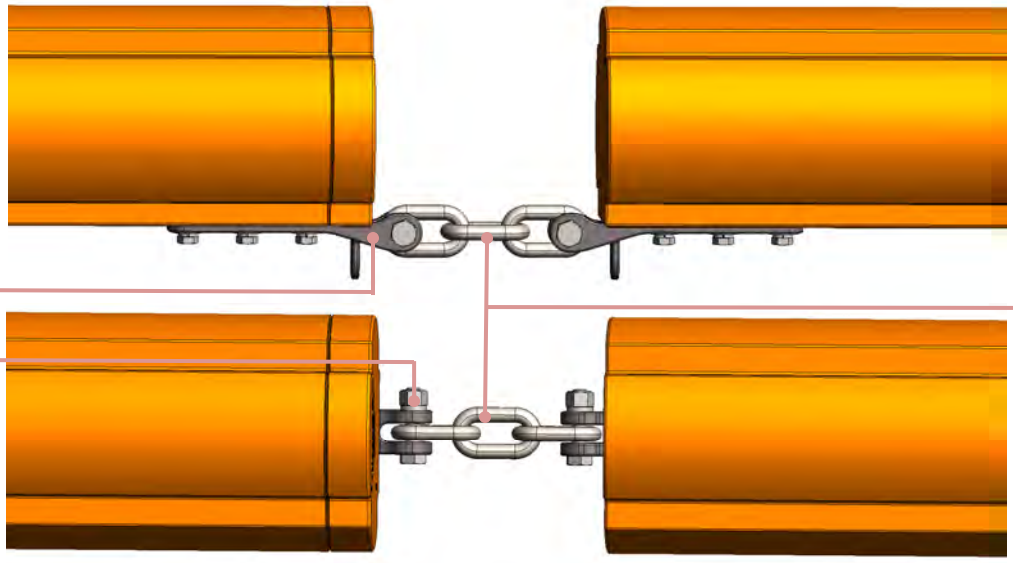
Debris Screen connection hardware prevents screens from rolling.

Worthington Products Inc.
1520 Wood Ave SE
East Canton, OH 44730
U.S.A.

Tel: +1 330.452.7400
Fax: +1 330.452.7495
Email: sales@tuffboom.com

GSA Contract Holder

Worthington | CONNECT®



TUFFBOOM is celebrating 25-years as the Worlds first polymer log boom. Since that 1994 introduction, there have only been two (2) changes to the way the booms are connected. UNTIL NOW.

25-years yields great lessons. For example, shackles and links are not well-suited for the harsh environments of many boom installations. So we challenged our engineers to develop a stronger and more reliable boom connection.

- We eliminated shackles because they are prone to come apart.
- We eliminated the thin-flat bottom plate because the holes oval out over time.
- We nearly tripled the load capacity of the booms.

Welcome to the new age of reliable, high-load boom connections and say good-bye to unreliable shackles.

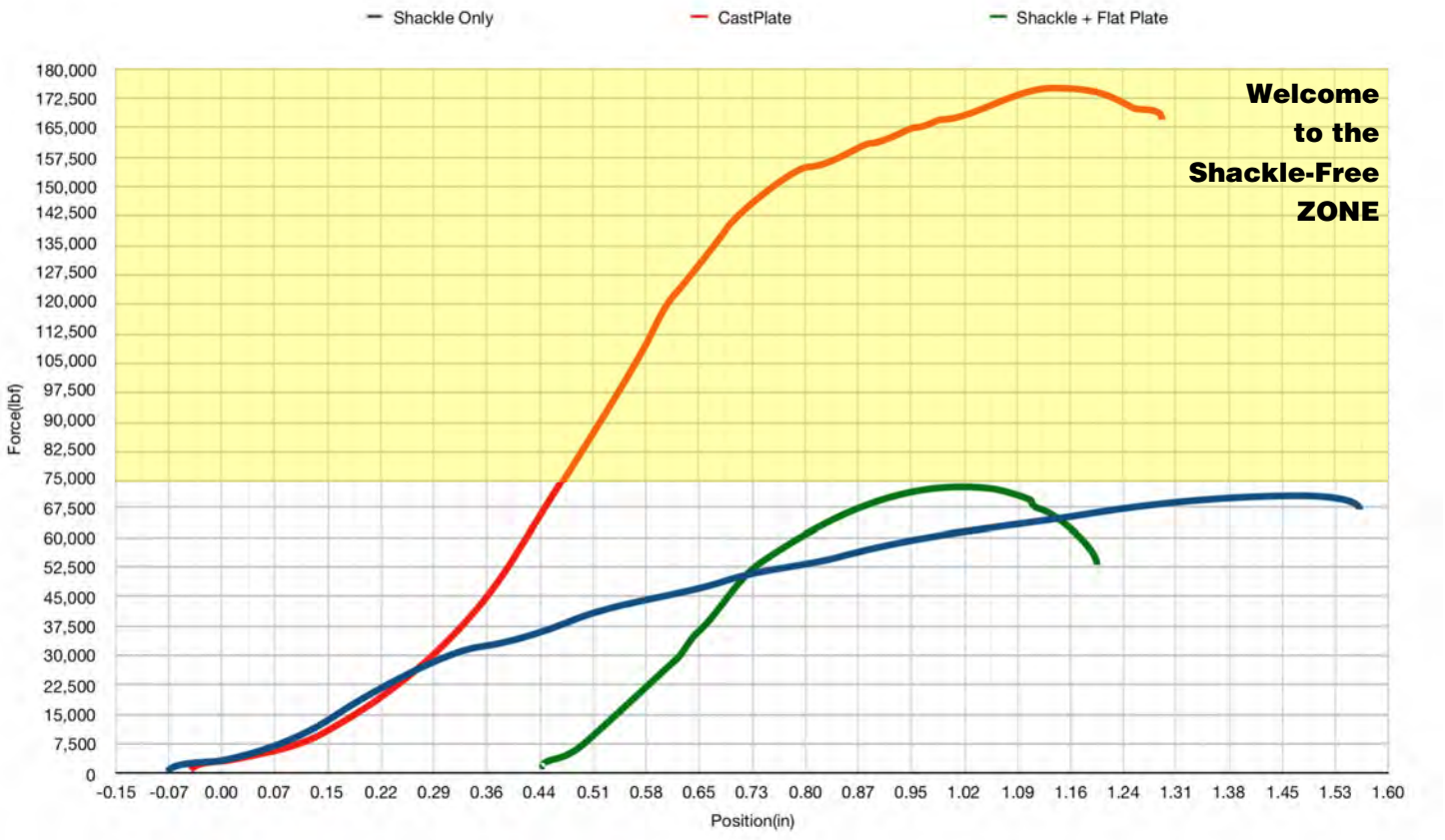
Our shackle free connections are now standard on all new booms and can easily be retrofitted to existing boom installations. On your new boom tender, be sure to specify only shackle-free high load connections for long term, maintenance free performance.

Superior Load Capacity = Superior Field Performance

We placed our new shackle-free connections in head to head tests against the old Shackle-Link Shackle connections. The results speak for themselves! A nearly 250% increase in overall breaking strength. You can't get get these results with shackles and flat plates.

It's time to make the switch to Shackle Free Connections.

Higher load capacity means greater margins of safety in connector capacity, fewer stress breaks and overall peace of mind.



Specification: Inter-boom Connection Hardware:

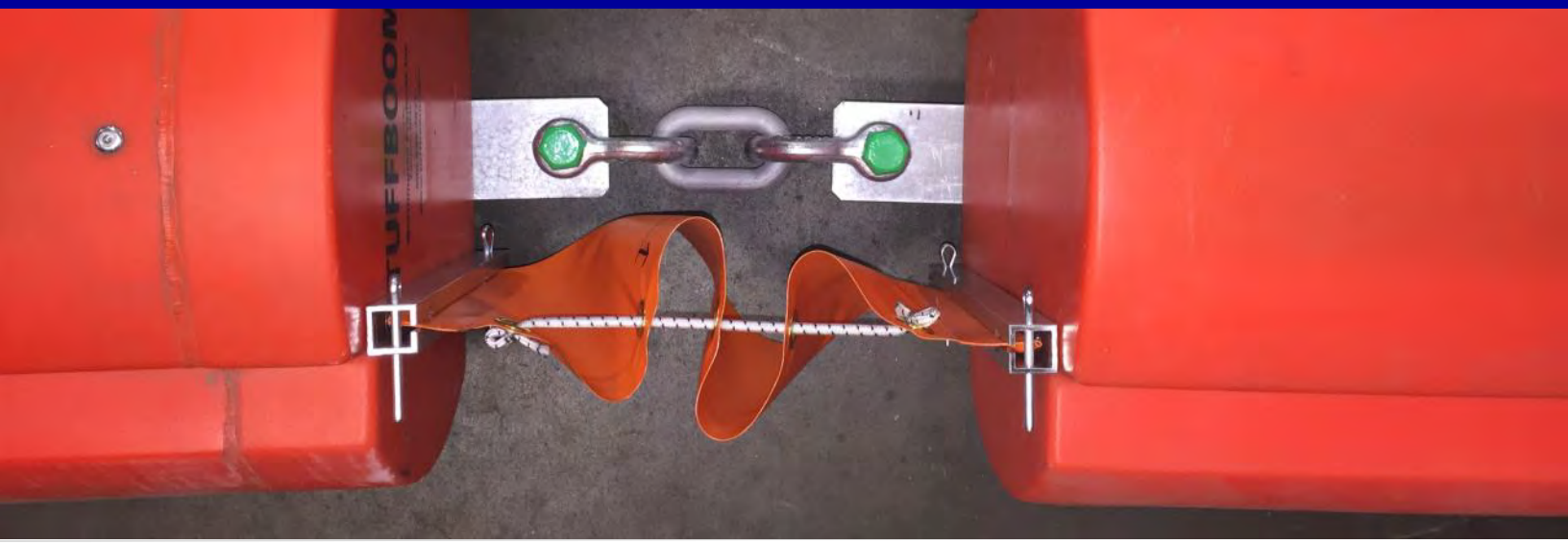
Connections between boom units shall permit full freedom of motion simultaneously in horizonal and vertical planes.

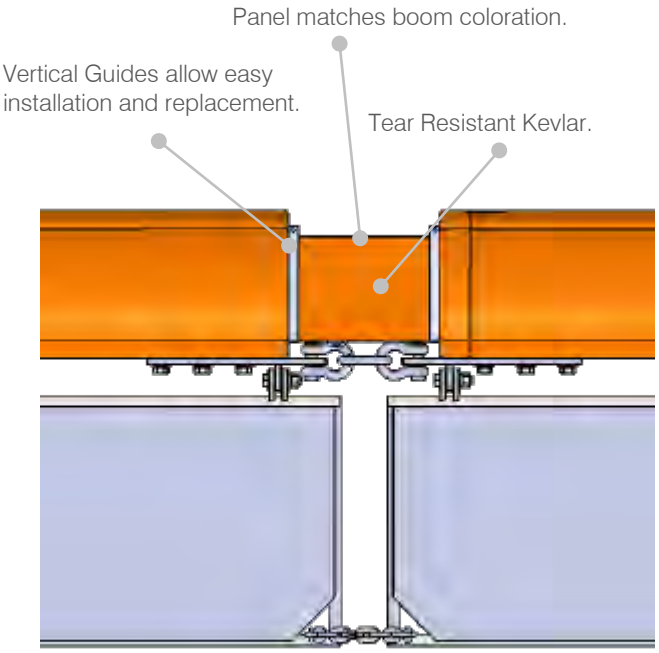
The minimum acceptable tensile strength for connection hardware shall not be less than 120,000 psi (54,434 kgs) and have a design factor of safety that is not less than 1.5. Manufacturer shall submit to owner certified independent test results confirming the minimum breaking strength is not less than 120,000 psi (54,434 kgs).

Wire rope connections, if used to connect boom units, must meet the minimum breaking strength requirements, spacing requirements and must include a swage fitting and thimble eye on each end. The use of Flemish eyes, and wire rope clips is not permitted.

Hot dipped galvanizing should be in accordance to the current version of ASTM A-123/A 123M and ASTM A-153/A 153M as applicable.

Worthington | **TUFFBOOM** Deflector Panels





TUFFBOOM Deflector Panels prevent smaller surface debris from passing between boom sections. These versatile panels are especially favored for use near fish ladders and collection systems where even very small floatable debris can create large problems.

TUFFBOOM Deflector Panels are manufactured using extremely strong, PVC & Kevlar materials specifically suited for marine environments. Individual panel segments are designed to permit a full range of movement between boom units without ripping or tearing.

Special marine grade aluminum guides mounted to the ends of the booms allow for ease of installation and replacement of individual panel segments. Panel and boom colors match or choose a contrasting color for added effect.

Worthington Products Inc.
3405 Kuemerle CT NE
Canton, OH 44705 (U.S.A.)

Tel: +1 330.452.7400
Fax: +1 330.452.7495
Email: sales@tuffboom.com

FLOAT COLLAR CAN BUOYS

Part No.	FCCB-1428EBW	FWFCCB-1428W	SWFCCB-1428W
Can Dia & Height	14” x 30”	14” x 30”	14” x 30”
Float Collar Dia & Height	28” x 12” (89” total height with Ballast Post.	28” x 12”	28” x 12”
Draft	>9” (51” with Ballast Post)	>6”	>9”
Submerged Buoyancy	350 lbs	350 lbs	350 lbs
Net Weight	120 lbs	120 lbs	120 lbs
Max Mooring Tackle Weight for 36” Exposure	29 lbs	29 lbs	29 lbs
For Use In:	High Winds & Waves	Faster Moving Water	Still Water
Eyebolt Location	Side on Ballast Post	Side	Bottom
Optional Items	Lifting Eye, Solar Light Mounts, Solar Lights, Solar Light Protective Cages, Ownership Labels		

Features (At-A-Glance)

1. Seamless one-piece ultra-strong high-density polyethylene plastic with UV stabilizers. No ABS, No CAPS.
2. Highly stable design includes external ballasting.
3. Completely foam filled with urethane foam meeting or exceeding U.S. Coast Guard requirements.
4. 1/2” rod with swivel eye as STANDARD.
5. Graphics are solid vinyl with a 5-year factory warranty not to fade. No Silk-screening.
6. 3” reflective orange band.
7. Standard symbols and messages.
8. Self righting without tackle
9. Field replaceable eye for easy maintenance.
10. Impervious to chemicals including gasoline, solvents, oils.

Anchoring Requirements:
Worthington can provide all your anchoring needs from cable, swivels, chain, shackles, anchor forms or concrete anchors.

www.tuffbuoy.com

REGULATORY CAN BUOYS

9" & 13" Diameters

Features (At-A-Glance)

1. Seamless one-piece ultra-strong high-density polyethylene plastic with UV stabilizers. No ABS, No CAPS.
2. Completely foam filled with urethane foam meeting or exceeding U.S. Coast Guard requirements.
3. Standard STAINLESS STEEL mooring eye recessed with access channels for easy connection. Units stand flat for easy storage.
4. Internal concrete counterweight.
5. Graphics are solid vinyl with a 5-year factory warranty not to fade. No Silk-screening.
6. 3" reflective band your choice of silver or orange.
7. Standard symbols and messages.

Options

USCG retroreflective tape
Owner or agency identification graphics
Heavier wall thickness
Alternate colors
Pickup eyes
Hardware for mounting lights
Cone or Nun top

Specifications

Part Number	RB-961W	RB-1362W
Diameter	9"	13"
Length	61"	62"
Exposure	36"	38"
Submerged Buoyancy	84 lbs	160 lbs
Net Weight	55 lbs	110 lbs
Shipping Weight	56 lbs	116 lbs

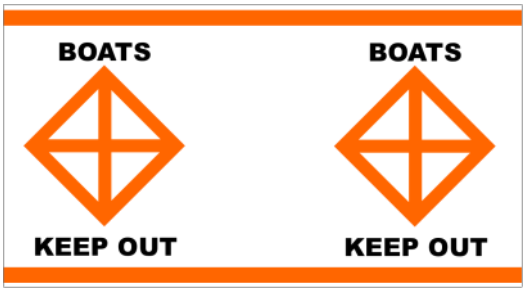
Worthington's graphics are made from the highest quality self-adhesive tape specially designated for buoy applications. Hi-intensity retroreflective banding assures even nighttime visibility.

Chose from the most common messages shown below or contact us with your custom message.

KEEP-OUT BUOYS	CONTROL BUOYS	INFORMATION BUOYS	HAZARD BUOYS
2" band width 11" wide, 14" high International Orange	2" band width 11" wide, 14" high International Orange	2" band width 11" wide, 14" high International Orange	2" band width 11" wide, 14" high International Orange
STANDARD MESSAGES KEEP OUT NO BOATS BOATS KEEP OUT DANGER DAM DAM AHEAD CLOSED AREA NO BOATING RESTRICTED AREA	**STANDARD MESSAGES** NO WAKE IDLE SPEED SLOW NO WAKE SPEED ZONE SKI AREA NO SKI SLOW 5 MPH SLOW 10 MPH	**STANDARD MESSAGES** CANOE PORTAGE PORTAGE HERE KAYAK PORTAGE MARINA ENTRANCE TAKE OUT FISHING ZONE MOORING ZONE	**STANDARD MESSAGES** ROCK DANGER SHALLOW AREA HAZARD AREA DANGER DAM STUMP SHOAL

REPLACEMENT VINYL SIGN KITS

Each kit includes a white self-adhesive wrapper complete with orange bands, symbol and



Please provide the following details when ordering replacement vinyl sign kits

- Buoy Diameter
- Symbol Type
- Message Text
- Orange Band Material
  - standard non-reflective
  - Orange retroreflective

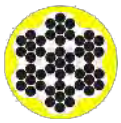
In addition to complete vinyl replacements, we also offer replacement symbols, message text and reflective banding. Your **Worthington buoy expert** will be happy to assist with these needs.

Worthington Products Inc.
3405 Kuemerle CT NE
Canton, OH 44705
U.S.A.

Tel: +1 330.452.7400
Fax: +1 330.452.7495
Email: sales@tuffboom.com

GSA Contract Holder

Nylon Coated Cable



7 x 7 galvanized, nylon coated aircraft cable offers high strength and durability. The yellow, waterproof exterior cable coating makes handling safe and provides added

Coated O.D.	Cable Dia.	Construction	Weight Lb/Ft.	Breaking Strength Lbs	Spool Size	Spool Weight	Part Number
5/32″	1/8″	7 x 7	0.28	920	1000′	28	WRS/Y/125/1000
1/4″	3/16″	7 x7	0.65	3700	500′	37	WRS/Y/188/500
5/16″	1/4″	7 x 7	.12	6100	500′	60	WRS/Y/250/500
15/32″	3/8″	7 x 19	.28	14400	500′	180	WRS/Y/325/500

Cable is sold by the spool

Chain

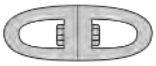
Type	Size	Weight Lb/Ft	Working Load Limit Lbs	Length per Drum	Part Number
Galvanized Proof Coil Chain	1/4″	.42	1300	400′	CHAIN-PC025/G/400
	3/8″	1.36	2650	200	CHAIN-PC038/G/200
	1/2″	2.3	4500	100′	CHAIN-PC050/G/100

Chain may be purchased by the foot. Additional cut charges will apply.

ANCHOR SHACKLES

Size	Weight	Working Load	Part Number
5/16″	.25		CS-5/16″-G
3/8″	.30		CS-3/8″-G
1/2″	.75		CS-1/2″-G

SWIVELS

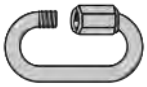


Size	Weight	Working Load	Part Number
1/4″	.21		SW-1/4″-G
3/8″	.61		SW-3/8″-G
1/2″	.93		SW-1/2″-G

CABLE CLAMPS

Size	Weight	Working Load	Part Number
3/16″	.11		WRC-3/16″ GALV
1/4″	.16		WRC-1/2″ GALV
5/16″	.28		WRC-5/16″ GALV
1/2″	.82		WRC-1/2″ GALV

QUICK LINKS

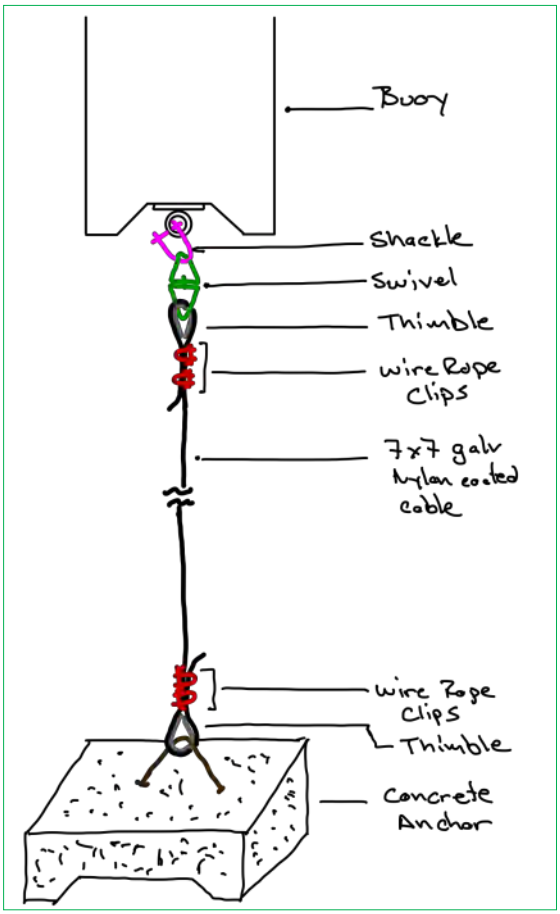


Size	Weight	Working Load	Part Number
1/4″	.21		QUICK LINK 1/2″
3/8″	.61		QUICK LINK 3/8″
1/2″	.93		QUICK LINK 1/2″

CABLE THIMBLES

Size	Weight	Working Load	Part Number
1/4″	.21		WRT-1/2″ GALV
3/8″	.61		WRT-3/8″ GALV
1/2″	.93		WRT-1/2″ GALV

Typical Buoy Anchor Connection



We also offer a complete selection of Stainless Steel hardware. Call for details.

www.tuffbuoy.com

ANCHORING *(Excerpts from "An Owners Guide to Private Aids to Navigation, 2001, Canadian Coast Guard)*

The deployment of the buoy system involves the design, construction and sizing of the mooring anchor. In making determinations for this component, the important thing to remember is that the mooring anchor weight must be sufficient to withstand any vertical or horizontal force which may be placed on it, and consistently hold the buoy on station. Failure of the anchor in this respect can have very serious consequences. Thus, appropriate anchor sizing and placement is essential.

As a general rule, the ability of an anchor to hold position is dependent on the following factors:

i. Seabed Type

A mooring anchor needs to be carefully paired with the prevailing seabed type. Simply stated, much of the holding power of the mooring anchor is dependent on the level of friction which exists between the sinker and the seabed. As a general rule, the more cohesive the bottom type, the more horizontal friction there is between the two materials and the more the force required to move the anchor. It follows that the less cohesive a bottom, the more consideration should be put into providing a larger sinker or adding a second sinker to the mooring system.

Because several bottom conditions exist within the confines of each individual water body, those wishing to establish a private buoy should become familiar with the bottom types in order to properly determine mooring requirements. Overall, the deployment site should be relatively flat with no steep slopes or drop-offs. Where poor bottom conditions exist, mooring anchor weights should be increased to ensure positioning. If after all efforts, the bottom type cannot be determined, assume the worst bottom condition prevails.

NOTE: Soft bottoms will generally have more holding force than rocks, gravel or shells.

ii. Anchor Material

In choosing a mooring anchor, the density of the anchor material is critical due to the loss of weight which materials experience when fully submerged. This is known as the material's submerged weight and is expressed as a factor of the materials dry land weight.

As illustrated BELOW, some materials perform better than others under water (e.g. a 100 lb / 45.5 kg concrete anchor weighs only 56 lb / 25.5 kg under water while the same sized steel anchor weighs 87 lb / 39.5 kg).

Submerged weight of anchor materials in water.

CONCRETE - 56 % of dry land weight

GRANITE - 64 % of dry land weight

IRON - 86 % of dry land weight

STEEL - 87 % of dry land weight

The low cost and ease of construction associated with concrete make it the most common material used in anchor construction. However, because of the reduced weight of concrete once submerged, larger sizes may be needed to achieve desired weights. This reduction in weight may be improved by reinforcing the concrete with steel or scrap chain.

More expensive anchors made from steel, iron or granite may also be used. With the exception of granite, these anchors are usually much smaller and easier to handle and stow in comparison to concrete. These materials are also superior to concrete in terms of durability. Granite, for example, has the longest lifespan of any anchor material.

Anchor Materials

CONCRETE

- low submerged weight, therefore, a larger weight is needed
- inexpensive and easily constructed
- may lack some of the durability of other material
- may be reinforced to add weight

GRANITE

- longest lifespan of any anchor material but priced high and difficult to obtain
- average submerged weight

STEEL/IRON

- high submerged weight, therefore smaller sizes may be used
- easiest to handle and stow
- slightly more expensive than concrete
- durable and readily available

iii. Anchor Shape

There are also **three rules of thumb** about anchor shaping that will help to increase the holding power and overall performance of your anchor.

First;	to keep the anchor from rolling end over end, shape the anchor in such a way that its height is less than half its width.
Second;	provide room for a small cavity in the bottom of the anchor, or purchase only those manufactured anchors which offer this feature. Such cavities act as a suction chamber and can substantially increase holding power.
Third;	square anchors tend to sit flat while round anchors may be prone to roll if poor environmental condtions such as current and wave prevail.

iv. Anchor Weight

The most important factor in determining anchor weight is that of site conditions. It is important to remember that anchor-holding power is partially a measure of the weight of the anchor and thus of the friction between the anchor and the sea bed. Where conditions are calm, such as in sheltered coves or lakes, there is little reason to add additional weight to a mooring anchor. In contrast, in locations where poor conditions prevail, such as heavy current, strong winds, or rough waters, the need for a heavy anchor is a real possibility.

It is therefore recommended that all environmental conditions be taken into consideration before finalizing anchor design.

NOTE:

For smaller mooring scopes (i.e. ratio of mooring length to water depth), a heavier sinker may be required to hold the buoy in position because there will be more tendency for the buoy to lift the anchor under rough sea conditions.

WEIGHT CALCULATION

The following procedure may be used to determine a **minimum** anchor weight for the application in question. This procedure takes the most fundamental and measurable factors into account, including buoyancy of the buoy, weight already present in the form of the initial dry land weight of the mooring line and any buoy, and the expected displacement factor of the sinker material itself. A small safety factor should then be added in consideration of any unseen problems.

Calculation of the minimum anchor weight required may be estimated by using the following equation:

[(SW - OW) x Material Displacement Factor] x Safety Factor = Minimum Anchor Weight

The term SW in the equation refers to the weight required to completely sink the buoy. The term OW can be defined as the offsetting weight of any attachment, and is calculated by adding together the dry land weight of the buoy, the mooring line, and any other addition to the system (i.e. floating devices or righting weights).

The Material Displacement Factor is calculated by dividing the weight of the anchor material on dry land by the weight of the anchor material in water.

For safety purposes, the Coast Guard recommends that a safety factor of **2.5** then be worked in to achieve the final result.

EXAMPLE:

For the purposes of this example, the weight calculations will be made for a concrete anchor, although factors for other types have been included.

Sinking Weight = 100 lb/ 46 kg

TOTAL SW = 100 lb/ 46 kg

Dry Land Weight Buoy = 20 lb/ 9 kg
Mooring Line Weight = 25 lb/ 11 kg

TOTAL OW = 45 lb/ 20 kg

Material Displacement Factor = 1.79
(concrete at 56% = 1.79) *
(granite/rock at 67% = 1.56)
(iron/steel at 86% = 1.16)

Safety Factor = 2.5

Minimum Acceptable Sinker Weight = [(SW - OW) x MDF] x S
= [(100 - 45) x 1.79] x 2.5
= (55 x 1.79) x 2.5
= 98.45 x 2.5

= 246.125 lb or 111.875 kg

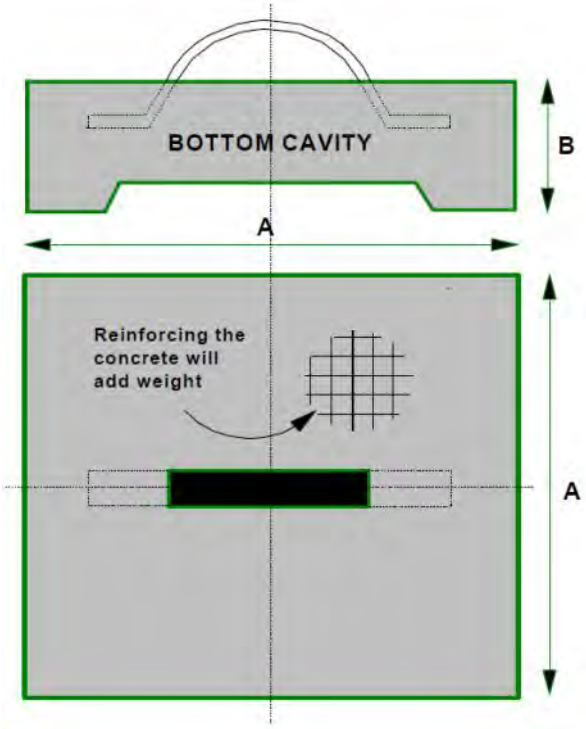
Following designation of the minimum sinker weight, all other relevant factors must be considered. As stated above, the sinker calculation gives only a nominal minimum weight and does not factor in the effects which current, wind, waves, mooring system type, and sea bottom have on the weight. For example, if the sinker was to be positioned in an area where heavy current existed, weight may have to be added to the system to retain precise positioning. In most cases, best judgment must be used to determine whether or not a heavier sinker, over and above that of the minimum, should be used. The more negative characteristics there are for your location and the system type, the more likely it is that a heavier sinker is required; the more positive they are, the more you can be confident that the minimum weight is acceptable.

The following table gives some indication of the approximate anchor dimensions that will be necessary to achieve a specific weight. The table is to be used for concrete anchor applications only. As suggested, reinforcement of the concrete with steel mesh or scrap chain will add weight to the anchor.

Approximate Concrete Anchor Dimension Requirements

DIMENSIONS IN INCHES (MM) A	B	Weight in LB *	Weight in kg *
59.1 (1500)	20.5 (520)	4500	2060
37 (940)	14.2 (360)	1200	560
32.3 (820)	12.6 (320)	800	380
27.6 (700)	11 (280)	550	250
22.8 (580)	9.4 (240)	375	170
18.1 (460)	7.9 (200)	200	100

Weights are approximate



Submerged Weight of Anchor Materials

SALTWATER

Anchor Weight on Dry Land		***Concrete Anchor Weight*** Submerged		***Steel/Iron Anchor Weight*** Submerged	
(lb)	**(kg)**	**(lb)**	**(kg)**	**(lb)**	**(kg)**
5 000	2 300	2 780	1 261	4 280	1 941
3 000	1 380	1 668	756	2 568	1 165
2 000	920	1 112	504	1 712	776
1 000	460	556	252	856	388
500	230	278	126	428	194
300	138	167	76	257	116
200	92	111	50	171	78
100	46	56	25	86	39

FRESHWATER

Anchor Weight on Dry Land		***Concrete Anchor Weight*** Submerged		***Steel/Iron Anchor Weight*** Submerged	
(lb)	**(kg)**	**(lb)**	**(kg)**	**(lb)**	**(kg)**
5 000	2 300	2 835	1 286	4 300	1 950
3 000	1 380	1 701	771	2 580	1 170
2 000	920	1 134	514	1 720	780
1 000	460	557	257	860	390
500	230	284	129	430	195
300	138	170	77	258	117
200	92	113	51	172	78
100	46	56	25	86	39

Worthington | **TUFF**Buoy Safety Floats

TUFFBUOY safety barrier floats are attached in a series to warn or restrict boaters or swimmers from dangerous areas such as spillways, dams, marina's and beaches.

TUFFBUOY floats can be attached using a continuous length of cable (type PT) or using individual cable sections between each float (type SE). Typical spacing varies from 15' to 25' between float units.

Type - PT (Pipe Through)

Steel or PVC pipe through float. Requires wire rope clips each end of buoy.

Type - SE (Swivel Ends)

Galvanized swivel eye each end of float. Requires wire rope between units with rope clips and thimbles.

Specifications:

- Outer shell: Seamless ultra-strong polyethylene shell with UV inhibitors. No ABS. Min 0.140 thickness.
- Buoyancy: Unsinkable even if punctured. Completely foam filled Coast Guard approved foam. 2lb density.
- Suitable for use to -40°F/C.

Options:

- USCG retroreflective tape
- Alternate colors including Transport Canada Yellow.
- Owner or agency graphics.
- Stainless steel hardware.

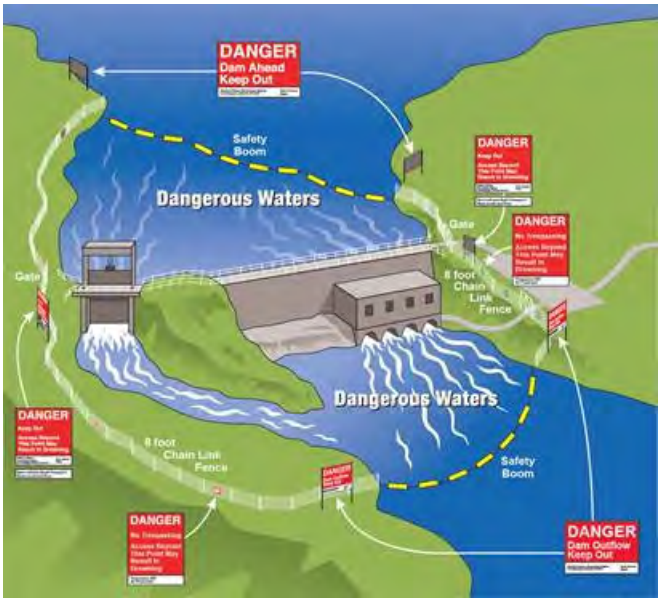
Suggested Hardware:

- Cable, cable clamps, anchor chain, anchor block, cable thimble, cable swivel.

GSA Contract Holder

Part Number	Barrier Style	Dia. and Length	Type	Description – Standard colors are international orange or white (specify color when ordering	Submerged Buoyancy	Net Wt.
T1313-SE		13" round	SE	1/2" dia steel rod thru center with galvanized swivel eye nut both ends.	35 lbs	5 lbs
T1818-SE		18" round			95 lbs	14 lbs
T2424-SE		24" round			240 lbs	20 lbs
T1313-PT		13" round	PT	1/2" sch. 40 PVC pipe thru on 13" round.	35 lbs	5 lbs
T1818-PT		18" round		1" sch. 40 galvanized pipe thru in 18" & 24" round.	95 lbs	14 lbs
T2424-PT		24" round			240 lbs	20 lbs
T1318-SE		13" x 18"	SE	1/2" dia steel rod thru center with galvanized swivel eye nut both ends.	55 lbs	10 lbs
T1830-SE		18" x 30"		5/8" dia steel rod thru center with galvanized eye nut both ends.	200 lbs	25 lbs
T2436-SE		24" x 36"		3/4" dia steel rod thru center with galvanized eye nut both ends.	385 lbs	55 lbs
T2445-SE		24" x 45"			650 lbs	70 lbs
T3648-SE		36" x 48"		Special internal components		
T1318-PT		13" x 18"	PT	1/2" sch. 40 PVC pipe thru on 13" unit.	55 lbs	10 lbs
T1830-PT		18" x 30"		1" sch. 40 galvanized pipe thru.	200 lbs	25 lbs
T2436-PT		24" x 36"			385 lbs	55 lbs
T2445-PT		24" x 45"			650 lbs	70 lbs
T3648-PT		36" x 48"		Special internal components	1,700 lbs	

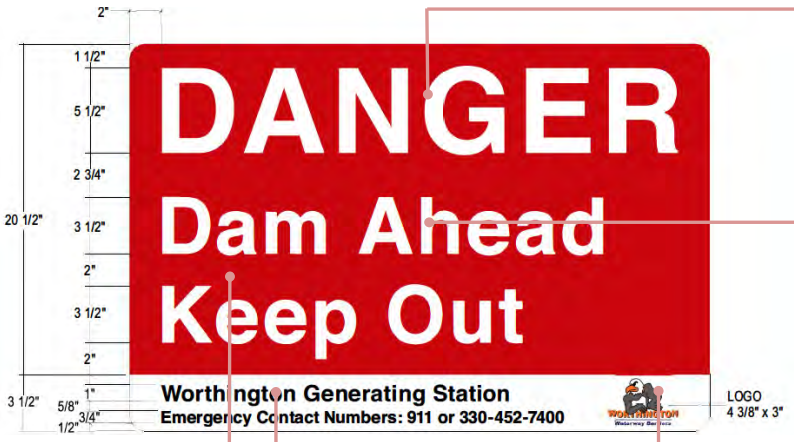
Worthington | DAM SAFETY SIGNS



Dam owners are responsible for the safe operation of their dams. This includes implementing appropriate public safety measures including signage around their dams. For nearly 20-years Worthington has been providing public safety booms and buoys. We also offer compliant Public Safety Around Dams signage.

More than ever, Worthington is your one-stop source for quality booms and buoys, signage, public-safety around dams assessments and design engineering.

Worthington | DAM SAFETY SIGNS



Headline - High visibility Helvetica or Arial font. DANGER: White text on red background. WARNING: Black text on yellow background.

Message - High visibility Helvetica or Arial font. White text on red background or black text on white background. Sized according to reading distance and speed of approach.

Identifier Logo - Logo of dam owner company.

Contacts - Name of dam and emergency contact information.

Material - Hi-tensile flat aluminum sheets. Diamond grade retroreflective sheeting.

*** Pictograms** (not shown) - easy to understand. Great for use in bilingual regions.

Sign Sizing:

Worthington offers standard and custom sized signs. Standard sign sizing is shown below:

Sign Size:	General Use Guidelines
1ft x 2ft	Perimeter fencing where approach is by foot on land. Low risk areas.
2ft x 4ft	Perimeter fencing where approach might be by slow moving vehicle with good visibility. Use on gates. Low to medium risk areas.
4ft x 8ft	Shoreline areas or land based locations where risk is medium to high and approach velocity medium to high.
8ft x 16ft	High risk areas where approach velocity is high and/or where channel width is large.
4ft x 56ft	Individual sign panels placed on face of powerhouse or dam to provide maximum visibility.

The above sign sizing guidelines are only suggestions based on industry best practices. Worthington assumes no responsibility that any of our standard signs are sized properly for the location and level of risk. It is the dam owners responsibility to determine the level of risk and sizing need for signage.

Sign Size		Headline Panel		Message Panel	
Height	Width	Text Height (in)	Safe Viewing Distance (ft)	Typical Text Height (in)	Safe Viewing Distance (ft)
1 ft	2 ft	2	70 ft	1.0 to 2.0	33 ft to 66 ft
2 ft	4 ft	4	130 ft	2.0 to 4.1	66 ft to 135 ft
4 ft	8 ft	8.25	250 ft	4.1 to 6.1	135 ft to 200 ft
8 ft	16 ft	15.5	500 ft	8.2 to 12.3	250 ft to 380 ft
4 ft	56 ft	40	1,200 ft	N/A*1	N/A

Worthington Products Inc.
1520 Wood Ave SE
East Canton, OH 44730
U.S.A.

Tel: +1 330.452.7400
Fax: +1 330.452.7495
Email: sales@tuffboom.com

GSA Contract Holder

Site Design
Services

Contract No.: WP17025-009-25.34

Level 1 Engineering

Services

General Boom Line Tension Calculations
Anchor Design with Load Calculations
Detailed Project Plans

Site Design Services

Designed to meet your project requirements

Worthington offers multiple levels of site design services tailored to meet your on-site needs and capabilities. Our services are structured so that you can decide how much, or how little, engineering and design support you require to get your boom project up and running.

SERVICE LEVEL	DESCRIPTION
Level 1 Anchor Loads	Using a marked up aerial image or on a drawing that you provide, we supply you with the boom tension at each anchor point based on standard site parameters that you provide to our engineers
Level 2 General Layouts with representative anchor size & type	Worthington provides standard General Layout drawings depicting the boom line position, catenary and location of anchor points. Generic anchor drawings are provided based on the Geotech characteristics for each anchor point. Boom line tension is shown for each anchor point and drawings are stamped to certify the load bearing capacity of the critical components.
Level 3 Full Project Engineering	Worthington engineers visit your site[1], acquire all site parameters, prepare a detailed design brief with calculations, prepare a full set of installation drawings and drawings stamped as for construction.

What's Included:	WPI Item Ref	Level 1	Level 2	Level 3
Boom line tension (basic tension at anchor points)	Design-Boom Tension	Included	Included	
Boom line tension c/w design calculations	Design-Design Calcs		Optional	Included
Aerial image or site plan depicting boom position, sag and tension at anchor points	Design-Aerial w/ Layout	Included		
General layout drawings of boom line	Design-Gen Layouts		Included	Included
Generic anchor drawings	Design-Anchor Generic		Included	
Engineering site visit	Design-Site Visit		Optional	Optional
Complete Design brief with calculations, assumptions, results	Design-Design Brief			Included
Site specific anchor drawings	Design-Anchors Detailed			Included
Specifications on drawings	Design-Specifications	Included	Included	Included
Site Survey: Bathymetric, Topographic & Geotech/Soil survey	Design-Topographic			Optional
Flow-3D study	Design-Flow3D			Optional
Solidworks Drawing Format	Design-SolidWorks		Included	Included
CAD Drawing format	Design-AutoCAD		Optional	Optional
"For construction detailed drawings"	Design-100% Submittal			Included
Engineers Stamp	Design-Engineers Stamp			Conditional
As-Built drawings	Design-As Builts			Optional
Weak Link Design	Design-Weak Link	Optional	Optional	Optional
Information required by Worthington Products		**Level 1**	**Level 2**	**Level 3**
Surface velocity at boom location (Ft/sec, m/sec)		X	X	X
Aerial imagery or site plan depicting boom location		X	X	X
Wind speed (mph, kmh)		X	X	X
Wave height (ft, m)		X	X	X
Debris Field Depth		X	X	X
Bathymetry/Topography/Geotech			X	X

1. Optional service. Additional fee's apply.

For more complete information on the range of Site design services offered by Worthington, please contact a Worthington support representative.

Design services provided by Worthington's engineering/design affiliate Revelostoke Design Services of Winnipeg, MB (Canada)

WORTHINGTON Waterway Barriers

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
SIGNATURE GARDENS

Project Description

Erosion along the north shore of the Chadakoin River basin is an ongoing concern that threatens the long-term viability of the land uses along the riverbank, reduces the structural integrity of many trees, and poses a potential safety hazard. At the same time, there is significant green space behind the National Comedy Center that is available for development.

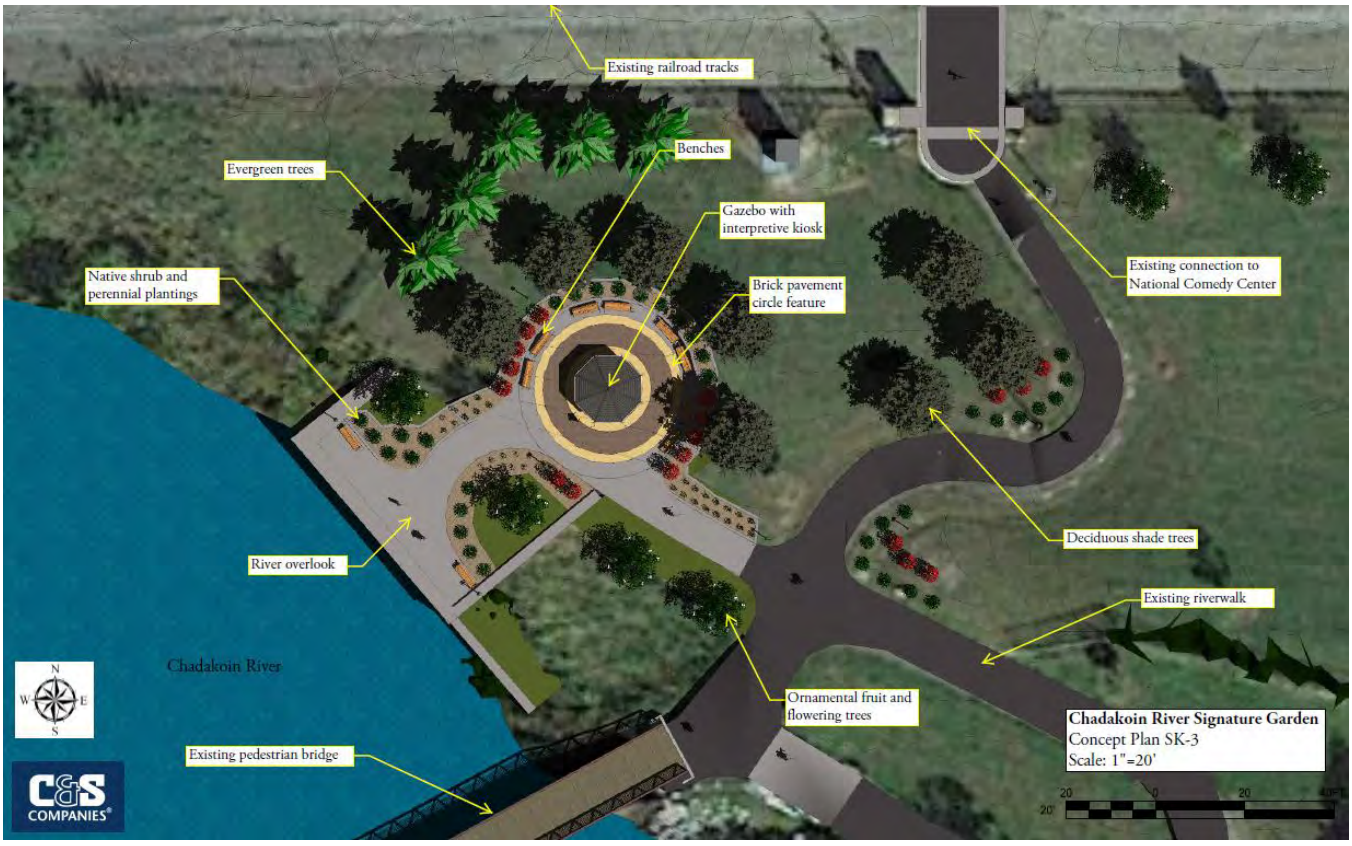
The development of the "Signature Gardens" will serve both as an enhancement to the North Basin green space and as infrastructure designed to collect and convey stormwater from the area. Situated on the western end of the north bank of the Chadakoin River Basin near the pedestrian bridge to Panzarella Park, the project will include ornamental trees, native shrubs, annual and perennial plants, a scenic river overlook a gazebo, and infrastructure that mitigates the currently unmanaged stormwater runoff.

Features

The Signature Gardens concept was initially designed as a passive recreation asset that would draw visitors to the North Basin, add to the overall attractiveness of the site, enhance the view from the South Basin area, and provide a quiet, shaded, outdoor seating area. It was subsequently suggested that the chosen site could also offer a solution to a long-standing erosion problem caused by severe stormwater runoff due to the lack of vegetation, the grade from the Comedy Center to the River, and the existing soil conditions. Features at the Signature Gardens may include a fountain, benches, pergolas, arbors, annual flowers, perennial plants, shade trees, solar powered lighting, and rainwater collection and conveyance infrastructure. Consideration should be given to incorporating locally-created artworks and craftworks into the design to help create a sense of community pride. The design and installation of features should take into account maintenance and repair responsibilities and costs (see "Ownership and Maintenance" below).

The rendering below includes the following amenities:

- Gazebo with interpretive kiosk
- Benches
- Brick pavers
- River overlook
- Native shrub and perennial plantings
- Ornamental fruit and flowering trees
- Evergreen and deciduous shade trees
- Access points to the National Comedy Center, Riverwalk, and pedestrian bridge to Panzarella Park



Addressing Erosion

Erosion on the north bank of the Chadakoin River, particularly in the area of the Signature Gardens, is a critical concern for the long-term integrity of the riverbank. Installation of the Signature Gardens will offer an opportunity to reduce and redirect storm runoff in a variety of ways and with several options.

As part of the initial planning and design, an evaluation of drainage patterns and topography should be completed to identify water movement. That evaluation will aid in a project design that can incorporate sustainable gardening practices including native plantings to create water diversion patterns, minimization of hard surfaces, and identification of water management, storage, collection, and recycling systems that may include rain barrels or cisterns, green roofing, storm water boxes, and bioswales. Specific methods for minimizing hard surfaces include using gravel instead of pavement, installing steppingstones for a pathway instead of concrete, avoiding compacting soil with heavy equipment, and using porous paving. Plantings should include trees, shrubs, and bushes that hold rainwater and keep soil in place, as well as grasses and groundcovers that slow runoff, filter pollutants, and allow water absorption.

Efforts have already been initiated to address erosion in the South Basin area. The Jamestown Department of Public Facilities and the Jamestown Board of Public Utilities have partnered with the Chautauqua County Soil and Water Conservation District and the Roger Tory Peterson Institute to improve stormwater management, stabilize the shoreline, and plant vegetated buffers. The Signature Gardens would complement similar efforts to prevent erosion in the North Basin area.

Interpretation

The Signature Gardens are an ideal venue to introduce the ecology of the entire Chadakoin River experience, offering an opportunity to interpret the various plant life at the site and to use signage and mapping to encourage further exploration of the Basin and River Corridor areas. The Gardens could also host lectures, guided tours, and other educational presentations.

Feasibility

Site Access

The proposed development area for the Signature Gardens will likely include multiple property owners including the City and the National Comedy Center via its lease from the railroad. This will necessitate long-term access rights as well as approvals for the capital improvements. The public exigency created by the erosion conditions on the north bank of the River may leverage a legal approach to site access if negotiations are unsuccessful. Because the City of Jamestown owns the Riverwalk right-of-way, the City may be the logical party to acquire access to the site.

Ownership and Maintenance

There is no logical “owner” of the Signature Gardens, either as an asset or for purposes of ongoing maintenance and repair. Its primary benefit is to the community at-large, and any value to area commercial enterprises would be considered residual – at least in the near term. Basin area activity in general may eventually represent a significant market and attraction for neighboring commercial businesses, both in the Basin area and in downtown Jamestown, at which point private sector support for the ongoing maintenance and operation of assets in the Basin area may become viable. Until that point is reached, however, assets such as the Signature Gardens would likely become civic responsibilities. For that reason, two general strategies should be applied: (i) While additional features can be added at a later time, the initial design should focus heavily on assets that will require minimal maintenance or repair such as paths, pavers, benches, and infrastructure, and on plantings such as trees and

native shrubs. Assets such as lighting, a water feature, and plantings that require regular maintenance can be added if and when maintenance and related costs are no longer an issue; and (ii) Efforts should be made to maximize volunteer support and private sector donations.

Maintenance of the garden's infrastructure and vegetation will be critical to the long-term success of the project. A maintenance plan should be developed including identification of a water source, development of a caretaking schedule for vegetation and infrastructure, and plans for re-vegetation if damage occurs.

Implementation Strategy

While an attractive and ecologically significant asset, the Signature Gardens project will not, by itself, draw substantial numbers of visitors to the Basin area. It should be viewed as a complement to those North Basin activities that will substantially increase visitation and is therefore not designated as a priority for early implementation.

As with several other proposed activities, the Signature Gardens present an excellent sponsorship opportunity in return for a contribution for the capital cost and/or for ongoing maintenance. There should also be opportunities to procure voluntary maintenance services from area civic groups, garden clubs, and local businesses.

In addition to municipal, foundation, and private grants and contributions, potential funding sources include:

- NYS Parks, Recreation, and Historic Preservation Zoos, Botanical Gardens and Aquariums Grant (ZBGA)
    - ZBGA is a non-competitive, eligibility-based grant program that provides consistent operational support for existing natural heritage collections and interpretive programs, with the goal of elevating and expanding the quantity and quality of natural heritage learning opportunities available to the public

- Scott's Miracle-Gro Company's Gro1000 Grassroots Grants
    - The focus is on garden and green space beautification projects that incorporate the involvement and engagement of neighborhood residents
    - Eligible applicants include nonprofit organizations, educational institutions, and government agencies
    - Funding up to $1,500

- Parks & Trails New York Partnership Grant Program
    - The program is administered jointly by Parks & Trails New York and the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) and is designed to enhance the preservation, stewardship, interpretation, maintenance and promotion of New York State parks, trails, state historic sites and public lands
    - Increase the sustainability, effectiveness, productivity, and volunteer and fundraising capabilities of organizations that promote, maintain, and support NYS parks, trails, state historic sites and public lands
    - Promote the tourism and economic development benefits of outdoor recreation through the growth and expansion of a connected statewide network of parks, trails, greenways, and public lands

Cost Estimate

The following cost estimate includes lighting and a gazebo as features, both of which can be added at a later time if a cost is a consideration.

PROPOSED PROJECT COST ESTIMATE CHADAKOIN RIVER STRATEGIC BUSINESS PLAN SIGNATURE GARDEN				
SITE ACQUISITION				
Pre-Acquisition Costs				
Purchase Price				
Closing or Other Costs				
Subtotal - Site Acquisition				$ -
ENGINEERING COSTS				
Design Costs (12%)				$ 16,440.00
Bidding Engineering Costs (2%)				$ 2,740.00
Construction Oversight/Administration (8%)				$ 10,960.00
Other Engineering Costs				$ 2,500.00
Subtotal - Engineering Costs				$ 32,640.00
CONSTRUCTION COSTS				
Item	Unit	Unit Rate	# Units	Cost
Mobilization	LS	$4,000.00	1	$ 4,000.00
Grading	CY	$30.00	200	$ 6,000.00
Drainage	LS	$4,000.00	1	$ 4,000.00
Retaining walls	FF	$40.00	500	$ 20,000.00
Concrete pavement	SF	$7.00	1000	$ 7,000.00
Brick pavement	SF	$12.00	1300	$ 15,600.00
Benches	EA	$1,500.00	10	$ 15,000.00
Deciduous trees	EA	$500.00	15	$ 7,500.00
Evergreen trees	EA	$400.00	6	$ 2,400.00
Shrubs	EA	$150.00	60	$ 9,000.00
Perennials	EA	$30.00	150	$ 4,500.00
Turf establishment	SY	$1.00	1000	$ 1,000.00
Lighting	EA	$3,500.00	6	$ 21,000.00
Gazebo	EA	$20,000.00	1	$ 20,000.00
Subtotal - Construction Costs				$ 137,000.00
Project Subtotal				$ 169,640.00
Contingency (25%)				$ 42,410.00
Project Total - Cost Estimate				$ 212,050.00

Anticipated Schedule

The implementation of the signature gardens can occur within a one-year timeframe. The estimated schedule includes:

- Months 1-2: Engineering Design
- Months 2-4: Bidding and Contracting
- Months 5-6: Construction
- Months 7-10: Furnishings and Plantings

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
TRAIL DESIGN AND CONSTRUCTION

Project Need

The City of Jamestown's Riverwalk is a multi-use trail that is focused on connections to many of Jamestown recreational parks and other attractions surrounding the River and within close proximity to the City's downtown. The trail is used by community members for both walking and cycling throughout the year. However, additional extensions could be created to enhance to trail and provide increased connectivity to both McCrea Point Park, Chadakoin Basin and along the Chadakoin River itself. The additional trail would provide a focus on the waterfront and its development, and also would increase the utilization of the trail and provide an increased opportunity to access the waterfront.

Project Description

This project will include the selection of locations for an extension of the trail network, trail design, potential property acquisition, and construction. The project will require the acquisition of two separate parcels to provide Right Of Way. These parcels are located along the existing rail line and 553W 3rd Street. Construction would be implemented in two segments, the first being 0.70 miles for the southern loop of the project and 0.25 miles for the northern connection, totaling 0.95 miles of a 10-foot wide asphalt trail. Retaining walls may be required along with fencing for safety purposes. Pedestrian railing will be required for portions directly abutting the Chadakoin River (0.35 miles total).

Intended Outcomes

Direct benefits will include increased access to the Chadakoin River and expansion of the existing Jamestown Riverwalk. The continued expansion of the Riverwalk is expected to result in an increase in users of the trail, including both City residents and visitors to the area. For residents, the increase in use will result in a commensurate increase in health and wellness. Relative to visitors to the area, an increase in trail usage is expected to result in an increase in tourist residence time and in dollars spent at local businesses.

Implementation Strategy

This project will require funding for design and implementation. Potential funding sources include:

- The Local Waterfront Revitalization Program
- The Brownfield Opportunity Area Program
- New York State Recreational Trails Grant Program
- Environmental Protection Fund: Parks, Preservation and Heritage Grants
- Department of Environmental Conservation Climate Smart Communities Grant

Cost Estimate

The estimated project costs are summarized below:

- Property acquisition fees
    - $70,000
- Engineering fees for survey, design, permitting, and bidding
    - $180,000
- Construction inspection:
    - $145,000
- Construction fees with assumed contingencies, change order and mobilization:
    - $1,180,000

The attached table provides a breakdown of the estimated construction costs.

Feasibility

Property acquisition of two ROW parcels would be necessary for additional portions and expansion of the Jamestown Riverwalk. Public support has been established regarding an increase in recreational activities and waterfront access. Following acquisition the next steps to making the project feasible are funding through either grant support or local sponsorships and donations.

Anticipated Schedule

Trail design can occur within a 1-year timeframe. The estimated schedule includes:

- Months 1-6: Trail survey and design
- Months 5-7: Permitting
- Months 8-9: Bidding

Trail construction schedule varies due to property acquisition and requiring a larger budget for funding. It is estimated that trail construction would take 6-12 months following permitting and bidding and acquiring necessary funds for construction.

TRAIL DESIGN
AND CONSTRUCTION

COST ESTIMATE

PROPOSED PROJECT COST ESTIMATE
CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

TRAIL DESIGN AND CONSTRUCTION

Item No.	Description	Qty	Units	Unit Cost	Extension
201	Clearing and Grubbing	1	LS	$ 45,000.00	$ 45,000.00
203	Excavation (Trail)	2,500	CY	$ 25.00	$ 62,500.00
203	Removal/Modification of retaining wall for "northern connector"	1	LS	$ 60,000.00	$ 60,000.00
203	Fill	750	CY	$ 20.00	$ 15,000.00
209	Temporary Erosion Control	1	LS	$ 15,000.00	$ 15,000.00
304	Subbase Stone	1,250	CY	$ 75.00	$ 93,750.00
402	Blacktop Pavement (Trail)	1,100	TON	$ 100.00	$ 110,000.00
554	Retaining Wall	150	LF	$ 350.00	$ 52,500.00
590	Chain Link Fence	3,000	LF	$ 30.00	$ 90,000.00
607	Pedestrian Railing	2,150	LF	$ 80.00	$ 172,000.00
610	Restoration: Topsoil/Seeding	6,000	SY	$ 10.00	$ 60,000.00
611	Plantings/ Decorative Signage	1	LS	$ 25,000.00	$ 25,000.00
611	Overlook at northern end of "southern loop"	1	LS	$ 25,000.00	$ 25,000.00
619	Work Zone Traffic Control	1	LS	$ 40,000.00	$ 40,000.00
625	Survey	1	LS	$ 15,000.00	$ 15,000.00
680	Rectanglar Rapid Flashing Beacon (RRFB)	1	LS	$ 20,000.00	$ 20,000.00
				Subtotal	**$ 905,000**
	Contingencies	Assume	20%	+	$ 185,000
	Change Order	Assume	5%	+	$ 50,000
	Mobilization	Assume	4%	+	$ 40,000
				Construction Cost	**$ 1,180,000**

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
WATERCRAFT RENTALS

Overview

Outdoor recreation is a powerful economic engine, generating almost $900 billion in consumer spending annually. Outdoor recreation acts as an economic driver by bringing in revenue through tourism, fostering growth in related industries, and helping retain and recruit businesses that offer goods and services to participants. Additionally, increased recreational activity in and around the Chadakoin will improve the look, feel, and overall desirability of the River and Basin, creating necessary. The presence of a rental operation in the Basin will reduce barriers for individuals and families who would like to spend time on the River, but either not have the necessary equipment or cannot easily get their equipment into the Basin. Further, a rental operation is likely to attract "spur of the moment" decisions to access the Chadakoin.

Much of the focus of the Chadakoin Activation Plan is expanding opportunities for Jamestown residents and visitors to experience the Chadakoin River and Basin by targeting public investment that is anticipated to leverage private participation. The construction of a kayak launch win the Basin is a valuable project in its own right but can become significantly more impactful if it helps leverage the creation of a watercraft rental operation servicing the Basin. This activity proposes creating the ideal environment for a rental business to thrive, and then recruiting an operator to run the business successfully.

Project Description

The project involves the establishment of a rental facility for water-based recreational equipment to be located along the banks of the south shore of the Chadakoin River Basin. Rental options would include kayaks, pedal boats, paddle boards, and water bikes. Ideally, the rental facility would either be owned and operated by a private entity or managed by a private entity through a lease or operating agreement. Lawson Boat and Motor, which operates a marina on the Chadakoin River and rents out kayaks, water bikes, and row boats, and is in the process of launching a second rental location at Bemus Point on Chautauqua Lake, would be a good candidate for operating the rental facility in the Basin. Other businesses in the area that rent out recreational water equipment include Evergreen Outfitters (located in Mayville) and Chautauqua Marina (also located in Mayville).

The business would be seasonal, operating during the summer and the shoulder seasons. The owner/operator would be responsible for maintaining adequate staffing, developing and adhering to safety procedures, and establishing a fee schedule for rentals. The project will require a significant initial investment in equipment, which may need to be scaled up as demand increases. The launch facilities would be located on the south bank of the Basin. Structures for ticket sales and storage will be required.

Land Assembly

Land acquisition may include leasing from the Jamestown Board of Public Utilities or Riverwalk Self Storage, both of which own land on the south shoreline. The ticketing and storage facilities do not need to be adjacent to the launch site, but there must be a means of access. Ideally, the rental facility would have access to parking for staff and customers.

Complementary Activities

As a means of generating customer traffic and promoting the business and interest in the Chadakoin River and Basin, the rental facility can offer complementary activities in partnership with local attractions and businesses, such as creating a weekly schedule of classes and workshops related to paddling, guided river tours by the Roger Tory Peterson Institute (RTPI), or stand-up paddle board yoga classes hosted by a local wellness business.

Advertising

Cross-promotion with other businesses and attractions along the Chadakoin Corridor and in the Basin will help generate customers for the rental business. Marketing strategies could also include online advertising via platforms like Google Ads, informational rack cards placed at local hotels and similar attractions in and around Jamestown, social media campaigns on networks like Facebook and Instagram, and promotional packages for families looking for activities in Jamestown. A week-day family focused campaign will help increase usage on the days that are not as tourist-heavy.

Intended Outcomes

The project is intended to establish a rental facility that will accommodate the needs of paddlers living in or visiting the Jamestown area. Having a rental facility in the hart of the Chadakoin River Basin reduces the barrier of entry for individuals and families who may be interested in paddle-based activities but do not have access to the equipment. This increase in amenities on the water will generate economic benefits to the City of Jamestown through a variety of ways including:

- Creating easy and affordable access to the water for recreational purposes for visitors and residents
- Generating increased spending on recreational activities, injecting additional money into the local economy
- Increasing activity in the Chadakoin River Basin and creating a more vibrant feel in the area
- Enhancing the local quality of life by creating additional opportunities for outdoor recreation
- Encouraging City residents to recreate on the Chadakoin River rather than traveling outside of the City, keeping their discretionary spending local

Feasibility and Priority

Feasibility is dependent on securing site access and control for launch, ticketing, and storage facilities and identifying a knowledgeable third-party operator and entering into any necessary agreements. Barriers to success of this project include a failure to identify an operator, lack of advertising and marketing efforts, rental rates that are higher than competitors, or lack of equipment to meet demand.

Public investment in a launch facility becomes the highest priority action item in order to eliminate one project barrier, while also providing opportunity to show the potential for a rental market by increasing paddle-based activities within the Basin. Once the launch is built, marketed and presumably well-utilized, it will be easier to market the business opportunity.

Potential Funding

Strategies for funding this project may be tied to other parts of the Activation Project including habitat conservation, wildlife preservation, and cultural appreciation. Funding will be required for design and implementation. Potential funding sources include:

- National Park Service and River Network - Youth River Education, Recreation Program Grants
    - Funds projects that develop and/or expand "on-water" education, recreation, and/or cultural preservation programs for youth and young adults
    - Projects will include diverse partner organizations that work together to enhance and expand availability of recreational, educational, and cultural preservation opportunities and programming for youth and adults on land and on water
    - Awards range from $5,000 to $25,000
- National Park Service's Land and Water Conservation Fund – Outdoor Recreation Legacy Partnership Program
    - Nationwide, federal, urban-focused grant program that funds projects that will create or reinvigorate parks or other outdoor recreation spaces to encourage people to connect or re-connect with the outdoors
    - Focus on projects that directly connect people to outdoor places in underserved communities, help stimulate economic development, and involve and expand public-private partnerships

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
WATER TAXI DOCK AT SOUTH BANK (CHADAKOIN RIVER BASIN)

Overview

The proposed Chadakoin River Water Taxi project requires the construction of a dock in the Basin to complete the linkage of Chautauqua Lake to the Basin and downtown. Currently, there is no easy way for boaters or boat passengers to access the banks of the Chadakoin Basin. Currently, with the absence of dockage, a kayak launch, or beach line, there is no easy way for individuals on boats or water recreation equipment to exit their vessel on the banks of the Chadakoin Basin. Construction of a dock on the south shore of the river near the Welcome Center will create a regular stop on the Water Taxi route, as well as docking to accommodate water bikes, upright paddle boats, other recreational craft, and emergency vessels as needed. The location allows for the construction of additional dock space if the demand exists.

Project Description

The project involves the construction of a new dock along the southern shore of the Chadakoin River Basin to create a landing point for the Chadakoin Water Taxi near the land owned by Riverwalk Self Storage, in proximity to the Welcome Center, Rental Facility, and pedestrian bridges that connect the south shore to the north side of the Chadakoin. It is anticipated that the docks would be owned by the City of Jamestown who will enter into an agreement with a private entity to operate the water taxi. The project will include two phases: design and cost estimate, then bidding and construction. Steps required for both phases are detailed below:

- Phase 1 – Design and Cost Estimate
    - Planning the project in coordination with the City of Jamestown and Riverwalk Self Storage
    - Survey the area for the docks
        - Terrestrial survey
        - Bathymetric survey
    - Engineering design, including:
        - Evaluation of river flow and ice
        - Evaluation of locations for piling, trusses, and other structural features
        - Detailed design of dock and gangplank
        - Electrical utilities and lighting
    - Creation of a permit application for submission and approval by the U.S. Army Corps of Engineers (ACOE) and the New York Department of Environmental Conservation (NYSDEC)
    - Preparation of a detailed cost estimate

- Phase 2 – Bidding and Construction

- Preparation of an RFP for the construction of docks
- Selection of contractor for project
- Performance of the construction

This project will require dredging the river to create space for the construction and placement of dock. An experienced dredging contractor should be engaged to coordinate any necessary permits for removal and disposal of sediments and debris. Dredging should be conducted in a way that minimizes impacts on the shoreline and wildlife and does not disrupt recreational and other activity within the Basin.

Dock Construction and Maintenance

The cost, durability, and maintenance requirements for the docks will depend to a large extent on the type of decking material used. Pressure treated wood is a cost-effective option that requires consistent maintenance, including regular sealing to keep out moisture and prevent rot. Ipe lumber is considered one of the most durable options, that is highly resistance to water and bugs, but will need regular cleaning and oiling to maintain its dark coloring. Composite decking is made from a combination of wood, natural fibers, and plastics and is similar in moisture and insect resistance to Ipe. Production of composite decking includes a special resin capping that protects the structure from mildew and decay underneath the deck. Since composite decking is easy to maintain, this material would be the best option for dockage for this project.

Including slips will make it easier for boats, including the water taxi, to pull in and out of the dock. Slips can be customized for particular types of boats. Lawson Boat & Motor in Jamestown can build slips for boats as large as 15 feet by 48 feet long. Their slips can range in cost from $1000 to $1500.

Regular maintenance will be required to ensure the continued structural integrity of the docks. If the docks will remain in the water during the winter as permanent structures, appropriate steps to winterize the docks should be taken. If the docks will be removed during the winter, adequate storage facilities should be secured.

Management & Fees

Part of project planning should include a determination of the number of slips and how they will be made available to the public (daily use only, long term rental, or some combination). Management of the dock facilities would include the implementation and enforcement of daily or monthly docking fees. The fee revenue would be available to cover maintenance and operating costs, with any excess being available for future projects.

Land Assembly

The river is a natural waterway that is part of the City of Jamestown. Permission and permitting for dredging, construction, and establishing dockage on the south shore will need to be coordinated through the appropriate City departments. Additionally, the shore and land near the Welcome Center is currently owned by Riverwalk Self Storage. Therefore, land assembly for this project will include leasing the shoreline and obtaining appropriate means of ingress and egress from the owner of the property or acquiring the area and access rights through eminent domain.

Feasibility

Negotiating land use with the owner of Riverwalk Self Storage and securing funding for dredging and construction will need to be top priorities for this project. Funding applications would be based on detailed design and cost estimates. Since the redevelopment plan for the Basin is focused on encouraging kayaking and paddlers rather than increasing motorboat traffic, it is expected that the main focus of the project would be to create dockage for the water taxi, with perhaps two or three slips available for public use.

Intended Outcomes

The project is intended to create access to the south bank of the Chadakoin Basis for the proposed water taxi, motorboats, and individuals using recreational equipment such as water bikes and paddle boards. Creating shore access near the proposed Welcome Center will encourage visitors to explore other attractions and amenities within the Basin and will generate economic benefits to the City of Jamestown through a variety of ways including:

- Encouraging boaters from Chautauqua Lake who bring their boats into the Basin to spend time and money at local attractions
- Creating a place in the Basin for passengers on the Chadakoin Water Taxi to disembark, increasing tourist traffic
- Improving the environmental health and usability of the River Basin by dredging the project site
- Building local support for the sustainable management of the Chadakoin as an economic and ecological asset
- Encouraging City residents to recreate on the Chadakoin River rather than traveling outside of the City, keeping their discretionary spending local

Implementation Strategy

This project will require funding for design, construction, and implementation. Potential funding sources include:

- Federal Land and Water Conservation Fund
- NYS Parks, Recreation, and Historic Preservation Boating Infrastructure Grant Program
    - Program of the Department of the Interior, U.S. Fish and Wildlife Service
    - Provides funding for the development and maintenance of facilities for transient nontrailerable recreational vessels
    - Boating infrastructure can include mooring buoys, day docks, navigational aids, transient slips, floating docks and fixed piers, dinghy docks, and dockside utilities
    - Facilities must be on navigable waters, allowing reasonable public access to all recreational vessels, charging equitable fees, and open for reasonable periods
    - Construction must be designed to last at least 20 years
    - Eligible activities could also included one time dredging to give transient vessels safe channel depths between the tie-up facility up to $200,000 as well as preliminary costs such as appraisals, environmental reviews, permits, feasibility studies, site surveys, site planning, preparing cost estimates, construction plans and specifications
- Department of State Local Waterfront Revitalization Program

Cost Estimate

The attached table provides a breakdown of the estimated project costs summarized below:

PROPOSED PROJECT COST ESTIMATE **CHADAKOIN RIVER STRATEGIC BUSINESS PLAN** **NEW DOCKS AT THE SOUTH BANK**			
ENGINEERING COSTS			
Terrestrial and Bathymetric Survey			$12,000
Design Costs			$25,000
Bidding Engineering Costs			$4,000
Construction Oversight/Administration			$5,000
Subtotal - Engineering Costs			$46,000
CONSTRUCTION COSTS			
Item	Unit Rate	# Units	Cost
Mobilization	$5,000	1	$5,000
Site Preparation, Clearing, Grubbing, Grading	$5,000	1	$5,000
Dredging	$15,000	1	$15,000
Dock and Associated Features	$200,000	1	$200,000
Lighting	$20,000	1	$20,000
Trail	$40,000	1	$40,000
Labor	$40,000	1	$40,000
Expenses	$1,000	1	$1,000
Subtotal - Construction Costs			$326,000
Project Subtotal			$372,000
Contingency (25%)			$93,000
Project Total - Cost Estimate			$465,000

Anticipated Schedule

The design and installation of the dockage can occur within a one-year timeframe. The estimated schedule includes:

- Months 1-5: Planning, Survey, Design, and Permit Application Preparation
- Months 6-7: ACOE and NYSDEC Permit Review and Approval
- Months 8-9: Request for Proposal Preparation, Bidding, and Contractor Selection
- Months 10-12: Construction

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

PROPOSED PROJECT:
WATER TAXI PROCUREMENT AND OPERATIONS

Overview

An important component of the Chadakoin River Basin redevelopment is the addition of a water-based transportation option. Since some portions of the Chadakoin River connecting Chautauqua Lake to the Basin are difficult to navigate and the Basin itself is not equipped to handle a high volume of watercraft at any given time, a water taxi will allow water access to the Basin in a safe, reliable, and enjoyable way. The proposed Chadakoin River Water Taxi would make regularly scheduled trips over the 5-mile portion of the Chadakoin River between Chautauqua Lake and the Basin, starting at the Chautauqua Harbor Hotel, with stops at other locations such as Lawson Boat & Motor and McCrea Point Park, and a newly constructed dock on the south shore of the River Basin.

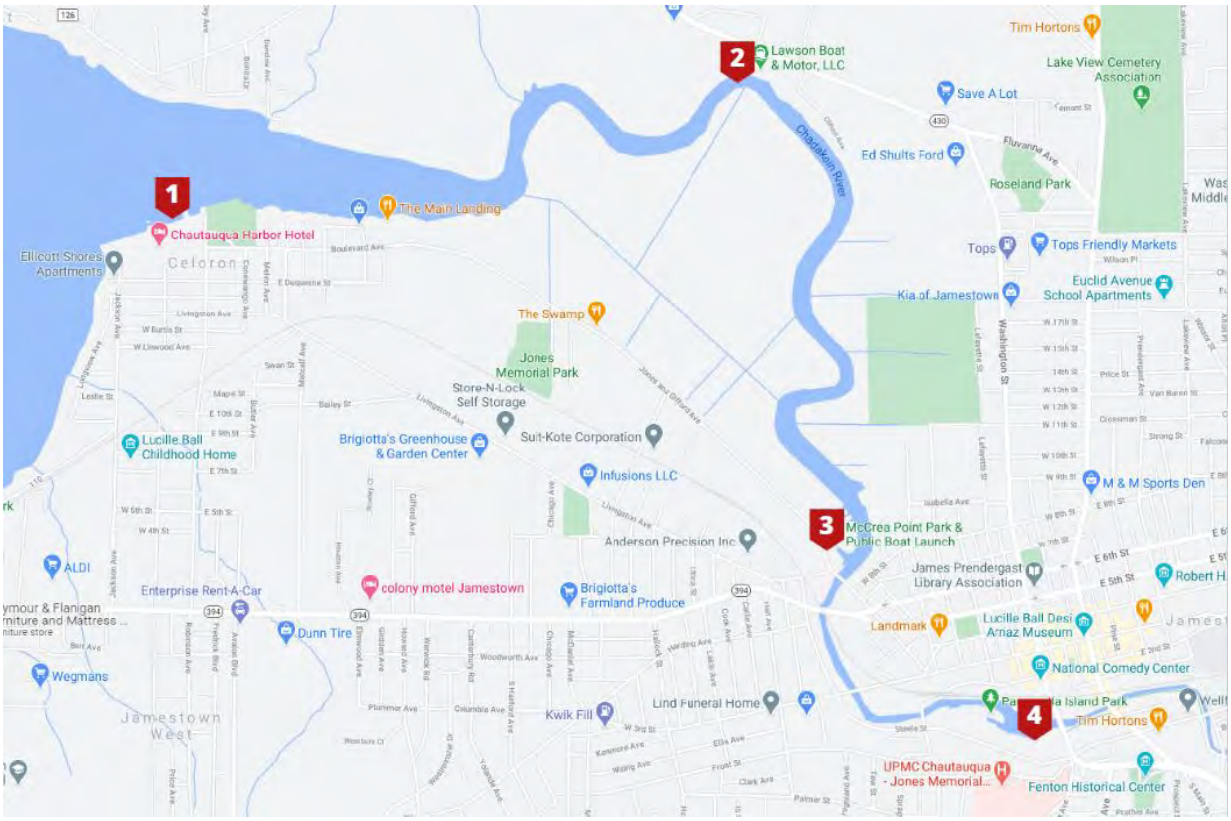
Project Need

As additional attractions and amenities are developed along the Chadakoin Corridor and within the Basin, the ability to transport visitors by boat will help support these recreational and commercial assets by bringing visitors into the Basin and provide an opportunity for cross-marketing other attractions. In addition, by creating opportunities for dinner cruises, guided tours, and private functions, the water taxi has the capacity to become an added attraction in its own right. This will be an important consideration when looking at design and amenities.

Project Description

Key components of the Water Taxi project include the identification of an experienced operator, the purchase of one or more boats, and the construction of docks in the Basin and at other identified connection points. The craft will be low draft to provide easy clearance under the bridges running over the Chadakoin River. The operator will implement a regular taxi schedule and rent out the boat during off-hours for parties, events, and meetings. The Chautauqua Harbor Hotel is a natural location for boarding and the hoteliers can provide the Chautauqua Lake terminus of the taxi route.

Taxi usage will be driven by the success of other attractions and programming in the Basin, and it is proposed that operations start with only one vessel until there is an increased demand that would justify the purchase of a second boat. The water taxi will be a seasonal business operating initially during the summer months of June, July, and August and possibly in the shoulder season months of May, September, and October. Subject to demand, it is expected that the taxi would operate on a regular schedule on weekends, with a 12-hour per day schedule from 8am to 8pm, Friday, Saturday, and Sundays. Given the one-hour long trip down the river, the water taxi will be able to conduct six round trips per day during this time. If there is insufficient demand on Monday through Thursday for scheduled trips, those days could be devoted to special events and private rentals that could be scheduled at two-hour long intervals.



Specific elements of the project are discussed in more detail below.

Management & Operations

Based on the nature of the water taxi business, the ideal model for management will be a third-party operator contracted via RFP (Request for Proposal) in conjunction with the City of Jamestown. The operator would collaborate with the City in determining the best type of vessel for the project, an appropriate operating schedule and ticketing system, and marketing and coordination with other attractions. The operator would be responsible for hiring an experienced, licensed captain and crew members to assist with ticketing, launching and docking, and food and beverage service, if available. Other operational elements include:

- Ticket pricing and adoption of a ticketing system, including an online system such as FareHarbor or RocketRez
- Adoption of safety protocols and operating policies and procedures
- Food and beverage service and whether to provide alcoholic beverages, which would require licensing through the State Liquor Authority

Boat Options/Specifications

Purchasing a boat to use as the water taxi will be a sizeable upfront investment. Several viable boat options are available for purchase or construction. Each option offers pros and cons that will need to be considered prior to acquisition. In addition to the acquisition cost, considerations include speed allowances, clearance requirements, passenger capacity and boarding, fuel type, and operation and

maintenance costs. A low wake, low draft boat will be required regardless of the specific type of boat. Since neither the Chadakoin River nor Chautauqua Lake are considered federally navigable waterways, the vessels selected would not be subject to Coast Guard Certification. The following three boats are viable, available options that would support a water taxi business.

Pontoon/Tritoon Gas-Powered Boat

- lowest upfront cost, could be purchased from Lawson Boat and Motor in Jamestown for about $30,000-$50,000 depending on features
- a single platform boat that can be outfitted to be handicap accessible and include a restroom facility
- gasoline powered
- a slow-moving, low draft vessel with trolley car seating

Used Diesel-Powered Boat

- formerly used as water taxis in the Oklahoma City Zoo
- have the capacity for 48 passengers and cost $75,000 each
- boats are 40 feet long by 12 feet wide and can run up to 7 miles per hour.
- have hard top roofs which help protect passengers from weather and are five years old and made of fiberglass
- low draft, about 14 to 16 inches into the water with an overall height of about 6 and ½ feet
- available through Evans Boats in Maryland, who can also build a new boat which would cost anywhere from $380,000 to $400,000.

Solar Electric-Powered Boat

- most economical from a fuel standpoint and most environmentally friendly
- developed by David Borton, owner of Solar Sal
- newest model will be fiberglass, 38 feet long outfitted with practical features, accommodating up to 28 passengers and two crew members, and will be completed in 2022
- powered by energy generated with solar panels on the roof
- batteries are lead acid based, not lithium and will need to be replaced every 8 to 10 years which can cost upwards of $20,000
- boat is eco-friendly and quiet
- 2022 model of the solar electric boat would cost approximately $450,000
- design incorporates wheelchair access into the model

Since the Chadakoin River is not particularly deep, any boat selected will have to have a shallow draft. In addition, since part of the redevelopment plan includes increasing use of the river by paddlers, kayakers, and anglers, the dimensions and speed of the boat will have to support a low-wake vessel impact. Passenger capacity will have to be sufficient to make the taxi economically viable. The boat must be able to pass under multiple bridges that cross the Chadakoin regardless of the water level, so the height of the boat will be a key consideration.

A number of features can be added to the water taxi to enhance the experience for passengers including:

- scripted narration, that could feature trivia, local history, and stories about the Chadakoin River and promote other local attractions
- addition of an all-weather television and sound system on the boat (cost upwards of $10,000) that could be used for special events or advertising to passengers
- automated communication system which costs about $1,000 and operates as a safety feature by broadcasting the boat's location to other vessels on the water
- wi-fi access, either by enabling the boat to connect to wi-fi through on-shore internet connections or a device like the Glomex weBBoat 4G Plus, which costs about $500 and ensures a stable and high-speed connection up to 20 miles from the coast. If a shoreside connection is not available, setting up a designated cellular service for the boat will be a much costlier option.

An electric engine is an economical and environmentally sound option that can be produced by Torqeedo, based in Chicago, and can be outfitted to any type of boat. The electric engines are charged by batteries. A water taxi, which is larger than a speed boat, will require twin motors. Boats with electric engines require much less maintenance over time and the boat can be stored easily without the need for tune ups, oil changes, or engine maintenance. Cost of the engine and the batteries will depend largely on the number of rides per day and size of the boat. A twin 10-kilowatt motor costs $9,000, but the batteries necessary for power cost a minimum of $22,000. Two batteries would be needed for each side of the boat totaling $44,000. Electric engines enhance the commitment to sustainability which will help obtain grant funding.
Solar powered boats also incorporate electric engines, which are powered by solar panels on the roof of the boat.

Market Analysis and Marketing

In recent years, Chautauqua County has welcomed more visitors from Pennsylvania and Ohio than New York State, with the majority being 55 to 64 years old. Visitors have a wide variety of incomes and therefore a range of disposable incomes. They enjoy attractions in the area like the Roger Tory Peterson Institute, National Comedy Center, and the Chautauqua Institute. These types of tourism centers tend to welcome older visitors. A high number of visitors come from major cities nearby including Pittsburgh, Cleveland, Buffalo, and Rochester. The Chadakoin River Water Taxi can be a critical attraction for visitors to the area who have extra time in their day, the desire to experience the Chadakoin River in a new way, or an interest in an alternate form of transportation.

Like any business, the success of the water taxi will largely depend on the success of the marketing, communication, public relations, and advertising strategies utilized to ensure potential customers know about the service and can easily purchase tickets. To accomplish this, initial consideration should be given to selecting an outside marketing agency via RFP who can work on creating a brand, website, and supplemental materials that promote and highlight the key advantages of the Chadakoin River Water Taxi. Strategies to use include:

1. ***Establish a Strong, SEO-Optimized Website:*** The water taxi needs a navigable, clean, well-maintained website where people can easily find information and purchase tickets. The website can feature long-form content on boating, the history of Jamestown, new upgrades to the Chadakoin River, and other related content to generate visitor traffic. The website will need to be maintained and updated regularly to ensure that ticket purchasing software is integrated and working properly. Use of visuals and keywords will enhance searchability of the website.

2. ***Collaborate with Other Attractions:*** Partnering with local businesses in creates a symbiotic relationship between the water taxi and commercial district of the City. Online ticketing software can enable guests to purchase tickets to other attractions in conjunction with water taxi tickets. Other water taxis across the country have implemented cross-promotional strategies such as encouraging shopping local by adding stops at holiday pop-up sales along the shore. Another received sponsorship funding from private businesses to offer free rides to passengers.

3. ***Share Information with Tourism Centers:*** It is critical to ensure that places of high tourism traffic receive accurate information about the water taxi. Information should be available at local hotels and accommodations and at area attractions.

4. ***Keep the Media Informed:*** Since advertising can be costly, there are different strategies that can be utilized to promote the water taxi at lower costs. Using public relations to keep the media informed is essential to promoting the benefits of the water taxi, particularly during the early stages of operation.

As indicated, cross-marketing with other local businesses and attractions will be critical to the success of the water taxi. Guests staying at the Chautauqua Harbor Hotel will have easy access to the water taxi and the business can be promoted through on-site advertising and through the hotel's concierge. Other connection points, such as Lawson Boat & Motor and McCrea Point Park, can be the focus of cross-promotion. The National Comedy Center has become a significant generator of tourist traffic, with more than 35% of visitors to the Comedy Center spending time enjoying other attractions in the area during

their trip. The proposed water taxi dock's proximity to the Comedy Center, creates a tremendous opportunity to provide unique transportation between the Chautauqua Harbor Hotel and the NCC.

Other local and regional attractions that could be useful for cross promoting the water taxi and coordinating greater usage include:

- Audubon Community Nature Center
- Lucille Ball Desi Arnaz Museum
- Chautauqua Belle
- Chautauqua Institution
- Cockaigne Resort
- Lawson Center Boat Museum
- Lily Dale Assembly
- Panama Rocks
- Peek'n Peak Resort
- Robert H. Jackson Center
- Roger Tory Peterson Institute of Natural History
- Southern Tier Brewing

Intended Outcomes

The establishment of the Chadakoin River Water Taxi will bring visitors to the Chadakoin River Basin in an enjoyable, experiential way which respects the ecosystem of the riverway and will enable greater usage of attractions in the Basin through water-based transportation without generating a large number of powered water vessels. The water taxi will generate economic benefits to the City of Jamestown in a variety of ways including:

- Increasing visitor traffic and participation in Chadakoin River Basin attractions
- Improving the connection between Chautauqua Lake and the Chadakoin River Basin and downtown businesses including restaurants, bars, retail shops, and museums
- Creating additional opportunities for cross-promotion of local attractions.
- Creating greater connectivity between Chautauqua Lake and the Chadakoin River
- Allowing boaters who dock upriver to have easier access to the Basin without the need to transport their vessels
- Encouraging City residents to recreate on the Chadakoin River rather than traveling outside of the City, keeping their discretionary spending local

Funding & Grants

This project will require funding for purchasing a boat and launching the business. Obtaining funding from grants or foundations would be a strategic method for offsetting costs. Potential funding from grants sources include:

New York State Department of Environmental Conservation (DEC)

- Based on feedback from other solar electric boat owners, the DEC has offered grant funding in the past that could offset costs of purchasing a solar electric water vessel from Solar Sal in Troy, New York
- Grant funding could range from $50,000 to $250,000 depending on availability
- Application period will likely be based on construction schedule for the boat

Environmental Protection Agency (EPA)

- Offers the National Grants - Diesel Emissions Reduction Act (DERA): EPA anticipates awarding approximately $44 million in grant funding under the Diesel Emissions Reductions Act (DERA) National Grants Program
- Offers the State Grants - Diesel Emissions Reduction Act (DERA): EPA allocates DERA funds to eligible U.S. states and territories for the establishment of diesel emissions reduction programs
- EPA anticipates a total of approximately $27 million available for the 2020 DERA State Grants
- This state grant was awarded to the DEC to create the NY State Clean Diesel Grant Program
  - The goal of the NYS Clean Diesel Grant Program (NYSCDGP) is to improve local air quality by reducing harmful diesel exhaust emissions
  - These harmful diesel exhaust emissions come from:
    - Older trucks
    - Locomotives
    - Marine vessels
    - Other diesel-powered equipment
  - NYSCDGP has received funding through the Diesel Emission Reduction Act (DERA) since 2008
  - Authority for DERA grant funding comes from the Energy Policy Act of 2005
- These grants would be helpful for funding the replacement of a diesel powered water vessel for the water taxi, if the preliminary water taxi is powered by diesel fuel, these funds could help cover the purchase of an electric powered engine or solar electric boat

New York State Energy Research and Development Authority (NYSERDA)

- Provides grant funding related to clean energy and innovative environmental conservation including funding for electric charging stations, clean energy financing arrangements, and innovative market strategies
- Clean Energy Financing Arrangements from the NY Green Bank
  - NY Green Bank invites private sector capital providers and other clean energy industry participants to propose transactions that facilitate the financing of clean energy projects in New York State, consistent with its mandate, mission, and priorities in addressing financing market gaps and barriers
- Innovative Market Strategies Funding
  - NYSERDA's Innovate Market Strategies Program is seeking to fund emerging clean energy solutions that have the potential to accelerate uptake or strengthen the value proposition of energy efficiency, distributed energy resources, and/or address affordability and equitable access

- The goal of this Program is to identify and fund projects that demonstrate promising approaches to scaling adoption of clean energy solutions in NYS

Other Sources for Potential Funding

- REVitalize New York State
- Office of Energy Efficiency & Renewable Energy
- Energy Foundation
- Rural Business Development Grants from the United States Department of Agriculture
- Rural Energy America Program (REAP)

Feasibility

Feasibility of the water taxi project is dependent on identification of an experience operator and establishing that the venture can be economically viable. Operations should be phased in, starting with an affordable pontoon boat, which will have limited capacity and higher fuel costs, but which will have a lower purchase price than some of the other options. Assuming demand grows, other vessels which accommodate more passengers and offer more amenities can be added.

CHADAKOIN RIVER STRATEGIC BUSINESS PLAN
ACTIVITY PROFILE: WELCOME CENTER

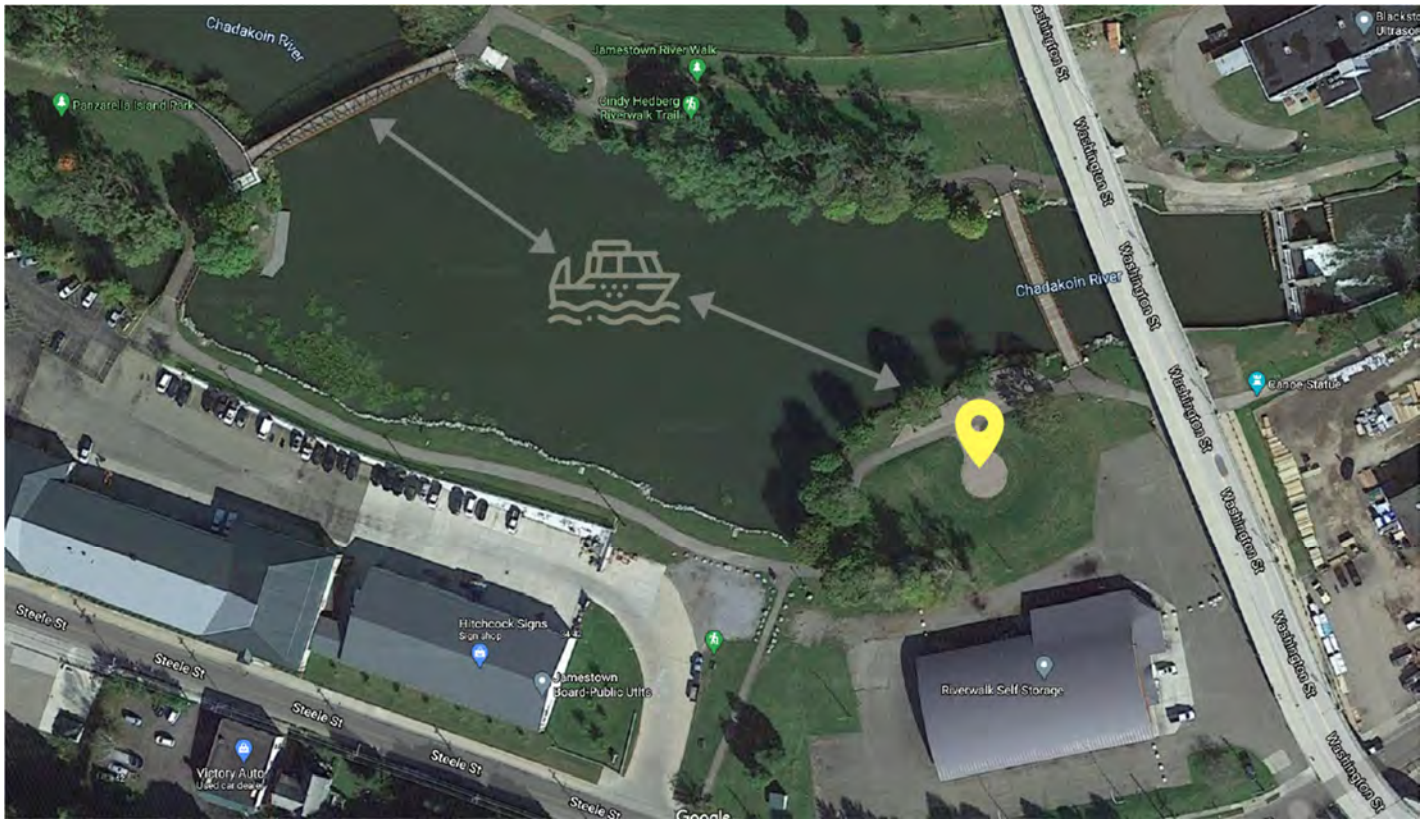
Project Need

Welcome Centers, also known as visitors' centers or information centers, are structures at points of entry to areas of interest that engage and inform visitors. Welcome Centers usually feature information related to nearby attractions, lodging and dining options, recreational areas, and entertainment options. They may be staffed and include printed and video information, event schedules, transportation options, ticket sales for area attractions, comfort facilities, and other amenities.

The Chadakoin Basin area, because of its size, geography, and variety of available activities and attractions, is an ideal location for a Welcome Center. While initial activity in the area is not likely to be sufficient to support a comprehensive staffed facility, an informational self-service kiosk is envisioned in the near term, with the option of upgrading as activity increases.

Project Description

The preferred location for the Welcome Center is on the south bank of the Chadakoin River Basin to the east of the Board of Public Utilities (BPU) buildings. Marked by the yellow pin drop in the image below, the Welcome Center would be adjacent to the existing Riverwalk and close to the water taxi dock. The site is currently part of the Riverwalk Self Storage property and site access would have to be secured from the owner through a sale or lease. The Welcome Center is intended to be an eye-catching interactive facility that provides visitors with accurate and up-to-date information on the events and activities available in the Chadakoin Area and downtown Jamestown.



Initially, the Welcome Center can be assembled simply and with limited features to control capital costs, staffing, and maintenance requirements. A structure of approximately 200 square feet is envisioned with feature boards and informative signage that promote local attractions and events. At least one map of the Chadakoin Basin and Corridor offerings and a map of downtown Jamestown highlighting tourism-focused

businesses and attractions can be included. Space can be dedicated for more permanent messaging related to attractions and activities that do not change frequently and for messaging that can be cycled regularly such as for outdoor concerts and exhibits at the National Comedy Center.

At a minimum, the Welcome Center would provide:

- Operating hours, maps, and other information for area businesses and attractions
- Locations of key amenities including free Wi-Fi, parking, public restrooms, and handicap accessibility
- Food and lodging options
- Public and private transportation availability
- Information for attraction and event tickets and admissions
- Testimonials and recommendations from prior visitors to make the experience more personal
- Key contact information

As activity in the Basin area increases, amenities can be enhanced, with priority given to the addition of digital features such as wayfinding information, Wi-Fi access, and the capture of visitor data and feedback. Consideration can then be given to addressing the facility itself by adding space, restrooms, gift shop, refreshments, etc.

Logistics

Even as a more simplified kiosk, the Welcome Center will require regular cleaning, maintenance, restocking of informational materials, and updating of digital information. Concurrent with the design, financing, and construction of the facility, a plan for developing informational content and addressing facility operations should be developed. While a single oversight entity is the most efficient, attempts should be made to involve multiple public and private sector partners to broaden the resources and potentially share the administrative and cost burdens of operating and maintaining the facility.

Partnerships

Given its potential to support local businesses and attractions, coordinated promotional partnerships will be important in the development and operation of the Welcome Center. Establishing these partnerships will require a coordinated effort with the supervision of a person or committee charged with maintaining the Welcome Center. On a regular basis, businesses could be contacted and asked to pay for advertising space at the Welcome Center. Based on sizing and demand, the pricing could be on a monthly or annual basis. Certain specifications would be implemented to ensure messaging from all businesses is consistent with the mission and look of the Welcome Center. Additionally, working with tourism centers in the region will be important in supplying visitors with the newest, most accurate brochures, guides, rack cards, and promotional materials at the Welcome Center.

Feasibility

There are three primary feasibility issues to be addressed:

<u>Site control</u>

Since the anticipated location of the Welcome Center is on property owned by Riverwalk Self Storage, the first step in executing the project will be negotiating access to the land via a sale or land lease. It will be important to negotiate some form of site control as quickly as possible due to the potential of the River Walk Storage property being sold and/or redeveloped for a commercial waterfront use. While a Welcome Center may be an

enhancement to such use, the site acquisition or control will be easier and less expensive to execute earlier in the Basin redevelopment process.

Infrastructure

The preferred site, as well as any site in close proximity to the south bank, will not have immediate access to water and sewer service. Those services would have to be extended from Steele Street or from Main Street at significant expense. While that will not preclude the development of a Welcome Center, it will limit the amenities that can be offered.

One alternative to the infrastructure issue is incorporating the Welcome Center into a commercial redevelopment on Steele Street. While that alternative would have the advantage of a presumably lower capital development cost and unlimited options for amenities, the distance from the River Walk and the incline to access the site from the Basin area make it less desirable.

Operations and oversight

The Welcome Center should not be developed without a plan in place that provides for at least a minimum level of services and financially viable operations.

Intended Outcomes

The Welcome Center is intended to create a modern, easily accessible method for sharing attraction, event, and business information with area visitors. The facility will encourage longer stays, increase visitor spending, expand the use of area amenities, and enhance the visitor experience. The Welcome Center will also add visual interest to the shoreline of the Basin and assist in creating a sense of place.

Schedule & Sequencing

The development of a Welcome Center can occur over an approximately 8-month timeframe:

- Months 1-2: Site acquisition or lease
- Months 3-4: Survey and design
- Months 5-8: Procurement and construction
- Months 7-8: Develop content and operating plan

While a Welcome Center would be desirable at any time, it is not an imperative until other Basin area activities are developed and visitation increases significantly. At that time, grant and sponsorship funding would be more easily achieved.

Cost Estimate

The recommendation that a fully enclosed Welcome Center be constructed only after substantial activity has been established in the Basin area dictates that the design and ultimate costs of the facility be determined at a later date. A variety of options can be considered at that time such as restroom facilities, electronic messaging and information, ticket sales, etc., with size and scope to be influenced by visitor counts, available infrastructure, and funding sources. The following cost estimate is based on a simple enclosed 450 square foot structure without restrooms or significant amenities.

WELCOME CENTER			
SITE ACQUISITION			
Pre-Acquisition Costs			N/A
Purchase Price			N/A
Closing or Other Costs			N/A
Subtotal - Site Acquisition			$ -
ENGINEERING COSTS			
Design Costs			$ 19,500.00
Bidding Engineering Costs			$ 3,500.00
Subtotal - Engineering Costs			$ 23,000.00
CONSTRUCTION COSTS			
Item	Unit Rate	# Units	Cost
Extension of Utilities	$ 20,000.00	1	$ 20,000.00
Site Work / Landscaping	$ 65,000.00	1	$ 65,000.00
Building (per SF)	$ 225.00	450	$ 101,250.00
Subtotal - Construction Costs			$ 186,250.00
Project Subtotal			$ 209,250.00
Contingency (25%)			$ 52,312.50
Project Total - Cost Estimate			$ 261,562.50

Funding Strategies

- For design and construction, consideration should be given to bundling this activity with other Basin and Corridor activities to magnify the impact of the overall project. Since the Welcome Center is designed to service visitors to the Basin area, it can be combined with activities such as the water taxi and related dockage, signature gardens, performance venue and stage, watercraft rentals, and other signage and interpretation activities.

- Because of its visibility and relatively low initial development cost, consideration can also be given to seeking a project sponsor for capital funding to include naming and display rights under negotiated terms.

- Sponsorships and display fees can also be considered to generate income to support ongoing operation and maintenance expenses.

In addition to traditional municipal, nonprofit, and foundation funding, the following New York State programs can be considered:

- Empire State Development / Market New York – Tourism Grant Program

- Supports regionally themed marketing projects that promote tourism destinations, attractions, and special events as well as tourism facility capital improvement projects

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CHADAKOIN RIVER STRATEGIC BUSINESS PLAN

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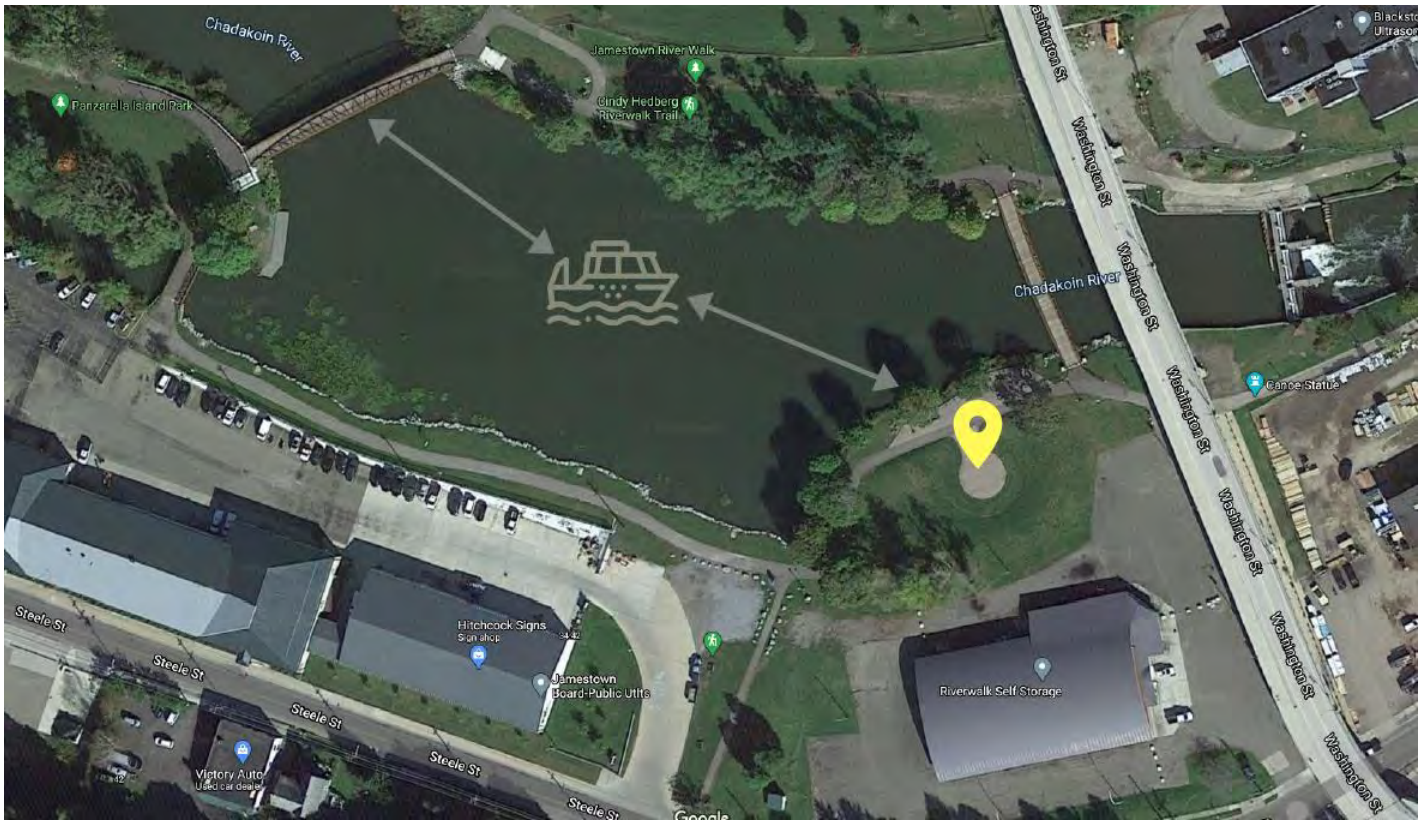

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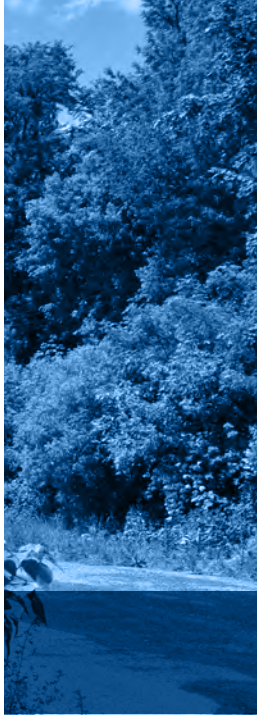

Appendix B: Steering Committee Meeting Minutes

Chadakoin River Strategic Business Plan
Committee Meeting Minutes
7/8/2020 – City of Jamestown Police Training Room

Persons Present: Emma Phillips, Dan Riker, Evan Tuthill (C&S), Harry Sicherman and Chuck Bell (Harrison Studio), Mark Geise and Nate Aldrich (CCIDA), Greg Edwards (Gebbie Foundation), Mayor Eddie Sundquist and Crystal Surdyk (City of Jamestown), Craig Garaas-Johnson (BPU)

Meetings and Site Visits Overview

- Project team has made three site visits to the Basin and surrounding area (including McCrea point park)
- Two trips on the Chadakoin by boat
- One kayaking trip
- Visit to Lawson's
- Had a virtual meeting with the DEC to discuss permitting
- Discussions with both the Comedy Center and Rail road

Study Area Overview and Vision

- Boundary was extended towards Chautauqua Lake and expanded to include property off Fluvanna Ave
- Looking at the Study Area as two separate development opportunities that dovetail off of eachother
    - Basin (northern recreational activities and south commercial development and boating potential)
    - River Corridor
        - Already a first-class recreational paddling experience
        - Rich eco-system
        - Ready to market and interpret

Potential Projects

- North Basin
    - Landscaped gardens
    - Picnic area / beer garden – a place people can just hang out
    - Event space – festivals, concerts, farmers markets, kids activities, yoga
    - Food truck corral
    - Walkway and connectivity to parking under Washington Street bridge along rail line
        - Very similar vibe to Canalside in Buffalo, NY
        - Bringing people of all ages to the water and using land use as a tool to create activity at all times
- South Basin
    - Welcome Center
        - Restrooms
        - Interpretive Features
    - Water Taxi parking
        - Get people down from McCrea Point Park and the Lake
    - Paddling launch
        - Storage
        - Kayaks, Pedal boats, Waterbikes
    - BPU building reuse
        - Accessibility with creation of parking
        - Signature restaurant overlooking the water / mixed use development
        - Ticketing
        - Fishing supplies and rentals
    - Panzarella Park and Ecological Area

        - Ecological enhancements and species protection
        - Signage
        - Passive recreation

- Corridor Development
    - Removal of obstacles
        - Phasing
        - Creating new habitats due to species habitats currently residing in some obstacles
    - Safety Boom and Safety Provisions
        - Boom and signage upriver of Warner Dam
        - Navigational safety signage in Basin and along the Chadakoin
    - BPU Bridge and Sheet Piling
        - RFP to remove bridge being released in August
        - Sheet Piling removal to widen river
            - DEC supports

Document Outline

- Table of Contents and Appendices outlined in Presentation
- Agreement of # of proposed projects with more in depth detailing for entities to use in funding applications
- Proposed project sheets will be 1-3 pages of text with cost estimate tables / project need / descriptions / outcomes / strategies / feasibility and schedule

Discussion / Next Steps

- Committee document review (portions of overall doc)
- Finalizing list of projects

DISCUSSION:

- Question about extension of study area
    - McCrea Point Park is essential point for project
        - Should become barrier for motorized boats from the lake
- Question of need for barrier or safety boom for warner dam
    - Resolved as a dire need for operations in the basin
- The BPU buildings on Steele St
    - Discovered to be fairly essential to the daily operations of the organization
    - Those operations only include parking, storage, and office facilities
        - This means that there are no major operations or machinery that is preventing the movement of the facilities elsewhere
    - Movement could be phased as to not disrupt BPU operations
- Noted desire of revamping the landscape at Panzarella Park
    - Including flowers, shrubbery, etc.
- Large desire to remove railroad ties on the banks of the river
    - As well as other debris
- Noted desire of buoys along the river as a navigational/safety service
    - May only need to put buoys/signage near only the more complicated/unsafe areas of the river rather than lining the entire river with them
- Noted worry about debris floating down the river and getting caught on the safety boom

    - Questioned who would be responsible for the cleaning of the boom
        - BPU?
    - Possible steel cage connected to the boom that would collect the debris through water flow
        - Approximate cost of $120,000 for maintenance
    - The DRI calls for a water catchment
        - Possible idea of continuous wave along with the boom to catch more debris
            - Approximate cost $500,000
- BPU bridge is coming out
    - Will either be sold or cut apart and used in other projects such as skate park
    - Removal of bridge is connected to sheet piling as a project(may need to be done together)
        - Noted belief of no major issues of pushing back the sheet piling from BPU

Chadakoin River Strategic Business Plan
Committee Meeting Minutes
10/27/2020 – City of Jamestown Police Training Room

Persons Present: Emma Phillips and Dan Riker (C&S), Harry Sicherman, Chuck Bell and Molly Downey (Harrison Studio), Mark Geise and Nate Aldrich (CCIDA), Greg Edwards (Gebbie Foundation), Crystal Surdyk (City of Jamestown), Craig Garaas-Johnson (BPU), Twan Leenders (RTPI) and Frank Besse (JRC)

Updates on Stakeholder Meetings

- Roger Tory Peterson Institute
- Jamestown Renaissance Corporation
- National Comedy Center
- Jamestown Board of Public Utilities
- Gebbie Foundation Board
- City of Jamestown Riverfront Management Council
- Lawson Boat and Motor
- Chautauqua Harbor Hotel

Project Updates

Obstruction Removal: removal of logs, cribbing, other obstacles to navigation.

- Will involve permitting, RFP / contractor selection and construction (mobilization of a small dive boat, use of chain saws to cut obstructions, hand removal, placement of materials in bins and disposal of materials)
- Expected costs with contingency = $60,000
- 4 month timeline including contractor selection
- *Was noted during the meeting that the RFP should pay special attention to any historic logs. Historic logs have markings and this could be used for educational components*

Safety Boom: two options for the Boom – Pipe Through Buoy Line and Tuff Boom

- Met with Worthington Products for cost estimate = $44,000
    - Accounted for in the DRI
- *Was noted during meeting that the Committee needs to determine who will be responsible for material collection from the boom*
- *Can the boom stay in year round?*
- *Details need to be ironed out before DRI funding comes through*

Mobile Stage: purchase of and placement of mobile stage for the great lawn between the Comedy Center and Basin

- Items for consideration include railroad approval, winter storage, and programming
- Cost estimates to be provided draft
- *Who is going to make this happen and be responsible for Basin programming?*

Signature Gardens: sited for vacant grassy area northwest of the Basin

- Will involve engineering and design, bidding, construction and oversight
- Funding sources include the LWRP, BOA, private investment and outdoor education grants
- 10-12 month timeline
- *Noted that the plantings need to be low maintenance and that there are drainage issues on site*
- *Noted that plants should be added to the eastern side of the path to keep visitors on the paved sections*
- *Could be complimentary to the ongoing Panzarella Park Green Infrastructure project*

Kayak launch: installation along south bank of the Basin, will provide an additional launch spot along the Chadakoin and allows paddlers and families to explore the area

- Similar to McCrea Point Park launch with minimal permitting required
- Project includes planning and permitting, bidding, construction
- 6-12 month timeline
- Expected costs with contingency = $49,000

Water Taxi: reviewed a number of business models nationwide including Cleveland Metroparks, San Francisco Water Taxi, and Solaris Boat Tour in Kingston New York

- Key takeaways include needing a licensed captain
- Coast Guard certification
- Acts as a local attraction and novelty
- Multiple revenue streams with different events / groups
- Opportunity for partnerships

Options for the Chadakoin:

1) New Solar Electric
2) Used Water Taxis
3) New Pontoon Boat though Lawson
    a. This could potentially lead to Lawson's assistance with programming

- *Was noted that there could be a potential partnership with the Chautauqua Belle*
- *Also noted that we need to ensure we don't create competition with existing services that are similar*

South Basin Commercial Development: overview of the BPU property, its existing conditions, relocation costs, current property values and the existing funding gap we will need to fil if plans move forward

Items to be worked on and looked into:

- Buoys and lighting for boaters near McCrea Point
- Dockage at McCrea Point Park and in Basin for Water Taxi
- Land Assembly along the River - new properties along Steele Street for sale (potential for Land Bank ownership?)
- McCrea Point Park improvements
- Facility for kayakers & storage
- Small welcome center

Discussion / Next Steps

- Draft document to Committee before Thanksgiving
- Committee meeting at beginning of December for final edits and review of Business Plan

Chadakoin River Strategic Business Plan
Committee Meeting Minutes
12/2/2020 – Zoom

- Dan notes that the draft document is not what the final document will ultimately look like
    - Final document will include maps, graphics, visual tables
    - There will be a final "brochure" type document that shows the bigger picture and can be used for marketing purposes
    - There are existing gaps in the current document while we wait for final estimates and scoping items from other teammates

- Overall comments regarding the draft document

- Needs an opening / one page executive summary to capture the reader

- Table of contents with PDF bookmarks so readers can flip to specific sections
    - All sections should be formatted the same way (headers, indentation)

- There should be a brief conclusion at the end of Section 5 before moving into Section 6 Implementation

- Projects should be before strategies within Section 6

- General ranking system for projects in Section 6.3 would be helpful within implementation
    - Feasibility, cost, timing / schedule
        - Matrix?
        - What is the low hanging fruit to start with?
        - What projects can be occurring simultaneously?

- Note about whether the stage should be rented or owned
    - Renting may relieve some responsibility yet allow larger events to happen

- How do smaller events along the Chadakoin work into the bigger picture of activating space
    - Comment regarding that Canalside started out with very little programming but rather amenities that brought people to Buffalo's waterfront

- Need to discuss what coordination needs to happen to make these projects happen (who are the major stakeholders, departments, agencies that need to work together)

- Should convey the overall impact of the project
    - Steps that were taken to get to this point
    - Process of the projects
    - Projects that resulted

- Possible inclusion of a Case Study
    - Milwaukee Park

Appendix C: Market Analysis Supporting Information

Parks & Trails in and around Jamestown

Outdoor Recreation	Location	Distance to Basin
Allen Park	Jamestown	2 Miles
Lucille Ball Memorial Park	Celeron	3 Miles
Panama Rocks Scenic Park	Panama	14 Miles
Bergman Park	Jamestown	1.5 Miles
Long Point State Park	Bemus Point	12 Miles
Lucy Trail	Between McCrea Point Park & Lucille Ball Memorial Park	~ 2 Miles
Chadakoin Park Bike Trail	Jamestown	~ 1 Mile
Roseland Park	Jamestown	1.5 Miles
Jones Memorial Park	Jamestown	2 Miles
Lincoln Park	Jamestown	1.8 Miles
Falconer Park	Falconer	3.2 Miles
Bentley Nature Preserve	Jamestown	4 Miles
Audubon Community Nature Center	Jamestown	8 Miles
Goose Creek Valley Greenway Preserve	Ashville	8 Miles
Baker Park	Jamestown	0.5 Miles
College Park	Jamestown	2 Miles
Dow Park	Jamestown	0.5 Miles
Johnson Street Playground	Jamestown	1.5 Miles
Lillian Dickson Park	Jamestown	1 Mile
Nordstrom Park	Jamestown	1.5 Miles
Russell E. Diethrick, Jr. Park	Jamestown	2 Miles
Willard Park	Jamestown	2 Miles
Panzarella Park	Jamestown	At Basin
McCrea Point Park	Jamestown	~ 1 Mile

Outfitters in and around Jamestown

Business	Location	Offerings	Distance to Basin
Ashville Bay Marina, LLC	Ashville	Boat, kayak, and paddleboard rentals	7.5 Miles
Smith Boys of Chautauqua	Ashville	Full-service marina	6.5 Miles
Holiday Harbor Marina-Celeron	Celoron	Boat rentals (of all sizes)	2.5 Miles
Boatworks	Chautauqua	Boat rentals	2.5 Miles
Sunset Bay State Marine Park	Irving	Over 30-foot boats, row boats, kayaks, john boats	42 Miles
Chautauqua Shooter's Supplies	Jamestown	Sporting and shooting equipment	1.6 Miles
M & M Sports Den	Jamestown	Gun store	0.7 Miles
Jamestown Cycle Shop	Jamestown	Biking and sporting goods	0.3 Miles
Hollyloft Ski & Bike	Jamestown	Skiing and biking equipment	1.8 Miles
Luke's Bait and Tackle	Jamestown	Fishing supplies	1.5 Miles
Runnings	Jamestown	Outdoor recreation equipment	2.2 Miles
Lawson Boat & Motor LLC	Jamestown	Water recreation equipment	2 Miles
We Wan Chu Cottages & Boat Rentals	Mayville	Boating rentals	15 Miles
Evergreen Outfitters	Mayville	Canoe and kayak store	19 Miles
Chautauqua Marina	Mayville	Motorized boats, kayaks, and fishing boat rentals	19 Miles
Allegheny Outfitters Outdoors Store	Warren, PA	Outdoor sports store	21 Miles

Lodging in and around Jamestown

Type of Lodging	Business	Location	Distance to Basin
Bed & Breakfast	The Oaks Bed & Breakfast Hotel	Jamestown	0.7 Miles
Bed & Breakfast	The Steward House Bed & Breakfast	Panama	14 Miles
Campground/RV Park	Hidden Valley Camping Area	Jamestown	8 Miles
Campground/RV Park	Wildwood Acres Campground	Bemus Point	11.5 Miles
Campground/RV Park	Top-A-Rise Campground	Falconer	9 Miles
Campground/RV Park	Camp Chautauqua	Mayville	13 Miles
Campground/RV Park	Chautauqua Lake KOA Holiday	Dewittville	16 Miles
Campground/RV Park	Peachie's Lakeside Camping	Lakewood	8 Miles
Campground/RV Park	Bella Vista Campground	Kennedy	12 Miles
Campground/RV Park	Westfield/Lake Erie KOA	Westfield	29 Miles
Campground/RV Park	Camp Prendergast	Mayville	15 Miles
Campground/RV Park	Aspen Acres Campgrounds	Panama	12 Miles
Campground/RV Park	Red House Campground	Jamestown	32 Miles
Campground/RV Park	Pope Haven Campground	Randolph	21 Miles
Campground/RV Park	Kinzua Lake Campgrounds	Frewsburg	19 Miles
Campground/RV Park	Chautauqua Family Campgrounds	Mayville	22 Miles
Campground/RV Park	Brushwood Folklore Center	Sherman	24 Miles
Campground/RV Park	Highbanks Campground	Steamburg	25 Miles
Campground/RV Park	Arkwright Hills Campground	Fredonia	27 Miles
Low-Cost Hotel/Motel	La Quinta Inn & Suites by Wyndham	Jamestown	0.2 Miles
Low-Cost Hotel/Motel	Colony Motel	Jamestown	1.8 Miles
Low-Cost Hotel/Motel	Comfort Inn	Jamestown	2 Miles
Low-Cost Hotel/Motel	Quality Inn	Falconer	5 Miles
Low-Cost Hotel/Motel	Americas Best Value Inn	Jamestown	1.8 Miles
Modern Hotel (3 stars or more)	DoubleTree by Hilton	Jamestown	0.3 Miles
Modern Hotel (3 stars or more)	Chautauqua Harbor Hotel	Celoron	3 Miles
Modern Hotel (3 stars or more)	Hampton Inn & Suites	Jamestown	2 Miles
Modern Hotel (3 stars or more)	Holiday Inn Express & Suites	Jamestown	2 Miles
Modern Hotel (3 stars or more)	Athenaeum Hotel	Chautauqua	17 Miles
Modern Hotel (3 stars or more)	Chautauqua Hillcrest Inn	Lakewood	4 Miles

Modern Hotel (3 stars or more)	Maple Springs Lake Side Inn	Bemus Point	13 Miles
Modern Hotel (3 stars or more)	The Spencer Hotel & Spa	Chautauqua	17 Miles
Modern Hotel (3 stars or more)	Pine Hill Cottages & Motel	Ashville	13 Miles
Modern Hotel (3 stars or more)	Hotel Lenhart	Bemus Point	11 Miles
Modern Hotel (3 stars or more)	Chautauqua Suites Hotel & Expo Center	Mayville	19 Miles

Food & Beverage options in and around Jamestown

Business	Location	Type	Cuisine	Distance to Basin
Brazil Craft Beer and Wine Lounge	Jamestown	Bar	NA	0.4 Miles
Pearl City Hops	Jamestown	Bar	NA	0.3 Miles
The Beer Snob	Jamestown	Bar	NA	0.2 Miles
Big Inlet Brewing	Mayville	Brewery	NA	19 Miles
Ellicottville Brewing	Bemus Point	Brewery	NA	11 Miles
Five & 20 Spirits and Brewing	Westfield	Brewery	NA	28 Miles
Jamestown Brewing Company	Jamestown	Brewery	NA	0.2 Miles
Southern Tier Brewing Company	Lakewood	Brewery	NA	6 Miles
Farm Fresh Foods	Jamestown	Deli	NA	0.6 Miles
Enchanted Mountain Spirits	Jamestown	Distillery	NA	1 Mile
ALDI	Jamestown	Grocery Store	NA	3 Miles
Allen Street Grocery and Deli Mart	Jamestown	Grocery Store	NA	1.5 Miles
Casty's Grocery	Jamestown	Grocery Store	NA	0.4 Miles
Save A Lot	Jamestown	Grocery Store	NA	1.5 Miles
TOPS (3)	Jamestown	Grocery Store	NA	1.5 Miles
Wegmans	Jamestown	Grocery Store	NA	3.2 Miles
Infusions LLC	Jamestown	Health Food Store	NA	1.5 Miles
Biodome Project	Jamestown	Natural Goods Store	NA	0.5 Miles
Brigiotta's Farmland Produce	Jamestown	Produce Market	NA	1.3 Miles
Allen Street Diner YO! Burrito & BBQ	Jamestown	Restaurant	Mexican/Diner	1.1 Miles
Coffee Cup	Jamestown	Restaurant	Diner	1.5 Miles
Forte	Jamestown	Restaurant	New American	0.5 Miles
Gialy's	Jamestown	Restaurant	Italian	0.5 Miles
Havana Cuban Café & Pizzeria	Jamestown	Restaurant	Cuban	0.5 Miles
Honest John's Restaurant & Pizzeria	Jamestown	Restaurant	Pizzeria	2 Miles
La Scala Restaurant	Jamestown	Restaurant	American	3 Miles
Labyrinth Press Company	Jamestown	Restaurant	Vegetarian	0.4 Miles
Landmark Restaurant	Jamestown	Restaurant	American/Steakhouse	0.3 Miles
Lena's Pizza	Jamestown	Restaurant	Pizzeria	1.5 Miles
Lisciandro's Restaurant	Jamestown	Restaurant	Diner	0.5 Miles
Lori's Kountry Kafe	Jamestown	Restaurant	Diner	2 Miles
Pace's Pizzeria	Jamestown	Restaurant	Pizzeria	0.3 Miles

Phil-N-Cindy's Lunch	Jamestown	Restaurant	Diner	3 Miles
Sauce	Jamestown	Restaurant	Italian	0.3 Miles
The Pub	Jamestown	Restaurant	American	0.5 Miles
Tokyo & Beijing Asian Cuisine	Jamestown	Restaurant	Asian	2 Miles

Appendix D: Maps

LEGEND

Chadakoin River

0 0.25 0.5 Miles

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City of Jamestown
Chadakoin River Stategic
Business Plan

Chadakoin River

-	-	-
		3/8/2021
		E. PHILLIPS
		E. PHILLIPS
		D. RIKER

CHADAKOIN RIVER

MAP 1

LEGEND

Properties of Interest

Chadakoin River

0 0.25 0.5

Miles

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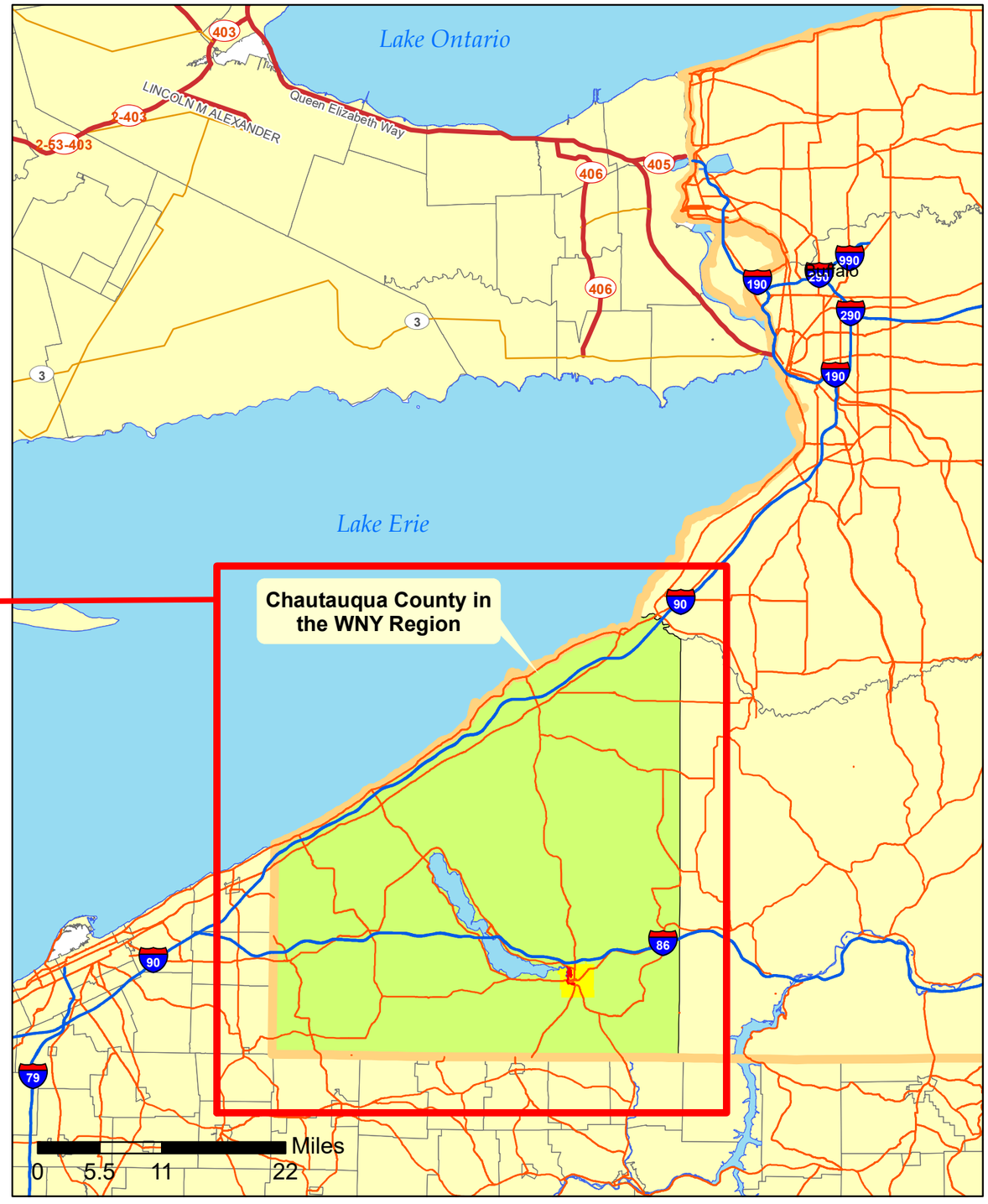
PROPERTIES OF INTEREST

MAP 2

Chadakoin River Study Area within Chautauqua County

- Focus Area
- Chautauqua Lake
- City of Jamestown
- Municipal Boundaries
- State Boundary



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City of Jamestown
Chadakoin River Strategic
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Regional Setting

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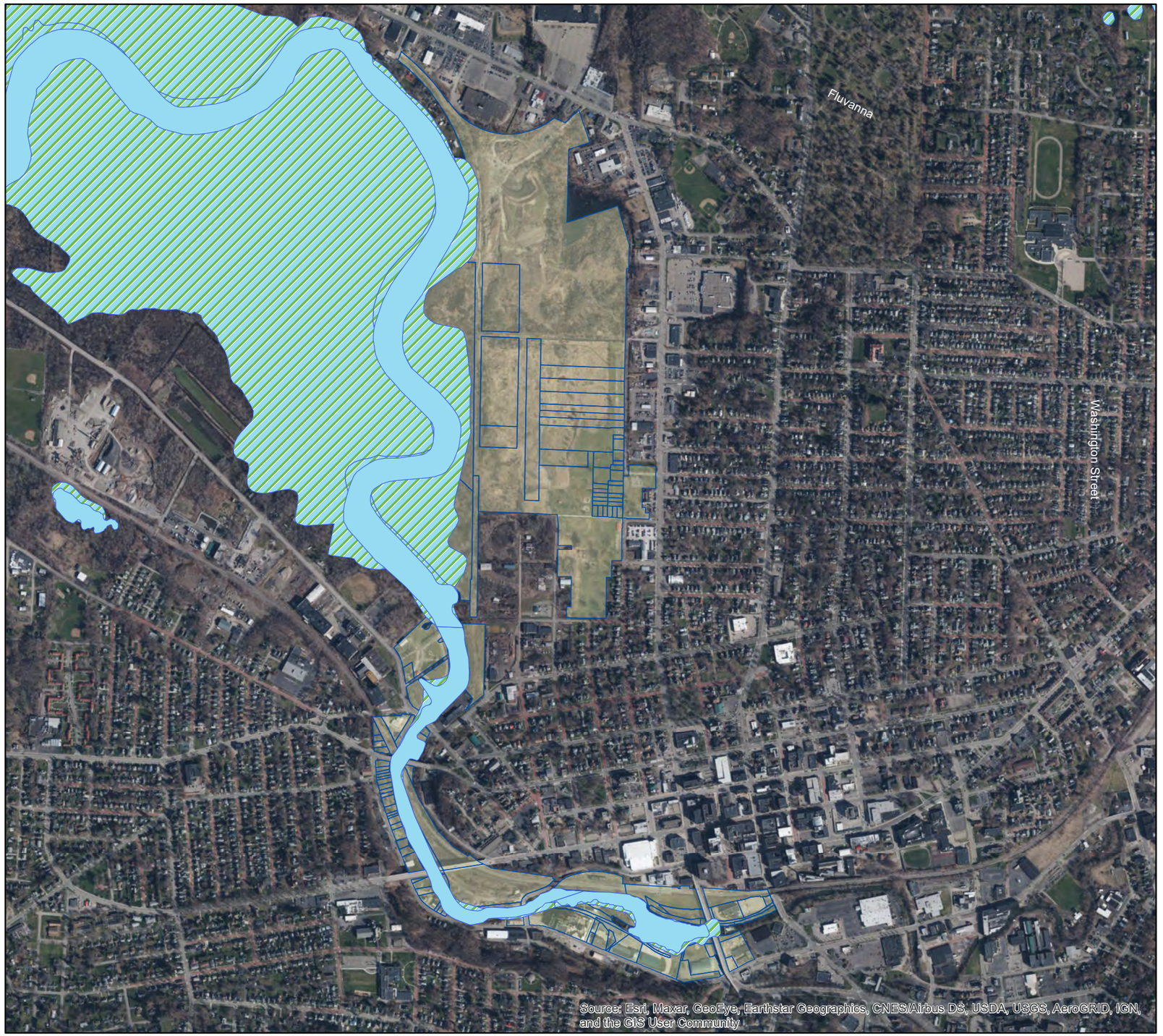
REGIONAL SETTING

MAP 3



LEGEND

- New York State Wetlands
- Properties of Interest
- Chadakoin River

0 0.25 0.5 Miles

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NYS Designated
Wetlands

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WETLANDS

MAP 4