Design Vision (May 2019)
Contextual Master Plan (May 2019)

- Front Park
- 4th Street Park
- Virginia-Carolina Interchange
- Waterfront/Emerson Young Park
- Ralph C. Wilson, Jr. Centennial Park
- Black Rock Canal
- Lake Erie
- Lakeview Neighborhood
- Downtown
- Interstate 190
- Colonel Francis G. Ward Pumping Station
- Waterfront Neighborhood
Schematic Design (June - November 2019)

- **05 June**  Technical Stakeholders
- **19 June**  Regulatory Agencies
- **17 July**  Regulatory Agencies (in Albany)
- **05 September**  Focus Group
- **11 September**  Pedestrian Bridge Competition - Phase I
  - Community Family Workshop
- **12 September**  Playground Workshop w/Belle Center
  - Technical Stakeholders
  - Regulatory Agencies
- **17 October**  Pedestrian Bridge Competition - Phase II
- **23 October**  Transportation Workshop
Design Development Phase
Project Schedule

- Concept Design: 4 mos.
- Schematic Design: 4 mos.
- Design Development: 9 months
- Construction Documents: 9 months
- Bidding and Negotiation: 4 mos.
- Construction Observation: 18-24 months

We are here!
Design Development Phase

1. Greater definition of the park program elements and their relationship with each other.

2. Exploration of park materials, including pavements, planting, site furnishings, etc...

3. Continued strategic development of design and construction schedule, and project budget and delivery, in collaboration with the Client Group and Stakeholders.
Design Team

Landscape Architecture: Michael Van Valkenburgh Associates, Inc.
Structural Engineering (bridge): Schlaich Bergermann Partner
Marine Engineering: Beech and Bonaparte Engineering P.C.
Civil and Structural Engineering/Infrastructure and Utilities: Wendel
Hydrologist: LimnoTech
Ecologist: Biohabitats
Soil Scientist: Craul Land Scientists
Irrigation Designer: WC3 Design
Geotechnical Engineering: Empire Geotechnical Engineering Services
Lighting Designer: Domingo Gonzalez Associates
Code Consultant: Foit-Albert
Playground Code Consultant: Abundant Playscapes
Traffic/Transportation Engineering: WSP
Cost Estimating: Trophy Point
Design Update

Existing Conditions

Design Vision
(May 2019)

March 2020 Scheme
7 Key Design Moves

1. Improve Neighborhood Connections with a Bridge.
2. Enhance Circulation Networks.
3. Create a Great Lawn.
4. Update Existing Fields and Increase Sports Variety.
5. Create a Destination Playground.
6. Provide Opportunities for Active and Passive Recreation.
7 Key Design Moves

1. Improve Neighborhood Connections with a New Bridge.
2. Enhance Circulation Networks.
3. Create a Great Lawn.
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6. Provide Opportunities for Active and Passive Recreation.
Improve Neighborhood Connections with a New Bridge
Improve Neighborhood Connections with a New Bridge
Improve Neighborhood Connections with a New Bridge
Selecting a Bridge Designer

- Ten bridge designers from around the world submitted qualifications.
- Four bridge designers participated in a two-phase idea competition.
- Jury members included: Michael Finn, Matthew Latko, Amanda May, Robert Shibley, and Michael Van Valkenburgh.
- Schlaich Bergermann Partner was selected.
Ralph C. Wilson Jr. Centennial Park Pedestrian Bridge
Liberty Bridge Greenville, South Carolina, 2004
Erie Canal at Virginia Street, then and now
Railing

Lighting
7 Key Design Moves

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Enhance Circulation Networks
Enhance Circulation Networks - Vehicular

*Dominated by Vehicular Circulation
Parking Strategy
Enhance Circulation Networks - Vehicular

Roadway = ~1.5 mi
Parking Spots = ~732
Bus Stop
Enhance Circulation Networks - Vehicular

- Roadway = ~0.8 mi
- Park Road = ~0.7 mi
- Total = ~1.5 mi
- Parking Spots = ~730
- Bus Stop

- Black Rock Canal
- Lake Erie
- Colonel Francis G. Ward Pumping Station
- Porter Avenue
- Hudson St.
- Waterfront Neighborhood
- Lakeview Neighborhood
- Virginia Carolina Interchange
- Interstate 190 (former Erie Canal)
- Bird Island Pier
- Front Park
- Waterfront / Emerson Young Park
- Virginia Caribbean

200 FT
Enhance Circulation Networks - Cycling
Enhance Circulation Networks - Cycling

- Bike Lane = 0.45 mi
- Bike Trail = 0.35 mi
- Shared Trail = 1.5 mi
- Bike Parking

Locations:
- Colonel Francis G. Ward Pumping Station
- Waterfront Neighborhood
- Virginia Carolina Interchange
- Interstate 190 (former Erie Canal)
- Bird Island Pier
- Black Rock Canal
- Lakeview Neighborhood
- Waterfront / Emerson Young Park

Maps showing enhanced circulation networks with cycling paths and parking.
Enhance Circulation Networks - Pedestrian
Enhance Circulation Networks - Pedestrian

- Pedestrian = 4.85 mi
- Shared Trail = 1.5 mi
Enhance Circulation Networks - Athletic Loop

Start/Finish Point

1. 5K
2
3
4

Athletic Loop = 5K
7 Key Design Moves

1. Improve Neighborhood Connections with a New Bridge.
2. Enhance Circulation Networks.
3. **Create a Great Lawn.**
4. Update Existing Fields and Increase Sports Variety.
5. Create a Destination Playground.
6. Provide Opportunities for Active and Passive Recreation.
Create a Great Lawn
Create a Great Lawn
Great Lawn - Yearround Daily Use

Spring

Winter
Great Lawn - Accommodating Events

100 - 500 ppl

1,000 - 5,000 ppl

400 - 2,000 ppl
Existing Pavilion
7 Key Design Moves

1. Improve Neighborhood Connections with a New Bridge.
2. Enhance Circulation Networks.
3. Create a Great Lawn.
4. Update Existing Fields and Increase Sports Variety.
5. Create a Destination Playground.
6. Provide Opportunities for Active and Passive Recreation.
Update Existing Athletic Fields & Increase Sports Variety
Update Existing Athletic Fields & Increase Sports Variety

BPS Standards  Orientation  Furnishings  Drainage & Soil
Update Existing Athletic Fields & Increase Sports Variety
7 Key Design Moves

1. Improve Neighborhood Connections with a New Bridge.
2. Enhance Circulation Networks.
3. Create a Great Lawn.
4. Update Existing Fields and Increase Sports Variety.
5. **Create a Destination Playground.**
6. Provide Opportunities for Active and Passive Recreation.
Create a Destination Playground
Play Themes
7 Key Design Moves

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2. Enhance Circulation Networks.
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Provide Opportunities for Active and Passive Recreation
7 Key Design Moves

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Shoreline Design Goals

- Structural Resiliency
- Flood Protection
- Ecological Function Uplift
- Enhanced Experience
It is estimated that over 80% of the shoreline of the upper Niagara River has been altered from its natural form. (BNW)
Large Network of Regional Habitats
Least Bittern (Ixobrychus exilis)

Cooper's Hawks (Accipiter cooperii)

Sedge Wren (Cistothorus platensis)

Ring-billed Gull (Larus delawarensis)

Cerulean Warbler (Setophaga cerulea)

Bonaparte's Gull (Chroicocephalus philadelphia)
Exposed to Extreme Environmental Conditions
Identified as a Blueway Site
Existing Bulkhead Profile

- Lawn
- Hardened Edge (Broken Ecotonal Transition)
- Prevailing Wind and Wave Direction
- Low Quality Aquatic Habitat

Scale: nts
Land Subsidence behind Existing Bulkhead
Land Subsidence behind Existing Bulkhead

Soil Saturation
Land Subsidence behind Existing Bulkhead
Land Subsidence behind Existing Bulkhead
Shoreline Edge Strategies

Raised Bulkhead

Layered Armored Edge

Breakwater Island

Blueway Access Site
Transform the Shoreline
Transform the Shoreline
Transform the Shoreline - Scheme A
FEMA Flood Map - Elevation +581 (June 2019)
Elevation +581 Comparison
Flood Protected Park Land Above FEMA Elevation

~ 11.9 acres
October 2019 Storm

Observed Flood Elevation over 10ft above Average Water Level

LAKE ERIE NEAR BUFFALO

Universal Time (UTC)

Latest observed value: 5.70 ft at 7:36 AM EDT 1 Nov 2019. Flood Stage is 8 ft

Minor: 8.0'

Action: 6.0'

Site Time (EDT)

Graph Created (8:00AM Nov 1, 2019) - Observed

BUF6(plotting HMRG) "Gage 0" Datum: n/a

Observations courtesy of National Ocean Service
October 2019 Storm - Existing Conditions

Observed Flood Elevation (+580)

Flood Elevation with NSWA (+582)
October 2019 Storm - Proposed Plan

Estimated Flood Elevation with NSWA (+582)

Estimated Flood Elevation (+580)
Hydrological Modeling

- Water flow
- Flooding
- Wave, seiche, and ice
- Water velocity as it relates to aquatic habitat
- Particle tracking simulation (sediment and debris accumulation)
Shoreline Edge Strategy: Raised Bulkhead
Shoreline Edge Strategy: Raised Bulkhead

- Raised Bulkhead (above +582)
- Steel Sheet Pile Wall

Average Water Level +570
Average High Water Level +574
Shoreline Edge Strategy: Layered Armored Edge
Shoreline Edge Strategy: Layered Armored Edge

Shallow Aquatic Habitat
(Low Water Velocity, 3-7' depth)

Coastal Sill
(REI Reduction and prevention of woody debris and trash accumulation.)

Natural Accretion of Sediment
(bolster Coastal Sill, limit amount of NSWA and water depth, and create an evolving coastal edge.)

Retain Existing Crib Wall

Primary Waterfront Path (above +582)

Secondary Waterfront Path (above +577)

SAV Planting Bed (cobble/sand substrate)

Fish Hive

Disturbance Invigorated Woody Vegetation

Vines to soften riprap appearance

Navigation Channel

Average Water Level +570

Average High Water Level +574
Shoreline Edge Strategy: Breakwater Island
Shoreline Edge Strategy: Breakwater Island
Shoreline Edge Strategy: Breakwater Island

- **Standing Snags**
  (habitat for birds and insects, perching for raptors.)

- **Rootwads**
  (aquatic habitat for fish and microinvertebrates, basking habitat for amphibians and reptiles, and perching habitat for waterfowl.)

- **Disturbance Invigorated Woody Vegetation**

- **Boulders**
  (basking habitat for reptiles and perching habitat for waterfowl.)

- **SAV Planting Bed**
  (basking habitat for reptiles and perching habitat for waterfowl.)

- **Stone Revetment Toe**
Shoreline Edge Strategy: Breakwater Island

- **Primary Waterfront Path (above +582)**
- **Rootwads**
  - (aquatic habitat for fish and microinvertebrates, basking habitat for amphibians and reptiles, and perching habitat for waterfowl.)
- **Protected Aquatic Habitat**
  - (Low Water Velocity, 3-10’ depth)
- **Dimensional Stone**
  - (enhanced experience and birdwatching.)
- **SAV Planting Bed**
- **Average High Water Level +574**
- **Average Water Level +570**
- **Standing Snags**
  - (habitat for birds and insects, perching for raptors.)
- **Disturbance Invigorated Woody Vegetation**
- **Fish Hive**
- **Protected Aquatic Habitat**
  - (Low Water Velocity, 3-10’ depth)
Shoreline Edge Strategy: Blueway Access Site
Shoreline Edge Strategy: Blueway Access Site

- Park Path
- Small Craft Launch
- Gravel

Average Water Level +570
Average High Water Level +574