National Park Service
U.S. Department of the Interior

CLIMATE*Friendly* PARKS

Great Basin National Park Action Plan

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GREAT BASIN NATIONAL PARK BECOMES A CLIMATE FRIENDLY PARK

As a participant in the Climate Friendly Parks program, Great Basin National Park 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, Great Basin National Park provides a model for climate-friendly actions within the park service.

This Action Plan identifies steps that Great Basin National Park can undertake to reduce greenhouse gas (GHG) emissions to mitigate its impact on climate change. The plan presents the park'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 Mojave Desert and Mediterranean Coast Climate Friendly Parks Workshop.[1] While the plan provides a framework needed to meet the park's emission reduction, 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.

Great Basin National Park intends to reduce its operational carbon footprint by 40% by 2016. This will be accomplished through a 45% reduction in energy emissions, 35%reducation in transportation emissions and a 40% reduction in emissions generated from solid waste.

To meet these goals, Great Basin National Park will focus on modifying behavior, identifying and implementing best practices, and educating both staff and visitors on how they can participate. 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

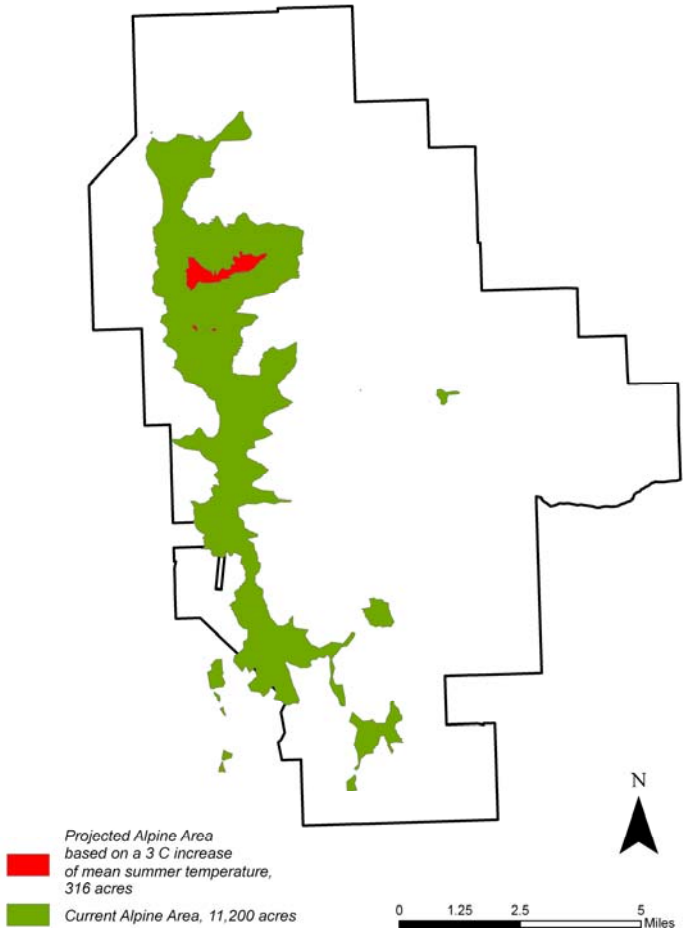
Climate change presents significant risks and challenges to the National Park Service and specifically to Great Basin National Park. Scientists cannot predict with certainty the general severity of climate change nor its impacts. Average global temperatures on the Earth's surface have increased about 1.1°F since the late 19th century, and the 10 warmest years of the 20th century all occurred in the last 15 years. The single leading cause of this warming is the buildup of GHGs in the atmosphere—primarily carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) —which trap heat that otherwise would be released into space.

The continued addition of CO_2 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.[2] Rising global temperatures will

[1] Original notes from these workshops, including detailed action items not presented in the final plan have been archived by Great Basin National Park and are available upon request.
[2] 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>

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.

Over the past 100 years the climate of the Great Basin has changed. Temperatures and precipitation have increased, snowpack has declined and spring has arrived earlier. Predictions of the effects of climate change in the Great Basin are complex but are apparently being realized. Cheatgrass (a non-native invasive species) now dominates over 20% of the Great Basin. Fire intensity and frequency has increased. Montane mammals have experienced local extinctions. Subalpine vegetation has retreated uphill, forest damage by insects has increased, and stream flows are decreasing. These occurrences are at least partially attributable to climate change.



Scientists at Great Basin National Park are actively monitoring park resources to determine the impacts of climate change and what steps to take to protect park resources. The monitoring includes alpine areas, climate, plant and animal distributions and diversity, stream flows, and aquatic ecosystems. The effects of climate change on the park could be dramatic. Models predict a loss of 95% of alpine habitat in the South Snake Range given a 3 degree C temperature increase.

GREENHOUSE GAS EMISSION INVENTORY AT GREAT BASIN NATIONAL PARK

Naturally occurring GHGs include CO_2, CH_4, N_2O, 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). Great Basin National Park encompasses 77,000 acres of the South Snake Range in eastern Nevada. Park facilities include two visitor centers, four developed campgrounds, numerous primitive campsites, and a 12-mile paved scenic drive. The park is open year-round (with reduced access in winter) and receives between 80,000 and 90,000 visitors per year.

In 2008, GHG emissions within Great Basin National Park totaled 659 metric tons of carbon dioxide equivalent ($MTCO_2E$). This includes emissions from park and concessioner operations and visitor activities, including vehicle use within the park. For perspective, a typical single family home in the U.S. produces approximately 11 $MTCO_2$ per year.[3] Thus, the combined emissions from park and concessioner operations and visitor activities within the park are roughly equivalent to the emissions from the electricity use of 60 households each year.

The largest emission sector for GRBA is transportation when visitor contributions are included (see Figure 1 and Table 1: 307 $MTCO_2E$). However, for park operations, energy is the largest contributor of emissions, at 239 $MTCO_2E$ (see Figure 2 and Table 2). Transportation and waste are nearly equal at 92 and 91. To meet an overall reduction goal of 40% by 2016, significant reductions must be made in all three categories.

[3] U.S. EPA, Greenhouse Gases Equivalencies Calculators – Calculations and References, Retrieved , Website: http://www.epa.gov/RDEE/energy-resources/calculator.html

FIGURE 1

Great Basin National Park 2008 Total Greenhouse Gas Emissions by Sector

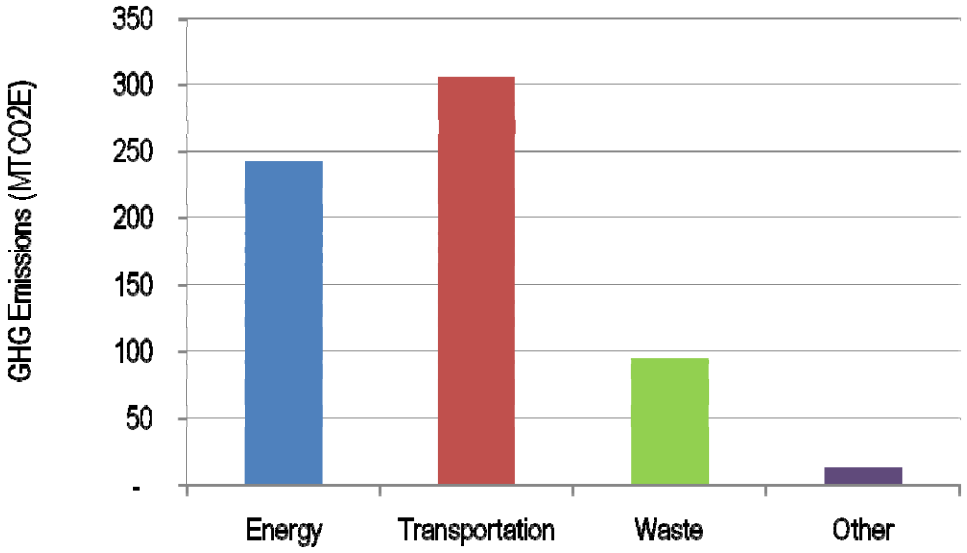


TABLE 1

Great Basin National Park 2008 Total Greenhouse Gas Emissions by Sector and Source

	MTCO2E
Energy	**243**
Stationary Combustion	46
Purchased Electricity	197
Transportation	**307**
Mobile Combustion	307
Waste	**95**
Landfilled Waste	94
Wastewater	1
Other	**14**
Refrigeration and Air Conditioning	14
Total	**659**

Note - Totals may not sum due to rounding

Not applicable data sources represented by "-"

FIGURE 2

Great Basin National Park 2008 Park Operations Emissions by Sector

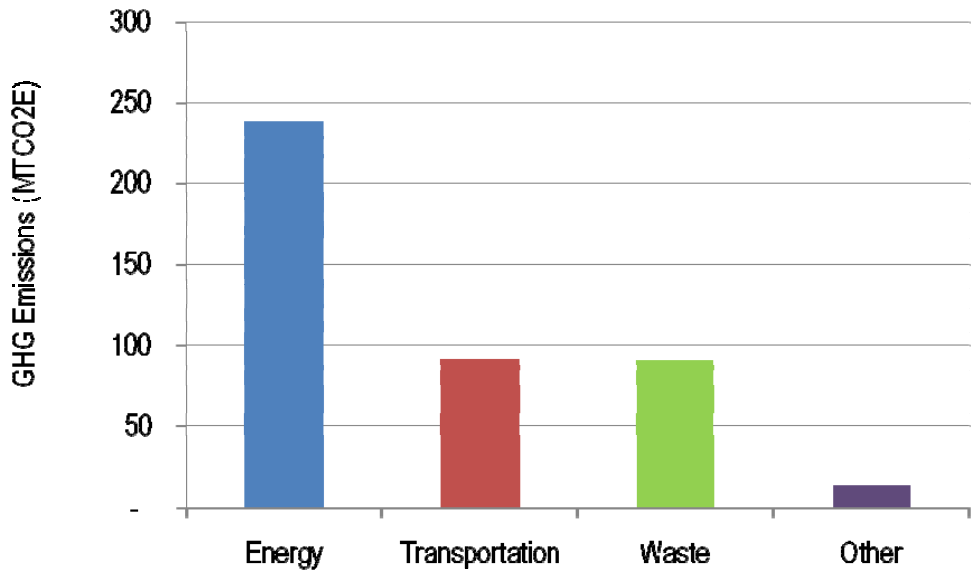


TABLE 2

Great Basin National Park 2008 Park Operations Emissions by Sector

	MTCO2E
Energy	239
Stationary Combustion	43
Purchased Electricity	195
Transportation	92
Mobile Combustion	92
Waste	91
Landfilled Waste	90
Wastewater	1
Other	14
Refrigeration and Air Conditioning	14
Total	435

Note - Totals may not sum due to rounding

Not applicable data sources represented by "-"

Great Basin National Park Responds to Climate Change

The following actions were developed during the Mojave Desert and Mediterranean Coast Climate Friendly Parks Workshop on December 1st and 2nd 2009, in order to meet the park's climate change mitigation goals.

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

Great Basin National Park has developed a set of actions that the park is committed to taking 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 Great Basin National Park 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 45 percent below 2008 levels by 2016.

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 55 percent of the park's GHG emissions from Park Operations are from energy consumption. Consequently, Great Basin National 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

- Installed system at the Great Basin Visitor Center to control heat pumps, reducing surge loads and energy used.
- Modified concession contract language to include sustainable practice requirement.
- Performed bulk replacement of residential unit appliances to upgrade to energy-efficient models.

Energy Use Management – Planned Actions

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

- Encourage energy conservation in all park activities.
  - Increase energy efficiency in all park buildings and housing by encouraging conservation and efficiency behaviors.
  - Identify and eliminate "vampire energy users."
  - Add conservation to closedown checkout process.
- Develop a mandatory energy-saving training program.
  - Instruct staff how to turn off equipment when it is not in use and enable energy-saving settings for computers and monitors.
  - Incorporate conservation into training and tailgate sessions.
  - Incorporate an energy performance reward system.
- Establish an Operations and Maintenance (O&M) schedule that evaluates energy use across the entire park.

- Conduct an energy audit of all maintenance activities.
- Use in depth project and purchase planning to reduce VMT, including both the number of trips out of the park and miles driven within the park for daily operations.

- Ensure all computers' power management settings follow current ENERGY STAR recommendations.
  - Set computers to enter system standby or hibernation mode after 30 minutes of inactivity and monitors to enter sleep mode after 15 minutes of inactivity (visit: www.energystar.gov/powermanagement).
- Adjust thermostat to be seasonally appropriate.

2 Upgrade lighting options

- Upgrade all light fixtures and bulbs in park to energy-efficient bulbs.
  - Use high intensity discharge (HID) lamps and/or fluorescent lights (T-8's or T5's with electronic ballasts) in all fixtures used for more than 3 hours a day.
  - Replace incandescent light bulbs with compact fluorescent light bulbs (CFLs) where appropriate.
- Install dimmable ballasts and pair lighting with photo sensors to reduce electricity use.
  - Use bi-level lighting and dimmable ballasts.
  - Use ambient light and take advantage of day-lighting opportunities.
- Install lighting controls.
  - Use motion sensors and make sure that a re-commissioning schedule is in place to ensure appropriate use.
- Establish guidelines that would require new and retrofitted buildings to efficiently utilize natural daylight through the use of light shelves, skylights and clerestory windows.

3 Switch to more efficient electronics and devices

- Establish and implement a green procurement policy that sets minimum energy performance standards for all electronic equipment.
  - Ensure that all new electronic/office equipment is ENERGY STAR qualified at www.energystar.gov, and rather than purchasing individual copy, fax, print, and scanning equipment, consider a multi-function device.
- Default all computers to print double-sided.
- Install Smart Strip power strips.
- Purchase only energy-efficient electronics.
  - Refer to the Federal Energy Management Program guidelines for purchasing energy-efficient appliances in accordance with federal procurement procedures.

4 Improve building structures and envelopes

- Develop and implement an HVAC inspection schedule for coils, filters, dampers, and fans and maintenance schedule that ensures timely replacement and cleaning (recommended monthly).
- Winterize and shut down unoccupied buildings.
- Recalibrate thermostats.
- Ensure efficient use of building automation system.
- Disable reheat system in summer months.
- Replace ceiling heating panels in Lehman Caves Visitor Center with baseboard or solar heating.
- Implement interior and exterior window shading to reduce solar heat.
- Add window films.
- Develop a policy for new construction that mandates the implementation of cool roofs.

5 Utilize alternative energy sources

- Purchase electricity from a renewable energy provider.
  - Research renewable electricity options through the local utility to reduce electricity-related GHG emissions.
- Install solar hot water heaters.
- Install photovoltaic panels on park buildings, parking lots, open areas, etc.
- Switch to biomass and biofuel instead of conventional fuel to heat park buildings.

6 Measure energy use throughout the park

- Conduct an energy audit for all park buildings. Partner with local utilities to conduct the audit.
  - As part of energy audit, have recommendations made for appropriate lighting solutions for each space.
- Incorporate energy efficiency criteria into new contracts for park and concessioner construction.

Transportation Management

Emission Reduction Goal: Reduce park operations' transportation emissions to 35 percent below 2008 levels by 2016.

Reducing vehicle miles traveled, improving vehicle efficiency, and using alternative fuels can significantly reduce Great Basin National Park's emissions. As the inventory results indicate, GHG emissions from transportation comprise 21 percent of park operations emissions and 47 percent of the park's overall emissions (including visitors, and concessioners). Accordingly, in addition to the park operations emissions reduction goal, Great Basin National Park needs to explore ways to encourage visitors to drive less while still being able to access and enjoy park resources. 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

- Purchased golf carts for campground hosts.
- Replaced Superintendent's vehicle with a hybrid Ford Fusion that gets higher gas mileage and lower emissions.
- Implemented "no idling" policy.

Transportation Management – Planned Actions

1 Transportation-related behavioral changes

- Encourage staff carpooling.
  - Develop carpooling information and support services for staff.
- Reduce vehicle idling.
  - Prohibit park vehicle idling unless required for vehicle maintenance.
  - Create dashboard idling guidelines and post in vehicles.
  - Encourage "no idling" of POVs.
- Encourage walking and/or biking to work.
- Reduce meeting travel.
  - Use webinars/conference calls to avoid excessive travel, both within and outside the park. Purchase necessary equipment for teleconferencing and videoconferencing.
  - Coordinate travel schedules for better carpooling potential.

2 Reduce visitor vehicle fuel consumption

- Improve tracking of visitor transit data.
  - Explore opportunities to collect data on visitor transportation patterns, vehicle occupancy, ridership.

3 Reduce NPS vehicle and equipment fuel consumption

- Promote efficient driving.
  - Conduct driver training that emphasizes fuel efficiency and trip planning.
- Incorporate native vegetation into landscape to reduce the amount of land needing to be mowed.
- Replace two-stroke engines with more efficient four-stroke engines.

4 Replace NPS vehicles and equipment

- Right size the vehicle fleet by the number and type.
  - Use a Vehicle Allocation Methodology (VAM) to achieve a fleet that is the right size and type.
- Use alternative fuel vehicles in demonstration projects.

5 Implement appropriate vehicle maintenance procedures

- Operate all fleet vehicles using re-refined engine oil.

Waste Management

Emission Reduction Goal: Reduce park operations' waste emissions to 40 percent below 2008 levels by 2016 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_4 emissions in the United States. Reducing the amount of waste sent to landfills reduces CH_4 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.

Great Basin National Park's park operation activities emitted 91 $MTCO_2E$ from waste management in 2008. Diverting or reducing the park's waste stream through management and recycling efforts will reduce the amount of waste sent to landfills. 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.

Waste Management – Planned Actions

1 Decrease waste through behavior change

- Encourage responsible printing. Require two-sided printing when feasible. All new printers must have two-sided capability. Train staff on "hard copy" requirements (change perception of what is "required").
- Engage staff to reduce and manage waste at work.

- Encourage park staff to be responsible at work by making it easy to recycle and compost waste; make sure containers fit environment (e.g., animal-proof, rust-proof/salt air -resistant/moisture resistant, and proper size).
- Make ceramic plates, bowls, mugs, and silverware available for employee use in lieu of disposable products.
- Institute paperless office practices. Establish standards for double-sided printing and copying, office supply reuse, electronic correspondence procedures, electronic file storage, elimination of colored paper, etc.
- Take into account the amount of packaging when making purchases.

- Train park staff and contractors on waste reduction responsibilities.
  - Ensure that staff and contractors are aware of their roles and responsibilities to reduce waste. Conduct periodic trainings to inform maintenance crews about recycling and composting policies at the park.
  - Require an annual training on waste reduction and green procurement.
  - Make reusable and recyclable materials available for staff to use (e.g., plates, cups, silverware, etc.).
  - Integrate metrics on these responsibilities into performance evaluations.
- Train maintenance staff on waste reduction initiatives.
  - Continually inform maintenance crews about recycling and composting policies at the park; conduct periodic trainings.
- Train custodial staff in most efficient use of cleaning products. Always use the most "green" product that will get the job done (akin to Wilderness "minimum tool" philosophy).

2 Establish new plans and policies that promote waste reduction.

- Incorporate Waste reduction into green office practices.
  - Reduce purchases where possible and avoid duplicate purchases.
  - Purchase CPG office supplies with maximum recycled content, avoid PVC supplies.
  - Purchase durable, reusable supplies, always print double sided, reuse office supplies when possible.
- Choose hand dryers over paper towels.
  - Install energy-efficient hand dryers throughout park facilities.
- Measure baseline solid waste generation (tons).
  - Record waste management data in an EMS or a spreadsheet tracking system.
- Measure, track, and report waste stream data (include landfill waste and recycled waste) to monitor reductions and success in diverting waste from the landfill.
  - Record waste management data in an EMS or a spreadsheet tracking system.

- Eliminate use of non-recyclable Styrofoam/food serviceware in favor of biodegradable cornstarch products.

3 Implement recycling and composting practices

- Continually increase the amount of waste material at the park that can be recycled and reused.
  - Recycle cardboard, aluminum, scrap metal, glass, white paper, and no. 1 PET and 2 HDPE plastics.
  - Add mixed paper, tin, other plastics (including film), and pallets.
  - Find reuse opportunity or donate unwanted items. Look into cooperative waste disposal or recycling to increase volume and reduce costs/traffic.
  - Reuse packing products (peanuts, bubble wrap, etc.)
  - Utilize reusable envelopes (holey manilas) instead of one-time use envelopes (blue) for in-park document transfers.
- Start a comprehensive recycling outreach campaign aimed at park visitors.
  - Include waste prevention/recycling messages in park talks.
  - Provide recycling messages in brochures, trail guides, maps, and posters.
  - Use recycling messaging at waysides, campground display boards, and kiosks.
  - Encourage visitors to take their recyclables home with them.
- Install easy-to-use recycling containers throughout park facilities.
  - Purchase containers with recycled content.
  - Place trash and recycling containers next to each other.
  - Evaluate signage; use graphics.
- Recycle or donate old computers and electronics.
  - Recycle unusable computers and electronics.
  - Donate old equipment to schools, senior centers, etc.
  - Practice cradle-to-grave recycling to ensure toxic components are properly managed.
  - Purchase electronics with less toxic components.
- Practice environmentally responsible deconstruction.
  - Old building materials will be reduced, reused, and salvaged, in that order.
  - Inefficient materials or components will not be salvaged; ensure that the reuse of vintage items represents an environmental gain.
- Establish purchasing requirements for computers, fax machines, printers, scanners, and other office equipment that utilize less toxic substances.

- Send used florescent bulbs to reclaim/recycle service center.
- Institute alkaline, lithium battery recycling locations in every office building.

4 Reduce waste through green procurement

- Use post-consumer recycled paper in all park publications.
  - Use 100% post-consumer (PC) content, processed chlorine-free (PCF) copy paper. Consider alternative fibers (i.e., non-wood) and water-based or vegetable-based ink. Target paper reduction.
- Train staff on green procurement practices.
  - Encourage procurement staff to take OFEE's online green purchasing training.
- Continually increase the recycled content of purchased materials.
  - Focus on office supplies, gift shop concessioners, building supplies, furniture and maintenance equipment: hoses, mulch, edging, timbers, posts, and compost with recycled content.
- Develop a Green Procurement Plan.
- Inventory and Substitute all cleaning supplies with non-toxic products.
  - Conduct an inventory and review of all cleaning supplies. Substitute products containing hazardous/toxic chemicals with non-toxic products.
  - Look for Green Seal Certified products and other green attributes when procuring cleaning and maintenance equipment (phase out use of Simple Green).
- Use low/no-VOC insulation, carpets, paints, and adhesives.
- Increase the use of bio-based products.
  - Audit the bio-based products in use and look for opportunities to incorporate new products.
- Use carpet with high recycled content for any building projects.
- Promote the use of recycled content products and materials procurement within the NPS.
- Manage waste associated with Computers and FAX/Printers.
  - Purchase remanufactured toner cartridges.
  - Purchase LCD monitors, which use less toxic substances, instead of CRT monitors.
  - Reduce the printer-to-employee ratio by maximizing shared network printers.

5 Reduce and reuse wastewater

- Install low-flow faucets.
- Replace toilets with low-flow models.
  - Install water efficient technology, e.g., composting toilets and waterless urinals.
  - Look at installing composting toilets at park comfort stations.
- Conserve water used in ground maintenance.
  - Plant drought-tolerant plants which need to be watered less
  - Avoid using sprinkler systems during the day and install automatic timing systems to avoid over watering.
  - Water deeper but water less often (water grass once a week and fully saturated the soil and roots rather than a shallow watering every day)
  - Use rain catchment techniques.

6 Other waste-related actions

- Use reclaimed materials for all new roads and paving.

STRATEGY 2: INCREASE CLIMATE CHANGE EDUCATION AND OUTREACH

Climate change is a complex and easily misunderstood issue. Great Basin National Park 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. Great Basin National Park 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 increasing the efficiency of public transportation to developing a green purchasing program, the actions Great Basin National Park takes to address climate change serve as opportunities for increasing the public's awareness of climate change. Presented the actions that are currently under way and which comprise the park's progress to date, and those actions that the park will pursue.

Progress to Date

- Connect with community and park partners on Climate Friendly Park efforts.
  - Great Basin National Park is building relationships with park concessioners, Friends Groups, sister agencies (BLM, USFS, FWS, etc.) local environmental groups, representatives from the local tourism/community business board, representatives from the state environment/energy departments, teachers, representatives from the regional transportation authority, and local university partners.

Park Staff

Incorporate climate change into park staff training, events, and performance plans

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, Great Basin National Park 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:

- Create visual reminders for park employees with climate change information and tips on how employees can help reduce emissions.
- Establish award program for the best green idea each year (one award per year).
- Hold internal Climate Friendly Park discussions and workshops.
  - Devise new strategies to continually reduce greenhouse gas (GHG) emissions.
  - Distribute resources and tools to staff, and acknowledge success of current strategies, including giving awards to climate leaders.
- Keep staff members that are part of the Green Team/Environmental Management Team informed about climate-related issues.
  - Use materials, publications, and tools available from the U.S. Environmental Protection Agency (EPA) and other agencies and organizations to mentor fellow staff about climate change.
- Include the science and impacts of climate change into park education tools.
  - Incorporate sessions on climate change into seasonal staff training.
  - Tailor seasonal staff handbook to include Climate Friendly Parks information.
  - Include Climate Friendly Parks language in kiosks and other educational materials.
- Disseminate information about climate-friendly actions the park is taking at conferences, meetings, and regional workshops.

Visitor Outreach

Understanding climate change and its consequences is essential to initiating individual behavioral change. Great Basin National Park 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, Great Basin National Park can play an important role in educating the public about climate change.

Great Basin National Park 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, local tribes, and external audiences. Reaching these various audiences with climate change information and engaging them in the park’s efforts requires appropriately focused messaging. The park will develop a number of strategies to reach these various audiences effectively. These strategies include:

- Educate visitors about climate change.
    - Link climate change and national parks preservation with actions visitors can take at home like using mass transit and alternative forms of transportation.
- Create and distribute previously produced information on climate change and its effects on national parks in general and on your park in particular.
- Integrate climate change themes into interpretive programs.
    - Integrate Climate Friendly Parks program with school programs using educational kits, wayside exhibits, posters, etc. Look for opportunities to educate with resources like the Climate Change Wildlife and Wildlands Toolkit. For more information, visit: http://www.globalchange.gov/resources/educators/toolkit
- Incorporate climate change information into existing park brochures.
    - Create/utilize bilingual brochures that talk about the success of the CFP program in terms of resource and economic savings where appropriate. Include information and illustrations on Do Your Part!
- Educate visitors about their recycling options at the park and at home.
    - Create visitor ads about the park's recycling activities.
- Communicate with local communities, park visitors, and local media about actions they can take to reduce GHG emissions.
    - Encourage internal and external stakeholders to reduce their carbon footprints using tools like Do Your Part!
- Incorporate climate friendly information into interpreter programs and talks.
- Develop and distribute Do Your Part! materials.
    - Provide links and directions to the Do Your Part! website on Great Basin Nation Park website.
- Create signs promoting the park's efforts to curb emissions.
    - Develop consistent messaging for recycling, idling, and emission reduction posters.

Local Community Outreach

The gateway communities, agencies, vendors, and volunteers surrounding Great Basin National Park 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 find partners to promote climate change education at those events, and engage with surrounding agencies to coordinate effective outreach and education efforts. Potential actions include:

- Consider the local economy in procurement and other areas.
- Work with the surrounding community to address climate change.
- Plan a community event for Earth Day.

STRATEGY 3: EVALUATE PROGRESS AND IDENTIFY AREAS FOR IMPROVEMENT

By taking the actions established in strategies 1 and 2 above, Great Basin National Park 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 revaluation of goals.

As part of this strategy, Great Basin National Park will:

- Monitor progress with respect to reducing emissions. This will include subsequent emission inventories to evaluate progress toward goals stated in this action plan.
- Develop additional emission mitigation actions beyond those listed in this plan.
- Periodically review and update this plan.
- Great Basin National Park will track climate-friendly actions through the environmental management system.

CONCLUSION

Great Basin National Park has a unique opportunity to serve as a model for more than 80,000 recreational visitors annually.[4] 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, Great Basin National Park 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. However, by seriously addressing climate change impacts and reducing emissions, Great Basin National Park 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 toward moving Great Basin National Park to the forefront of Climate Friendly Parks.

[4] Great Basin National Park Statistics. Available online at: http://www.nature.nps.gov/stats/viewReport.cfm

APPENDIX A: LIST OF WORK GROUP PARTICIPANTS

Brandi Roberts (Interpretation) and Don Geary (Maintenance) attended the December 2009 workshop in Boulder City, Nevada and drafted this plan. GRBA's Green Team provided input as did the park's Management Team and Superintendent Andy Ferguson.

GREEN TEAM MEMBERS: Don Geary (Maintenance), Karla Jageman (Cultural Resources), Jesse Pike (Protection), Brandi Roberts (Interpretation) and Lindsay Steinbauer (Interpretation).