

# Sustainability Center

A collaborative presentation by the Buffalo Society of Natural Sciences, Buffalo Urban Development Corporation, The City of Buffalo, and RiverWright, LLC.

Presentation to the  
Western New York Environmental Alliance  
November 10, 2009



# Sustainability Center

In envisioning a sustainability center, the WNY environmental alliance wanted a center that could serve as a “one stop shop” featuring:

Physical Demonstration Center

Visitor Attraction

Research/Incubation Center

Shared Space Facility

Meeting / Event Space

Office Space / Hot desking

Energy Efficiency Technologies

Renewable/Alternate Energy

Environmental Education

Green Landscaping

Green Building Techniques

Collaboration space

Resource center



Could Tiffitt Nature Preserve work to meet these objectives?



# Tifft's Vision



- Regional hub for environmental education and eco-tourism housed in a cutting edge green building
- Interpretive displays focused on sustainable energy
- Flexible spaces to use as workshops, meeting locations, working research labs and offices for staff and key partners
- Community resource (hub) for sustainable education
- Leverage Museum collections elements to highlight natural and regional environmental history



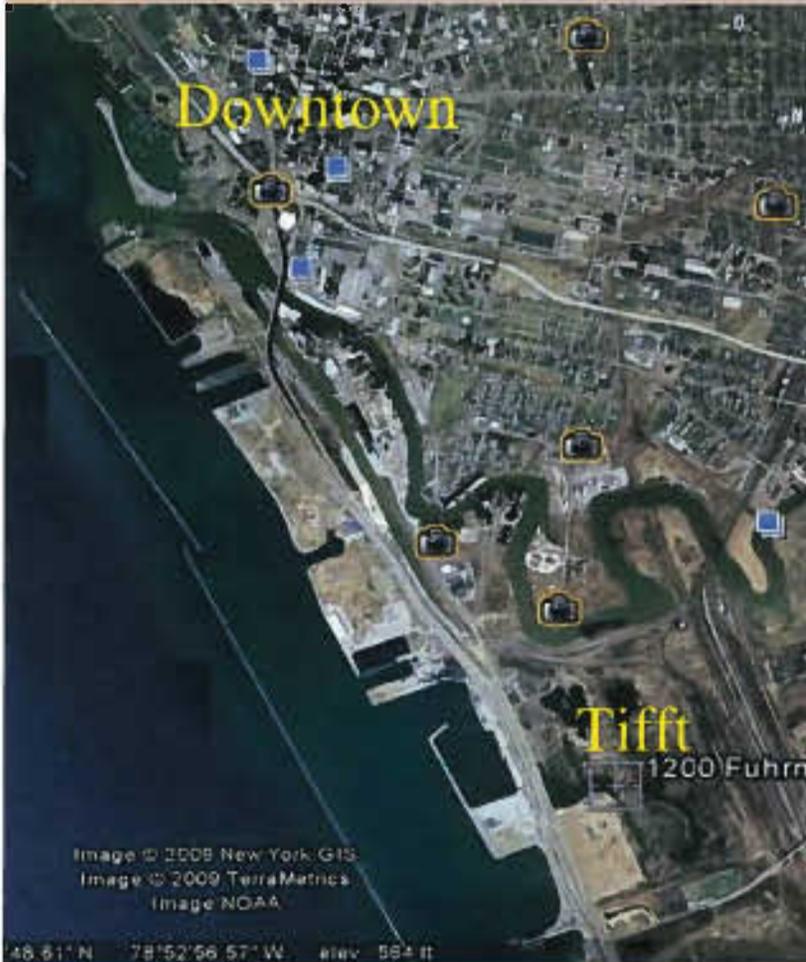
# Tifft's Mission

Inspiring stewardship and sustainability

- Educate the community about regional environmental resources
- Protect and manage historic and natural assets
- Connect environmental education with active research
- Provide public enjoyment in a natural setting



# Uniqueness of Tifft



- First nature preserve on a restored brownfield
- Largest wetland on the shores of Lake Erie in NYS
- Connects Buffalo's heritage to a sustainable future
- Proximity to downtown, Lake Erie, the Buffalo River and South Park
- Important birding area



# Emerging Themes

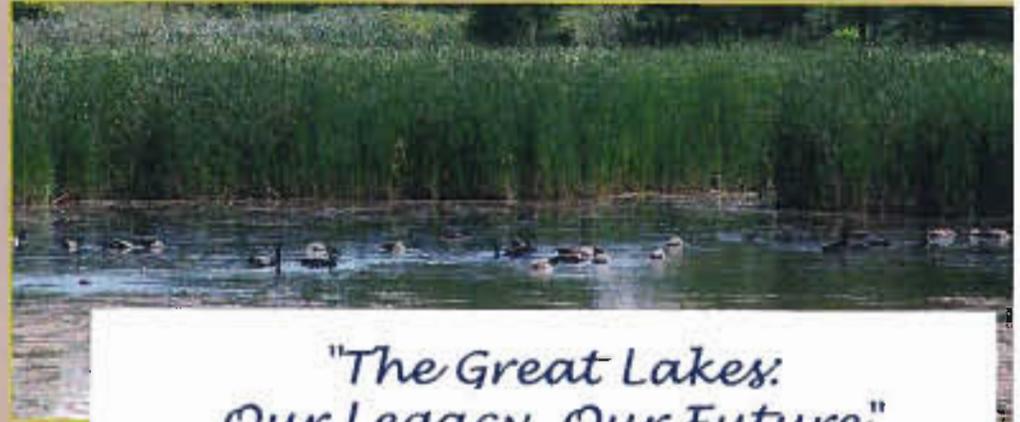
- **Blue Story:**  
*Celebrate our connection with water*
- **Green Story:**  
*Embrace green energy corridor*
- **Brown Story:**  
*Build on our unique heritage*



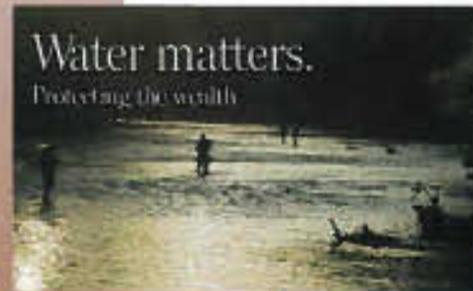


# Blue Story

- Southern gateway to the Niagara River Greenway
- Connection to the Erie Canal, Great Lakes, and the Buffalo River
- Wetland significance



*"The Great Lakes:  
Our Legacy, Our Future"*



*Water matters.  
Protecting the wealth*





# Brown Story



- First Urban Nature Sanctuary on Restored Brownfield
- Transshipment History
- Connecting the Natural and Cultural Stories
- Active research site for Ecological restoration
- Largest brownfield in New York State



# Green Story

- Proposed Green Building
- Environmental Education
- Eco-tourism
- Important Birding Area
- Nature's Biodiversity and Research
- Renewable/Green Energy





# ***Buffalo Niagara Renewable Energy Corridor***

***Role in Sustainability Center***

**How to Align our Forces for Good**

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# Green Energy Corridor

## - “What is it?”

- NFP / NGO
- Public / Private partnership – Urban Development Corp
- Industry Association providing joint planning, infrastructure/ real estate development, and community development



# Green Energy Corridor

- “What does it do today?”

## ■ Re-Brand and Re-Vision

- our *Buffalo River to Bethlehem* Brownfield
- As a Green Industry Corridor ready to be reborn

## ■ Proactive participation in planning initiatives with a collective voice

- Develop a consensus vision for green industrial reuse
- Consistent with ecological, economic and community objectives
- Consolidate policy, incentives, and public infrastructure financing



# Green Energy Corridor

## - “What will it add?”

- Pilot biomass energy technology center
- Sustainability center supportive of public green energy education
- Site development/marketing to attract new projects
  - Industrial scale biomass logistics, storage terminal
- Develop Green Energy Utility Grid
  - Wind & Solar
  - Hydro and Geo Thermal
  - Biomass energy center projects: CHP and Biofuels



# Consistent with the New Vision for the City of Buffalo

## BUFFALO GREEN BELT RENEWABLE ENERGY AND TECHNOLOGY CORRIDOR



The City of Buffalo, New York is excited to announce its new initiative, the Buffalo Green Belt. The Buffalo Green Belt boasts a strong work force, beautiful scenery along the Lake Erie shoreline, the largest number of wind turbines on the Great Lakes, shovel ready land and progressive companies and industries.



"...with hundreds of acres of shovel ready properties, access to fresh water, rail, interstate and workforce, the Buffalo Green Belt is an excellent location for sustainable development in the City of Buffalo."

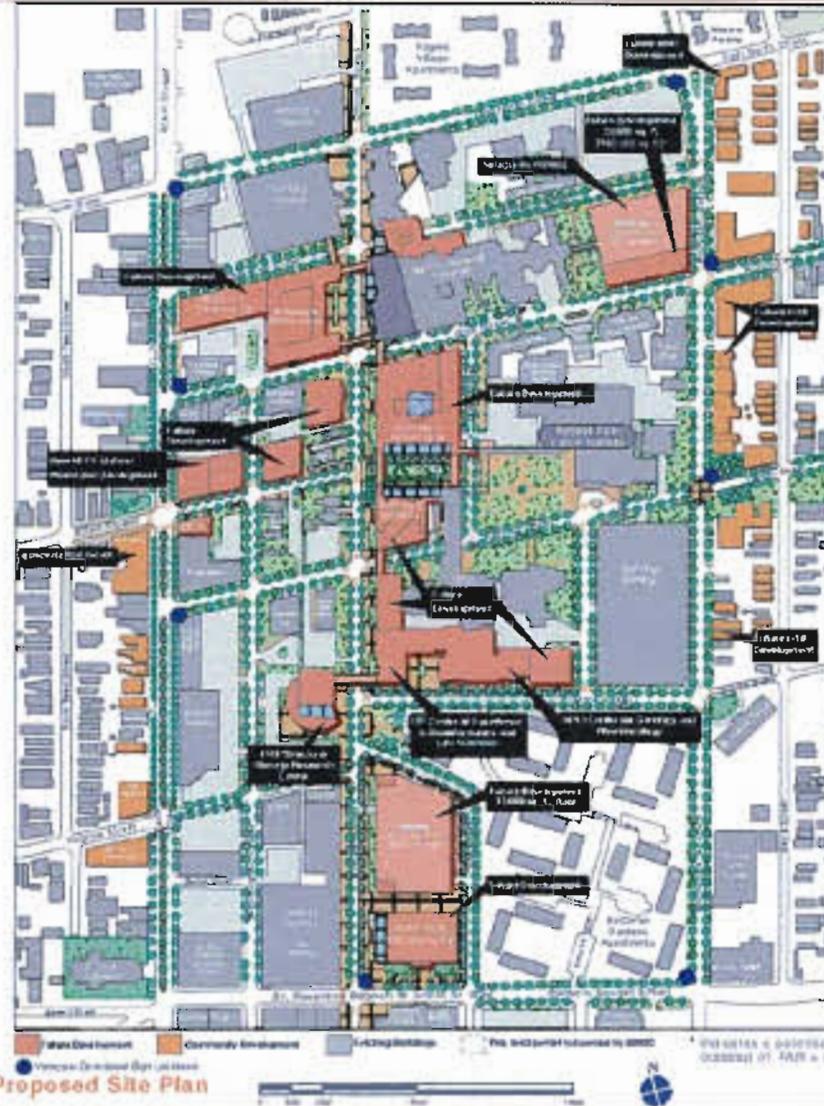
— Mayor Byron W. Brown



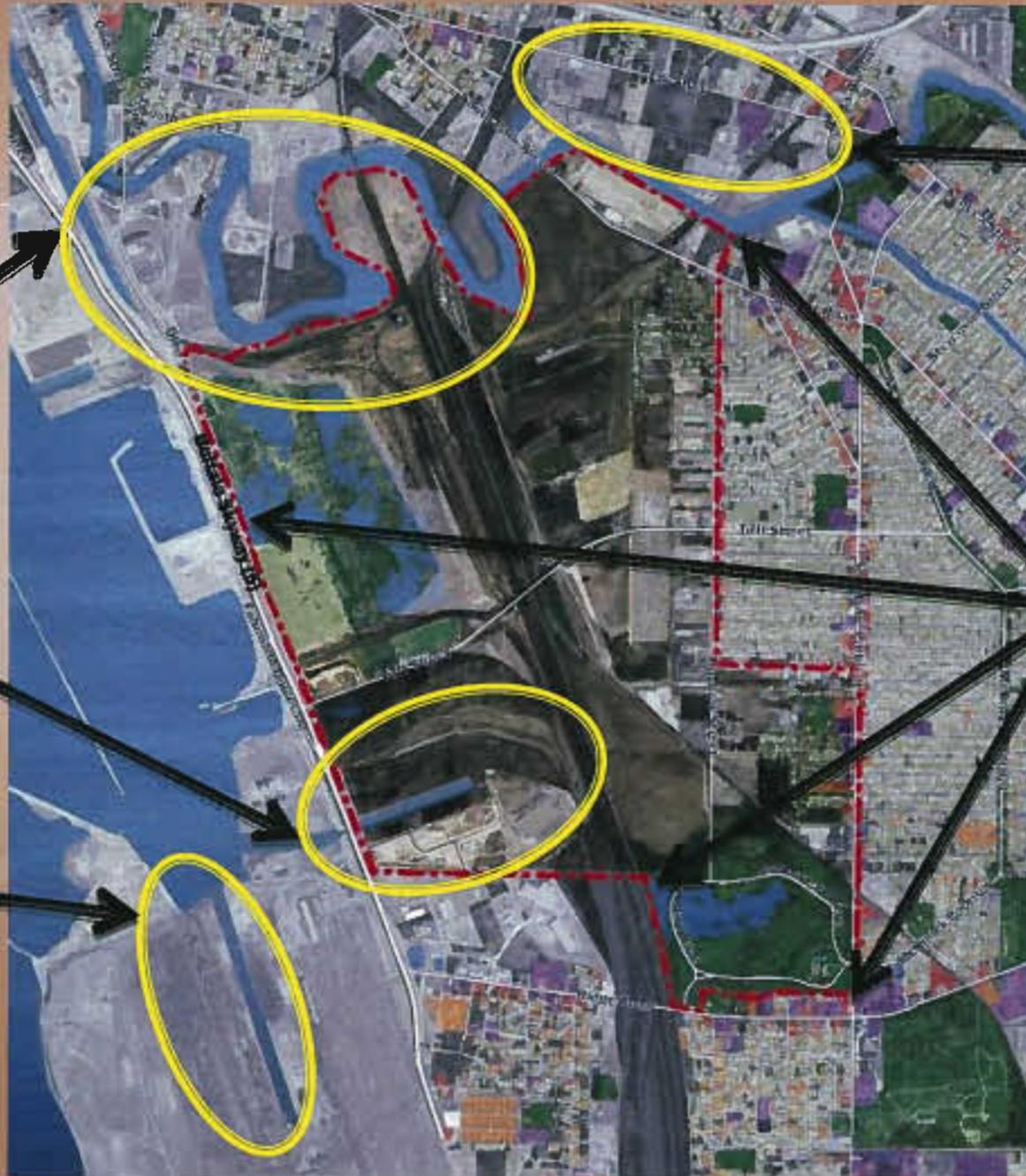




# Modeled after a Success Story: Buffalo Niagara Medical Campus



*Includes Existing Development and Study Areas*



Elk St.  
Corridor  
Study

Buffalo  
River  
BOA

Lakeside  
Commerce  
Park

South  
Buffalo  
BOA

Steelwinds



# Geographic Scope



## Elk Street Corridor Redevelopment Plan

OCTOBER 2008



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**MALCOLM  
PIRNIE**





# South Buffalo Brownfield Opportunity Area

RiverWright

Buckeye  
Terminal



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# Sustainability Center Elements

GEC	Tifft Center	UB	Eco office	Green Home
Pilot technology center Urban wind farm	Green energy education center Brownfield remediation demonstration plots	Green energy incubator and engineering Solar demonstration project	Co-location of env. Groups in urban core	Green redevelopment demonstration in urban core

**All connected and coordinated by a virtual Sustainability Center - the Green Table**

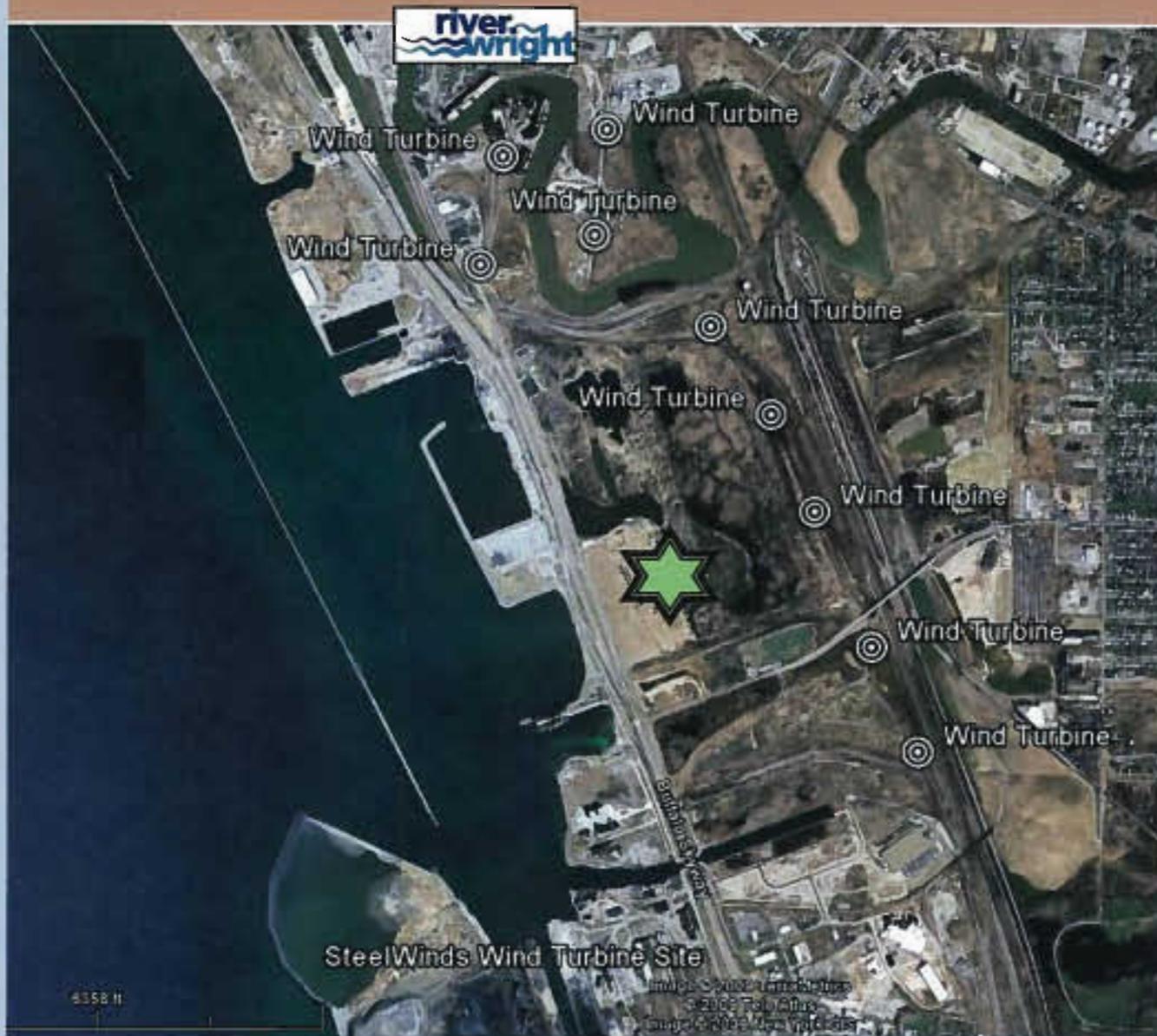
Green energy wind sites



Tifft green energy Education center



RiverWright pilot plant in American Mill





# How we make it happen

- GEC acquires and remediates LV properties
- GEC recruits a wind developer to install turbines
- Tifft builds green education center with funding from GEC, Wind & Solar Developers, NYSERDA, NYPA, etc
- GEC gives LV properties to Tifft, with lease revenue to fund green education center and brownfield remediation habitat demonstration plots



# South Buffalo Brownfield Opportunity Area





# Site details

- Nearly 2,000 acres
- 800 parcels
- 5 rail companies
- East: South Buffalo
- West: Waterfront
- North: Buffalo River
- South: Lackawanna





# Strategically Located

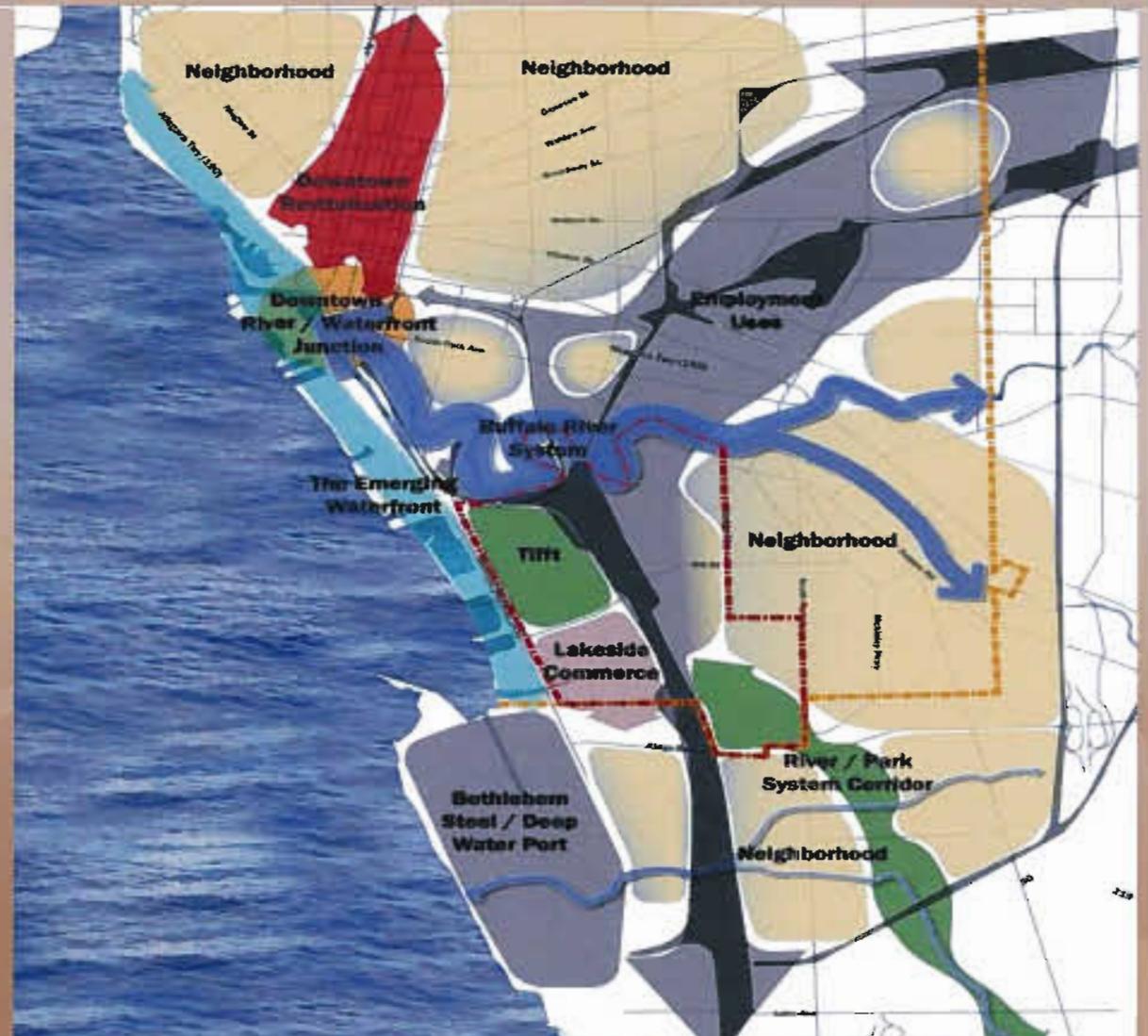
- I/90 QEW research and innovation corridor
- Total US research \$1.33B in 2004
- Canadian research \$2.4B in 2004
- Compare this to Raleigh-Durham of \$1.36B in the same year





# Unique Convergence

- Former Industrial (Steel) manufacturing
- Bordered by the waterfront and the Buffalo River
- On the edge of Downtown
- Access to rail and water based transportation
- Strong surrounding neighborhoods





# Quality of Life

- Numerous cultural and environmental assets
- Neighborhood parks
- Recreational, bicycle and pedestrian trails





# BOA Goals

- Leverage existing assets
- Diversify the economic base
- Enhance the natural environment as the key asset
- Create a strong brand
- Foster collaboration



# Final Land Use Concept

## Land Use Areas

R&D	33 acres
Business Park	220 acres
Business Services	66 acres
Industrial	317 acres
Rail	190 acres
Mixed Use	102 acres
Neighborhoods	138 acres
Tiftt & South Park	450 acres
Natural Areas	212 acres
Golf	133 acres
Parks & Open Space	107 acres
<b>Total</b>	<b>1,968 acres</b>

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## Tifft / Lehigh Valley

### **Role and Description**

A nature refuge dedicated to conservation, environmental education and passive recreation, supplemented by green industry and brownfield related R&D, that provides a green focus and identity for the BOA.

### **Land Uses**

- Conservation/Recreation
- Industry (Green Industry)
- R&D
- Institutional/Education



# Riverfront

## Role and Description

A primarily naturalized Conrail property overlooking the river that allows for habitat restoration and passive recreation, adjacent to sensitively sited industry capable of returning the silos to use and existing alongside a remediated river.

## Land Uses

- Industrial (Green Industry)
- Conservation/Recreation
- Cultural





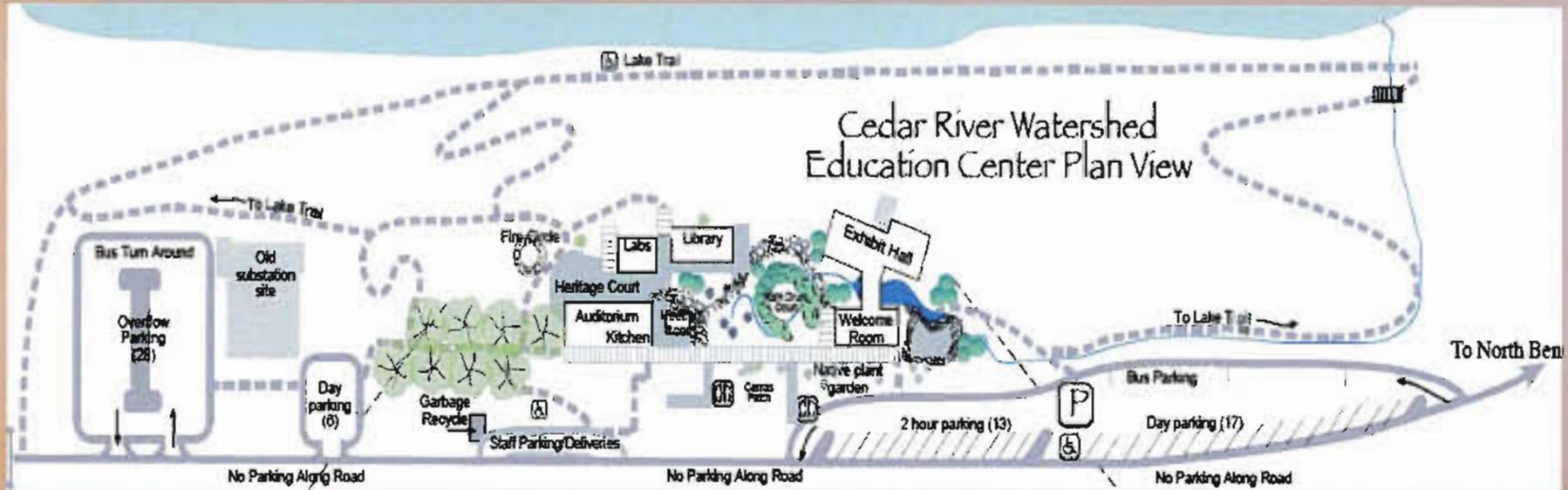
# Realizing our Potential

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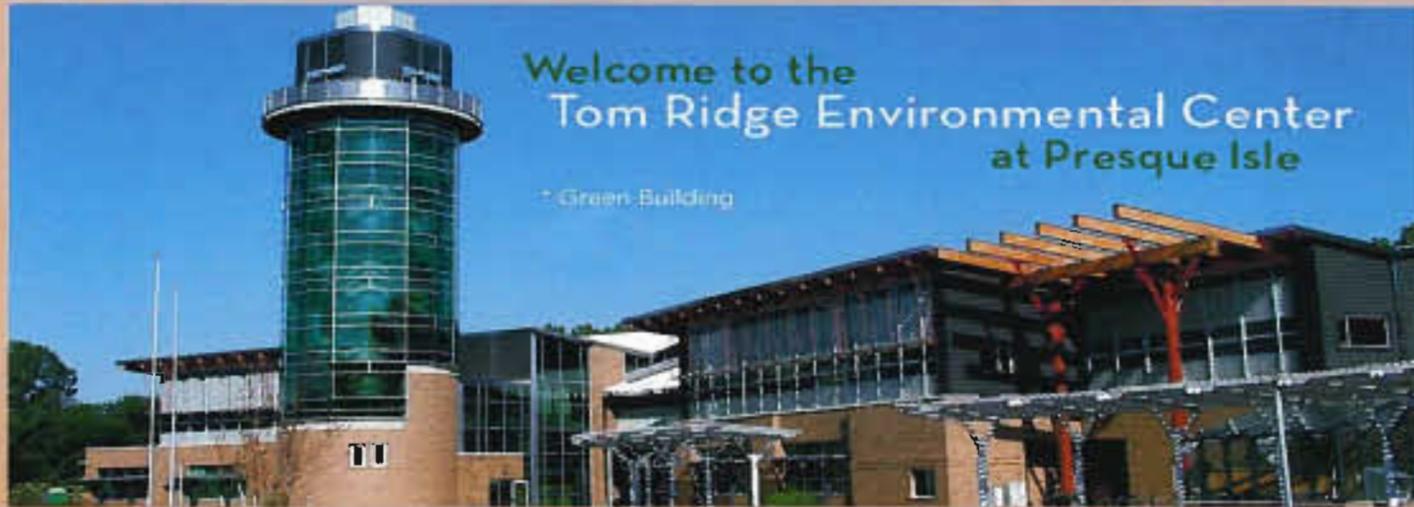
# Cedar River Watershed North Bend, Washington



- Example of a campus environment including library, labs, exhibit space and programming space
- Rain drum courtyard



# Tom Ridge Environmental Center Presque Isle, Pennsylvania



- Shared service site for local and state environmental agencies
- Offers visitor exhibits, research facilities, environmental education, public programs and has a big screen theatre



# Swaner Eco-center Park City, Utah



#### WATER EFFICIENCY MEASURES INCLUDE:

- LOW FLOW FIXTURES
- WATERLESS URINALS
- WATER SAVING TOILETS (DUAL FLUSH)
- DRY WASHING
- PREVENTING LEAKS THROUGH REGULAR MAINTENANCE
- RECYCLED MATERIALS FOR CONSTRUCTION

APPLYING TO THE PROJECT AND  
DESIGN TO REDUCE THE ENVIRONMENTAL  
IMPACT OF THE BUILDING

CONSTRUCTION WASTE  
DIVERTED

PERCENTAGE OF  
MATERIALS FROM  
RECYCLED CONTENT

PERCENTAGE OF  
WOOD COSTS FROM  
FSC CERTIFIED



- Sustainable building
- 53.4% energy cost savings over the energy code
- 12.5% renewable energy provided by PV and solar thermal
- 77.7% construction waste was diverted from landfills
- 24.6% of the cost of materials came from recycled content
- 13% of materials originated from local sources
- 69.5% of the wood costs is FSC certified
- 79.13% of all occupied spaces have natural daylight
- 94.69% have direct line of sight to outside views
- 82% reduction of indoor water use and zero potable water for sewage conveyance



# Brownfields Center

## Carnegie Mellon, Pennsylvania

WESTERN PENNSYLVANIA

# BROWNFIELDSCENTER

an affiliate of the Steinbrenner Institute for Environmental Education & Research



## What is a Brownfield?

Are any of these brownfields?



grades 5-8

A Young Environmentalist's Guide

- Brownfield Research and Educational Center
- School Outreach Program
  - Engages middle school students in an interdisciplinary curriculum using brownfields as a platform.



# Center for Eco-literacy Berkeley, California

- Provides information and inspiration to students (k-12), educators, parents, and other members of the school community who are helping young people gain the knowledge, skills, and values essential to sustainable living
- No physical building. Outreach only.
- <http://www.ecoliteracy.org/index.html>
- Guiding principles
  - Nature is our teacher
  - Sustainability is a community practice
  - The real world is the optimal learning environment
  - Sustainable living is rooted in a deep knowledge of place



# Tifft's Plan

- Expand capacity as an environmental/sustainable center of programming
- Retrofit and expand existing center to incorporate green building technologies
- Physical installations of renewable energy for visitor demonstrations and practical applications
- Gateway to Niagara River Greenway and green energy corridor.
- Public resource / education opportunities



# Tifft Works!!!

- ✓ Physical Demonstration Center
- ✓ Visitor Attraction
- ✓ Research/Incubation Center
- ✓ Shared Space Facility
- ✓ Meeting / Event Space
- ✓ Office Space / Hot desking
- ✓ Energy Efficiency Technologies
- ✓ Renewable/Alternate Energy
- ✓ Environmental Education
- ✓ Green Landscaping
- ✓ Green Building Techniques
- ✓ Collaboration space
- ✓ Resource center



# Comments / Questions

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