Triple Bottom Line & WATAR

A Sustainable Restoration Model

Federal Urban Waters Partnership – Brownfields Community of Practice
March 24, 2015

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Same Goals – Different Approaches

- Site Investigation and Restoration (SIRS) – state level "Superfund" cleanup and oversight
  - Address sites one at a time
  - Develop clean up plan that reduces risk at the site
  - Remedy eliminates off-site transport pathway in most cases
- Watershed Assessment Section (WAS) – state level Clean Water Act implementation
  - Address waterways one at a time
  - Develop Total Maximum Daily Load (TMDL) that defines point & nonpoint loads to water without exceeding water quality criteria
  - TMDLs not effective in addressing legacy issues
  - TMDLs aren't self-implementing.

-To overcome limitations in both programs, we built a bridge-

Let's call it W.A.T.A.R.

- **Watershed Approach to Toxics Assessment and Restoration**
- A watershed scale approach to the evaluation of contaminant sources, transport pathways, and receptors that will result in management actions that mitigate and/or eliminate the levels of toxins that individual sites release to the State's waterways.
- A mechanism to implement restoration actions (including Natural Resource Damage restoration) based upon site prioritization that considers the level of threat to public health, welfare and the environment and the expected resulting benefit to its watershed.

Plan Available: *http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessment.aspx*
http://www.dnrec.delaware.gov/dwhs/SIRB/Pages/WATAR.aspx

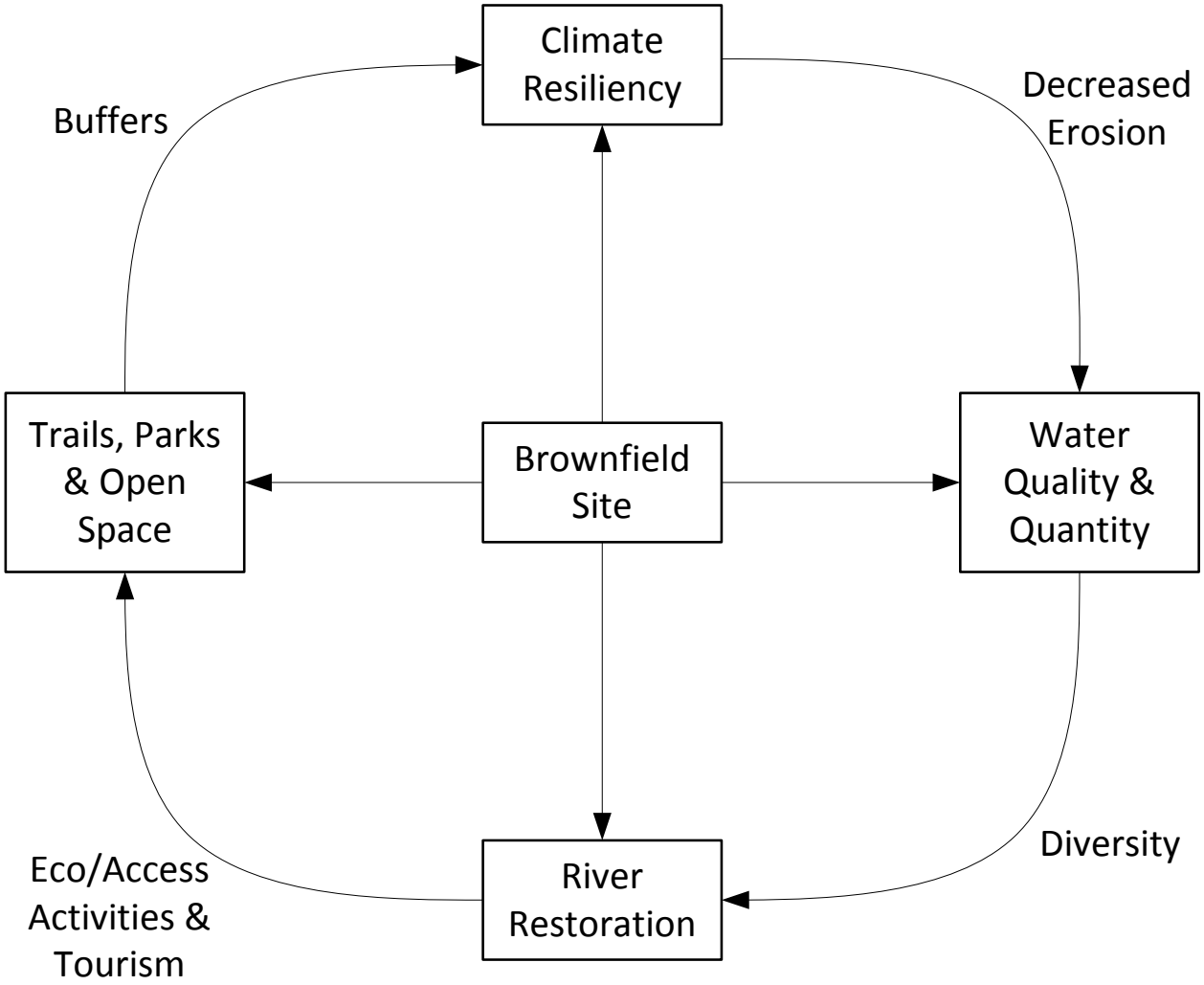
WATAR 5 Year Plan Objectives

- Compile existing toxics data for the surface waters, sediments, and biota into Equis database
- Monitor to assess status and trends in priority watersheds; determine need for toxics TMDLs
- Develop Delaware sediment guidance through HSCA using advanced forensic grade methods.
- Identify high priority remediation projects (upland & in water)
- Facilitate technology transfer to incorporate WATAR into management decisions
- Create a culture to address toxics using the WATAR approach

Expected Benefits of WATAR

- Shorten time frame for removal of fish advisories
- Link contaminant sources (sites, facilities) and sinks (waterways) to compel remediation
- Create a centralized location for ambient and site related toxics data
- Improve transparency and predictability for RPs
- Evaluate and advance state-of-the-art remediation and restoration techniques
- Engage partners – public, private, Federal, state
- Document successes

Urban Waters/BF Ecosystem Service Model

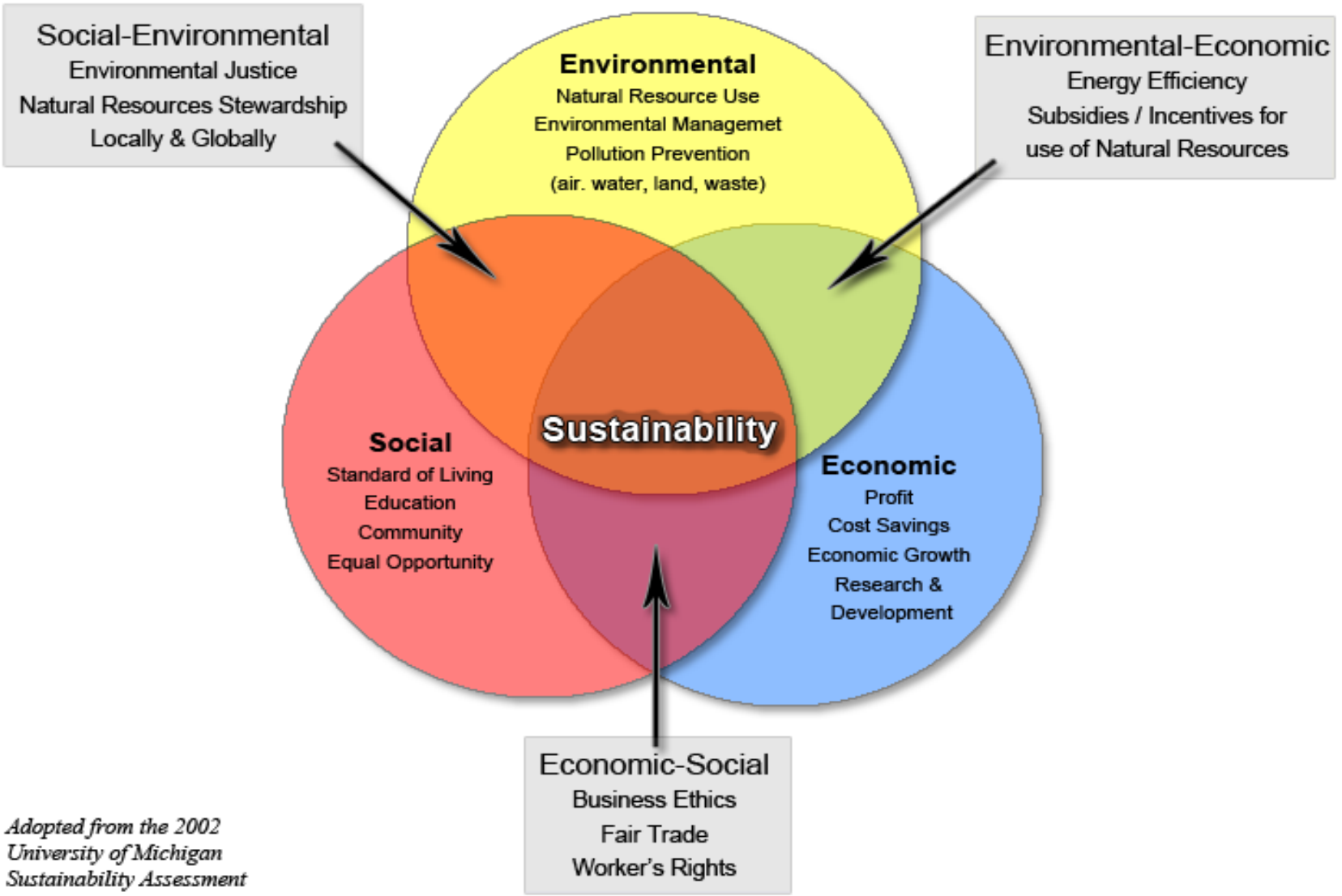


The Triple Bottom Line

People • Planet • Profit

*TBL diagram adapted from www.gcbl.org

The Three Spheres of Sustainability



Adopted from the 2002
University of Michigan
Sustainability Assessment

Metrics/Performance Measurements

Social

- Safety/Crime Reduction
- Housing/Vacancy/ Ownership vs. Rental
- Demography/ Displacement
- Community Engagement
- Neighborhood Economy
- Recreational Access
- Public Health Indicators

Economic

- Number of Jobs
- Increased Property Value
- Housing/Ownership / Vacancy
- Neighborhood Economy
- Education

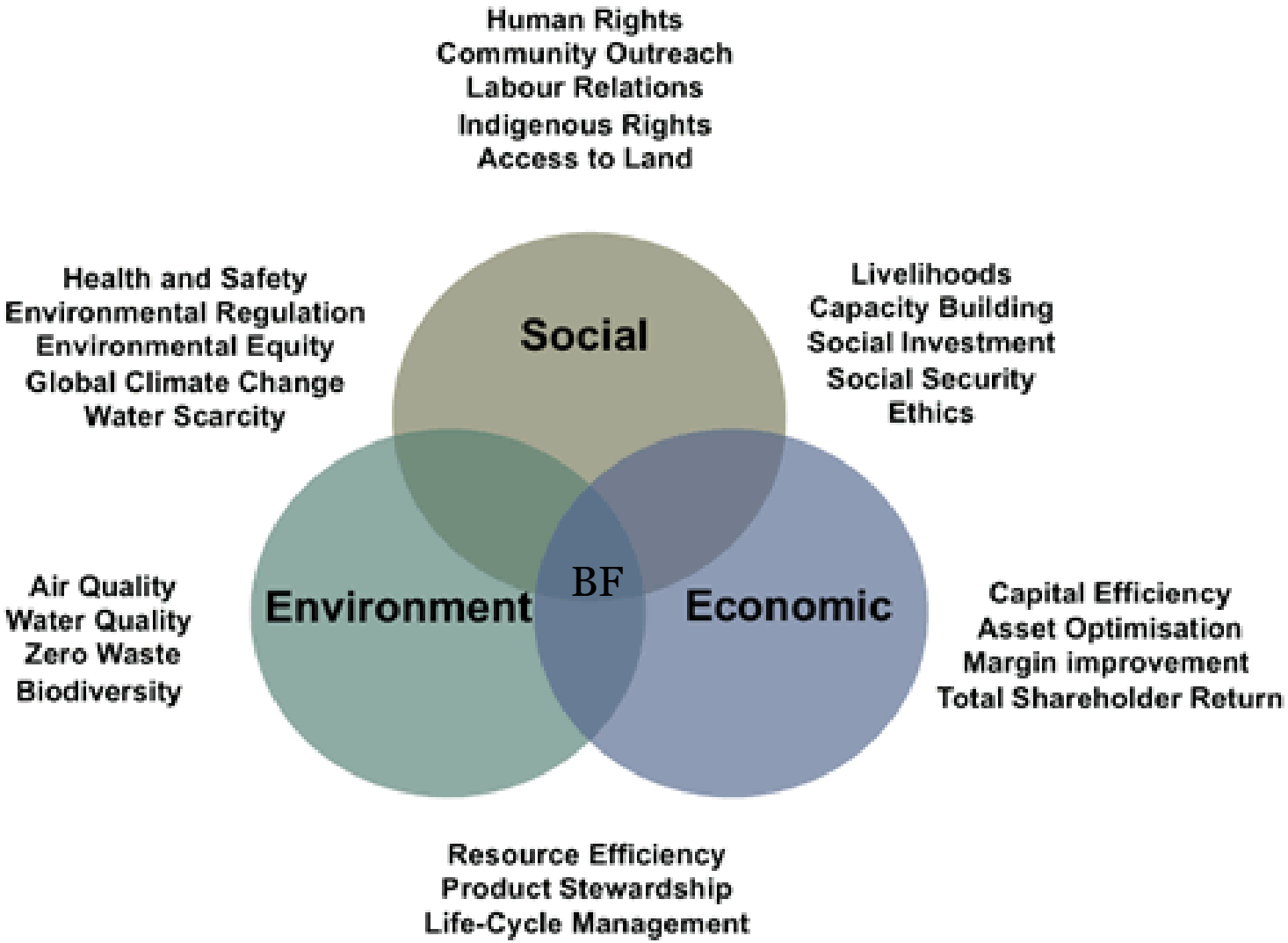
Environmental/ Ecological

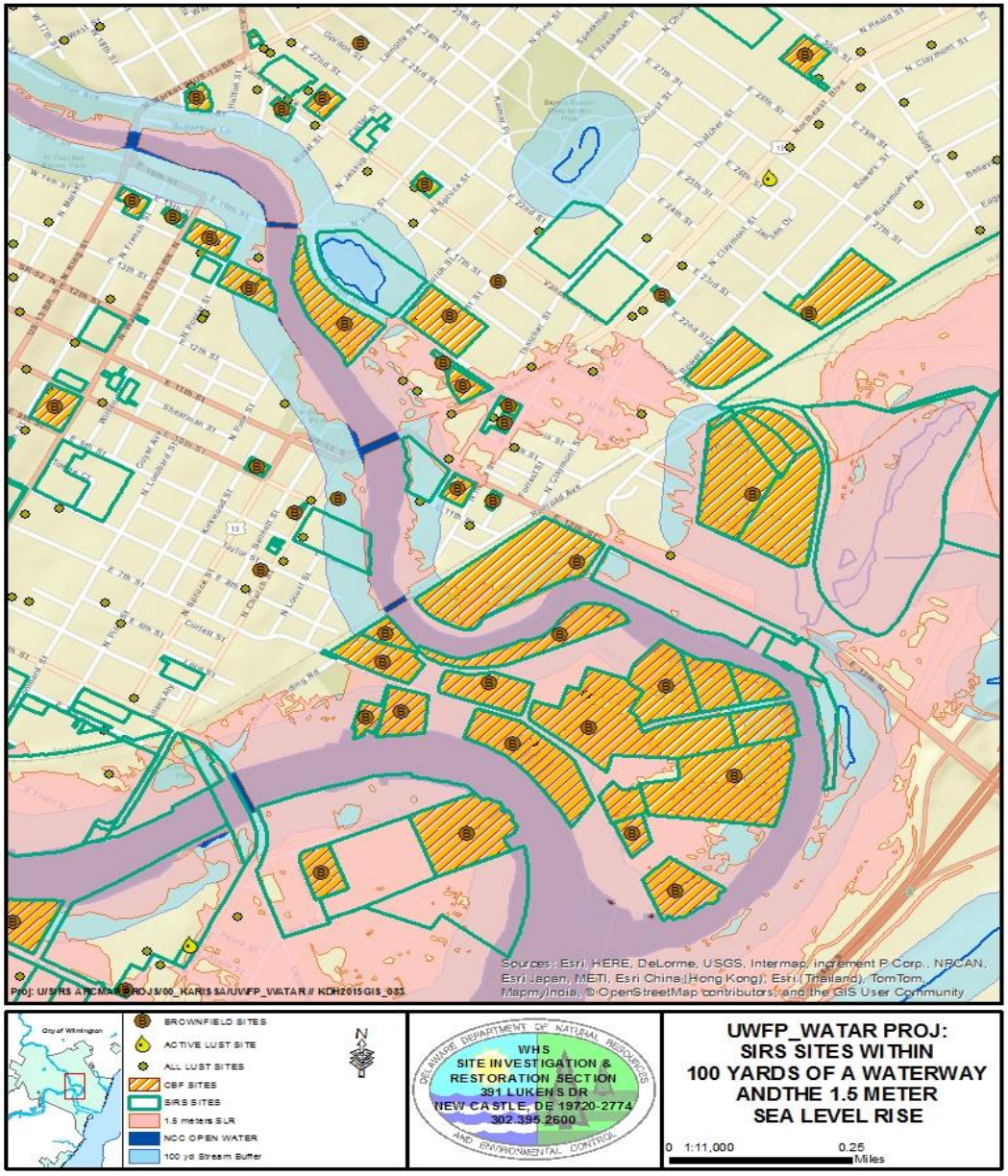
- Acres Cleaned
- Sea Level Rise/Resiliency
- Fish Advisory Removal
- Shoreline Restoration
- Watershed Revitalization

Detrimental Externalities/External Costs

- Remediation of BF Site
- Eco-Restoration BMPs
- Planting/Landscaping
- Other Upfront Increased Costs

Triple Bottom Line Venn Diagram




Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
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City of Wilmington
BROWNFIELD SITES
ACTIVE LUST SITE
ALL LUST SITES
CBF SITES
SIRS SITES
1.5 meters SLR
NCC OPEN WATER
100 yd Stream Buffer
N
WHS
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DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
UWFP_WATAR PROJ:
SIRS SITES WITHIN
100 YARDS OF A WATERWAY
ANDTHE 1.5 METER
SEA LEVEL RISE
0
1:11,000
0.25
Miles

TBL Discussion

What Are TBL'S Values and Goals
As An Implementation Model?

- Metrics & Assessment
- How to Weigh Negatives/Costs
- Utility/Application
  - Cost/Benefit Analysis
  - Prioritization
  - Evaluation

TBL & WATAR

Interested?

Questions?

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