

## RiverBend Shoreline Restoration Phase I

Application to the  
Niagara River Greenway Ecological Fund Committee



Buffalo, New York



# Niagara River Greenway Ecological Standing Committee Meeting

June 26, 2012

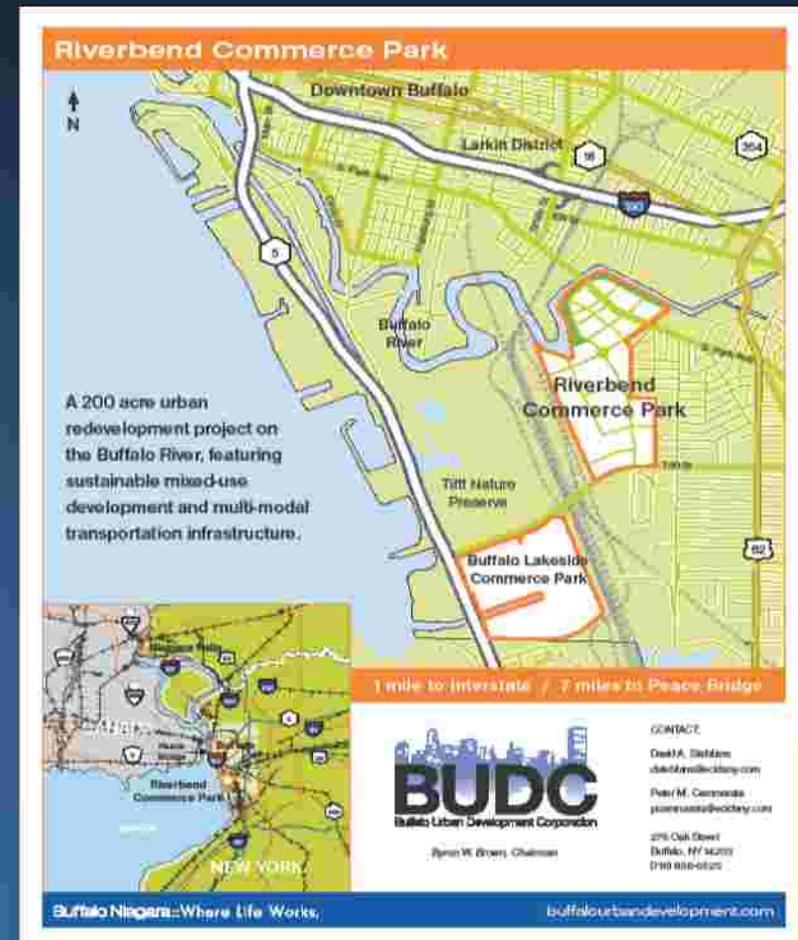
# RiverBend Shoreline Restoration Phase I Project – Background/Pre-project Information

- RiverBend site is located within the South Buffalo Brownfield Opportunity Area
- Phase I area is owned by the City of Buffalo and Buffalo Economic Renaissance Corporation (BERC). BUDC to assume ownership of BERC portion
- BUDC recently completed the RiverBend Master Plan



# RiverBend Shoreline Restoration Phase I Project – Background/Pre-project Information (RiverBend Commerce Park)

- Commerce Park to create vital urban community with residential, commerce, and open spaces uses
- Emphasis on connecting community to the river and surroundings
- BUDC took the approach of sequencing ecological restoration first!



# RiverBend Shoreline Restoration Phase I Project – Pre-project Consultation and Planning

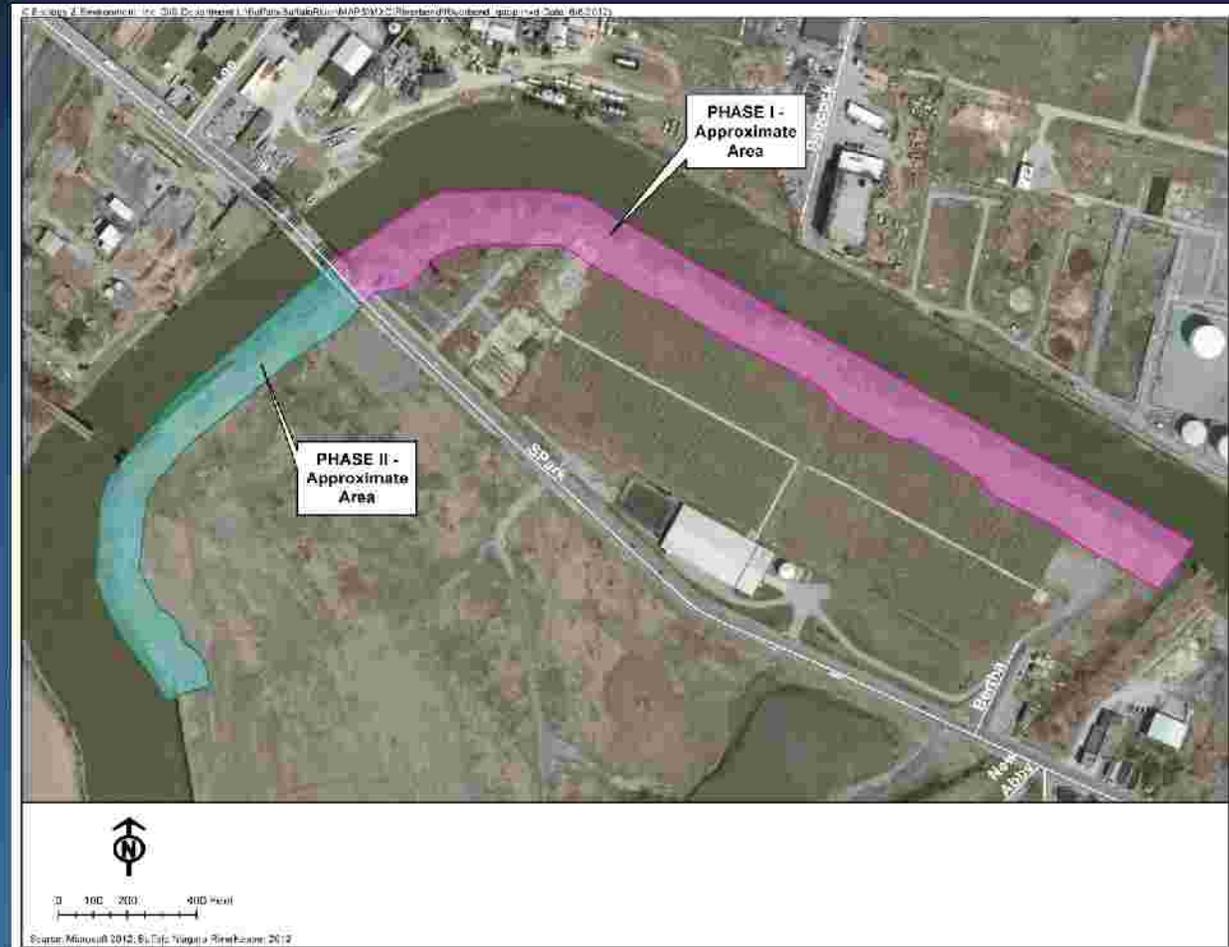
- BUDC presented the RiverBend Commerce Park plan to the Greenway Commission on January 17, 2012
- Greenway Commission determined project is consistent with Greenway Plan
- Planning efforts include:
  - the City of Buffalo's Local Waterfront Revitalization Program (LWRP),
  - the City of Buffalo's South Buffalo Brownfield Opportunity Area (BOA) Master Plan,
  - the Buffalo River Restoration Project,
  - the Buffalo River Greenway Plan, and
  - the RiverBend Master Plan.



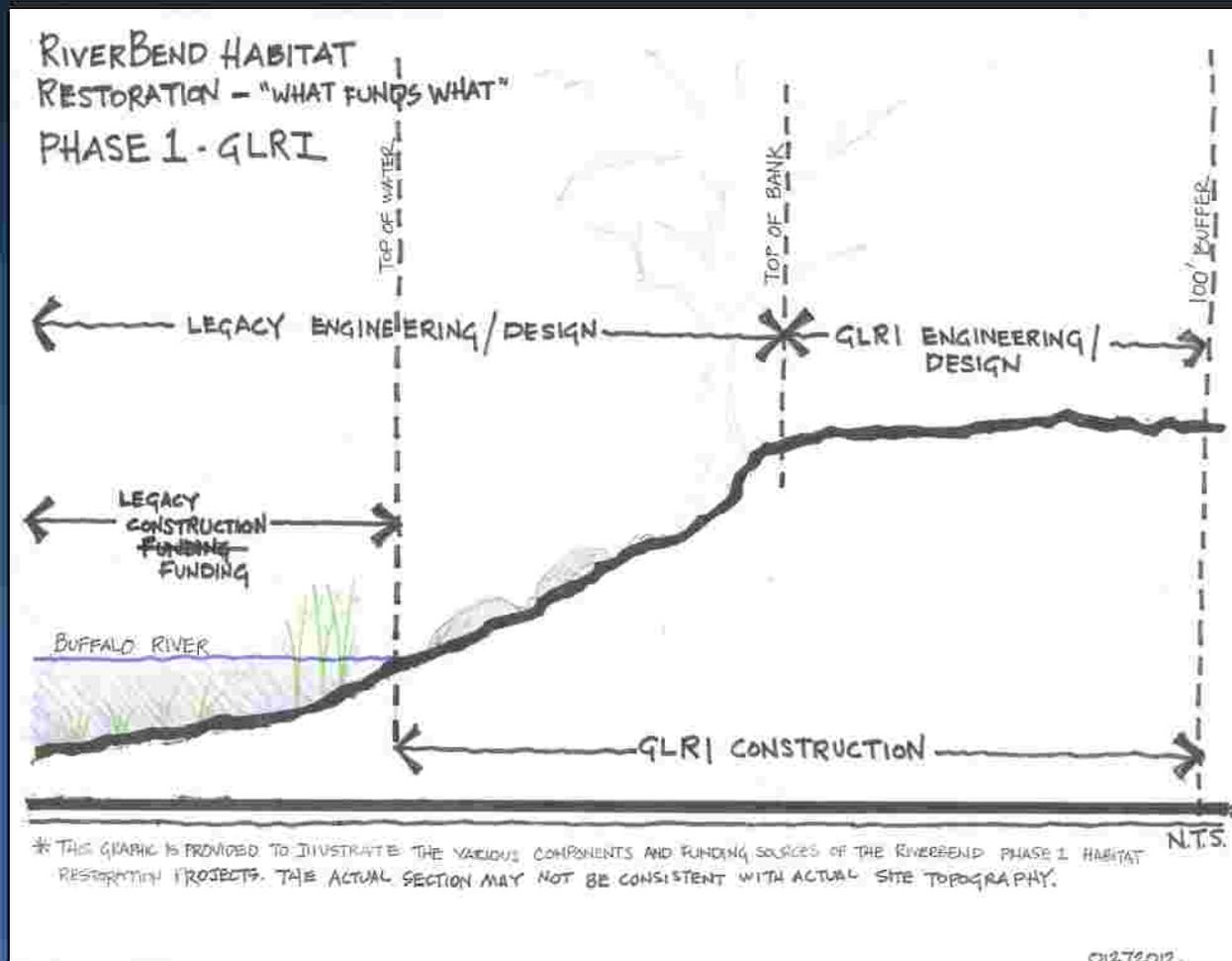
## RiverBend Shoreline Restoration Phase I Project – Purpose for Application to Greenway ESC

- To request additional funding for the construction of, and construction related services for, the Phase I area of the RiverBend Shoreline Habitat Restoration Project.
- Existing funding for Phase I is \$690k
  - \$521k from EPA (GLRI)
  - \$169K from USFS
- Funding for construction and design are limited given site conditions

# RiverBend Shoreline Restoration Phase I Project – Project Site



# RiverBend Shoreline Restoration Phase I Project – Spatial Summary of Funding Sources and Areas

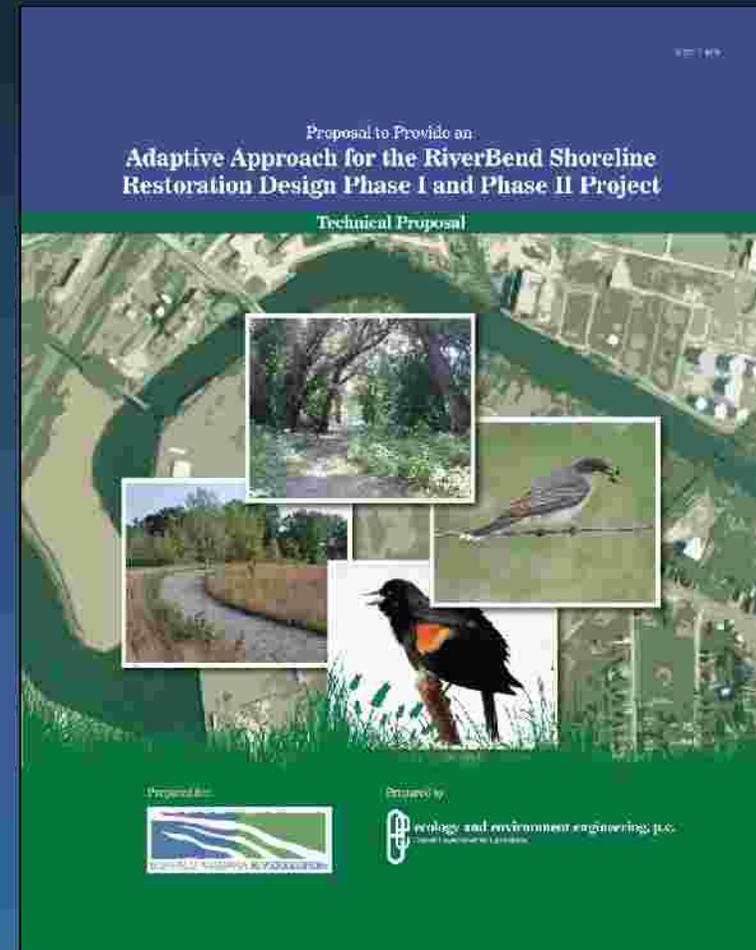


# RiverBend Shoreline Restoration Phase I Project – Project Design Scope

- Quality Assurance Plans
- Baseline Field Data Collection
  - Soil characteristics
  - Soil contamination
  - Habitat characterization
  - Invasive species
  - Plant communities
- Engineering and Design Plans
- Construction Bid Package
- Permitting
- Post-Construction Monitoring Plan

# RiverBend Shoreline Restoration Phase I Project - Project Team

- BUDC
- BERCC
- Buffalo Niagara Riverkeeper
- EPA Region 2
- EPA GLNPO
- US Forest Service
- Ecology and Environment Design Team



# RiverBend Shoreline Restoration Phase I Project – Project Site, Goals, and Objectives

- Phase 1 and Phase 2 areas combined represent ~4,320 linear feet of shoreline and 9.79 acres
- Phase 1 site contains 2,800 linear feet of shoreline including top of bank to ~100 feet inland; total area of 6.29 acres
- Project is to design and construct restored riparian corridor with overall goal of contributing to the BUI delisting process for #14 Loss of Fish and Wildlife Habitat
- Objectives include establishing native plant communities, restoring Buffalo River corridor, control and management of ISs

# RiverBend Shoreline Restoration Phase I Project – Regional Landscape Ecological Corridors

- Niagara River Bi-National Important Bird Area (IBA)
- Oak Orchard and Tonawanda Wildlife Management Areas
- State waterfowl area
- Buckhorn Island Bird Conservation Area
- Tiftt Nature Preserve



# RiverBend Shoreline Restoration Phase I Project – Site Location

- Formerly Republic Steel and Donner Hanna Coke
- Located on south shore (LDB) of Buffalo River
- Site is within the Buffalo River AOC and in vicinity of Niagara River AOC and waterfront area.

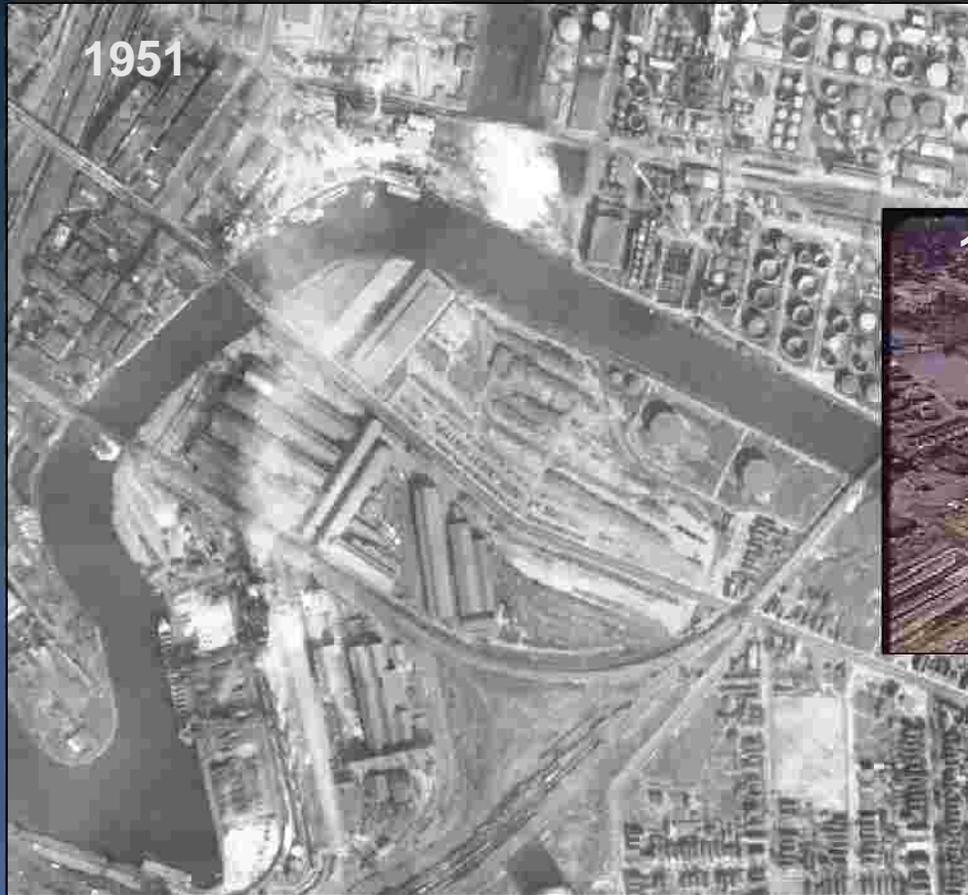


# RiverBend Shoreline Restoration Phase I Project – Regional Context and Synergies

- Real and measurable environmental gains from implementation of this project and other projects
- Other projects include:
  - GLLA Sediment Remediation
  - GLLA Habitat Restoration at up to 6 locations
  - Times Beach AIS Control and Restoration
  - Tifft IS Control
  - Erie County Pocket Parks
  - ERMP sites



# River Bend 1951 and 1973



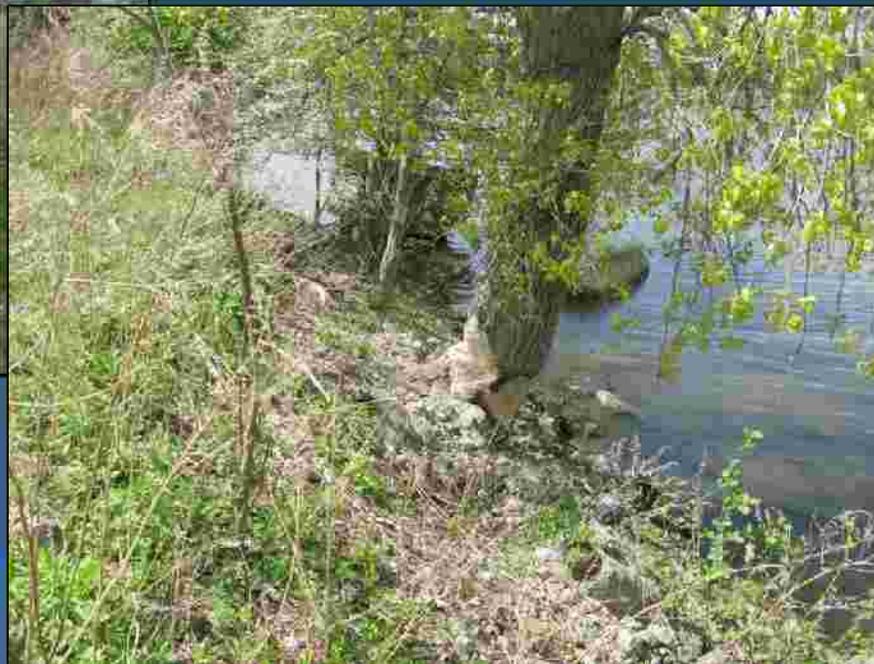
# RiverBend 1995



# RiverBend 2012



# RiverBend 2012



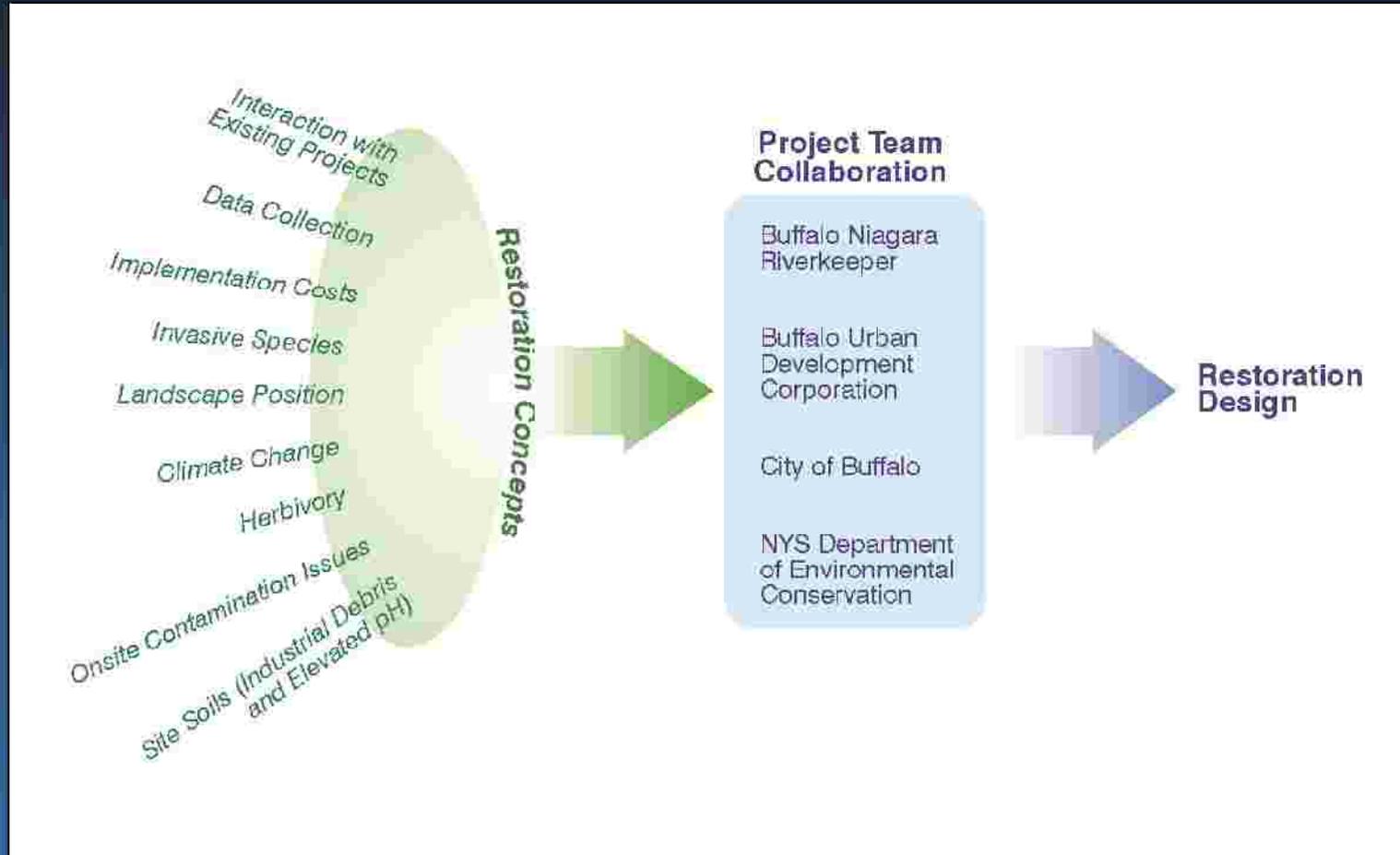
# RiverBend 2012



# RiverBend Shoreline Restoration Phase I Project – Existing Conditions

- Elevated terrace - disconnected from historic floodplain surface hydrology and water table
- Soil structure – variable size aggregates demolition fill, slag forming variable interstices and voids
- Soil chemistry - many unknowns (documented pH levels from 8.5 to 9.5)
- Soil fertility - unknowns
- Soil substrate contaminants
- Exposed plateau-like, windswept environment with narrow hydrated riparian edge at water level.

# Factors Influencing the Restoration Concepts Development and Design Process



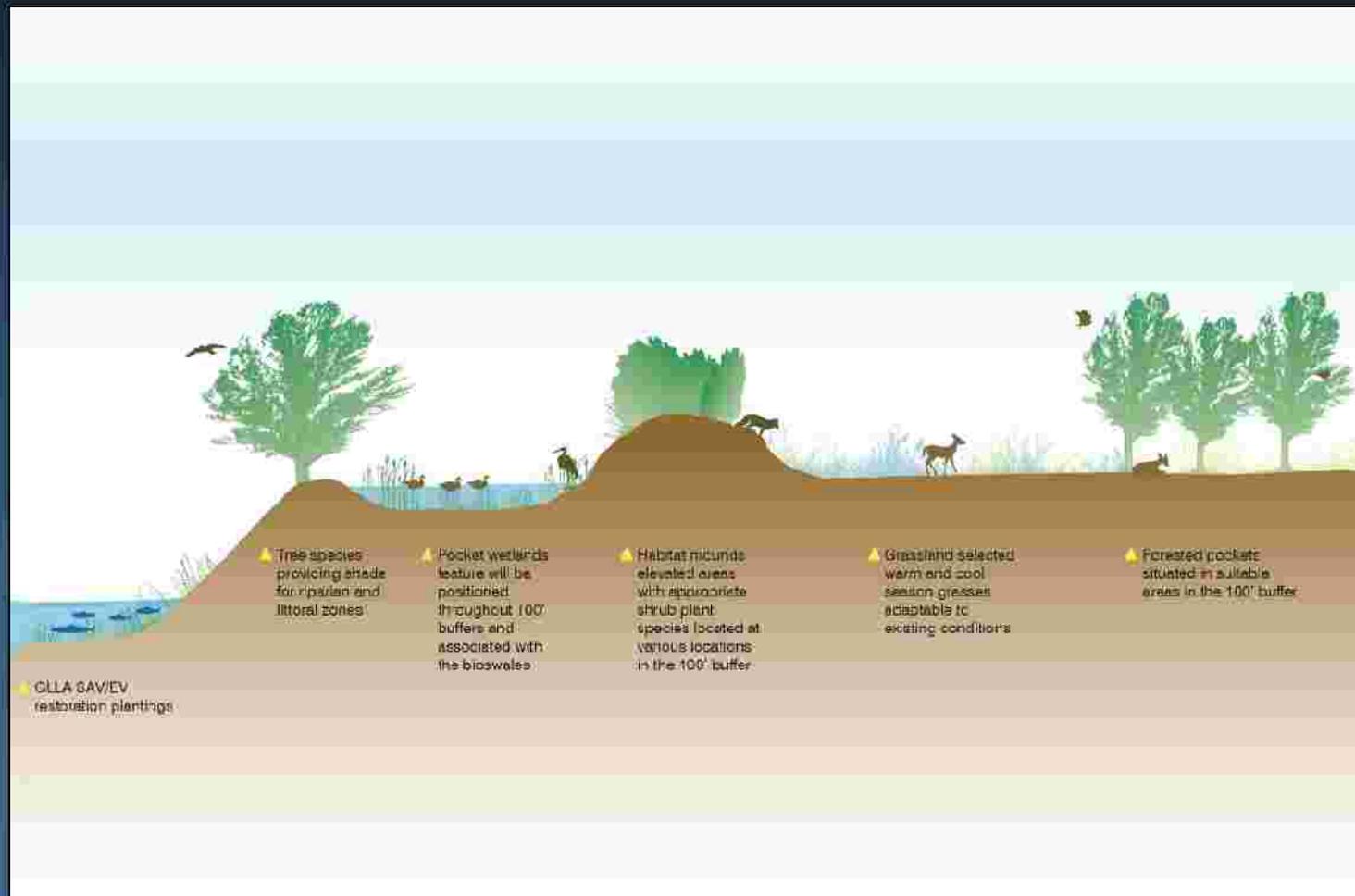
# RiverBend Shoreline Restoration Phase I Project – Design

- Underlying tenet is to design for development of onsite sustainable ecological and biological integrity
- Elements of design will: evaluate appropriate trajectories; restore riparian native habitat structure and communities; implement ISCM practices; create micro-gradients and niches to increase physical and biological diversity; increase temperature buffering and improve transition from top of bank to river.

# RiverBend Shoreline Restoration Phase I Project – Design Ideas (Plan View)



# RiverBend Shoreline Restoration Phase I Project – Design Ideas (Cross Section)



## RiverBend Shoreline Restoration Phase I Project – Outcome of Additional Funding

- Added flexibility in design and construction to evaluate more intensive solutions to site challenges
- Increase footprint or size, numbers, and extent of restoration features (berms, swales, etc.)
- Ability to specify and install features at an ecologically greater successional stage (i.e., larger trees)
- Enhance the probability of sustainable and successful design (greater allowance for soil and substrate amendments, additional features, additional plant materials)
- Increase flexibility of timeframe for implementation

