Anderson, Indiana

Eco-Industrial Business Park

CED
Corporation for Economic Development

Working Partners / Community Builders
in Anderson / Madison County
# Table of Contents

## I. Flagship Overview........................ Pages 4 - 16
- Logistics.......................................................... page 4
- Demographics....................................................... page 7
- Inventory / Analysis............................................. page 13

## II. Vision Statement....................... Pages 17 - 18
- Action Plan.......................................................... page 18
- Goals / Objectives................................................ page 19

## III. Design Guidelines...................... Pages 21 - 35
- Site Design.......................................................... page 22
- Building Design and Energy Use....................... page 26
- Materials & Resources......................................... page 29
- Construction / Demolition........................................... page 30
- Indoor Environmental Quality.............................. page 32
- Operations and Maintenance........................................ page 34

## IV. Potential Plans / Designs........ Pages 36 - 47
- Design One Master Plan........................................ page 37 (Foldout)
- Design One Images................................................ page 38
- Design Two Master Plan........................................ page 41 (Foldout)
- Design Two Images................................................ page 42

## V. Economics........................................ Pages 48 - 60
- Benefits of building “Green”............................... page 49
- Funding Sources.................................................... page 52
- Pilot Projects........................................................ page 57
- Case Studies.......................................................... page 58
FLAGSHIP OVERVIEW
Chapter One

Logistics

ANDERSON, INDIANA
The city of Anderson is named for Chief William Anderson, whose mother was a Delaware (_lenape_) Indian and whose father was of Swedish descent. Chief Anderson's Indian name was Kikthawenund meaning “making a noise” or “causing to crack” and is spelled in a variety of ways.

The settlers coming into Anderson referred to the village as “Anderson Town.” The Moravian Missionaries called it “The Heathen Town Four Miles Away.” Later it was known as “Andersontown.” In 1844 the name was shortened by the Indiana legislature to “Anderson.”

Between 1853 and the late 1800's, twenty industries of various sizes located here.

On March 31, 1887 natural gas was discovered in Anderson. With this discovery several factories (i.e. glass, etc.) rushed to locate here. The population increase made Anderson bulge at the seams. Other industries that could use natural gas began to locate here over night.

In 1912 the natural gas ran out. Several factories left and the whole city slowed down. The Commercial Club (formed on November 18, 1905) was the forerunner of the present Chamber of Commerce. This club persuaded the Remy Brothers to stay in Anderson and others to locate here. For decades Delco Remy and Guide Lamp (later Fisher Guide) were the top two employers in the city.

In 1990 Anderson was the ninth largest city in Indiana with a population of 59,518. The city of Anderson is located in parts of four townships: Anderson, Union, Richland, and Lafayette.

ANDERSON FLAGSHIP ENTERPRISE CENTER
Created through a partnership between Anderson University and the City of Anderson, the Flagship Enterprise Center (FEC) serves as a small business incubator and growth stage business accelerator. Through its client-specific client support program, the FEC helps emerging companies to become independently viable. Located at I-69 and Martin Luther King Blvd. (exit 22) in Anderson, the FEC provides ongoing contact with management consultants, university researchers, student mentoring opportunities and access to capital. The FEC and its partners seek to encourage and nurture the entrepreneurial spirit within the community. The Flagship Enterprise Center is both an educational and technological incubator helping businesses develop and transition their technologies into real
world applications and products in global markets. The FEC is one of the largest such Centers in Indiana.

**FLAGSHIP ACCELERATOR**

In June of 2007, the Flagship Enterprise Center dedicated the new Flagship Accelerator adjacent to I-69 and southwest of Remy, Inc. within the Flagship Business Park. The new facility will support the needs of incubator graduates and qualified “early stage companies” that are transitioning to a permanent location within Anderson or Madison County.

Participating in the program was Charles Staley, CEO of the Flagship Enterprise Center and special assistant to the president for Engagement at Anderson University; Kevin S. Smith, Mayor of the City of Anderson; Dr. James L. Edwards, president of Anderson University, Tim Lanane, Indiana State Senator–District 25, and Dr. Kerry Robinson, AU trustee and senior pastor of East Side Church of God in Anderson.

Built in partnership with the City of Anderson, the Flagship Accelerator will represent the third facility, including the recently dedicated Anderson Business Incubator at 700 Meridian Street in Anderson, within the management portfolio of the Flagship Enterprise Center. In addition, the Flagship Enterprise Center also hosts the Flagship Education Center supporting the educational operations of Anderson University and Purdue University.

The new facility was built for a cost of approximately $2.6 million plus lands costs. The facility will provide approximately 70,000 square-feet of operational space and 28 feet of “clear span” for storage, light manufacturing, and prototyping. The facility was constructed to accommodate additional office space as needed by accelerator tenants. GDI Construction Corporation in Indianapolis was the design-build contractor for the project.

**CORPORATION FOR ECONOMIC DEVELOPMENT (CED)**

The Corporation for Economic Development was formed in late 1983 through the merger of two non-profit corporations: the Anderson Business Development Corporation and the Anderson Downtown Development Corporation. This merger was a response to the devastating recession which had gripped Anderson in the first years of the 80’s decade.
CED struggled to find a success formula in its first two years. In 1986 CED leadership began an internal reorganization. A blue ribbon board of directors was recruited, new funds were raised, and different staff was hired. CED reinvented itself as a completely private sector community marketing organization, which it remains today. Local financial supporters have remained steadfast for more than a decade.

In 1987, CED began planning an industrial park which later became The Flagship. This effort was undertaken in response to a lack of available industrial property in the area. In 1988, a partnership was formed on a handshake between CED, Anderson’s new mayor Mark Lawler, and the Madison County Commissioners. This strong relationship laid the foundation for CED’s (and Anderson’s) success. Since then CED has created not only The Flagship (230 acres), but also Orchard Industrial Center (32 acres). Aero Park (six acres) is the third business park under CED’s control. Nine buildings have been constructed on these properties since 1992.

CED has also undertaken the redevelopment of several vacant buildings. In the early 80’s it acquired and subsequently sold two industrial buildings from Lynch Machinery (160,000 square feet). In 1994, it acquired and developed a vacant 210,000 square foot factory from General Motors. In 1996, it turned around a vacant 9,000 square foot office building formerly owned by Indiana Gas Company. Its latest acquisition is a 91,000 square foot industrial building vacated by General Motors and slated for the wrecking ball. The building is being used for Electric Vehicles International’s new electric bus manufacturing operation in Anderson.

Since 1987, CED has carried out a successful marketing program aimed at recruiting business investment and jobs to the Anderson/Madison County area. This program, which is international in scope, has provided information to almost 4,000 companies considering expansion activities. As a result of CED’s activities over the past decade, more than 5,000 jobs have been created or retained by expanding companies in Madison County.

CED has also played a significant role in rebuilding the Anderson/Madison county area. Its efforts have improved the data base of information available to companies making investment decisions. It helped establish the Madison County Community Foundation and Anderson International (Anderson’s Sister City Committee). CED has worked closely with city and county government officials to help plan and envision the community’s future. Teamwork is a hallmark of the community’s economic development effort.
Demographics

ANDERSON, INDIANA DEMOGRAPHICS (Source: www.census.gov)

Summary

Population
- Total: 59,734
- Male: 28,300
- Female: 31,434
- White: 48,978
- Black: 8,886
- American Indian: 187
- Asian: 292
- Hawaiian / Pacific Islander: 9
- Other: 516

Housing
- Total Units: 27,643
- Owned: 16,131
- Rented: 9,143

Education
- High School Graduate or Higher: 30,196
- Bachelor’s Degree or Higher: 5,118

Employment
- In Labor Force: 28,577
- Unemployed: 2,342
- Mean Travel Time to Work: 22.9 minutes

Income
- Median Household Income: $32,577
Chapter One

Race

- White: 48,978
- Black or African American: 8,886
- American Indian and Alaska Native: 187
- Asian: 292
- Native Hawaiian and Other Pacific Islander: 9
- Some other race: 516

Housing

- Owner: 16131
- Renter: 9143
- Vacant: 2369
Chapter One

### Educational Attainment

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9th grade</td>
<td>2,602</td>
</tr>
<tr>
<td>9th to 12th grade, no diploma</td>
<td>6,199</td>
</tr>
<tr>
<td>High school graduate (includes equivalency)</td>
<td>15,198</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>7,681</td>
</tr>
<tr>
<td>Associate degree</td>
<td>2,199</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>3,089</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>2,029</td>
</tr>
</tbody>
</table>

### Employment by Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management, professional, and related occupations</td>
<td>5,984</td>
</tr>
<tr>
<td>Service occupations</td>
<td>4,975</td>
</tr>
<tr>
<td>Sales and office occupations</td>
<td>7,067</td>
</tr>
<tr>
<td>Farming, fishing, and forestry occupations</td>
<td>38</td>
</tr>
<tr>
<td>Construction, extraction, and maintenance occupations</td>
<td>2,504</td>
</tr>
<tr>
<td>Production, transportation, and material moving occupations</td>
<td>5,660</td>
</tr>
</tbody>
</table>
Chapter One

Employment by Industry Type

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry, fishing, mining</td>
<td>53</td>
</tr>
<tr>
<td>Construction</td>
<td>1,281</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5,412</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>877</td>
</tr>
<tr>
<td>Retail trade</td>
<td>3,789</td>
</tr>
<tr>
<td>Transportation, warehousing, &amp; utilities</td>
<td>854</td>
</tr>
<tr>
<td>Information</td>
<td>513</td>
</tr>
<tr>
<td>Finance, insurance, real estate, rental, &amp; leasing</td>
<td>1,471</td>
</tr>
<tr>
<td>Professional, scientific, admin, &amp; legal</td>
<td>1,609</td>
</tr>
<tr>
<td>WW Agent</td>
<td>5,008</td>
</tr>
<tr>
<td>Educational, health and social services</td>
<td>2,582</td>
</tr>
<tr>
<td>Arts, entertainment, recreation, &amp; food</td>
<td>1,565</td>
</tr>
<tr>
<td>Other services (except public administration)</td>
<td>1,214</td>
</tr>
<tr>
<td>Public administration</td>
<td></td>
</tr>
</tbody>
</table>

Transportation to Work

<table>
<thead>
<tr>
<th>Mode of Transportation</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car, truck, or van – drove alone</td>
<td>19,850</td>
</tr>
<tr>
<td>Car, truck, or van – carpooled</td>
<td>3,916</td>
</tr>
<tr>
<td>Public transportation (including taxicab)</td>
<td>250</td>
</tr>
<tr>
<td>Walked</td>
<td>919</td>
</tr>
<tr>
<td>Other means</td>
<td>148</td>
</tr>
<tr>
<td>Worked at home</td>
<td>604</td>
</tr>
</tbody>
</table>
Chapter One

The following tables display general demographic information for the United States, Indiana, Madison County, Anderson, Pendleton, and a 30 mile radius around the Flagship. This information can be used to see similarities and differences between the data at the various levels.

### Demographic Comparisons

<table>
<thead>
<tr>
<th>TOTAL POPULATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United States</strong></td>
<td>281,421,906</td>
</tr>
<tr>
<td><strong>Indiana</strong></td>
<td>6,080,485</td>
</tr>
<tr>
<td><strong>Madison County</strong></td>
<td>133,358</td>
</tr>
<tr>
<td><strong>Anderson, IN</strong></td>
<td>59,734</td>
</tr>
<tr>
<td><strong>Pendleton, IN</strong></td>
<td>3,873</td>
</tr>
<tr>
<td><strong>30 Mile Radius</strong></td>
<td>1,243,272</td>
</tr>
</tbody>
</table>
Chapter One

<table>
<thead>
<tr>
<th>RACE</th>
<th>White</th>
<th>Black</th>
<th>Asian</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>211,460,626</td>
<td>34,658,190</td>
<td>10,242,998</td>
<td>35,305,818</td>
</tr>
<tr>
<td>Indiana</td>
<td>5,320,022</td>
<td>510,034</td>
<td>59,126</td>
<td>214,536</td>
</tr>
<tr>
<td>Madison County</td>
<td>119,892</td>
<td>10,511</td>
<td>469</td>
<td>1,993</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>48,978</td>
<td>8,886</td>
<td>292</td>
<td>1,235</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>3,806</td>
<td>15</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>980,062</td>
<td>212,962</td>
<td>15,189</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RACE - % OF TOTAL POPULATION</th>
<th>White</th>
<th>Black</th>
<th>Asian</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>75.1%</td>
<td>12.3%</td>
<td>3.6%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Indiana</td>
<td>87.5%</td>
<td>8.4%</td>
<td>1.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Madison County</td>
<td>89.9%</td>
<td>7.9%</td>
<td>0.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>82.0%</td>
<td>14.9%</td>
<td>0.5%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>98.3%</td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.5%</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>78.8%</td>
<td>17.1%</td>
<td>1.2%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEX</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>138,053,563</td>
<td>143,368,343</td>
</tr>
<tr>
<td>Indiana</td>
<td>2,982,474</td>
<td>3,098,011</td>
</tr>
<tr>
<td>Madison County</td>
<td>65,684</td>
<td>67,674</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>28,300</td>
<td>31,434</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>1,814</td>
<td>2,059</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>603,964</td>
<td>639,308</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEX - %</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>49.1%</td>
<td>50.9%</td>
</tr>
<tr>
<td>Indiana</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>Madison County</td>
<td>49.3%</td>
<td>50.7%</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>47.4%</td>
<td>52.6%</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>46.8%</td>
<td>53.2%</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>48.6%</td>
<td>51.4%</td>
</tr>
</tbody>
</table>

| MEDIAN AGE |  
|-----------|----------|
| United States | 35.3 |
| Indiana | 35.2 |
| Madison County | 37.4 |
| Anderson, IN | 36.1 |
| Pendleton, IN | 35.9 |
| 30 Mile Radius | 34.7 |
Chapter One

**EDUCATION**

<table>
<thead>
<tr>
<th></th>
<th>High School Degree</th>
<th>Bachelor's +</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>146,496,014</td>
<td>44,462,605</td>
</tr>
<tr>
<td>Indiana</td>
<td>3,197,738</td>
<td>755,613</td>
</tr>
<tr>
<td>Madison County</td>
<td>71,677</td>
<td>12,870</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>30,196</td>
<td>5,118</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>1,973</td>
<td>590</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>668,710</td>
<td>216072</td>
</tr>
</tbody>
</table>

**EDUCATION - %**

<table>
<thead>
<tr>
<th></th>
<th>High School Degree</th>
<th>Bachelor's +</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>80.4%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Indiana</td>
<td>82.1%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Madison County</td>
<td>80.1%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>77.4%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>88.0%</td>
<td>26.3%</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>83.3%</td>
<td>26.9%</td>
</tr>
</tbody>
</table>

**MEDIAN INCOME**

<table>
<thead>
<tr>
<th></th>
<th>Median Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$41,994</td>
</tr>
<tr>
<td>Indiana</td>
<td>$41,567</td>
</tr>
<tr>
<td>Madison County</td>
<td>$38,925</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>$32,577</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>$46,204</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>$43,168</td>
</tr>
</tbody>
</table>

**MEDIAN HOME VALUE**

<table>
<thead>
<tr>
<th></th>
<th>Median Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$119,600</td>
</tr>
<tr>
<td>Indiana</td>
<td>$94,300</td>
</tr>
<tr>
<td>Madison County</td>
<td>$81,600</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>$67,900</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>$110,700</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>$102,892</td>
</tr>
</tbody>
</table>

**VACANCY RATES**

<table>
<thead>
<tr>
<th></th>
<th>Vacancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>9.0%</td>
</tr>
<tr>
<td>Indiana</td>
<td>7.7%</td>
</tr>
<tr>
<td>Madison County</td>
<td>6.8%</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>8.6%</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>5.0%</td>
</tr>
<tr>
<td>30 Mile Radius</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

**MEDIAN RENT / MONTH**

<table>
<thead>
<tr>
<th></th>
<th>Median Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$602</td>
</tr>
<tr>
<td>Indiana</td>
<td>$521</td>
</tr>
<tr>
<td>Madison County</td>
<td>$490</td>
</tr>
<tr>
<td>Anderson, IN</td>
<td>$493</td>
</tr>
<tr>
<td>Pendleton, IN</td>
<td>$592</td>
</tr>
<tr>
<td>30 Mile Buffer</td>
<td>$466</td>
</tr>
</tbody>
</table>
Chapter One

FLAGSHIP DEMOGRAPHICS

Summary

Businesses
Total: 16
Square Footage:

Employees
Total: 2,260

Utilities
Electric Provider: Anderson Municipal Light and Power
Water Provider:

Land
Available Acreage:
Highway Frontage:

![Flagship: Number of Employees by Business](image-url)
Chapter One

Inventory and Analysis

Context

Legend
- Interchange Location
- Freeway System
- Major Rivers
- Major Lakes
- County Boundaries
- States

eco-industrial business park plan
Chapter One

Current Land Use

With the exception of the wetland areas on the southern portions of the site, the majority of the land use is reserved for industrial, farmsteads, and fields/pastures.

Floodways

Other than the wetlands located on the southern portions of the site, there are no significant floodways present.

Analysis of Land Use and Floodways

Land Use

With the exception of the wetland areas on the southern portions of the site, the majority of the land use is reserved for industrial, farmsteads, and fields/pastures.

Floodways

Other than the wetlands located on the southern portions of the site, there are no significant floodways present.
Chapter One

Electric Providers

Anderson Municipal Light and Power is the sole electric provider for the site.

Hydrology & Wetlands

Scattered throughout the site are minor hydrology features and wetlands. The prominent features lie within the southern portions of the site adjacent to Interstate 69. The wetlands in this area are protected by the state and should not be disturbed or destroyed during phases of construction and development.
Chapter One

place a full page map with circulation diagram, site boundaries, and rail call-out

On a secondary page- place a map with figure ground utilizing property line. - What is existing? What is available for expansion? Current and future boundaries for flagship.
Chapter Two

Vision Statement
The Flagship endeavors to reflect the principles of an Eco-Industrial Park (EIP) design in both spirit and physical construction. The EIP is characterized by closely cooperating manufacturing and service businesses that work together to improve their environmental and economic performance by reducing waste and increasing resource efficiency. Neighboring firms coordinate activities to increase efficient use of raw materials, reduce waste outputs, conserve energy and water resources, and reduce transportation requirements.

While these efforts have a positive environmental impact, all increases in efficiency translate into economic gains for businesses. The actions taken by the firms occupying the Flagship will ultimately benefit the local community by creating new jobs, improving the environment, and focusing attention on the area as a generator of new technology and revenue.

As consumers pay increasingly more for energy, consumers will look for more ways that they can cut costs. Through the creation of long-term, varied employment opportunities; the provision of increased public transportation; and cutting-edge building and conservation technology, the Flagship will lead the way towards the future of Central Indiana.

Action Plan
It is imperative for the Flagship to establish a firm set of goals and objectives for future development so that it avoids becoming yet another piecemeal, nondescript business park on I-69. There are a series of strategic planning measures that can ensure that the Flagship embodies a new way of doing business in central Indiana.

The first step that must be taken is to develop a comprehensive inventory and analysis of the exit 22 area. Based on the results of this survey, a set of design guidelines for future developments and recommendations for retrofits on existing buildings can be created. The focus of these guidelines should be enhanced environmental, economic, and social performance through collaboration in managing environmental and resource issues.

In conjunction with the inventory and analysis of the site and buildings, an assessment of potential alternative energy sources and approaches will be an integral tool used to develop a strategic plan for the Flagship. Geothermal, solar, and wind generation will be explored for their feasibility, and possible community benefits such as public transportation hubs will be evaluated as well.
Funding sources such as tax abatements, grants, and federal incentives will be explored and pursued in order to defray the startup costs of employing alternative energy technology on site. A cost/benefit report must also prove that the savings are both tangible and significant.

All of the above information will be outlined and elaborated upon in this document, which is intended as a guide for gaining leverage in negotiations with potential developers and investors interested in locating their industry or business in the Flagship. If the philosophy of EIP development is taken to heart, the result may be a stand-alone business park that is able to draw tenants, create jobs, and thrive against the odds.

**Goals and Objectives**

**GOALS**

- Increase visibility of North Central Indiana as a leader in sustainability and green industry
- Promote the practice of alternative energy use and conservation locally
- Provide leadership for Eco Industrial Park Development in Indiana
- Create opportunities to attract “green” businesses into the community
- Increase local tax base
- Increase local employment levels
- Improve the local environment
- Attract young professionals and recent graduates who are seeking “green” communities and employment
- Minimize waste and maximize efficiency of businesses on site
- Foster and promote innovation and forward-thinking energy and resource use
• Create job and energy security

OBJECTIVES
• Create and adhere to design guidelines that promote efficiency

• Reduce overhead costs by employing alternative energy technologies on site

• Coordinate inputs/outputs amongst onsite industries to reduce waste stream

• Demonstrably improve community by encouraging public transportation

• Increase local tax base

• Increase local employment levels

• Improve the local environment

• Attract young professionals and recent graduates who are seeking “green” communities and employment

• Minimize waste and maximize efficiency of businesses on site

• Foster and promote innovation and forward-thinking energy and resource use

• Create job and energy security
DESIGN GUIDELINES
Chapter Three

Design Guidelines

SITE DESIGN
Purpose: Promote adaptive reuse of Flagship property that recognizes the ecological context, wetland influence, existing landmarks, building stock and industrial heritage, and improve existing infrastructure (sidewalks, streets, storm drainage). Sustainable site design should address water quality and quantity issues, native species, open space that provides recreation, wildlife habitat, cultural and contextual connections; and alternative transportation, lighting and parking design.

Site Analysis and Planning
A. Design all parking facilities and open spaces to work together to manage stormwater, create connections to the existing natural amenities within the Flagship and improve the aesthetics of your site.

B. From the outset of the development project, integrate site, landscape and soil needs into architectural and construction sequences.

C. Maintain a ratio of total gross floor area to total lot area of no less than 25% for initial site build-out.

D. Build to street-fronting property lines, or to the setback of neighboring buildings. When buildings cannot be at property lines, minimize parking along the street frontage.

E. Do not construct within ten feet of any interior side lot line of the property. Side yards on the street side of corner lots shall have no minimum required width.

F. Attach signage to a vertical surface of the building or to a ground-mounted base. Do not post signs other than corporate identification signs, directional and educational or interpretive signs.

G. If possible, orient the building so the majority of the structure is south-west facing. Utilize this orientation to capture natural lighting throughout the day.

H. Where feasible, install utility lines underground.
Chapter Three

Stormwater Management

A. Connect to regional stormwater treatment areas where available, or share stormwater management practices with neighboring parcels.

B. Design your stormwater conveyance system to use a connected series of vegetated swales and channels for stormwater infiltration in place of direct discharge into the drainage ditch and wetland areas.

D. Design landscape planting materials, soils and sub-soils for infiltration and evapotranspiration of rainwater. Note that soils and subsoils placed above a remedial cap can serve to store and evapotranspire collected stormwater.

E. Use drought resistant plantings, eliminating irrigation other than collected rainwater.

F. Consider using green roof systems to collect and evapotranspire rainwater, thus reducing runoff as well as heating and cooling loads.

Natural Landscape

A. Specify native plant and tree species for at least 80% of planted area. See Appendix A for tips on planning, installing, and maintaining a native landscape, as well as a list of locally native plants and invasive species.

B. Landscape all open areas, except those required for driveways, parking, or walks, not later than 6 months after occupancy.

C. Use deciduous shade trees, vegetative cover and exterior structures such as louvers, arbors and trellises to provide 30% shade over non-roof impervious areas within 5 years.

D. Where rooting area will be limited, use strategies such as connected planting beds, rooting breakouts under parking, or walkways floating on root-permeable soils to extend rooting space and increase plant vigor. Establish engineering specifications for these strategies, drainage patterns, and installation of structural soils as part of the building design and site grading plans.

E. Use Integrated Pest Management practices and appropriate plantings to eliminate the use of pesticides, herbicides and fertilizers.

F. Consider using subsurface structures to aid in soil stability.
Chapter Three

Parking and Transportation

A. Encourage transportation alternatives for employees and visitors by providing:
   o Bicycle racks and employee shower/changing facilities.
   o Covered bus shelters or waiting areas.
   o Pleasant, safe and accessible walkways.
   o Preferred parking for carpools.
   o Special transit routes.

B. Provide a buffer of native plantings between parking areas and natural amenities.

C. Do not locate parking or waste facilities within 10 feet of the front line of the property, and screen these areas from view. Contain all refuse in an appropriate receptacle further enclosed by a 6-foot fence of solid material.

D. Provide no more than two drive openings, and provide appropriate traffic control measures at all entrances to public rights-of-way.

E. Locate truck loading berths at the side or rear of the building.

F. Include on-street and shared parking resources in parking calculations. Minimize parking stall dimensions to 9’ x 18’, as smaller stalls will decrease the parking lot size and allow for a large building footprint.

G. Use concrete pavement rather than asphalt where possible to keep parking areas cool.

H. Incorporate green spaces into parking areas to break up large expanses of concrete.

I. Consider using porous paving systems, especially in parking stalls, to extend the life of the pavement, allow for stormwater infiltration, reduce maintenance costs, and reduce the urban heat island effect in summer. See Appendix B for additional guidance on using porous paving systems.
Site Lighting

A. Provide site lighting appropriate for the security needs of the site while maintaining an overall “low-lighting profile” for the park.

B. Use high efficiency lighting (metal halide or high pressure sodium lamps) with low cut off angles and down-lighting for landscaping.

C. Utilize reflective-type lighting fixtures to reduce or eliminate glare and provide safer, more human-scaled nightscapes.

D. Allow zero direct-beam exterior lighting at the property line.

E. To reduce dependence on high-wattage electrical lighting at night, use light colored or reflective edges along driveways or walkways.
Chapter Three

BUILDING DESIGN AND ENERGY USE

Purpose: Generate operating cost savings by designing for energy efficiency and ensuring that the building is capable of operating in accordance with its design. Building design should address energy efficiency, daylighting techniques, building commissioning, improved systems controllability and improved aesthetics.

Building Design

A. Ensure that the scale and design of new buildings are compatible with adjacent buildings. At pedestrian areas of the building, use awnings, landscaping, windows and doors to lower the scale of the building.

B. Design a principal façade and obvious entrance parallel to the street edge. Do not face blank walls towards public streets.

C. Utilize brick (reclaimed or new), architectural pre-cast concrete panels, decorative concrete block or cut stone. Corrugated sheet metal, vinyl siding, reflective glass and imitation stone siding are discouraged.

D. Screen sources of mechanical noise, odors and loading operations from public open space areas and adjacent properties.

E. Locate utility meters and exhaust vents on the side or rear of building.

F. Screen or locate roof-top mechanical equipment so it is not visible from the street.

G. Design to accommodate areas for recycling of waste materials. Provide a centralized ground-floor location for collection and storage of recyclables.

H. Where possible, orient buildings along an east-west axis for maximum daylighting benefits. (see “Site Analysis and Planning,” Objective G on page 22)

I. For new developments strive to obtain LEED certification. See Appendix C for additional information regarding LEED certification for new construction.
Energy Efficiency

A. Design for energy performance that improves upon State of Indiana Building Code by 25%, and demonstrate energy efficiency using hourly simulation tools. See Appendix D for guidance on meeting this objective for Office, Assembly/Manufacturing and Warehouse spaces. Additionally, consider the following strategies:
  o Group spaces for similar functions or requirements to concentrate similar heating and cooling demands, and use non-program spaces as climate buffers.
  o Use thermal mass such as masonry or concrete to moderate interior temperatures and to achieve desired R-value in foundation, walls and roof.
  o Design air-lock entrances to reduce heat loss or gain.
  o Use Energy Star Roof-compliant, high reflectance and high emissivity roofing to reduce heat retention in summer, unless using a green roof.


C. Consider separate circuitry to isolate HVAC, lighting and plug loads, enabling operations and maintenance staff to monitor energy use on site.

Daylighting and Interior Lighting

A. Maximize daylight in your building through the appropriate use of the following strategies:
  o Maximize window height, and use roof monitors, clerestory windows, skylights, and light-pipe technology to transmit light to spaces not reachable by other means.
  o Balance glazing color for view, daylight and energy performance.
  o Use interior windows, light shelves and low partitions to bring daylight deeper into the space, manage glare, and balance light levels.
  o Use south-facing windows with appropriate overhangs to reduce summer sun and admit winter sun.
Chapter Three

B. Supplement daylighting with highly efficient electric light distribution that improves visual quality while reducing electricity use. For instance:
   o Rely on low ambient lighting levels for general illumination (predominantly light reflected from the ceiling where achievable) boosted by high quality, flexible task lighting. For general office space and non-critical manufacturing task areas, consider achieving a lighting power density (LPD) goal of between 0.8 and 1.0 watts/ft². See Appendix E for information regarding measurement of LPD.
   o Use high efficiency lamps and luminaires with electronic ballasts.
   o Employ efficiency-based controls such as dimmers, occupancy sensors, and lumen maintenance controls.
   o Wire luminaires parallel to walls with windows so they can be dimmed or turned off by row.

Alternative Energy
   A. Purchase power generated from renewable sources (solar, wind, biomass, or low-impact hydro sources)

B. Consider closed-loop ground-source (geothermal) heating and cooling.

C. Consider the development and use of solar panels and/or wind turbines to obtain a renewable sources of energy.

Building Commissioning (Quality Control)
   A. Contract with an independent commissioning authority from the beginning of the design process to review design options and expected operation of building and its component systems.

B. Have commissioning agent train building staff to operate and maintain the building.

C. Ensure that energy measures are installed and operating one year after completion of construction.

D. Use long-term continuous measurement of performance for building and site systems.
MATERIALS AND RESOURCES

Purpose: Reduce impact on natural resources as well as reduce costs, increase performance and improve aesthetics and the working environment. Selection of building materials and resources should involve consideration of available and renewable natural resources in addition to more traditional criteria such as cost, durability, performance, and aesthetics.

Exterior and Interior Materials

A. Reuse existing building shells and components where feasible.

B. If on-site reuse is not possible, create a demolition management plan that identifies opportunities to reuse, recycle or sell salvaged materials.

C. For historic buildings (constructed before 1935), make changes to exterior in accordance with US Department of the Interior Rehabilitation Guidelines. [http://www2.cr.nps.gov/tps/standguide/index.htm]

D. Where feasible, develop rooftop gardens.

E. In material selection strive to achieve the following goals:
   - Use 25% materials with post-consumer and post-industrial recycled content.
   - Use 20% materials and products that are manufactured within a radius of 500-mile radius.
   - Specify US Forest Stewardship Council-certified wood-based materials and products for 25% of all wood used in the project.

F. Specify mold- and moisture-inhibiting construction materials.

G. Use low-VOC sealants and adhesives.

H. Use paints and coatings that are certified by Green Seal for VOC and chemical component limits.

I. Use carpet systems that meet the requirements of the Carpet and Rug Institute’s Green Label Indoor Air Quality Test Program. [http://www.carpet-rug.org/drill_down_2.cfm?page=8&sub=6]

J. Use composite wood and agrifiber products that do not contain added urea-formaldehyde resins.

K. Specify building materials (e.g. insulation, carpet pad) that do not use CFC’s or HCFC’s as foaming agents or in other parts of the manufacturing products.

L. Use CFC-free HVAC&R equipment.
Chapter Three

Water Conservation

A. Employ whole-building design strategies and use the following high-efficiency plumbing fixtures to reduce aggregate water use:
   - Specify lavatory faucet aerators.
   - Specify low-flow electronic sensor faucets in lavatories or provide lavatories with pedal controls.
   - Consider waterless urinals as a way of reducing first cost in plumbing risers and to reduce water consumption.

CONSTRUCTION AND DEMOLITION

Purpose: Improve construction and demolition waste management practices to reduce waste, costs and environmental impacts of demolition and construction activities and transform wastes into resources. The materials in Appendix 6 are designed to assist you in managing Construction and Demolition waste.

Waste and Recycling

A. Reuse existing building shells and components. Salvage materials for reuse or resale.

B. Implement a Construction or Demolition Waste Management Plan to recycle and/or salvage at least 50% of construction, demolition and land clearing waste. Include waste reuse and recycling in project specifications. Calculations can be done by weight or volume, but must be consistent throughout. This plan should cover:
   - Identification of a Plan Manager.
   - Identification of opportunities to reduce site disturbance and minimize environmental impact of construction activities.
   - A list of materials to be separated for recovery and designation of areas for collection.
   - A plan to educate workers about separation requirements
   - Procedures for waste auditing.
   - On-site soils management, including areas of concern, types of contamination and disposal or encapsulation methods.
   - List sorting/separation/tracking rules.
Erosion and Dust Control
   A. Follow Indiana Code/guideline (insert code or guidelines for erosion control)

   B. Decrease work during high winds and spray loose soils with water.

Pre-Occupancy Controls for Indoor Air Quality
   A. Protect stored on-site or installed absorptive materials from moisture damage and mold, and replace all filtration media immediately prior to occupancy.

   B. Install wet materials before dry in construction sequence to reduce indoor air pollutants.

   C. Consider a two-week flush of systems at 100% outside air before occupancy.
Chapter Three

INDOOR ENVIRONMENTAL QUALITY

Purpose: Provide a healthy and productive environment for facility occupants; increase the comfort and alertness of occupants; improve productivity and reduce absenteeism. Good indoor environmental quality encompasses such factors as temperature and relative humidity, adequate ventilation, visual comfort, and noise control.

Indoor Air Quality


B. Replace all filtration media immediately prior to occupancy using filtration media that have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999.

C. Increase ventilation to exceed air change effectiveness of 0.9 per ASHRAE 129-1997.

D. Provide for the use of natural ventilation in transition seasons. Take advantage of cross ventilation, prevailing winds and stack effects when possible.

E. Provide direct exhaust for all spaces that generate moisture and pollutants, including manufacturing, toilet and locker rooms, copy rooms and rooms where chemicals and cleaners are stored.

F. Provide mats or grills at entry areas to control dirt and dust.

G. Prohibit smoking in the building.

H. Consider a carbon dioxide monitoring system in spaces of variable occupancy to provide feedback on space ventilation performance. Specify initial operational set point parameters to ensure indoor carbon dioxide levels do not exceed outdoor levels by more than 530 ppm at any time.
Acoustic Quality

A. Maintain a maximum interior Noise Criteria of 35 decibels in occupied areas. Ceiling panels and carpeting can assist in absorbing sound.

B. Place acoustic buffers (corridors, lobbies, stairwells, storage rooms, etc.) and sound-insulated partitions between noise-producing spaces and noise-sensitive areas.

C. Place vibrating equipment on isolation pads and enclose in sound-absorbing walls, floors and ceilings.

D. Maintain a maximum external decibel reading of 50 db at property line.

E. In areas of high ambient noise, specify windows rated at an STC of 40 or better.

F. In other areas, specify windows rated at 35 or better.
Chapter Three

OPERATIONS AND MAINTENANCE
Purpose: Ensure the building operates at its designed efficiency, reducing costs and increasing occupant productivity over the full life of the facility.

Operations Manual and Monitoring

A. Prepare an Operations & Maintenance manual, including monitoring of energy use, luminaire and filter maintenance, in accordance with ASHRAE 4-1993. This plan should clearly describe the principles of design intentions, O&M procedures, and should be accessible to building occupants.

B. Schedule regular systems review and maintenance.

C. Prepare an operational waste prevention and recycling plan.

D. Design to accommodate areas for recycling of waste materials.

E. Assign a manager to monitor and oversee that the forementioned actions are being completed.

F. For existing facilities, strive to obtain LEED certification via LEED’s Operation and Mainenance program. See Appendix G for more information regarding this certification.

Facility Maintenance

A. Maintain healthy and efficient custodial operations using Green Seal [http://www.greenseal.org/certproducts.htm] or equivalent cleaning products.

B. Frequently inspect for fungus and molds.

C. Form an in-house “Green Team” to raise awareness of workplace associated environmental concerns.

D. Provide centralized ground-floor location for collection and storage of recyclables. Train occupants on recycling procedures and consider incorporating recycling facilities such as compactors, chutes or other technologies to accommodate predicted volumes.

E. Do not store materials, products or equipment outdoors, except finished product in transit and company-owned vehicles.
Chapter Three

Maintenance and Stewardship of Site and Landscape Elements

A. Prepare and implement a landscape care and maintenance manual or plan to ensure long-term viability of plantings. This should identify any long-term sequencing actions that are intended by the landscape designer.
POTENTIAL PLANS/DESIGNS
[ See previous foldout page for Master Plan ]
Chapter Four
Chapter Four
Chapter Four

[ See previous foldout page for Master Plan ]
Chapter Four

FIGURE XX is a bird’s eye view of the entire park. Prominent features include large wind turbines in the roundabout islands, landscaped medians, street trees, sidewalks, and a multi modal path linking natural areas throughout the park.

FIGURE XX illustrates an idea of what the commercial/ retail buildings may look like. This image also includes trees along the streets and wide pedestrian sidewalks.
FIGURE XX is a cross-section of a new and improved 73rd Street. A few highlights include a landscaped median, street trees, and water retention and filtration systems throughout the landscaped areas. The illustration also includes pedestrian amenities such as sidewalks and pedestrian-scaled lighting.

FIGURE XX is an illustration showing the possibility of Flagship advertisement on the Exit 22 overpass. This design would serve as a landmark element and provide a sense of arrival to the park.
FIGURE XX is an image illustrating the architectural detail for the new accelerator. The image also shows a new landscaped median, street trees and a pedestrian crosswalk linking the existing incubator to the proposed accelerator.

FIGURE XX is a look at what a below-grade crossing under the rail line would look like. One of the main features in this image is amount of lighting and openness of the tunnel. Openness and lighting plays an integral part in whether or not an individual will use the crossing. Pedestrians are more likely to avoid dark narrow spaces which make them feel unsafe.
**FIGURE XX** illustrates the possibilities for an upgrades main entrance into the park. A few prominent elements include: a landscaped median, street trees, a new sign, lighting with banners, sidewalks, and a multimodal path. The wind turbines can be seen in the distance providing an image of “green” upon entering the business park.

**FIGURE XX** is a look at some of the architectural details a business should have in the park. This is extremely important in those areas with high visual exposure to the interstate.
Chapter Four

FIGURE XX is a look at what a business can do to improve the quality of the workplace for its employees. This illustration includes outdoor seating areas for lunch breaks, an open glass wall which provides ample amounts of sunlight, and a landscaped view in the distance.

FIGURE XX is another example of the architectural detail needed for businesses in the park.
**FIGURE XX** illustrates what the North Commercial District may look like. This area is the proposed connection between the multimodal transit station and the new accelerator. Some prominent place-setting features are: a centralized water feature, decorative architecture, pedestrian-scaled lighting, grasscrete, canopy trees and benches.

**FIGURE XX** highlights the roundabouts and what they may look like. The prominent feature is the turbine landmark. It serves as both a source of renewable energy for the park and an iconic image of “green”.

---

eco-industrial business park plan

---

Chapter Four
Chapter Five

5 ECONOMICS & FUNDING
Benefits of Building “Green”

The results of including sustainable design objectives as a design development tool generate economic and environmental benefits that reach beyond the project level to include the neighborhood and global level as well. These include direct and indirect economic, environmental and community benefits.

DIRECT ECONOMIC BENEFITS

• Competitive First Costs (initial)
  To reduce initial development costs, objectives should be set before any planning or design is initiated. Once the goals are set, the architects, engineers, planners and maintenance managers should understand the project goals. This will allow them to take advantage of synergies between disciplines. These efficiencies can lower the first costs and ensure the building functions as planned.

• Reduced Operating and Life-Cycle Costs
  Appropriate sustainable design significantly lowers utility costs by utilizing energy efficient insulation, proper building orientation and use of daylighting. These techniques may enable the project team to reduce the size and scale of heating and cooling systems to precisely match a building’s needs. Additionally, ensuring proper function of these systems through building and systems commissioning can ensure high performance and high cost savings over the life of the building.

• Increased Building Valuation
  A decrease in overall operating costs of a building or facility, expressed as Net Operating Income, can directly increase its asset value.

• Decreased Vacancy and Improved Tenant Retention
  Sustainable buildings have a marketing advantage with many types of tenants, renters, and industries. In many cases they are desired by companies that rent, but want to enjoy low energy costs and high worker productivity.
Chapter Five

PRODUCTIVITY BENEFITS (INDIRECT ECONOMIC BENEFITS)

• Improved Occupant Performance
  There is an estimated $29 – 168 billion lost yearly due to productivity losses in the U.S. alone. Day-lighting, along with livable, comfortable work areas have been shown to both indirectly and directly increase productivity and reduce sick days and absenteeism.

• Reduced Absenteeism and Employee Turnover
  Providing a healthy workplace improves employee satisfaction. Sustainable interior building materials that don’t off-gas volatile organic compounds, formaldehydes, or process related volatiles (paints, glues, carpets, etc.) make for enhanced occupant comfort and health.

• Increased Retail Sales
  Studies have shown an approximate 40% sales improvement in day-lit retail outlets over stores with conventional lighting designs.

ENVIRONMENTAL AND COMMUNITY BENEFITS

• Increased Energy Efficiency and a Cleaner Environment
  High efficiency energy and lighting systems reduce the impacts of the built environment on natural resource consumption, in addition to reducing energy costs. The combustion of fossil fuels associated with energy production results in the conversion of SO2 and NOx in the atmosphere into fine-particle aerosols that we breathe. These aerosols are linked to asthma, heart attacks, and chronic bronchitis. Fine particulates also contribute to fine-particle soot. These particles may absorb trace elements of other dangerous substances such as cadmium and arsenic, and transmit them out into the atmosphere.

• Efficient Infrastructure Use
  Development in already-dense urban environments takes advantage of infrastructure that is already in place, including transportation, sewer, storm water, electricity and phone networks. The costs associated with developing this infrastructure in suburban locations are borne by all rate and taxpayers.

• Materials Use Reduction and Local Materials
  Reducing the use of building materials can not only minimize the initial capital investment of building development, but also reduces the life-cycle impacts of materials from a cradle-to-grave perspective. Fewer materials used initially will result in fewer materials sent to landfills at the end of their useful life. Additionally, using materials that are produced or procured locally will reduce transportation-related expenses (and associated transportation-related emissions) and support the local and regional economy.
• Increased Ecological Sensitivity
  Sustainable design minimizes the ecological problems associated with urban and suburban
development, including exterior light pollution, urban heat islands, and the destruction of
natural habitat.
Chapter Five

Funding Sources

Duke Energy—Small Commercial and Industrial Efficiency Rebate Program

Available for: Lighting, Heat Pumps, Air Conditioners, Motors, Pumps, Geothermal Heat Pumps

Incentive Amount: Motors: $4-$10/HP  
Pumps: $250-$400/Pump  
Lighting Equipment: varies  
Air Conditioning Units: $20-$45/ton  
Heat Pumps: $40-$45/ton  
Geothermal Heat Pumps: $30/ton

Maximum Incentive: Combined Maximum of $50,000 per facility per year

Eligible System Size: Rebate only Available to commercial and industrial customers with a demand of 500 kW or less.

Installation Requirements: Customers may install the equipment themselves, but all installations will have to be inspected by Duke Energy.

Alternative Power & Energy Grant Program

**Incentive Type:** State Grant Program

**Available For:** Solar Water Heat, Photovoltaics, Wind, CHP/Cogeneration, Anaerobic Digestion

**Available Sectors:** Commercial, Industrial, Nonprofit, Schools, Local Government, Agricultural, Institutional

Heat Pumps: $40-$45/ton
Geothermal Heat Pumps: $30/ton

**Incentive Amount:** Solar Water Heating: 50% of projects cost
Solar Electric: $5/watt DC
Wind Power: $2.50/watt DC
Biogas CHP: 50% of projects cost

**Maximum Amount:** $25,000

**Installation Requirements:** CHP must be installed at a municipal wastewater treatment facility

**Website:** http://www.in.gov/oed/2376.htm
Chapter Five

Energy Efficient Commercial Buildings Tax Deduction

**Incentive Type:** Corporate Deduction

**Available For:** Furnaces, Boilers, Heat Pumps, Air Conditioners, CHP/Cogeneration, Caulking/Weather-Stripping, Duct/Air Sealing, Building Insulation, Windows, Doors, Siding, Roofs

**Amount Available:** $.30-.80/square foot, depending on technology and reduction amount

**Maximum Incentive:** $1.80 per square foot

**Equipment Requirements:** Must meet certification requirements

**Website:** http://www.efficientbuilding.org
Chapter Five

Alternative Power & Energy Grant Program

**Incentive Type:** State Grant Program

**Available For:** Solar Water Heat, Photovoltaics, Wind, CHP/Cogeneration, Anaerobic Digestion

**Available Sectors:** Commercial, Industrial, Nonprofit, Schools, Local Government, Agricultural, Institutional

- **Heat Pumps:**
  - Solar Water Heating: 50% of projects cost
  - Solar Electric: $5/watt DC
  - Wind Power: $2.50/watt DC
  - Biogas CHP: 50% of projects cost

**Incentive Amount:**
- Solar Water Heating: 50% of projects cost
- Solar Electric: $5/watt DC
- Wind Power: $2.50/watt DC
- Biogas CHP: 50% of projects cost

**Maximum Amount:** $25,000

**Installation Requirements:** CHP must be installed at a municipal wastewater treatment facility

**Website:** http://www.in.gov/oed/2376.htm
Chapter Five

Vectren Energy Delivery--Commercial Energy Efficiency Rebates

**Incentive Type:** Utility Rebate Program

**Eligible Technologies:** Water Heaters, Furnaces, Boilers, Steam-system upgrades, Programmable Thermostats, Energy Management Systems/Building Controls, Custom/Others pending approval

**Applicable Sectors:** Commercial

**Incentive Amount:** Prescriptive: varies by measure; Custom: $1.00/therms or $.50/therm for < 7500 therms

**Maximum Incentive:** Prescriptive: varies by measure; custom: $25,000 or 30% of cost

**Website:** https://www.vectrenenergy.com/web/eenablement/learn_about/conservation_i.jsp
Chapter Five

Pilot Projects
Chapter Five

Case Studies

GreenPark:
GreenPark is a business park near junction 11 of the M4 motorway on the outskirts of Reading, but partly in the civil parish of Shinfield, in the English county of Berkshire. Area: 180 acres (0.73 km²)
Developer: Prudential and PRUPIM.
Population Served: About 2000 people work on site
Features: 2.05 MW Wind turbine (generates enough to power 1,500 homes)
Facilities: a day nursery for pre-school children, a fitness club with a swimming pool, a gymnasium, health and beauty studios and fitness classes, and a brasserie on the waterside.

The GreenPark site was once an area of low-lying, poor quality agricultural land, lying in the flood plain of the River Kennet. In its development, Prudential has created a wide range of natural habitats which support a diverse variety of birds, animal and wildlife.
The focal point of the GreenPark landscape is Longwater, originally a man-made channel built to act as flood alleviation but which, through connection to the River Kennet by existing water courses, has become a living lake and thus rapidly colonised by fish. It snakes through the park to a length of 1.25 km and an average width of 80m with approximately 30% of it planted with some form of aquatic plants including native yellow flowered water lily.
As part of the landscaping programme, more than 2,500 mature trees are being planted to add to the existing 500. Among the main species are Crack Willow, Ash, Alder, Grey Poplar and Field Maple.

New Greenham Park:
West Berkshire located close to the A34 trunk road and the M4 and M3 motorways and has excellent access to the major centres of population in the Thames Valley and South Eastern England.
Area: 150 acres
Developer:
The concrete from the miles of runway on the base was dug up and re-used on the construction of the Newbury by-pass, but it left another mark on the area because the alkaline effect of the concrete on the soil created a rare lowland heath land. Covered in heather, it is a landscape reminiscent of a picturesque scene from the South of France. People have been known to go mushroom picking during their lunch break, and it is now possible to cycle to work from Newbury through the common, making the daily commute a joy rather than a struggle, particularly as many people working on the park arrive to outstanding views from their office windows.
With two “incubator” units for business start-ups already in operation, and over 170 companies now based there, the Chief Executive of the Trust, Stuart Tagg; the Chief Executive of the Council, Stella Manzie; the Leader of West Berkshire Council, Keith Lock, welcomed SEEDA’s “added value” approach to further support sustainable development of the Newbury area.

**New Greenham Arts is housed in the former airbase Recreation Centre.**

*Features:* Office-wide online car-sharing network, shuttle bus, designated on-site cycling routes, 2 business incubators

**Lake Erie Business Park:**
http://findarticles.com/p/articles/mi_qa5333/is_200805/ai_n25501032
http://www.lakeeriebusinesspark.com/
Sun Prairie Business Park:
http://www.spide.org/energy.html

**Riverview Business Park:**

**Texas Clean Energy Park:**

**Butterfield Business Village:**

**Indiana:**
https://www.insideindianabusiness.com/contributors.asp?id=745

**Ohio Geothermal:**
http://findarticles.com/p/articles/mi_m0BPR/is_3_18/ai_72116193/pg_1?tag=artBody;coll1
Chapter Five

NYC Geothermal:
http://www.nationaldriller.com/Articles/Industry_News/cad8e2ee7631d010VgnVCM-100000f932a8c0____

Reno Industrial Park Geothermal: