

# Economic Feasibility of Sustainable Development

Environmental Science & Policy Graduate Program, University of Wisconsin-Green Bay

## Economic Overview

Several studies have indicated that economic prosperity and environmental and green space preservation are not mutually exclusive. In fact, evidence indicates that economic prosperity may be enhanced by the preservation and enhancement of natural ecosystems.

The following sustainable practices all have significant economic benefits

- Stormwater Management
- Native Landscaping
- Community Gardens
- Open and Green Spaces
- Conservation Development (Design Layout for Streets, Trails, and other Infrastructure)
- Energy Efficient Technologies

## Native Landscaping

- Native plants are less expensive than conventional landscaping practices
- Lower installation costs
- Require less water eliminating need for irrigation systems
- Require no pesticides or fertilizer applications
- Reduce mowing and other routine maintenance

Table 1. Comparison of Native and Conventional Landscaping Practices. (EAS, 2004)

Landscaping Procedure	Sodded Turf Grasses	Seeded Turf Grasses	Prairie or Wetland Seedlings
Herbicide/Pesticide Applications	\$140	\$140	\$140
Irrigation	\$1,680	\$1,680	
Top Soil	\$4,480	\$4,480	
Tilling	\$392	\$392	\$392
Sod and Installation	\$5,964		
Seed and Installation		\$1,064	\$1,232
Wildflower Planting*			\$1,680
First Year Mowing	\$784	\$672	\$196
Total Installation Costs	\$13,440	\$8,428	\$1,960 to \$3,640
Subsequent Annual Upkeep	\$1,120	\$1,120	\$168

## Stormwater Management Benefits

Natural infiltration methods save up to \$500,000 in installation costs over conventional systems

Prevent downstream flooding

Pollutant filtration processes in detention ponds, rain gardens, etc.

Table 2. Average Construction Costs for Stormwater Management Techniques.

Technique		Cost per Unit
Rain Gardens	Residential	\$3.50 / square foot
	Commercial	\$25.00 / square foot
Detention Ponds		\$0.75 / cubic foot
Green Roofs		\$21.50 / square foot

## Cost of Community Services (COCS)

- Case study approach
- Calculate ratio of a community's public service costs versus revenues based on current land use patterns (Freedgood et. al. 2002)
- Assess three categories: residential, commercial/industrial, and agricultural/open space uses

Figure 1. Averages COCS Studies Costs (AFT, 1995)

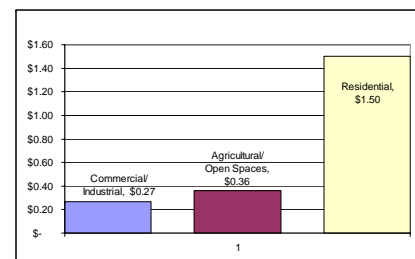


Table 3. Recent Wisconsin COCS Studies Results (AFT, 1995)

Community	Residential	Commercial/Industrial	Agricultural/Open Spaces
Dunn	\$1.06	\$0.29	\$0.18
Dunn	\$1.02	\$0.55	\$0.15
Perry	\$1.20	\$1.04	\$0.41
Westport	\$1.11	\$0.31	\$0.13

## Voters Approve \$3.25 Billion in Open Space Funding

WASHINGTON, DC, 11/4/2004 - Despite a presidential election that revealed broad political polarization, voters in states and communities nationwide came together to dedicate new public funds for conservation. In Tuesday's elections, voters in 120 communities in 26 states passed ballot measures to create \$3.25 billion for protecting land as parks and open space, according to the Trust for Public Land (TPL).

Overall, 120 of 161 local and state measures nationwide were successful - a rate of passage of 75 percent. Since 1997, 1,000 out of 1,301 conservation ballot measures have passed in 44 states, raising over \$25 billion in funding for land conservation-a passage rate of 77 percent.

"American voters are remarkably consistent in approving three out of every four funding measures for land conservation, both before 9/11 and after, whether in recession or recovery," said Will Rogers, TPL president. "The mandate is clear - land conservation is a high priority for Americans."

Voter support for land conservation came from Republican and Democratic strongholds alike.

Ahern, 2004

## References

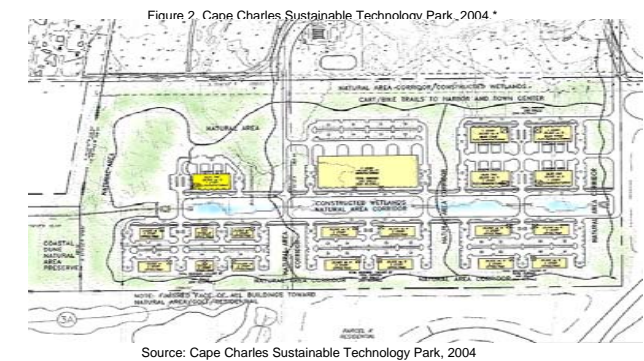
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## Eco-Industrial Parks

- Apply conservation design principles to both commercial and industrial sites
- Relatively new concept
- Promotes business collaboration
- Improves the economic performance of the tenants while minimizing the overall environmental impacts

## EIP Advantages

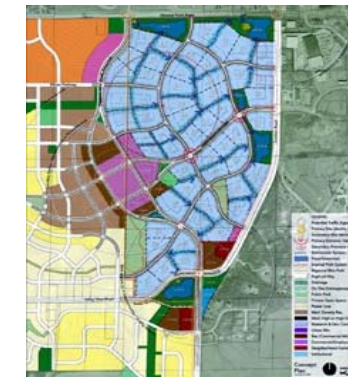
- Shared maintenance costs
- Reduced construction costs
- Reduced operating costs
- Increased health and psychological benefits to employees



## Criteria for establishing a sustainable industrial park

- Adopt an oversight committee for commercial/industrial parks.
- Institute development covenants for tenants.
- Establish performance-based sustainability criteria.
- Initiate monitoring programs to maintain adherence to criteria.
- Incorporate economic, environmental, and social criteria and amenities into the commercial/industrial developments.
- Offer economic incentives to design criteria.
- Establish working relationships with surrounding residential areas.
- Establish working partnerships with local universities and community organizations.

Figure 3. University Park.



Source: JJR, 2000.

Figure 4. Jackson National Life Insurance Corporate Headquarters



Source: JJR, 2000.

## Sustainable Features of Successful EIPs

- Preservation of natural habitats and open spaces
- Habitat restoration projects
- Natural area buffer zones between EIP and residential areas
- Larger parking lot islands
- On-site stormwater management BMPs (detention ponds, swales, etc.)
- Utilization of energy-efficient technologies
- Reduced impervious services (shared parking lots, square footage restrictions)
- Proximate service sector industries (restaurants, day care centers, etc.)
- Pedestrian trail networks connecting to service industries

Figure 5. Husky Molding Injection Systems Headquarters.



Source: Thomas, 2004.