



**2009**

**Wisconsin Energy Independent  
Community Partnership**

**25 x 25 Plan for Energy  
Independence**

**Report completed by:**

**Brown County**

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# Wisconsin Office of Energy Independence

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## **Table of Contents**

<b>Overview</b>	<b>4</b>
<b>What was measured? Why?</b>	<b>6</b>
<b>Discoveries/Surprises</b>	<b>10</b>
<b>Total Projects Considered</b>	<b>11</b>
<b>Pathways to 25 x 25</b>	<b>13</b>
<b>Projects Selected – Explanation</b>	<b>16</b>
<b>Potential Renewable Feedstocks</b>	<b>19</b>
<b>Existing Unknowns – Necessary Information for Future</b>	<b>21</b>
<b>Action Steps – Immediate &amp; Long-Term</b>	<b>23</b>
<b>Energy Independence Team Members</b>	<b>29</b>
<b>Attachments</b>	
• <b>Brown County Resolution</b>	<b>30</b>
• <b>Letter from Brown County Executive</b>	<b>32</b>
<b>Appendices</b>	
• <b>Baseline Data &amp; Goals</b>	<b>33</b>
• <b>Energy Analysis 1</b>	<b>34</b>
• <b>Energy Analysis 2</b>	<b>35</b>

## **1. Overview**

In October 2008 the State of Wisconsin announced its plan through the Office of Energy Independence to establish ten Energy Independent (EI) Pilot Communities. Each EI Pilot Community was required to develop a plan that would help support the Governor's 25x25 goals for energy independence. The three goals are:

1. *Generate 25 percent of our electricity and 25 percent of our transportation fuel from renewable fuels by 2025;*
2. *Capture 10 percent of the market share for the production of renewable energy sources by 2030, bringing \$13.5 billion annually to Wisconsin's economy by 2030; and*
3. *Become a national leader in groundbreaking research that will make alternative energies more affordable and available to all – and to turn those discoveries into new, high paying Wisconsin jobs.*

The EI Pilot Communities are to serve as leaders in the state's efforts to *clean our air and water, create jobs, and save money for our communities* and will provide opportunities for other communities around our state to learn from the experiences of the pilot communities.

Brown County teamed with the Oneida Nation, submitted an application, and was selected as one of the ten Energy Independent Pilot Communities in January, 2009. Brown County was required to measure current energy and fuel consumption levels and develop a plan by December, 2009 that would identify actions necessary to achieve 25x25 goals.

### ***Brown County Resolution***

In December 2008, the Brown County Board of Supervisors adopted a resolution (See Brown County Resolution, Document No 1. in attachments) which formally committed the County to Sustainability and the 25x25 energy independence goals. The resolution declared that Brown County's Board of Supervisors is a partner with the State of Wisconsin in the pursuit of "25x25" goals for energy independence. The resolution authorized the development of policies, guidelines, goals, strategic actions and their incorporation into a Sustainability Plan for Brown County. The sustainability efforts will yield cost savings to taxpayers by reducing County energy and operating costs and will improve employee productivity by providing cleaner and healthier work environments.

### ***Energy Oversight Committee***

In December 2008, the County Executive established a Brown County Energy Oversight Committee. (See County Executive Memo, Document No 2 in attachments.) The Committee is composed of sixteen members including Brown County Department Heads responsible for energy budgets and other Department Heads that have ongoing sustainability related missions. Committee membership also includes members from the Brown County Board, Wisconsin Public Service, and the Oneida Tribe. The committee was charged with supporting the governor's 25x25 energy independence goal by:

1. *Looking into different areas where we can reduce our carbon footprint as an organization.*
2. *Researching alternative energy sources.*
3. *Exploring areas where we can reduce our energy consumption.*
4. *Investigating alternative fuel and fuel-efficient vehicles for future purchase.*
5. *Determining how we can become a leader in the areas of energy efficiency and renewable energy.*

Brown County's Energy Oversight Committee felt that it could best support the 25x25 energy independence goals by establishing an energy efficiency and renewable energy action and project plan.

It was determined that Brown County could best support “market share” and “groundbreaking research” goals by working with Wisconsin educators, consultants, engineers, manufacturers, and installers to develop and implement our action and project plans. The Committee decided that the best method for establishing this plan was to create subcommittees with each being responsible for developing a major component. The Subcommittees and their major components of the Brown County Sustainability and 25x25 Energy Independence Plan are:

1. Administration
2. Buildings
3. Vehicles
4. Energy
5. Community and Education

The Subcommittees and Full Committee meet monthly to discuss and develop specific goals and actions for implementation of the plan.

Once developed and put into action, Brown County’s Sustainability and 25x25 Plan will complement and reinforce “*The mission of Brown County government*” which “*is to provide our citizens with a high level of responsible and efficient public services that support the health and well being of our residents*”.

## **2. What was measured? Why?**

In order to meet the County's 25x25 energy independence goals, it was necessary to measure the existing energy usage at Brown County facilities. We chose to measure only facilities that were owned by Brown County and occupied by Brown County Departments. This excluded Brown County Departments or Divisions that occupied rented facilities and had rental agreements in which utilities were paid by the lessor. This also excluded Brown County Buildings which were leased to other organizations who had responsibility for budgeting and paying utility bills. The Brown County Veterans Memorial Arena Complex, which includes the Resch Center, Shopko Hall, the Arena, and the Old Packers Hall of Fame Buildings, fall under this category.

We were also required to measure fuel usage throughout the County. Since we have quite a range of categories of vehicles and equipment that use different amounts of fuel for many purposes, we chose to qualify the types of vehicles and equipment that we would track. Although our goal would be to reduce total fossil fuels, we felt that it would be cost prohibitive to measure and track all items. It was established that the vehicles or equipment to be measured needed to be a type that required a seated operator and one that used more than 100 gallons of fuel a year. This eliminated special purpose vehicles that were only used a few times a year, walk-behind equipment such as mowers and snow blowers, stationary equipment such as wood chippers, and hand held equipment that included leaf blowers and chainsaws.

### ***Buildings***

At the end of 2008, Brown County's building inventory included 193 structures with a total of 2.1 million square feet of floor space. The buildings range in age from historical to modern. The Courthouse building built in 1908, the old Mental Health Center originally constructed in 1934 and expanded in 1965, and the Southwest Library built in 1958 are some of the oldest buildings. Recent buildings include the Kress Family Library built in 2003, the NEW Zoo Giraffe House built in 2006, and the Syble Hopp Duplex built in 2007. The buildings range in size from the 240,000 square foot Brown County Jail and the 222,000 square foot Airport Terminal being the largest to numerous Golf Course, NEW Zoo, and Parks service buildings with less than 500 square feet.

In addition to the existing building inventory, Brown County completed construction of four buildings in 2009 - the 102,000 square foot Community Treatment Center, a 15,000 square foot Public Safety Communications Center which replaced a leased facility, the Mayan Food Court at the NEW Zoo, and the Landfill Gas to Electric Generator Building at the East Landfill site. In addition, construction of a Snow Equipment Maintenance Building was started at the Airport in 2009 and will be completed in 2010.

### ***Energy Usage***

Brown County Departments who manage building operations also are responsible for managing energy accounts. These departments include the Airport, Golf Course, Highway, Libraries, NEW Zoo, Parks, Port and Solid Waste, and Syble Hopp School. It also includes the Brown County Facility Management group who manage building operations and energy for two major campuses (Courthouse Square and Bayview). The Court House Square Campus has buildings in downtown Green Bay and nearby areas. It includes the Courthouse, the Law Enforcement Center, the Work Release Center, the Northern Building, the Sophie Beaumont Building, the Aging and Disability Resource Center, the Neville Public Museum, and UW-Extension. The Bayview Campus which is approximately 5 miles northeast of downtown Green Bay includes the Jail, the Public Safety Communications Center, the old Mental Health Center (MHC), Shelter Care, and the new Community Treatment Center (CTC).

The following chart shows the total number of Brown County buildings, square feet, and annual energy used by major department. The chart shows annual energy usage in kWhrs and therms. The data is the result of a review of three years of electrical and gas usage. Three years of historical data (2006, 2007, and 2008) from 126 electric meters and 65 gas meters was provided by the local utility, Wisconsin Public Service. Total annual electricity used for all County buildings is 21,447,467 kWhrs. Total annual gas used for all County buildings is 1,259,135 therms. When both units are converted to BTUs, Brown County uses 199 billion BTUs annually. The data does not include energy use for new buildings completed in 2009.

### ***Brown County Building Summary***

<b>Depart</b>	<b>No Of Bldgs</b>	<b>Sq Ft</b>	<b>With BC Elect</b>	<b>KWHrs</b>	<b>With BC Gas</b>	<b>Therms</b>
<b>Airport</b>	<b>20</b>	<b>320,881</b>	<b>11</b>	<b>5,652,166</b>	<b>6</b>	<b>120,511</b>
<b>FM</b>	<b>22</b>	<b>882,303</b>	<b>17</b>	<b>10,208,244</b>	<b>17</b>	<b>672,216</b>
<b>Golf</b>	<b>14</b>	<b>18,323</b>	<b>4</b>	<b>392,459</b>	<b>2</b>	<b>23,024</b>
<b>Highway</b>	<b>25</b>	<b>208,807</b>	<b>16</b>	<b>445,394</b>	<b>8</b>	<b>84,934</b>
<b>Libraries</b>	<b>9</b>	<b>155,339</b>	<b>7</b>	<b>2,462,093</b>	<b>7</b>	<b>88,031</b>
<b>NEW Zoo</b>	<b>27</b>	<b>39,320</b>	<b>27</b>	<b>551,848</b>	<b>12</b>	<b>20,044</b>
<b>Parks</b>	<b>60</b>	<b>365,110</b>	<b>35</b>	<b>427,246</b>	<b>9</b>	<b>17,544</b>
<b>Port/SolWst</b>	<b>12</b>	<b>56,616</b>	<b>6</b>	<b>890,662</b>	<b>2</b>	<b>24,316</b>
<b>Syble</b>	<b>4</b>	<b>68,242</b>	<b>3</b>	<b>664,234</b>	<b>2</b>	<b>37,007</b>
<b>Lighting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>62,132</b>	<b>NA</b>	<b>NA</b>
<b>Total</b>	<b>193</b>	<b>2,114,941</b>	<b>126</b>	<b>21,447,467</b>	<b>65</b>	<b>1,259,135</b>

## *Vehicles*

At the end of 2008 the Brown County vehicle inventory included 390 vehicles which were assigned to nineteen departments. The vehicles were grouped into four major categories – Airport, Highway, Sheriff Department, and Other Brown County departments.

The four major groups were established because they have many vehicles unique to their operations as well as standard passenger automobiles and pickup trucks. They also have vehicle maintenance staff with special training to maintain their vehicles. The types of vehicles range from fire trucks, rescue vehicles, and snow plows at the Airport; to backhoes, mowers, excavators, sweepers, graders, and double wing snow plows at the Highway Department. The Sheriff Department utilizes numerous patrol vehicles modified with the latest computer, communication and safety equipment, one of a kind bomb squad and ambulance vehicles, and a Harley-Davidson motorcycle.

Most of the vehicles in the Other Group are standard passenger automobiles, vans, and trucks assigned to the remaining sixteen departments. However there are specialty vehicles in this group as well, including an electrical maintenance vehicle with a high lift boom in the Facilities Department, a school bus at the Syble Hopp School, a Bookmobile at the Libraries, a Zoomobile at the NEW Zoo that sometimes transports animals, and snowmobiles and snow grooming equipment at Parks. Many vehicles in the Other Group are maintained by the Facilities Mechanic at the downtown Sophie Beaumont Garage. However, some departments in the group, including the Parks Department, use their own trained staff and/or nearby private maintenance and repair facilities.

Determining total fuel used by each Brown County vehicle was more difficult than determining energy usage by buildings. All Brown County Departments maintain an accurate inventory of vehicles and equipment and keep good history for each item including miles driven or hours operated, and maintenance performed. However, most Brown County Departments managed fuel by budget dollars rather than by gallons of fuel used. When gallons of fuel used per vehicle was known, this information was entered into the vehicle data base. In other situations where total gallons for a group of vehicles was known, average gallons per vehicle was calculated and entered. In situations where only budget dollars was known, total gallons used was estimated based on actual dollars spent and then averaged across the vehicles in that group.

The following table shows fuel usage by fuel type (gasoline or diesel), and by the major functional groups discussed above. Of the total 390 vehicles, there are 175 gasoline fueled vehicles and 215 diesel fueled vehicles. The Highway Department has 171 or 80% of the diesel vehicles used by the County; however, they consume approximately 88% of the diesel fuel used by the County. The Sheriff Department and the Other Group each have approximately 40% of the gasoline vehicles. However, the Sheriff Department uses approximately 59% of the gasoline used by the County, whereas the Other Group uses approximately 18%. When both gasoline and diesel are converted to BTUs, Brown County uses 65.6 billion BTUs annually.

*Brown County Vehicle Summary*

<b>Department</b>	<b>No of Vehicles</b>	<b>Gasoline Vehicles</b>	<b>Gallons</b>	<b>Diesel Vehicles</b>	<b>Gallons</b>
<b>Airport</b>	<b>34</b>	<b>15</b>	<b>7816</b>	<b>19</b>	<b>26203</b>
<b>Highway</b>	<b>192</b>	<b>21</b>	<b>34008</b>	<b>171</b>	<b>300537</b>
<b>Sheriff</b>	<b>70</b>	<b>69</b>	<b>110174</b>	<b>1</b>	<b>100</b>
<b>Other</b>	<b>94</b>	<b>70</b>	<b>34087</b>	<b>24</b>	<b>15599</b>
<b>Total</b>	<b>390</b>	<b>175</b>	<b>186085</b>	<b>215</b>	<b>342439</b>

### **3. Discoveries/Surprises**

One of the biggest discoveries for the Brown County Energy Oversight team was the emphasis that had been placed on energy efficiency throughout the County at the department level rather than at the countywide level. Throughout the decade Focus on Energy had conducted numerous energy audits for various departments including the Airport, Highway Department, Libraries, Syble Hopp School, as well as Facilities Management. Focus on Energy had also conducted audits at the Arena Complex and had worked with the Complex management firm, PMI, to reduce energy consumption. Many recommendations had been implemented over the years improving energy efficiency at the department level.

Another major discovery known by all but a few at Brown County was the Port and Solid Waste Department's Landfill Gas to Electricity Project. The project provided a facility at the East Landfill site for two 0.925 megawatt generators that convert landfill gas to electricity. The electricity generated is sold to the local utility, Wisconsin Public Service. The project, which cost approximately \$3.8 million, was brought online in April, 2009 and is projected to generate 9.7 million kilowatt hours per year of electricity.

The amount of energy used (21.4 million kilowatt hours of electricity and 1.26 million therms of natural gas) for all County facilities and the amount of fuel used (186,085 gallons of gasoline and 342,439 gallons of diesel fuel) for all County vehicles, was a major surprise for all. Annually, Brown County uses enough electricity to operate approximately 2000 homes. Prior to the Energy Oversight Committee, all energy was reviewed at the department level by department managers. With the establishment of the energy team by the County Executive this changed. We now know that the County uses a significant amount of energy each year, in dollars and Btu's. And although energy efficiency efforts have been ongoing for a number of years, a Countywide coordinated review of energy use provides tremendous opportunities to reduce energy consumption and carbon emissions.

Another discovery was the progress over the past several years in the development of various energy and fuel technologies. Significant progress has been made in Photovoltaic (PV) Solar Electric, Solar Hot Water, and Wind Turbine technologies as well as Landfill Gas and Geothermal. Likewise, developments have been made in various automotive technologies including flex-fuel, hybrids, electric and compressed gas for reducing or replacing gasoline consumption. Biodiesel has also reduced or replaced diesel fuels. Brown County was and continues to be very interested in the development of all technologies and will be selecting those that best help meet our energy goals while offering the most cost efficient solutions.

## **4. Total Projects Considered**

Brown County's approach to developing a 25x25 Energy Independence Plan focuses around five major activities. The first is administrative policies and procedures that are necessary to implement long-term sustainability including energy efficiency and renewable energy practices. The next is a building energy strategy that focuses on efficiency and conservation improvements and renewable energy projects at buildings located throughout the County. The third approach is community and education programs that will educate and benefit both community groups and Brown County citizens and employees. Large-scale energy production facilities and alternative vehicles programs for gasoline and diesel fueled vehicles are the final two activities. Brown County's Energy Oversight Committee established five subcommittees to investigate potential actions and projects for each major activity.

### ***Administration***

The Administration Subcommittee investigated County policies, procedures, and programs that it felt are necessary to successfully implement a Countywide sustainability plan that would meet 25x25 energy independence goals. Policies and procedures considered included green cleaning, green purchasing, and green design criteria for renovation and new construction projects, personal appliances used at County facilities, building energy schedules, workplace environment and air quality, Countywide recycling, video conferencing, and energy and fuel purchasing. Program evaluations included copier and printer analysis, procurement documents, energy efficiency driver training, and County waste stream. Other program evaluations that might be more long-term included green partnerships with vendors and suppliers, document handling, consolidated procurement, and alternative transportation methods.

### ***Buildings***

Brown County established a baseline of 21.4 million kWhrs of electricity and 1.26 million therms of natural gas that is used annually in 193 buildings throughout the County. We felt that our first effort should be to insure all buildings were operating as efficiently as possible as we began investing renewable energy projects. Brown County considered energy audits for major buildings to identify efficiency opportunities in building operations. We felt it would be most cost effective to consider buildings for auditing that would provide the best energy savings from the auditing effort. We could then take the lessons learned and apply those to the remaining County buildings. Building selection criteria considered major energy users in total energy consumption, major energy users by square feet, and major energy users in departments with multiple buildings.

Brown County investigated various technologies for building site renewable energy projects for both immediate and long-term timelines. These included photovoltaic and wind for generating electricity, solar heating for hot water, geothermal for heating and cooling, and biomass for heating. We considered photovoltaic projects at various sites including Parks, Libraries, NEW Zoo, and the County Jail. Wind turbines were considered for Parks, Airport, Highway Department, and the New Zoo. We considered solar hot water at Syble Hopp School, Jail, downtown Huber Facility, MHC/CTC, and Shelter Care. We investigated geothermal and biomass for new buildings and future HVAC upgrade projects throughout the County.

## ***Community and Education***

The Community and Education Subcommittee considered various educational programs that will help convey information regarding Brown County's Sustainability Plan to employees and citizens. The subcommittee also investigated programs for educating communities, businesses and homeowners in sustainable practices, energy efficiency and renewable energy. The numerous educational programs and activities which have been researched and discussed by the Community and Education Subcommittee can be classified into the following categories: "Turning Brown County Green" Logo Development, Website Development, Educational Activities for County employees, Educational Activities for County residents, Media Projects (including press, cable TV, and public TV), Special Events and Other activities.

## ***Energy***

Brown County investigated a variety of renewable energy production alternatives for large-scale production. Projects evaluated include landfill gas to electric facilities, the diversion of landfill waste as a fuel for energy production, development of a large-scale cooperative manure to energy facility, small-scale wind turbines for facility electrical demands, large-scale wind farms on County owned property, as well as a large-scale photovoltaic electric production site.

## ***Vehicles***

Brown County established an annual baseline of 186,000 gallons of gasoline used in 175 gasoline vehicles and 342,000 gallons of diesel fuel used in 215 diesel vehicles throughout the County. As with buildings, we felt that fuel efficiency and conservation projects should be considered as a part of our overall strategy for an alternative fuel program. Brown County considered both training in fuel-efficient driving as well as the purchase of fuel-efficient vehicles as part of our fuel-efficiency and conservation efforts.

Brown County investigated several alternative fuel vehicles including flex-fuel, hybrids, electric, fuel cell, and compressed gas vehicles. Not all of these options were considered for all vehicles types within the major four groups – Airport, Highway, Sheriff, and Other. For example the Sheriff Department requires high-performance patrol vehicles, which make up the majority of vehicles operated by their department. It was felt that hybrid and electric vehicles could not meet the performance requirement. Another problem encountered is not all of the technologies were readily available for purchase starting in 2010.

Brown County investigated various blends of biodiesel fuel as a replacement for regular diesel fuel. These included B2, B5, B10, and B20 blends. There are a number of concerns with biodiesel that will need resolution to fully implement this strategy. These include deterioration of motor gaskets, gelling during cold weather months, and product availability..

## 5. Pathways to 25 x 25

Brown County's pathway to 25x25 involves short and long-term action plans for the five major strategies identified in previous sections of this report.

1. Administrative policies and procedures will be implemented which will insure sustainable practices including energy efficiency and conservation for existing programs and processes and future purchases and contracts.
2. Short-term building energy efficiency and conservation projects and short and long-term building energy projects will be implemented which will contribute an estimated 9.2% reduction in carbon emissions.
3. Community and education programs will be developed to educate Brown County citizens and employees in sustainability and conservation practices for Brown County operations but will also provide useful information on practices that could be applicable to businesses and homeowners throughout the County.
4. Large-scale energy production facilities will be implemented in the short and long-term which will contribute from 16.7% to 28.1% of Brown County's renewable energy goal. Similar percentages will be seen in the reduction of carbon emissions.
5. Brown County's short and long-term vehicle projects for gasoline and diesel vehicles will result in transitioning both groups to alternative fuels that will result in a 25% plus reduction of Brown County current fossil fuel usage.

### ***Brown County Energy – Pathway to 25x25***

The following table illustrates Brown County's pathway to achieve the 25x25 energy independence goals. The plan includes both building site energy and large-scale energy production sites. The building site energy plan includes both energy efficiency and conservation projects as well as renewable energy projects.

1. Energy audits were conducted by a private energy consulting firm at the five County-owned Libraries. Focus on Energy also conducted energy audits at ten major Brown County buildings. After final analysis many of the recommendations will be implemented at the Brown County Buildings and Libraries audited. A replication plan will be developed which will implement energy efficiency ideas to all other buildings where the recommendations may be applicable. Based on review of the Library audits cost and savings detail, it is estimated that the energy efficiency and conservation actions will result in approximately a 5% reduction of energy use at all Brown County buildings.
2. Renewable energy projects including PV and Wind at Park sites and Solar Hot Water at the Jail will begin implementation in 2010. Additional renewable projects still to be determined will be implemented in the 2011-2014 timeframe. In addition Geothermal and/or Biomass technologies will be used to replace existing HVAC systems that need upgrading in the 2015-2025 timeframe. The specific sites of these projects are still to be determined. It is estimated that PV, Wind, and Solar Hot Water projects will replace approximately 1% and the Geothermal/Biomass projects will replace approximately 3.2% of present fossil fuel energy used by the County.

- Large-scale production sites include the Landfill Gas to Electricity Site which went online in April of 2009 and a large-scale wind turbine operation which will be located at the Brown County's South Landfill site in the 2016-2022 timeframe. Both sites will produce electricity that will be sold to the local utility, Wisconsin Public Service. The Gas to Electricity Site will generate approximately 16.7% and the Wind Farm site will generate approximately 28.1% of the present fossil fuel energy used by the County.

### *Pathway to 25x25 Energy*

<i>Energy</i>	<i>2008 BTU Base</i>	<i>BTU Renewables</i>	<i>BTU Savings</i>	<i>Percent Renew</i>	<i>Percent Savings</i>	<i>Schedule</i>	<i>Cost</i>
<b>Kilowatt Hrs (21447467)</b>	<b>73,178,757,404</b>						
<b>Therms (1259135)</b>	<b>125,997,862,045</b>						
<b>Total</b>	<b>199,176,619,449</b>						
<b><i>Building Projects</i></b>							
EEC I			<b>2,364,564,312</b>		<b>1.19%</b>	<b>2010</b>	<b>\$ 293,625</b>
EEC II			<b>7,594,266,660</b>		<b>3.81%</b>	<b>2012-2015</b>	<b>\$ 943,035</b>
<b>Renewable Projects I</b>		<b>940,016,045</b>		<b>0.47%</b>		<b>2010-2011</b>	<b>\$ 808,000</b>
<b>Renewable Projects II</b>		<b>1,051,750,149</b>		<b>0.53%</b>		<b>2012-2015</b>	<b>\$ 904,042</b>
<b>Geothermal/BioMass</b>		<b>6,348,675,956</b>		<b>3.19%</b>		<b>2016-2025</b>	<b>\$ 2,008,127</b>
<b><i>Large Scale Production</i></b>							
<b>Landfill Gas to Electricity</b>		<b>33,191,936,000</b>		<b>16.66%</b>		<b>2009</b>	<b>\$ 3,831,000</b>
<b>Wind Farm I</b>		<b>22,416,840,000</b>		<b>11.25%</b>		<b>2016-2017</b>	<b>\$ 5,850,000</b>
<b>Wind Farm II</b>		<b>33,625,260,000</b>		<b>16.88%</b>		<b>2020-2022</b>	<b>\$ 8,775,000</b>

### *Brown County Fuel – Pathway to 25x25*

The next table illustrates Brown County's pathway to achieve 25x25 fuel goals. The plan includes a gasoline vehicle plan and a diesel vehicle plan, both of which are necessary to achieve the County's 25x25 energy independence goal for fuel.

- Brown County vehicles are listed in four major categories: Airport, Highway Department, Sheriff Department, and Other. With the exception of the Sheriff Department, gasoline vehicles are replaced every 10 years. The Sheriff Department vehicles are replaced every 1 to 3 years. Brown County's gasoline vehicle plan will replace vehicles at their normal replacement cycle with four categories – FEV (fuel-efficient vehicles that must be 5% more efficient than vehicles being replaced), FFV (flex -vehicles that will use Ethanol 85), Hybrids, and Electric. After the replacement period, Brown County's mix will change from 100% gasoline vehicles to 43% FEV, 37% FFV, 12.5% Hybrids, and 7.5% Electric Vehicles. The vehicle mix will vary within each department depending on specific program requirements. These changes in gasoline vehicles will contribute 14.2% toward the Brown County alternative fuel goal of 25%. The changes are contingent upon the continued development of Hybrid and Electric technologies and E85 becoming readily accessible to the County.
- The second component of the Brown County Fuel plan is to replace the diesel fuel presently used with biodiesel (B20). The diesel vehicle replacement plan averages 20 plus years per vehicle. However, since existing diesel vehicles can use biodiesel, a transition plan tied to new vehicle purchases is not required. The Brown County Highway Department will conduct

yearly tests starting with B2, and then going to B5, B10, and finally B20. It is anticipated that by 2016, we will make the complete transition to B20, which will contribute 12.8% to Brown County's alternative fuel goal of 25%. The changes to B20 are contingent on B20 being easily accessible in Brown County and maintenance problems associated with B20 being satisfactorily resolved by 2015.

***Pathway to 25x25 Fuel***

<b><i>Fuel</i></b>	<b><i>2008 BTU Base</i></b>	<b><i>BTU Renewables</i></b>	<b><i>BTU Savings</i></b>	<b><i>Percent Renew</i></b>	<b><i>Percent Savings</i></b>	<b><i>Schedule</i></b>
<b><i>Gasoline Plan</i></b>						
<b>Base (186085 Gallons)</b>	<b>21,232,298,500</b>					
<b>FEV - 43%</b>			<b>456,494,418</b>		<b>0.70%</b>	<b>2010-2020</b>
<b>FFV (E85) - 37%</b>		<b>9,281,805,451</b>		<b>14.2%</b>		<b>2010-2020</b>
<b>Hybrid - 12.5%</b>			<b>1,327,018,656</b>		<b>2.02%</b>	<b>2010-2020</b>
<b>Electric - 7.5%</b>			<b>1,353,559,029</b>		<b>2.06%</b>	<b>2010-2020</b>
<b><i>Diesel Plan</i></b>						
<b>Base (342439 Gallons)</b>	<b>44,345,850,500</b>					
<b>Diesel - 5%</b>			-		<b>0.00%</b>	
<b>Bio Diesel (B20) - 95%</b>		<b>8,425,697,281</b>		<b>12.8%</b>		<b>2015-2016</b>
<b>Total</b>	<b>65,578,149,000</b>		<b>3,137,072,103</b>	<b>27.0%</b>	<b>4.78%</b>	
<b><i>Energy Efficiency Driving</i></b>						
<b>Efficiency Savings (5%)</b>			<b>3,278,907,450</b>		<b>5.00%</b>	<b>2010-2011</b>

## 6. Projects Selected – Explanation

### *Administration*

The Administration Subcommittee selected to implement policies and procedures that will result in sustainability practices and energy efficiency and conservation throughout the County. Those selected include policies and procedures related to green processes (green cleaning, green purchasing, and green designs), policies related to energy (personal appliance use, building energy schedules, workplace environment, and energy purchasing), and other sustainability procedures including recycling and video conferencing. The subcommittee also selected programs for evaluation which will be updated as necessary to support Brown County sustainability goals. These include analysis of copiers, printers, and procurement documents, the County waste stream, and document handling. It will also include the establishment of driver efficiency training, green partnerships, consolidated procurements, and alternative transportation programs.

### *Buildings*

#### **Energy Efficiency and Conservation**

Brown County selected the ten Brown County buildings which consume the largest amount of energy for energy audits. Brown County also selected the five Brown County Libraries which are County-owned for energy audits. The audits were completed in 2009. Many of the low-cost changes have already been implemented or will be implemented in 2010. Other higher-cost recommendations will be prioritized for implementation in the 2011 to 2015 time period. The recommendations will also be implemented at other Brown County buildings where applicable. It is anticipated that implementation of recommendations at all buildings will result in approximately a 5% reduction in energy used for Brown County buildings.

#### **Sustainability**

Brown County established a goal of implementing green certifications programs (Energy Star or LEED EB) for 14 existing buildings by 2014. It is felt that energy efficiency and conservation efforts discussed above will contribute significantly to the accomplishment of this goal. Buildings being considered for Energy Star or LEED EB are the Northern Building, the Sophie Beaumont Building, and the Courthouse in 2010. Buildings will be selected from the Airport, Libraries, NEW Zoo, and Parks for certification in the 2011-2014 timeframe. Other buildings being considered are the Syble Hopp School, Highway Department Administration Building, Neville Public Museum, Aging and Disability Resource Center, and UW Extension. Brown County will also continue to design new buildings with LEED or other green certification criteria.

#### **Building Site Energy**

Brown County selected the following renewable energy projects for 2010 installations: solar hot water at the County Jail, photovoltaic at the Barkhausen Interpretive Center, and a wind turbine at Bay Shore Park. Future renewable projects being planned include a 2<sup>nd</sup> photovoltaic project at the Kress Library and a solar hot water project for the swimming pool at Syble Hopp School. Other projects are still to be determined. It is anticipated that building site renewable energy projects will save approximately 1% in total energy use. In addition, geothermal and possibly biomass technologies will be used to upgrade aging HVAC where applicable. These replacements are planned for implementation in the 2016-2025 timeframe and will save approximately 3.2% in total energy use.

## ***Community and Education***

The Community and Education Subcommittee selected to implement programs that will help convey information regarding Brown County's Sustainability Plan to employees and citizens and information regarding sustainable practices to Brown County communities, businesses and homeowners. Programs that were implemented in 2009 include the development of the "Turning Brown County Green" Logo and the development of Brown County's Sustainability website. Other programs selected for implementation immediately and during the long-term include Educational Activities for County employees, Educational Activities for County Residents, Media Projects, Special Events and Other activities.

## ***Energy***

### **Large-Scale Production**

Brown County investigated and developed a 1.85 MW landfill gas to electric project at the East Landfill site in 2009. A 75 kW wind turbine project will be implemented at the same site in 2010 or 2011 to provide some of the electricity needed to operate the generators. A potential wind farm project on 1500 acres of County-owned land in southern Brown County will be investigated for feasibility. A meteorological (MET) tower will be installed in 2010 to determine the quality of the wind resource at this location. If wind tests prove the site to be feasible, Brown County will seek partners to develop a large-scale wind farm on this location. A preliminary analysis has indicated that adequate land exists to locate up to 21 large 1.65 MW wind turbines that could generate significantly more than the total energy needs for Brown County by 2025.

Brown County has been evaluating the potential for diverting landfill waste as a fuel source for generating electricity at the County's waste transfer facility which is located adjacent to the closed West Side Landfill. This project would also include a landfill gas to energy component. Preliminary discussions with possible partners have occurred and evaluation continues on the feasibility of this project.

## ***Vehicles***

### **Gasoline Fuel Projects**

Brown County selected a gasoline vehicle plan that will replace all existing gasoline vehicles at their normal replacement schedule with a mix of 43% fuel-efficient vehicles (FEV), 37% flex-fuel vehicles (FFV), 12.5% Hybrids, and 7.5% Electric vehicles. All FEV must be at least 5% more efficient than those they are replacing. All FFV will be purchased to use E85. In 2010 Brown County purchases will include (5) hybrids.

## **Fuel Efficiency and Conservation**

Brown County selected to implement an efficient driver program for training all employees who drive Brown County vehicles. It is estimated that a 5% saving in fuel use will be achieved after the training program has been successfully implemented.

## **Diesel Fuel Projects**

Brown County selected a biodiesel program that will phase into B20 over a several year period. In 2010 Brown County will start a testing program using B2 in highway vehicles during the warm months. The test will advance to B5, B10, and B20 in the 2011- 2014 timeframe. The test will move to the winter months when cold weather gelling issues have been resolved and to B20 full time when vehicle maintenance and product accessibility issues have been resolved. B20 will be used in approximately 95% of diesel vehicles.

## 7. Potential Renewable Feedstocks

Dedicated feedstocks are perennial grasses and trees grown as crops specifically to provide the required raw materials to industrial enterprises especially bio-energy producers. The Bio-energy Feedstock Development Program, funded by the U.S. Department of Energy, has identified hybrid poplars, hybrid willows, silver maples, and switchgrass as having the most potential for dedicated use as bio-energy feedstocks.

The existing cropland acres available in Brown County are currently being used to sustain its livestock production. At this point in time, production agriculture is experiencing a corn/grain deficit. Additional alfalfa forage and grain is being imported into Brown County in order to meet the dietary needs of its livestock which is primarily of a dairy nature. Due to this corn/grain deficit, the dedication of cropland for bio-energy feedstocks continues to be unlikely in Northeast Wisconsin. The Northeast Wisconsin Technical College (NWTC) has initiated a study on the growth of switchgrass for the purpose of evaluating its viability as a bio-energy crop in Northeast Wisconsin. Discussions have been held to contemplate how switchgrass might fit into Brown County crop rotations. The switchgrass could be used as a feed stock for bio-fuel and bio-energy production. Currently no infrastructure is available to utilize this particular feed stock. Brown County will continue to monitor progress on this study.

Other feedstocks such as agricultural and forest wastes, recycled paper, or municipal and manufacturing wastes may be valuable bio-energy resources. Paper mill sludge is a significant byproduct of the extensive paper industry that is located in Brown County. Rather than the continued land filling with this material, alternative uses such as for bio-energy continue to be evaluated.

With the arrival of the Emerald Ash Borer in Brown County it is anticipated that a large amount of diseased Ash trees will need to be disposed of over the next twenty years. The wood may be a temporary feedstock material for energy purposes. Brown County will also evaluate the potential for committing acreage at the Brown County Reforestation Camp for the planting of fast-growing cottonwoods as feedstock material for heating of County Park facilities.

Brown County has been evaluating the potential for diverting landfill waste as a fuel source for generating electricity at the County's waste transfer facility which is located adjacent to the closed West Side Landfill. This project would also include a landfill gas to energy component. Preliminary discussions with possible partners have occurred and evaluation continues on the feasibility of this project. If this project is implemented the possibility exists for using feedstock as a fuel. This would especially be beneficial if waste products such as paper mill sludge can be used.

Brown County has the highest concentration of dairy cows per acre of cropland and greatest number of Confined Animal Feeding Operations (CAFO's) in Wisconsin. (CAFO's are livestock operations greater than 1000 animal units). Because of this high concentration the potential for converting cow manure into electricity is significant. Spurring this interest in manure-based energy is the recognition that what once was waste now has value. Contamination of groundwater as a result of runoff from agricultural fields following the spreading of manure has been a problem in some areas of Brown County.

Dairy farmers in Brown County have used anaerobic digesters as well as the burning of dried manure to generate electricity. These facilities can also result in a reduction of the use of petroleum fuels because the manure does not need to be transported to fields for spreading. As farmers become more confident in the technologies for generating electricity from manure it is anticipated that the number of these facilities in Brown County will increase. Also, the conversion of animal waste to energy and other technologies such as dewatering and waste transformation would have the additional benefits of reducing agriculture runoff and improving the quality of groundwater and surface water while providing economic sustainability for agriculture in Brown County.

Brown County can facilitate the sharing of information about these technologies. Brown County may also be able to provide economic development financing. The potential also exists for Brown County to facilitate regional cooperative manure to energy facilities.

## **8. Existing Unknowns – Necessary Information for Future**

### ***Renewable Energy Technologies***

Probably the biggest area of existing unknowns revolves around advancements in renewable energy technologies. Limited budgets make it essential that investments of public tax dollars into renewable energy projects provide an adequate return on the investment. The rapid development of new renewable energy technologies makes it difficult to stay on top of the latest and greatest improvements. Renewable energy technologies oftentimes demand significant investments which include risk for the decision makers. Examples of these evolving technologies include solar photovoltaic, anaerobic digesters, pyrolysis and gasification, as well as advancements in wind turbines.

### ***Funding***

The challenging economy and budgetary constraints that Brown County faces at this time places an extreme emphasis on the need to make sound financial decisions. The tolerance level for experimental or risky solutions to energy problems is also reduced when there are so many demands for the limited dollars that are available.

Brown County was fortunate to have been identified as a recipient of funds for the Wisconsin Energy Independent Communities 25 x 25 Plan Grant and as an entitlement community to receive \$612,000 in Energy Efficiency Conservation Block Grant (EECBG) funds in 2009. These funds provided a significant source of revenue for planning as well as for many of the renewable energy and energy conservation projects identified in the 25 x 25 Energy Independence Plan.

Federal funding for the EECBG program was included in the federal economic stimulus program under the American Recovery and Reinvestment Act (ARRA) of 2009. At this time the Federal Energy Program Budget does not include continued funding for the EECBG program. Uncertainties regarding future funding of the EECBG program make it difficult to sustain the necessary financial commitment to reducing our dependence on non-renewable energy sources.

### ***Political and Public Support***

Public concerns regarding global warming, conflicts associated with energy markets, as well as the economic impact of fuel prices is at an all time high. However, maintaining a high level of public support on any issue is always difficult especially when so many challenges face our nation. It is important that public awareness of the many energy challenges continues and that evidence of success in regards to the development of renewable energy is publicized.

Presently Brown County has enjoyed significant support from political leaders from the Brown County Executive, Governor of Wisconsin, and from the President of the United States. The legislative branches of each of these levels of government, including the Brown County Board of Supervisors have contributed significant support and funding to promote energy independence and reductions in dependence on non-renewable energy resources. Continue support from all is necessary for Brown County to achieve 25x25 goals.

## ***Opportunities for Partnerships***

The potential for success in achieving the goals and objectives of the 25 x 25 Energy Independence Plan increase based on the ability to develop sound partnerships. There is a need to explore public/private partnerships with research & development interests to implement and evaluate new energy technologies. Relationships with educational and research institutions such as the University of Wisconsin, University of Wisconsin – Green Bay, the Northeast Wisconsin Technical College, and the University Extension need to be promoted. Intergovernmental partnerships, not only with funding sources such as the state and federal government but also with local government at the municipal and school district level must be utilized.

## ***Non-renewable Energy Prices***

A major determinant in the cost-effectiveness of renewable energy investment is a comparison to the cost of traditional non-renewable energy. Energy market prices vary significantly based on the overall global economy and market demand. For example inexpensive petroleum prices can reduce the public demand for more efficient hybrid automobiles. Short term economic shifts can often reduce governmental emphasis on long-term sustainable solutions to energy needs.

## 9. Action Steps – Immediate & Long-Term

Brown County identified immediate and long-term actions for the five major strategies in previous chapters of this report. The actions for each strategy are summarized below and listed in the following pages.

The Administration Subcommittee established eight new or revised policies and procedures and eight program evaluations which will insure energy efficiency and conservation for existing programs and processes and future purchases and building construction contracts.

The Building Subcommittee identified a total of forty-six immediate and long-term actions in six major categories – Energy Efficiency, Energy Star/LEED EB Certification, Renewable Energy, Building System upgrades, Building Renovations, and New Construction. Once implemented, energy efficiency and building certification projects will save an estimated 5% in total energy use. Renewable energy and building systems upgrades will contribute 4.2% toward Brown County’s renewable energy goal. In addition all renovation and new building construction contracts will be specified to meet energy efficiency goals (25% more efficient than state code) and renewable energy goals (4.2% of total energy use).

The Community and Education Subcommittee developed programs and activities which, once implemented, will educate community groups as well as Brown County citizens and employees in sustainability, energy conservation, and renewable energy plans at Brown County. The education programs will also include sustainable actions that can be implemented in businesses and homes. Thirty-two immediate and long-term actions were identified.

The Energy Subcommittee identified three short-term and three long-term actions items which are necessary to develop and implement large-scale energy production facilities. Brown County’s Landfill Gas to Electricity Facility was constructed in 2009 and will be in operation until 2020. A wind turbine is planned for this site and a MET tower is planned for another Brown County property, both in the 2010-2011 time period. A Wind Farm project and other energy projects are planned for the long-term.

The Vehicle Subcommittee has identified six immediate and long-term actions for gasoline and diesel vehicles. These include purchase of fuel-efficient, flex-fuel, hybrid, and electric vehicles as well as transition to a B20 biodiesel program for diesel vehicles. Once implemented, these actions will result in Brown County achieving its 25% alternative fuel goal.

The list of specific actions by subcommittee, the responsible department, and implementation schedule are shown in the following table.

**Actions****Responsibility****Schedule*****Administration*****Policy and Procedure****Immediate**

1	Green Cleaning	Administration and Facilities	2010
2	Green Purchasing	Purchasing	2010
3	Utilities Use at Work and Home	Administration and Facilities	2010
4	Appliance Use	Administration and Facilities	2010
5	Recycling Program	Admin, Facilities, Solid Waste	2010
6	Workplace Environment	Administration and Facilities	2010
7	Video/Teleconferencing	Administration and IS	2010
8	Fuel-efficient Purchasing	Administration and Facilities	2010

**Program Evaluations****Immediate**

9	Copier and Printer Analysis	Administration and IS.	2009
10	Procurement Documents	Purchasing	2009
11	Energy Efficient Driver Training	Admin, HW, Sheriff, Airport	2010
12	County Waste Stream	Administration and Solid Waste	2010

**Long -Term**

13	Green Partnerships	Purchasing, BC Departments	2010 – 2011
14	Document Handling	Administration and IS	2011 – 2012
15	Consolidated Procurements	Administration	2010 – 2011
16	Alternative Transportation	Administration, BC Departments	2010 - 2012

***Buildings*****Energy Efficiency and Conservation****Immediate**

1	Library Audits	Facilities and Libraries	2009
2	Library Audit Analysis	Facilities and Libraries	2010
3	Library Audit Projects I	Facilities and Libraries	2009 - 2010
4	BC Buildings Audits	Facilities and BC Departments	2009
5	BC Buildings Audit Analysis	Facilities and BC Departments	2010
6	BC Buildings Audit Projects I	Facilities and BC Departments	2009 - 2010

**Long -Term**

7	Library Audit Projects II	Facilities and Libraries	2011 - 2014
8	BC Building Audit Projects II	Facilities and BC Departments	2011 - 2014
9	Replication Plan	Facilities and BC Departments	2011 - 2014

## **Energy Star/LEED Existing Bldg Certification**

### **Immediate**

10	Northern Building	Facilities	2010
11	Sophie Beaumont Bldg	Facilities	2010
12	Courthouse	Facilities	2010

### **Long-Term**

14	Austin Straubel Airport	Facilities and Airport	2011 - 2014
15	Libraries	Facilities and Libraries	2011 - 2014
16	NEW Zoo	FPM and NEW Zoo	2011 - 2014
17	Parks	FPM	2011 - 2014
18	Syble Hopp School	Facilities and SHS	2011 - 2014
19	Highway Admin Bldg	Facilities and Highway	2011 - 2014
20	Museum	Facilities and Museum	2011 - 2014
21	Aging and Disability Resource Ctr	Facilities and ADRC	2011 - 2014
22	UW-Extension	Facilities	2011 - 2014
23	Law Enforcement Center	Facilities	2011 - 2014
24	Jail	Facilities and Sheriff Dept	2011 - 2014

## **Renewable Energy Projects**

### **Immediate**

25	Jail Hot Water	Facilities and Sheriff Dept	2010
26	Barkhausen PV	FPM	2010
27	Bay Shore Wind	FPM	2010

### **Long -Term**

28	Syble Hopp Hot Water	Facilities and SHS	2011
29	Airport TBD	Facilities and Airport	2011 - 2014
30	Library PV	Facilities and Libraries	2011
31	NEW Zoo TBD	FPM and NEW Zoo	2011 - 2014
32	Courthouse Square TBD	Facilities	2015 - 2020

## **Building Systems Upgrades**

### **Immediate**

33	Barkhausen Roof	FPM	2010
34	Shelter Care Roof	FPM	2010
35	Way-Morr Parking Lot	FPM	2010

### **Long-Term**

36	HVAC upgrades (Geothermal/ Biomass Installations)	FPM and BC Departments	2015-2020
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## **Building Renovations**

### **Long-Term**

37	Sheriffs Department Building	Facilities and Sheriff	2011
38	Huber	Facilities and Sheriff	2011
39	Central Library	Facilities and Libraries	2011-2014
40	Courts	Facilities and Courts	2015-2020

## **New Building Construction**

### **Immediate**

41	911 Center	Facilities and Safety Comm	2009
42	CTC	Facilities and Human Services	2009
43	Mayan Food Court	NEW Zoo	2009
44	Airport Snow Equip Storage	Airport	2010

### **Long -Term**

45	Jail Pods	Facilities and Sheriff	2011-2014
46	BC Programs	Facilities and BC Departments	2020

## ***Community and Education***

### **Website**

#### **Immediate**

1	Set up Website	UWE, IS	2009
2	Add Visual Resources	UWE, IS	2010
3	Link to FOE	UWE, IS	2010
4	Add Calendar of Programs	UWE, IS	2010
5	Add 25x25 Plan and Evaluation	UWE, IS	2010
6	Install Website Counter	UWE, IS	2010

### **Education**

#### **Immediate**

7	Establish Logo	UWE	2009
8	Educational Display	UWE	2010
9	Energy Conservation Tips	UWE	2010
10	Weatherization Kits	UWE	2010
11	Sustainability Workshops	UWE	2010-2014
12	Northern Building Display	UWE	2010-2014
13	County Building Displays	UWE	2010-2014
14	Promote LEED Projects	UWE, Facilities, BC Departments	2010-2012
15	Promote Partnerships	UWE	2010-2015
16	Barkhausen PV	UWE, Parks	2010-2014

#### **Long -Term**

17	Develop Brochure	UWE	2011
18	Workshop/Seminar Survey	UWE	2011
19	Natural Steps Study Circle	UWE	2011
20	County Practices	UWE, BC Departments	2011
21	Alternative Energy Tours	UWE	2011
22	County Resident Speakers	UWE	2011-2015
23	Workshops Employees/Residents	UWE	2011-2015

### **Media**

#### **Immediate**

24	GB Press Gazette Article	UWE	2010
25	Press Releases - Initiatives	UWE, BC Departments	2010-2015

### **Long -Term**

26	Wisconsin Public Television	UWE	2012
27	Cable Access Channel DVD's	UWE	2012

### **Special Events**

#### **Immediate**

28	Tour LEED Facilities	UWE, Facilities, BC Departments	2010
29	Rain Barrels	UWE	2010-2011
30	Earth Week	UWE	2010-2012
31	Display Booth - Special Events	UWE	2010-2014
32	New technologies - livestock waste	LWCD, UWE	2010

#### **Long-Term**

33	Analyze ash trees for energy	UWE, Parks, LWCD	2011-2014
34	Transfer Sustainability Ideas	UWE	2011-2014

## ***Energy***

#### **Immediate**

1	East Landfill Gas to Electric	Port & Solid Waste (P&SW)	2009
2	East Landfill Wind Turbine	P&SW	2010
3	MET Tower	P&SW, Planning and Land Services (PALS)	2010

#### **Long-Term**

4	West Landfill Gas/Transfer Station Waste to Energy	P&SW	2011-2025
5	Wind Farm Southern BC	P&SW, PALS	2016-2022
6	WPS Green Energy Purchase (If Necessary)	Administration, Facilities	TBD

## ***Vehicles***

### **Gasoline Plan**

#### **Immediate**

1	Purchase 2010 Vehicles (FEV, FFV, Hybrids)	Purchasing and BC Departments	2010
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#### **Long -Term**

2	Purchase Vehicles (FEV, FFV, Hybrids, Elec)	Purchasing and BC Department	2011-2025
3	Continue to Investigate Other Technologies (Fuel Cell, Compressed Gas and Other)	Airport, Highway, Sheriff, FPM	2011-2025

### **Diesel Plan**

#### **Immediate**

4	Conduct B2 Tests	Highway Department	2010
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**Long -Term**

5	Conduct Tests (B5, B10, B20)	Highway Department	2011-2014
6	Implement B20 Plan	Highway and BC Departments	2015

## **10. Brown County Energy Independence Committee**

### ***Committee Members***

Tom Hinz – County Executive, Brown County  
Larry Adlebush – Brown County Highway Department Superintendent  
Bill Dowell – Brown County Facilities and Park Director  
Mike Fleck – Brown County Board Supervisor  
Bill Hafs – Brown County Land Conservation Director  
Jeff Henkelmann – Wisconsin Public Service, Brown County Account Manager  
Molly Hillmann – Brown County Administration, Grants Development Specialist  
Kurt Hogarty- Brown County Administration, Purchasing Manager  
Judy Knudsen – Brown County UW-Extension Department Head  
Dennis Kocken – Brown County Sheriff  
Chuck Lamine – Brown County Planning and Land Services Director  
Chuck Larscheid – Brown County Port and Solid Waste Director  
John Machnik – Brown County Assistant Facility Director  
Tom Miller – Austin Straubel International Airport Director  
Karen Nuthals – Brown County Facility and Park Office Manager  
Pat Pelky – Director, Oneida Environmental, Health, and Safety  
Jayme Sellen – Brown County Executive Legislative Assistant

### ***Other Subcommittee Members***

Neil Anderson – Brown County NEW Zoo Director  
Nate Curell – Brown County Facility Engineer  
John Gossage – Brown County Sheriff Department, Chief Deputy  
Doug Hartman – Brown County Assistant Park Director  
Randy Schultz – Brown County Sheriff Department, Patrol Division Captain  
Lynn Stainbrook – Brown County Library Director  
Aaron Schuette - Senior Planner  
Jeff DuMez – GIS/Land records Coordinator

## **11. Attachments**

### ***1. Resolution***

#### **Brown County Sustainability Resolution**

Whereas, Sustainability means satisfying our present needs without compromising the ability of future generations to meet their needs; and

Whereas, Sustainable County Government means:

1. Leading by demonstrating sustainable stewardship that will yield cost savings to taxpayers by reducing County operating costs, and
2. Providing healthy work environments for County staff, visitors, and clients and protecting, conserving, and enhancing the County's resources, and establishing community standards of sustainable living practices; and
3. Operating County facilities to minimize environmental impacts by incorporating the use of sustainability and energy efficient materials, renewable resources, alternative energy and fuels, water conservation, waste reduction; and
4. Designing, constructing new, and renovating existing County facilities utilizing Green Building design guidelines including LEED and Energy Star design criteria; and
5. Developing and implementing sustainable fleet management policies and procedures that will result in improved vehicle operational and maintenance practices and fuel efficiencies; and

Whereas, the County should be a leader in setting policies, guidelines, goals, and strategic actions that will result in a more Sustainable community; and

Whereas, the County Executive has established the Energy Oversight Committee to draft a long range energy strategic plan; and

Whereas, the State of Wisconsin 2025 Energy Independence goals are to:

1. Generate 25 percent of our electricity and 25 percent of our transportation fuel from renewable fuels by 2025; and
2. Capture 10 percent of the market share for the production of renewable energy sources by 2030, bringing \$13.5 billion annually to Wisconsin's economy by 2030; and
3. Become a national leader in groundbreaking research that will make alternative energies more affordable and available to all – and to turn those discoveries into new, high paying Wisconsin jobs.

NOW, THEREFORE BE IT RESOLVED, that the Brown County Board of Supervisors are committed to Sustainable County Government procedures and declares itself a partner with the State of Wisconsin in the pursuit of the "25 x 25" goals for energy independence.

BE IT FUTHER RESOLVED, that the County Clerk shall provide a copy of this resolution to Governor Doyle, The Brown County state delegation and the Wisconsin Counties Association.

## ***2. From Tom Hinz, Brown County Executive***

In January 2009, Brown County government, through a collaborative effort with the Oneida Tribe, was chosen by the Governor's Office as one of only ten "25x25" pilot communities in Wisconsin! This means we have made a commitment to the State of Wisconsin to become 25% energy independent by the year 2025 through initiatives such as "green" internal policies and procedures, LEED building criteria and the exploration of alternative energy sources.

We applied for this status through a competitive grant process along with 70 other communities in the state—and we consider it quite an honor to have been chosen for this initiative.

Brown County has formed an Energy Oversight Committee comprised of several strategically arranged sub-committees, and have been diligently working on all areas of sustainability within Brown County government. By early Spring we will have completed an energy assessment of all County buildings and vehicles, and by the end of 2009, we will have outlined a comprehensive plan to become "25x25".

We also partnered with Northeastern Wisconsin Technical College to have students of their graphic design program design a "green" logo (presented above) for us to start incorporating on our website, letterhead, and other official County correspondence. We hope you like it as much as we do.

This is a proud time for us as we move forward with setting goals, guidelines, policies and strategic actions that will result in a more sustainable community for all.

Tom Hinz  
County Executive

## **Appendix: Baseline Energy Consumption Data – Spreadsheets**

### ***Baseline Data and Goals***

Your 2008 energy usage baseline is **269,766** million (MM) Btus.

That baseline is comprised of 21,447,467 kWh,  
1,259,135 therms,  
186,085 gallons of gasoline,  
and 342,439 gallons of diesel.

By assuming an annual growth rate of **1.10%** ,  
in 2025 your energy use baseline will be **324,905** MMBtu.

Your 25% energy reduction goal  
for 2025 is therefore **81,226** MMBtu,  
or 30% of your 2008 consumption.

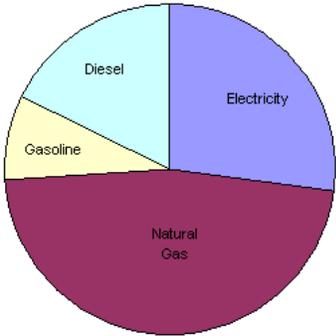
This translates into 23,806,060 kWh or  
812,263 therms or  
655,051 gallons gas or  
584,362 gallons diesel or  
some combination  
of those fuels.

# Energy Analysis 1

## Brown County 2008 Energy Baseline: Additional Info

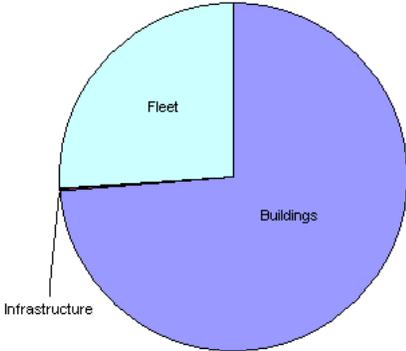
### Total Consumption by Energy Type

Energy type	Percent of total Btus
Electricity	27%
Natural Gas	47%
Gasoline	9%
Diesel	18%



### Total Consumption by End Use

Energy end use	Percent of total Btus
Buildings	74%
Infrastructure	0%
Lighting	0.06%
Fleet	26%



# Energy Analysis 2

## Brown County 2008 Energy Baseline: Additional Info

### Total Consumption by Sector

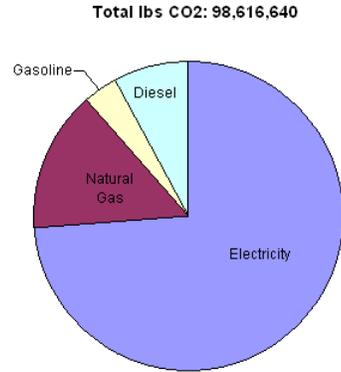
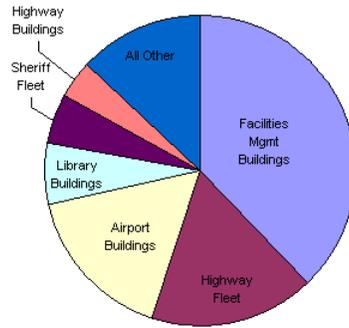
Sector	Percent of total Btus
Facilities Mgmt	38%
Highway	21%
Airport	18%
Library	6%
Sheriff	5%
Other Fleet	2%
Public Works	2%
Syble Hopp	2%
New Zoo	2%
Golf Course	1%
Parks	1%

### Total Consumption by End Use and Sector

Sector + Energy end use	Percent of total Btus
Facilities Mgmt Buildings	38%
Highway Fleet	17%
Airport Buildings	17%
Library Buildings	6%
Sheriff Fleet	5%
Highway Buildings	4%
All Other	13%

### Total CO2 Emissions by Energy Type

Energy type	Percent of total CO2
Electricity	74%
Natural Gas	15%
Gasoline	4%
Diesel	8%



Please direct any questions electronically to:

Brian Driscoll  
Community Relations Director  
State of Wisconsin  
Office of Energy Independence  
17 West Main St. Room #429  
Madison, WI 53702  
[brian.driscoll@wisconsin.gov](mailto:brian.driscoll@wisconsin.gov)