



CLIMATE *Friendly* PARKS

# Indiana Dunes National Lakeshore Action Plan

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## INDIANA DUNES NATIONAL LAKESHORE BECOMES A CLIMATE FRIENDLY PARK

As a participant in the Climate Friendly Parks program, Indiana Dunes National Lakeshore (IDNL) belongs to a network of parks nationwide that are putting climate friendly behavior at the forefront of sustainability planning. By conducting an emission inventory, setting an emission reduction goal, developing this Action Plan, and committing to educate park staff, visitors, and community members about climate change, IDNL provides a model for climate friendly behavior within the park service.

This Action Plan identifies steps that the National Lakeshore can undertake to reduce greenhouse gases (GHG) emissions and mitigate its impact on climate change. The plan presents the IDNL's emission reduction goals, and associated reduction actions to achieve the park's goals. Strategies and action plan items were developed by working groups at the IDNL Climate Friendly Parks Workshop in March of 2011.<sup>1</sup> While the plan provides a framework needed to meet the park's emission reduction goals, it is not intended to provide detailed instructions on how to implement each of the proposed measures. The park's Environmental Management System will describe priorities and details to implement these actions.

Indiana Dunes National Lakeshore intends to reduce its greenhouse gas emissions produced by park operations as follows:

- Energy use consumption emissions to 10% below 2008 levels by 2015
- Waste emissions to 10% below 2008 levels by 2015
- Transportation emission levels to 10% below 2008 levels by 2015

To meet these goals, the park will implement strategies proposed in this plan that relate to the park's current and future emission inventories. Specifically, the plan recommends three strategies:

**Strategy 1:** Identify and implement mitigation actions that the park can independently take to reduce GHG emissions resulting from activities within and by the park.

**Strategy 2:** Increase climate change education and outreach efforts.

**Strategy 3:** Monitor progress with respect to reducing emissions and identify areas for improvement.

## THE CHALLENGE OF CLIMATE CHANGE

Climate change presents significant risks and challenges to the National Park Service and specifically Indiana Dunes National Lakeshore. Scientists cannot predict with certainty the general severity of climate change nor its impacts. Average global temperatures on the Earth's surface have increased about 1.1°F since the late 19<sup>th</sup> century, and the 10 warmest years of the 20<sup>th</sup> century all occurred in the last 15 years<sup>2</sup>. The single leading cause of this warming is the buildup of GHGs in the atmosphere—primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)—which trap heat that otherwise would be released into space.

<sup>1</sup> Original notes from these workshops, including detailed action items not presented in the final plan have been archived by Indiana Dunes National Lakeshore and are available upon request.

<sup>2</sup> IPCC 2007. Climate Change 2007: The Physical Science Basis. Intergovernmental Panel on Climate Change, Geneva Switzerland. Available online at < <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>>

The continued addition of CO<sub>2</sub> and other GHGs to the atmosphere will raise the Earth's average temperature more rapidly in the next century; a global average warming of 4-7°F by the year 2100 is considered likely.<sup>3</sup> Rising global temperatures will further raise sea levels and affect all aspects of the water cycle, including snow cover, mountain glaciers, spring runoff, water temperature, and aquatic life. Climate change is also expected to affect human health, crop production, animal and plant habitats, and many other features of our natural and managed environments.

At Indiana Dunes National Lakeshore, increasing temperatures and changing precipitation patterns may alter park ecosystems and change vegetation communities, habitats available for species, and the experience of park visitors.

## GREENHOUSE GAS EMISSIONS INVENTORY AT INDIANA DUNES NATIONAL LAKESHORE

Naturally occurring GHGs include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and water vapor. Human activities (e.g., fuel combustion and waste generation) lead to increased concentrations of these gases (except water vapor) in the atmosphere.

### Greenhouse Gas Emissions

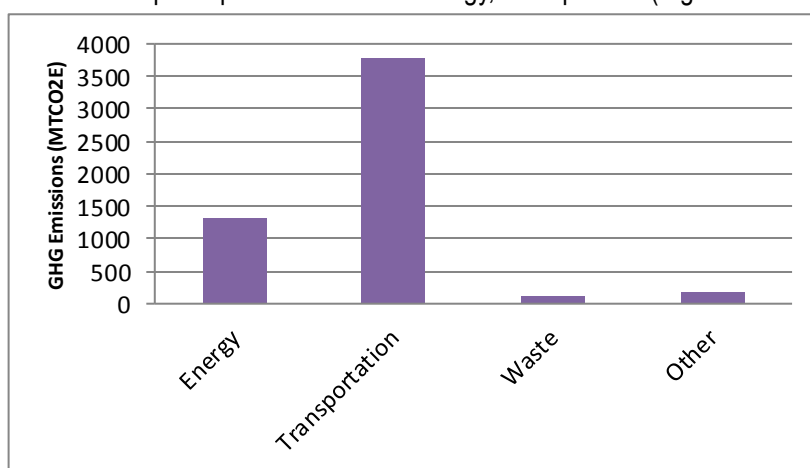
GHG emissions result from the combustion of fossil fuels for transportation and energy (e.g., boilers, electricity generation), the decomposition of waste and other organic matter, and the volatilization or release of gases from various other sources (e.g., fertilizers and refrigerants).

In 2008, GHG emissions within IDNL totaled 5,373 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>E). This includes emissions from park, the Lake Michigan Ecological Research Station of the United States Geologic Service (USGS), Dunes Learning Center (DLC) operations and visitor activities, including vehicle use within the park. The DLC and USGS have been included because they are located entirely within IDNL and their actions directly impact the park. For perspective, a typical single family home in the U.S. produces approximately 11 MTCO<sub>2</sub> per year.<sup>4</sup> Thus, the combined emissions from park and these other operations—and visitor activities within the park—are roughly equivalent to the emissions from the electricity use of 488 households each year.

The largest emission sector for IDNL is mobile emissions, totaling 3,778 MTCO<sub>2</sub>E (Fig 1 and Table 1). Figure 1 and Table 1 also show that transportation is the largest source of GHG emissions, with visitors contributing the largest portion of transportation emissions. The largest source of GHG emissions from park operations alone is energy, at 52 percent (Figure 2).

### FIGURE 1

*Indiana Dunes National Lakeshore 2008  
Total Greenhouse Gas Emissions by  
Sector*



<sup>3</sup> IPCC 2007. Climate Change 2007: The Physical Science Basis. Intergovernmental Panel on Climate Change, Geneva Switzerland. Available online at < <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>>

<sup>4</sup> U.S. EPA, Greenhouse Gases Equivalencies Calculators – Calculations and References, Retrieved, Website: <http://www.epa.gov/RDEE/energy-resources/calculator.html>

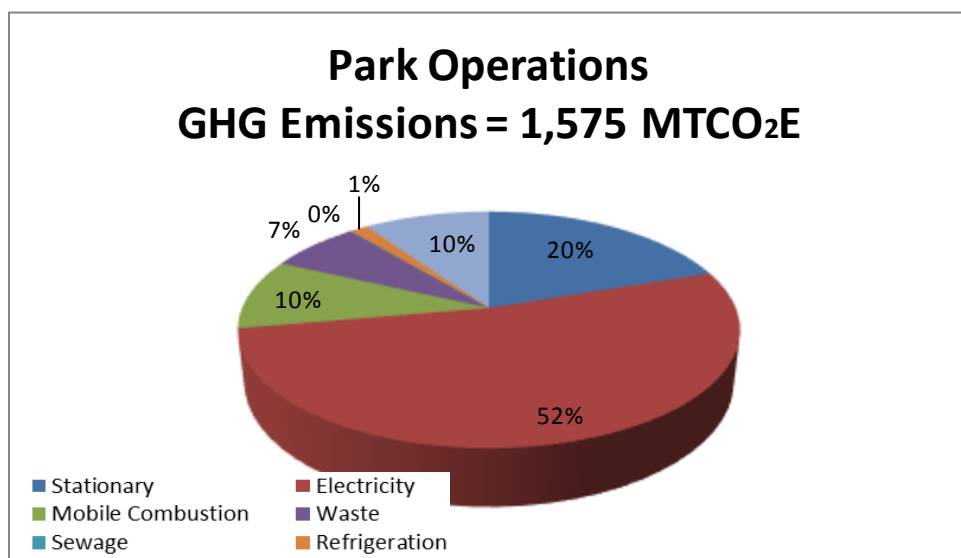
## TABLE 1

*Indiana Dunes National Lakeshore 2008 Total Greenhouse Gas Emissions by Sector and Source*

	Emissions (MTCO <sub>2</sub> E)	% of Total
<b>Energy</b>	<b>1,305</b>	<b>24.3%</b>
Stationary Combustion	379	7.1%
Purchased Electricity	926	17.2%
<b>Transportation</b>	<b>3,778</b>	<b>70.3%</b>
Mobile Combustion	3,778	70.3%
<b>Waste</b>	<b>115</b>	<b>2.1%</b>
Solid Waste Disposal	113	2.1%
Wastewater Treatment	2	0.0%
<b>Other Emission Sources</b>	<b>174</b>	<b>3.2%</b>
Refrigeration	21	0.4%
Park Employee Commuting	153	2.9%
<b>Total Emissions</b>	<b>5,373</b>	

## FIGURE 2

*Indiana Dunes National Lakeshore 2008 Park Operations Emissions by Sector*



# Indiana Dunes National Lakeshore Responds to Climate Change

*The following actions were developed during the national lakeshore's Climate Friendly Parks Workshop on March 30 - 31, 2011 in order to meet the park's climate change mitigation goals.*

## STRATEGY 1: REDUCE GHG EMISSIONS RESULTING FROM ACTIVITIES WITHIN AND BY THE PARK

Indiana Dunes National Lakeshore has developed a set of actions in order to reduce emissions from activities within and by the park. These strategies have been prioritized based on a qualitative assessment of a set of criteria including: emission reduction potential, cost-effectiveness, feasibility, co-benefits, regional impact, and ability to rapidly implement. Actions that IDNL will take have been presented below in order from highest to lowest priority within each sub-category.

### Energy Use Management

*Emission Reduction Goal: Reduce park operations' energy use emissions to 10 percent below 2008 levels by 2015.*

Improving energy efficiency and implementing alternative energy sources reduces park-based fuel use, lowers GHG emissions, decreases electricity consumption, and offers monetary benefits for the park. Emissions inventory results indicate that 24 percent of the park's GHG emissions (including visitors, DLC and USGS), and 52 percent of the GHG emissions from purely park operations are from energy consumption. Consequently, the park identified actions it will take to reduce energy-related emissions. Presented below are the actions that are currently under way and which comprise the park's progress to date, as well as those actions the park will pursue.

#### Progress to Date

- ✓ IDNL has installed over 50 (24 watt) solar lights in high use areas, all of which support the dark skies initiative.
- ✓ A green roof has been installed on Building 110
- ✓ The total rehab of a 7,500 sq. ft. building's HVAC systems, including high velocity ductwork, four highly efficient heat pumps for cooling and first stage heating, two 93% efficient on-demand cascading boilers, and four heat recovery ventilators.
- ✓ Solar powered storage cabin at the Dunes Learning Center.
- ✓ The recently added Portage Lakefront Pavilion is a Gold LEED certified building, with geothermal heat pump HVAC system, and reserved parking for low-emitting vehicles and carpoolers.
- ✓ Numerous buildings totaling 18,500 Sq. ft. throughout the park have white membrane roofs to reduce the heat island effect by reflecting light/heat off the roof to keep the building cooler.

### Energy Use Management – Planned Actions

#### 1 Promote energy efficiency and energy conservation in the park through behavioral change

- Encourage and set accountability for energy conservation in all park activities
  - Develop and implement a mandatory energy-savings training program.
  - Incorporate conservation into seasonal training sessions.
  - Incorporate an energy performance reward system (Green Star Award Program initiated in May, 2012).
  - Reduce the number of hours lights are on by shutting them off when not in use.
  - Use natural lighting whenever possible.
  - Set computers to hibernate throughout the day, and shutdown overnight.
  - Unplug items when not in use for periods of time to prevent unnecessary draw of energy.
- Upgrade windows, window films, install window shading on south sides,



- Plant trees to provide shade onto buildings.
- Ensure programmable thermostats are being set correctly, and continue to purchase them for any areas that don't currently have programmable thermostats.

## 2 Upgrade lighting options

- Upgrade all light fixtures and bulbs in the park to energy-efficient bulbs.
  - Replace any remaining incandescent light-bulbs with compact fluorescent light-bulbs (CFLs) where appropriate.
  - Explore the option of installing LED's in high use areas.
  - Use high intensity discharge (HID) lamps and/or fluorescent lights in all fixtures used for more than three hours a day.
- Install lighting controls.
  - Use motion sensors and make sure that a decommissioning schedule is in place to ensure appropriate use.

## 3 Switch to more efficient electronics and devices

- Continue to implement the green procurement policy that sets minimum energy performance standards for all electronic equipment, resulting in purchasing only energy efficient electronics.
  - Ensure that all new electronic/office equipment is ENERGY STAR qualified at [www.energystar.gov](http://www.energystar.gov), and rather than purchasing individual copy, fax, print, and scanning equipment, consider a multi-function device.
  - Refer to the Federal Energy Management Program guidelines for purchasing energy efficient appliances in accordance with federal procurement procedures.
- Default all computers to print double-sided.
- Install SmartStrip power strips.
- Continue to replace park's existing boilers with energy-efficient models.
- Install energy efficient water heaters.

## 4 Utilize alternative energy sources

- Continue to investigate the installation of a wind power supply in headquarters area.
- Investigate the possibility of installing photovoltaic panels on park buildings, parking lots, open areas, etc.
  - PV panels both generate electricity as well as (if placed correctly) decrease building energy use by reducing solar heat gain.



## Transportation Management

*Emission Reduction Goal: Reduce park operations transportation emissions to 10 percent below 2008 levels by 2015.*

Reducing vehicle miles traveled, improving vehicle efficiency, and using alternative fuels can significantly reduce Indiana Dunes National Lakeshore's emissions. As the inventory results indicate, GHG emissions from transportation comprise 70.3 percent of the park's overall emissions (including visitors and the DLC). Accordingly, in addition to the park operations emissions reduction goal, IDNL set a goal to reduce overall transportation emissions by 10 percent below 2008 levels by 2015. Presented below are the actions that are currently under way and which comprise the park's progress to date, as well as those actions that the park will pursue.

### Progress to Date

- ✓ More than 30 percent of the parks fleet are alternative or flex fuel vehicles.
- ✓ Fuel storage tanks have been removed from the park property.
- ✓ Significant reductions in mowing operations have been taken.
- ✓ Current efforts are underway working with South Shore Clean Cities (SSCC) to receive a grant for nearly one million dollars to make IDNL an electric vehicle ready national park (including several of the action items mentioned in this plan).

## Transportation Management – Planned Actions

### 1 Reduce emissions from travel by park vehicles by 10 percent

- Promote and set accountability for transportation-related behavioral changes to reduce fuel consumption
  - Set and enforce a zero idling policy for park operations. Post reminders to do so on key chains and the insides of park vehicles. IDNL is working with SSCC on such an idle reduction project.
  - Eliminate unnecessary trips between field and offices by requiring all employees to take lunch and breaks in field (unless unsafe to do so).
  - Reduce travel miles by consolidating trips.
  - Continue to reduce unnecessary mowing efforts.
  - Station individuals at work locations to reduce unnecessary trips across the park.
- Investigate the feasibility of flex schedules and telecommuting to reduce commuting and travel on site.

### 2 Reduce visitor vehicle fuel consumption

- Set and enforce a zero idling policy for all busses/vehicles bringing groups in for interpretation programs.
  - Post signs in parking lots encouraging visitors to follow zero idling initiative.
  - Law Enforcement will stop to verbally explain the new policy to those who get caught idling.
- Provide shuttle service to transport visitors from designated parking areas to beach access points three days a week for four summer months. (Proposed action item in SSCC grant includes the purchase of two propane powered shuttle busses.)
- Promote visitors to ride bikes, take the South Shore train, and carpool to and within the park.
  - Consider having concessioners rent bikes for visitors to have easier beach access from a set location.
  - Tweet parking lot status during busy summer months.

### 3 Replace NPS vehicles and equipment

- Continue to replace gas and diesel vehicles with alternative fuel/hybrid vehicles.
  - SSCC grant includes the replacement of three existing pick-up trucks with propane powered pick-up trucks, one existing crew cab 4x4 with a propane powered crew cab, one existing passenger van with a propane powered van, and two existing ranger cars with new E85 Caprice vehicles.
- Investigate and replace gas powered equipment (mowers, ATVs, etc.) with propane or electric versions.
  - SSCC grant includes the replacement of four zero turn radius mowers with propane powered mowers and up to five weed trimmers with propane weed trimmers.
- Purchase an electric cart to be used at the campground and or West Beach.

### 4 Encourage appropriate vehicle maintenance

- Ensure current policies on vehicle maintenance are well known, understood, and implemented.

## Waste Management

*Emission Reduction Goal: Reduce park operations waste emissions to 10 percent below 2008 levels by 2015 through waste diversion and reduction.*

The connection between waste and GHG emissions may not be obvious. However, waste management—in the form of source and solid waste reduction—can dramatically reduce GHG emissions. Landfills are the largest human-generated source of CH<sub>4</sub> emissions in the United States. Reducing the amount of waste sent to landfills reduces CH<sub>4</sub> emissions caused by decomposition as well as the GHGs emitted from the transportation of waste. The less the park and its visitors consume in terms of products and packaging, the less energy is used and fewer GHGs are emitted.

Indiana Dunes National Lakeshore's park operation activities emitted 115 MT CO<sub>2</sub>E from waste management in 2008. Diverting or reducing the park's waste stream through increased recycling efforts and waste management will reduce the amount of waste sent to landfills and resulting emissions. Presented below are the actions that are currently under way and which comprise the park's progress to date as well as those actions that the park will pursue.

#### Progress to Date

- ✓ In addition to recycling common items such as plastic, glass, metal and paper, INDU also recycles aluminum, antifreeze, batteries, car tires, computers and other electronic equipment, scrap metal, toner cartridges, used oil, and wood chips.
- ✓ The park purchases and uses bio-based materials whenever feasible: re-refined oil, carpets, hand cleaners/sanitizers, glass cleaners, bath and tile cleaners, 2-cycle engine oils, bar oil, maintenance oils, firearm lubricants, hydraulic fluid, penetrating lubricants, and deicers.
- ✓ Over 4,130 tires and 75 tons of concrete have been recycled by the park, some of which has been used to produce rubberized asphalt, used to pave park roads.
- ✓ Recycling all materials possible is a requirement in all demolition projects within the park.
- ✓ Park custodial operations are 95 percent green (Green seal certified chemicals are used (multi-purpose cleaner, glass cleaner, graffiti remover). Microfiber cloths are used instead of paper towels for cleaning. Park orders the highest recycled content for paper products, toilet paper, paper towels, and copier paper. Custodial operations

has 1 hybrid (gas/ battery) vehicle, 1 Compressed Natural gas vehicle and 2 flex fuel vehicles. Bagless energy star rated vacuum cleaners are used. All trash liners are recycled content bags and the clear liners can be recycled.)

- ✓ Recovered materials are purchased/used when possible, including paper (30+% recycled content), commercial sanitary tissue products, toner cartridges, landscaping timbers, park benches, picnic tables, trash cans (we have 75 that are made of recycled steel and plastic lumber), no/low VOC paints.
- ✓ Currently, the green procurement plan requires that all laptops, desktops, and monitors are EPEAT -registered products (Electronic Product Environmental Assessment Tool), EnergyStar and Water Sense-labeled water conserving/efficient products are used when possible, motion sensitive lights and low flow fixtures are used in updated park restrooms.

## Waste Management – Planned Actions

### 1 Reduce waste sent to landfill through recycling by encouraging behavior change

- Continue vigilance in proper recycling, encouraging staff and visitors to place all recyclable materials in proper bins.
- Review and improve co-locating recycling bins at all visitor use areas.
- Educate all employees on proper waste/recycling procedures.
- Encourage the use of reusable containers for lunch, snacks, and beverages.
- Investigate potential of a ‘pack in-pack-out’ park, or at certain beaches.
  - Start trial at parking lots where there are attendants (West Beach or Mt. Baldy).
  - Goals would be to eliminate litter and workload on maintenance staff, as well as reduce waste by packing out trash, and giving visitors a single location per site to dispose of garbage/recycling where we can have educational signage on the importance of recycling.
- Set up relationship with TerraCycle to recycle previously non-recyclable materials.
- Reduce the amount of catalogs shipped to the park.
  - Designate one staff member per division to determine what catalogs can be cancelled, and cancel them.
- Require all employees to use double sided printing whenever possible.

### 2 Implement composting practices

- Look into the feasibility of setting up a compost bin near the greenhouse area at Headquarters.
  - If possible, designate a small, closed storage container in each building to keep food scraps.
  - Designate an individual to empty the containers into the compost pile once a week.
  - Set special emphasis on school group programs.
  - Compost to be used in greenhouse operations.

## STRATEGY 2: INCREASE CLIMATE CHANGE EDUCATION AND OUTREACH

Climate change is a complex and easily misunderstood issue. Indiana Dunes National Lakeshore can play an integral role in communicating about climate change to a vast audience. A better understanding of the challenges and benefits of reducing GHG emissions can motivate staff, visitors, and community members to incorporate climate friendly actions into their own lives. The national lakeshore recognizes that the greatest potential impact the park can have on mitigating climate change is through public education. Thus, the park sees public education as an end goal of any climate initiative. From installing a green roof to developing a compost program, the actions IDNL takes to address climate change serve as opportunities for increasing the public's awareness of climate change. Presented below are the actions that are currently under way which comprise the park's progress to date, and those actions that the park will pursue.

### Progress to Date

- ✓ INDU staff has conducted three teacher workshops on climate change with over 60 participants, in partnership with the Dunes Learning Center and the Chicago Wilderness Climate Task Force. The workshops focused on local impacts of climate change and how teachers can incorporate messages about regional and park issues into their classroom lessons on this important topic.
- ✓ INDU staff participates regularly on the Chicago Wilderness Climate Change Task Force and contribute to climate clinics and publications regularly for the region.
- ✓ The Nature in My Neighborhood initiative is beginning currently with pilot testing the new nature play area for young children at the Douglas Center. This project will teach families and children how to relate to nature in their own backyards and give them tools and ideas for making it a sustainable part of their lives.

### Educating Park Staff

Developing a climate change education program for park staff is vital to increasing awareness about climate change among park visitors and fostering a sense of collective responsibility among staff to help reduce park emissions. By incorporating climate change education into staff development programs, IDNL will enable its staff to demonstrate their commitment through leading by example, and providing visitors with the tools and resources they need to reduce GHG emissions in the park and in their own communities. Potential actions include:

#### **Develop a Climate Friendly Parks Team dedicated to increasing climate change knowledge among park staff and visitors.**

- The CFP team will consist of the environmental management team (EMT) members. Together, with the help of subject matter experts within the park, we will complete this action plan, incorporate it into our Environmental Management System (EMS), and follow through with management to ensure that necessary actions are taking place.
- Each member of the team will bring the CFP message and updates to their divisions, as well as update the team leader on anything related to CFP within their division.
- EMT member from Interpretation will work with interpretation staff to develop programs incorporating the CFP message at a local level—how it affects INDU and what the park is doing about it.
- EMT member from Interpretation will work with their staff to update the park website to include the parks CFP status and updates.

### **Train interpreters to speak to park visitors about climate change**

- Include climate change educational information during the training of park staff during annual seasonal training.
- Attend climate change webinars and put notes and information on Climate Change folder in I: Drive, updating interpretation and CFP team when information has been added to the drive.
- Update the CFP/EMT team when anyone from interpretation has attended or put on a training pertaining to Climate Change.

## **Visitor Outreach**

Understanding climate change and its consequences is essential to initiating individual behavioral change. IDNL realizes that it has a unique opportunity to educate the public in a setting free from many of the distractions of daily life. By using existing materials, developing park-specific materials, highlighting what the park is currently doing about climate change, and encouraging visitors to reduce emissions, the national lakeshore can play an important role in educating the public about climate change.

IDNL staff recognize the many different audiences that visit the park, including recreational and non-recreational park visitors, “virtual visitors” who visit the park online, school-aged visitors, local and out of town visitors, and local tribes. Reaching these various audiences with climate change information and engaging them in the park’s efforts requires appropriately focused messaging. The park has developed a number of strategies to reach these various audiences effectively. These strategies include:

### **Develop climate-friendly messaging to communicate IDNL’s climate friendly actions**

- Develop an information sheet that describes IDNL’s actions to date pertaining to reducing GHG emissions, ways visitors can help reduce emissions, and a simple summary of our GHG inventory showing how visitors’ actions and park operations effect the parks GHG emissions. Post this information on the parks website and have available for distribution upon request.
- Prior to their visit, distribute information electronically to visiting educational groups regarding bus idling while in the park, and remind them verbally once they arrive.
- Incorporate the CFP message and ways to be green in all park handouts, signage, and website.
  - Utilize the Climate Friendly Parks logo on signage.

### **Develop Climate Friendly Education Program**

- Develop educational programs and materials incorporating actions the public can do to reduce their emissions. Present to the public through interpretation programs throughout the park and on the spot at the Douglas Center and Visitor Center.

## **Local Community Outreach**

The gateway communities, agencies, vendors, and volunteers surrounding Indiana Dunes can play a significant role in supporting the park’s climate change mitigation goals. As such, when appropriate, park staff will assist local communities with incorporating climate change messages into community events and work with partners to promote climate change education at those events, and engage with surrounding agencies to coordinate effective outreach and education efforts. Potential actions include:

### **Develop climate-friendly partnerships with gateway communities, universities, non-profits, and other entities**



- Have scientists who conduct research in the park hold seminars for employees on their findings. Ensure the public and all employees are invited to attend.
- Work with local universities, South Shore Clean Cities, and other environmental organizations to find ways to make the park more sustainable, get funding for projects, and educate the public on climate change.
- Partner with local universities to conduct energy audits at IDNL as needed.

## STRATEGY 3: EVALUATE PROGRESS AND IDENTIFY AREAS FOR IMPROVEMENT

By taking the actions established in strategies 1 and 2 above, Indiana Dunes National Lakeshore plans to reduce its emissions to the specified goals. Achieving these goals will require an ongoing commitment by the park, which may include subsequent emission inventories, additional mitigation actions, and reevaluation of goals. As part of this strategy, the national lakeshore will:

- Monitor progress with respect to reducing emissions. Conduct repeat GHG inventories at least every 3 years to monitor progress in reducing GHGs.
- Educate visitors about climate change, and the mitigation actions that IDNL has taken to reduce GHG emissions, with special emphasis on actions the park has taken that they may also implement in their lives.
- Develop additional emission mitigation actions beyond those listed in this plan.
- Incorporate all actions into EMS, serving as a 'go-to' when creating yearly EMS goals, and a single spot for all climate friendly action ideas.
- The park will track climate friendly actions through the environmental management system.

## CONCLUSION

Indiana Dunes National Lakeshore has a unique opportunity to serve as a model for over 1,863,553 recreational visitors annually.<sup>5</sup> This report summarizes the operational actions the park commits to undertake to address climate change. Specifically, the park realizes its ability to educate the public and serve as a valuable model for citizens. By seriously addressing GHG emissions within the park and sharing its successes with visitors, the national lakeshore will help mitigate climate change far beyond the park's boundaries.

The National Park Service faces an uncertain future due to the possible effects of climate change and the impacts on the highly diverse ecosystems here. However, by seriously addressing climate change impacts and reducing emissions, Indiana Dunes National Lakeshore will reduce its contribution to the problem while setting an example for its visitors. The strategies presented in this Action Plan present an aggressive first step towards moving Indiana Dunes National Lakeshore to the forefront of Climate Friendly Parks.



July 26, 2012

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Signature of Commitment

Date

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Superintendent

<sup>5</sup> Indiana Dunes National Lakeshore: Park Statistics. Available online at: <http://www.nature.nps.gov/stats/viewReport.cfm>

## **APPENDIX A: LIST OF WORK GROUP PARTICIPANTS**

### **The Climate Friendly Park Action Plan workgroup includes the following:**

Laura Brennan  
Garry Traynham  
Christine Gerlach  
Frank Knapp  
Ron Griffin  
Lorri Nelson

### **Other individuals who contributed greatly though the Climate Friendly Parks Workshop towards this plan include:**

Wendy Smith  
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