

1. Background of the Green Parks Plan

The sustainability problem we have chosen to address is the greenhouse gas (GHG) emissions and sustainable operations of the United States National Park Service. The National Park Service (NPS) is a bureau of the United States Department of the Interior, with the management of 401 national parks comprised of 84 million acres of land (“National Park Service Overview”, 2014). The NPS is a leader in environmental stewardship. However, the NPS must not only protect the national treasures of the United States; because of its national prominence, it must also set an example for how citizens should be environmentally-conscious in their everyday life. Therefore, it is imperative they are also a leader in areas of sustainable practices and GHG emission reduction.

The National Park Service is focused on the issue of sustainable practices because of its impact on the environment. The Environmental Protection Agency (EPA) highlights the importance of sustainable practices by stating that, “Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment.” (“Sustainability”, 2014). Therefore, employing sustainable practices- such as improving water-use efficiency and recycling more- will benefit the environment and advance the goals of the NPS.

Another issue the National Park Service is concerned about because of its environmental effects is GHG emissions. According to EPA, “Greenhouse gases from human activities are the most significant driver of observed climate change since the mid-20th century” (“Climate Change Impacts”, 2014). Climate change has significant effects across many sectors: agriculture, energy supply, ecosystems, human health, and transportation (“Climate Change Impacts”, 2014). Because of its wide-reaching effects, reducing human impact on climate change through GHG emission reduction is important to the well-being of the earth for our generation and generations to come.

We will be analyzing the effectiveness of the National Park Service’s response to the problems of GHG emissions and sustainable operations: the Green Parks Plan. This plan was created April 22, 2012 by the National Park Service. The NPS defines the Green Parks Plan as:

“The National Park Service’s collective vision and strategic plan for sustainable operations through pursuit of sustainability goals.”
-Green Parks Year in Review, 2013

The plan is guided by nine goals that focus on GHG emissions, water use, recycling, and other issues of concern (see Section 2 for in-depth description of these goals). These goals will be measured through the Environmental Management System’s “Plan-Do-Act-Check” process (Jarvis, 2012).

All of the national parks in the United States are expected to participate in the Green Parks Plan. There have been several success stories from the Green Parks Plan already in the following parks: Sequoia, Kings Canyon, Denali, and Lake Mead (Scavo, 2013). The NPS has had some success in achieving their goals of increasing sustainable practices and reducing GHG emissions; however, there are still a few areas they should improve upon to make the Green Parks Plan more efficient and therefore successful.

2. Description of the Green Parks Plan

The Green Parks Plan contains nine goals that aim to make the National Park Service a more sustainable organization and reduce their GHG emissions. Some of the goals are required by federal mandates and others exceed those requirements. The goals are listed below: (Jarvis, 2012).

1. Continuously Improve Environmental Performance

This involves adhering to all federal laws, executive orders, and policies pertaining to environmental conservation and sustainability. This also includes the implementation of Environmental Management Systems in all parks by 2012.

2. Be Climate Friendly and Climate Ready

This emphasizes the critical response of the National Park Service to climate change. Executive orders require that the parks reduce Scope 1 and Scope 2 GHG emissions by 35% and Scope 3 emissions by 10% by 2020. The NPS will also develop and implement guidance on adapting the location, structure, or function of park facilities in anticipation of climate change, including severe weather impacts.

3. Be Energy Smart

Fossil fuels are consumed in excess and contribute heavily to GHG emissions. In response, the NPS will improve energy performance and increase reliance on renewable energy. Objectives include reducing energy intensity, conducting energy assessments, tracking usage in buildings that consume the most energy, reducing reliance on fossil fuels in new buildings, and prioritizing sources that are renewable and appropriate.

4. Be Water Wise

This goal seeks to improve facility water use efficiency. Water is becoming increasingly rare and part of being sustainable is monitoring water usage. Objectives for this goal include reducing potable water use intensity by 30% by 2020, conducting water use assessments, and improving water usage tracking system wide.

5. Green Our Rides

Transportation is responsible for 40% of NPS emissions and the plan. This goal involves adopting greener vehicles and transportation methods. Visitors can experience hybrid or alternative fuel vehicles and learn about sustainable ways to commute.

6. Buy Green and Reduce, Reuse, and Recycle

The emphasis of this goal is on product life cycles, from buying environmentally friendly products to recycling materials properly. Hazardous waste will be closely monitored and

the NPS will divert 50% of annual solid waste from landfills by 2015 through recycling and other practices.

7. **Preserve Outdoor Values**

Buildings and facilities can quickly diminish the outdoor experience for visitors so it is important to maintain as natural an atmosphere as possible at the parks. Objectives include reducing light pollution with the goal of dark night sky preservation, minimizing noise pollution, and sustainably integrating facilities in a way to minimize disruption to the natural and cultural environment.

8. **Adopt Best Practices**

The NPS will encourage innovation and sharing best practices internally and externally. Objectives include complying with *Guiding Principles for High Performance and Sustainable Buildings*, adding sustainability requirements in new contracts where possible, ensuring clean air and water, and reducing stormwater runoff.

9. **Foster Sustainability Beyond Our Boundaries**

This goal engages millions of visitors with sustainable principles and ways to participate in them. Objectives involve identifying areas in need of improvement for visitors, providing ways to help become more sustainable in and out of the parks, and specifically targeting youth for educational information.

Our analysis will focus on the fifth goal- “Green Our Rides.” We chose to focus on the transportation goal for several reasons:

- The Green Parks Plan provides specific, measurable objectives for improving sustainable transportation
- The private sector has published a wealth of information about the benefits of low GHG-emission transportation
- There are a variety of initiatives from other park services to compare to

3. Legal & Policy Environment of the Green Parks Plan

The Green Parks Plan combines the NPS core values with sustainability today in a much-needed public setting. The NPS has the ability to impact an extremely large audience: in 2013 alone they attracted 273,630,895 visitors. (“About us”, 2014). Few organizations have the ability to educate as many people about living sustainably as the NPS does, and with that broad public reach comes certain difficulties.

The 5th goal of the Green Parks Plan- “Green Our Rides”- is guided by three pieces of federal legislation (Jarvis 2012):

- Presidential Memorandum on Federal Fleet Performance (2011): Requires federal agencies to conduct a right-sizing analysis of their transportation equipment in order to reduce costs; this analysis must begin in 2011 and targets of right-sizing analysis must be reached by 2015.

- Executive Order 13514, Section 2, Subsection A (2007): Requires federal agencies to decrease petroleum product consumption by 2 percent annually.
- Executive Order 13514, Section 2, Subsection B (2007): Calls on federal agencies to implement low-carbon emission transportation strategies in the following areas: transit, travel, training, and conferencing.

Executive Order 13514 was a significant piece of legislation that reshaped federal policy on green transportation. The Presidential Memorandum on Federal Fleet Performance was created in order to meet the goals for federal transportation in Executive Order 13514 (Obama, 2011). While Executive Order 13514 was preceded by Executive Order 13423, it does not rescind the previous order; rather, it expounds upon it by giving more specific goals in the areas of GHG emission reduction (Federal Facilities Environmental Stewardship and Compliance Assistance Center, 2014). These pieces of legislation affect the “Green Our Rides” goal by serving as motivation for the goal’s four objectives (Jarvis 2012):

- The NPS will evaluate and transform the size, types of vehicles, and technologies used in its fleet
- The NPS will increase the use of high-efficiency and low-GHG emitting vehicles and will reduce fossil fuel consumption by 20 percent by 2015 from the 2005 baseline
- The NPS will support alternative commuting practices, including employee telework
- The NPS will reduce GHG emissions attributable to official travel

The GPP leaves some decisionmaking for the NPS directors as well. If they want to boast about numbers, they may make changes in numerous smaller parks to save costs. If educating their large audience about sustainability is the priority, then the most popular parks will be more likely places of changes. With respect to the “Green Our Rides” goal, the NPS directors could choose to eliminate public transportation in small parks like Greenbelt and Hot Springs, or they could purchase a new fleet of low-GHG-emission shuttle buses for more popular parks like Zion or Yellowstone.

Section A: Modeling Effects

A1. Integrated Involvement

There are several key organizations that are involved in the implementation of the Green Parks Plan. The NPS is largely directed at the federal level, but frequently collaborates with tribes, states, local governments, nonprofits, and other groups who all have distinct values and priorities (“About us”, 2014). This wide range of stakeholders must integrate effectively in order to execute the GPP, which creates a unique set of challenges. There are five main organizations we will focus on, as well as numerous other agencies that play a small but important role. These organizations are listed below, along with the respective roles that they play in implementing the Green Parks Plan.

1. National Park Service: The NPS created the Green Parks Plan and is ultimately responsible for its full and complete implementation. This includes setting goals and executing them, evaluating and reporting their findings, and educating the public about the plan. Note that NPS is not a free-standing agency, but rather a branch of the United States Department of the Interior.
2. United States Congress: Congress is responsible for approving the NPS budget. Without approval, NPS is unable to receive funds necessary for implementing the GPP.
3. President of the United States: The President of the United States- the leader of the executive branch of the federal government- affects the Green Parks Plan by issuing executive orders that direct the actions of the National Parks Plan. Two orders that have motivated the “Green Our Rides” goal of the Green Parks Plan are Executive order 13514 and the Presidential Memorandum on Fleet Performance.
4. Tax-paying Citizens of the United States: NPS is a federal agency; therefore, the funds it receives from Congress come from the tax-paying citizens of the United States. In order for Congress to make NPS a budget priority, tax-paying citizens must elect politicians that value the environment and sustainable practices.
5. Visitors of the National Parks: While the visitors do not have a direct role in implementing the Green Parks Plan, they are still an important group to consider with the integrated involvement of the plan. Since NPS works to serve the visitors of the park, their preferences regarding sustainability and environmental conservation motivate the policies that NPS chooses to pursue.
6. Other agencies: This includes groups that the 5 major organizations partner with to implement the Green Parks Plan. Such groups range from federal agencies to local grassroots organizations. For example, NPS is currently collaborating with the Department of Energy, National Renewable Energy Laboratories, and local Clean Cities Coalitions to execute the “Green Our Rides” goal of the Green Parks Plan (Scavo, 2014).

Each of the organizations listed above are stakeholders who have interest in the Green Parks Plan. The NPS is interested in the plan because they created the plan and are responsible for it. Congress is interested in the plan because they must allocate part of the national budget to fund it. The President is interested in the plan because his office issues orders that affect its goals. Tax-paying citizens are interested in the plan because their money- in the form of taxes to the federal government- are used to fund it. Lastly, the visitors are interested in the plan because the plan will affect the conservation of the parks, as well as their experience visiting the parks.

These differing interests affect the plan by maximizing benefits while minimizing costs. NPS and the visitors of the parks are the stakeholders who are the most motivated to improve the sustainability of the parks since they value the national parks. Congress, taxpayers, and the president are the stakeholders who are most interested in spending as little money as possible on the plan since they are the ones responsible for financing it. Since there are a variety of

stakeholders with differing interests, balance is preserved. This causes the Green Parks Plan to create impactful change at a relatively low cost.

The distribution of responsibility among these organizations works well, but there are a few issues to be addressed. Because NPS has so much power and responsibility for the Green Parks Plan, there are very few checks and balances to keep them accountable. This will be discussed in depth in Section C: Improvements and Recommendations.

A2. Modeling Effects of Integrated Involvement

The Green Parks Plan, as well as the concept of sustainability, is an ongoing ambition. There are often goals set with deadlines, but the progress towards a greener National Park system has no end date. Since the plan was released over 2 years ago, it is possible to evaluate the implementation thus far while continuing to research the long term effects as well.

The NPS issued a news release on April 22, 2013, one year after the introduction of the GPP. This release lists several accomplishments towards achieving the objectives. These achievements include (Scavo, 2013):

- Decreased emissions from on-site fossil fuel combustion and electricity consumption from the grid by 13% from the baseline measurement in 2008. This is on track toward the goal of reducing these emissions by 35% by 2020.
- Decreased greenhouse gas emissions from indirect emission sources such as commuter travel and off-site wastewater treatment by 7%. This is on track toward the goal of reducing these emissions by 10% by 2020.
- Decreased potable water use intensity by 22% from the 2007 baseline measurement, on track to achieve the goal of a 30% reduction by 2020.
- Diverted 92% of construction/demolition waste, exceeding the goal of diverting 50% of annual solid waste from landfills through recycling and other practices.

Along with the above data are several success stories from specific national parks. Below are two examples of the “Green Our Rides” objective being implemented:

- Sequoia and Kings Canyon National Parks partnered with the City of Visalia, Calif. to provide hybrid-electric shuttle-bus services to its visitors.
- Through a partnership with the Department of Energy Clean Cities Program, 13 parks have received grants to exchange conventional vehicles for alternative technologies, install electric charging stations, and implement other fuel reduction opportunities.

The “Green Our Rides” objective will likely have lasting effects on the environment, economy, and society. According to the EPA, transportation accounted for approximately 28% of all U.S. GHG emissions in 2012- second only to the electricity sector (EPA, 2012). It is also estimated that the typical passenger vehicle emits 4.7 metric tons of CO₂ annually (EPA, 2014). By implementing fuel-efficient/alternative-fuel fleets and encouraging public transportation, GHG

emissions will be greatly reduced as fewer cars will be on the road. This in turn will lead to a cleaner atmosphere.

Long-term economic effects from this objective could include the creation jobs as vehicle operators produce new hybrid vehicles and researchers look into fossil fuel alternatives. Additionally, this could lead to the shift of jobs from traditional offices to home offices as the NPS promotes teleworking through this objective. Monetary savings will likely occur as less fossil fuel is needed, which in turn could decrease the admission price for visitors. By decreasing the price of admission to the National Park, the supply curve of admissions will shift to the right, thus causing demand of admissions to increase.

We speculate that social effects will include improved health at the parks as GHG emissions are reduced. The parks may also become more attractive because a decrease in vehicles more closely replicates the true natural environment. Lastly, the educational aspects of the GPP will support a sustainable culture and could influence the visitors to make similar choices in their own lives.

Section B: Estimating Budgetary Costs and Savings Across Decades

The “Green Our Rides” objective requires funding in order to achieve its goals of auditing and evaluating its fleet size, increasing the use of low-GHG emission vehicles, and supporting commuting practices. Just how much funding it requires, however, is unclear. There is no mention of the Green Parks Plan or “Green Our Rides” in any NPS budget statement since its implementation in 2012. There are several categories in the Department of the Interior’s highlights of NPS budget appropriations that could account for the funds required to implement “Green Our Rides” listed below (Bureau highlights, 2014):

- Park Operations: Climate Change Adaptive Management Tools- \$5 million to support climate-related monitoring systems and the development of appropriate land, water, and wildlife adaptation strategies
- Park Operations: General- \$1.2 million to ensure a science-based response to proposed energy development
- Parks Operations: Repair and Rehabilitation- \$2 million to support leading to greater water and energy efficiency of park units

The lack of available information on funding implies two possibilities: 1) NPS has not allocated any funds to the “Green Our Rides” objective thus far or 2) they are not compelled to create a specific section of their budget dedicated to the Green Parks Plan. Given press releases about progress on implementing the “Green Our Rides” objective in parks such as Sequoia and Kings Canyon, NPS is certainly allocating funds to move this goal forward. It seems that the lack of information on the budget is not due to a lack of action, but rather due to the Department of Interior’s ineffective budget writing practices.

The “Green Our Rides” objective could possibly reduce operating costs for NPS, depending on how they choose to execute the goals. The first goal of the objective is to audit and reduce the size of the NPS fleet of vehicles. Reducing the number of vehicles will certainly reduce maintenance costs as well as gasoline costs. The second goal of the objective is to switch to high-efficiency low GHG-emission vehicles. This goal may or may not save costs, depending on which new vehicles they purchase. A study done by Vincentric- an automotive research company- determined that 13 out of 33 hybrid vehicles were more cost effective than their traditional gasoline-powered counterparts over their expected lifetime (Gorzelay 2013). These cost savings ranged from \$6,379 (Lexus CT 200H) to \$195 (Lexus ES 300H). While these savings may seem modest, they are quite large when applied to the entire fleet of NPS vehicles. It is important to note that while 13 of the hybrids tested were more cost effective than traditional models, 20 of them were not. Therefore, possible savings produced by implementing this goal of the “Green Our Rides” objective depend heavily on which new vehicles NPS purchases for their fleet.

Section C: Comparison to Best Alternatives

C1. Limitations & Consequences

One of the biggest limiting factors in any project is funding, and this is no exception in the federally-funded NPS. Whereas private organizations can raise money and work with flexible budgets, the government in recent decades has been a sea of debts and deficits resulting in frequent budget cuts. NPS funding comes from an annual budget out of the Dept. of Interior, and is split between mandatory and discretionary spending. Changes to parks that are listed in the GPP can only be made if there is money to be spent, and currently that is easier said than done. Other issues in the government besides funding can also cause trouble for the NPS, such as the Shutdown in 2013 that temporarily closed all 401 parks (Koontz, 2014).

Bringing alternative fuel vehicles and energy efficient transportation into the national parks is a forward-thinking, reachable objective of the GPP. An important consequence to consider, however, is that a green fleet of vehicles used in greater numbers or frequency could actually lead to more GHG emissions than before. This process is described in Jevon’s Paradox, and the NPS should proceed with caution in an attempt to avoid making backwards progress.

An additional limitation of the GPP is that many of its goals are unmeasurable and therefore are difficult to evaluate. “Continuously Improve Environmental Performance,” for example, is a great sustainable ambition but it remains vague and the amount of improvement is left open to interpretation. Similar limitations can be said for the “Preserve Outdoor Values” and “Foster Sustainability Beyond Our Boundaries” goals. Even if drastic improvements and changes are made in the national parks over the years, it could be difficult to prove the GPP was successful without numerical data to support that claim.

C2. Improvements & Recommendations

There are several ways which the National Park Service could improve the Green Parks Plan in order to achieve the sustainability outcomes it pursues. In this section, recommendations will include improvements for the GPP as a whole, as well as specific improvements for the “Green Our Rides” goal.

Green Parks Plan as a Whole

In order to improve the efficacy of the GPP as a whole, it is recommended that NPS make all nine of the goals mentioned in the GPP measurable. Each of the nine goals in the GPP are broken down into several objectives which explicitly outline the actions to be taken to achieve the goal. However, many of these objectives are not quantitatively measurable. This is a serious weakness in the structure of the GPP. According to the Performance Development Office at the MIT, goals must be measurable in order to be attainable (Massachusetts Institute of Technology). In order to improve the GPP, NPS should make all of the objectives for the goals quantitatively measurable. Several examples of quantitatively measurable objectives for the goals are given below:

Goal	Current Objective	Improved Objective
Foster Sustainability Beyond Our Boundaries	The NPS will explain the threats to national parks posed by climate change and how it is adapting its management and operations	The NPS will explain climate change threats to national parks and mitigation efforts through ranger-led talks held 5 times per week at the 20 most-visited parks.
Preserve Outdoor Values	The NPS will reduce light pollution from park facilities with the goal of dark night sky preservation.	The NPS will reduce light pollution by 30% in 100 parks by the year 2016.
Green Our Rides	The NPS will evaluate and transform the size, types of vehicles, and technologies used in its fleet.	The NPS will evaluate and reduce the total size of its fleet by 20% by the year 2016. The NPS will switch 50% of its remaining fleet to hybrid vehicles by year year 2018.
Adopt Best Practices	The NPS will include applicable sustainability requirements in all new contracts where possible	The NPS will ensure that all new buildings are LEED certified. NPS will also certify 25% of existing buildings to LEED standards

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Another way the NPS can improve the GPP is to create more public awareness. This is important because increased public awareness will lead to stronger public support, which can in turn lead to better funding for the NPS. In 2013, one year after the GPP was published, NPS put out a press release and performance review to inform the public about the plan’s progress and success. These two documents were extremely informative and useful, but unfortunately no such press releases or performance reviews have been published in 2014. In order for stakeholders like taxpayers and visitors to support the GPP, NPS should continue to publish performance reviews and press releases. By ensuring that they are a priority for such important stakeholders, they will also ensure that they have the funding necessary to fully realize the sustainability benefits associated with GPP implementation.

“Green Our Rides” Goal

The National Park Service can improve the “Green Our Rides” goal by reducing costs associated with purchasing low GHG-emission vehicles and by pursuing realistic avenues for reducing fossil fuel consumption.

In objective 2 of “Green Our Rides”, NPS states they will “increase the use of high-efficiency low GHG-emission vehicles” (Jarvis 2012). As previously stated in the budget section, high-efficiency low GHG-emission vehicles have the possibility of being more cost effective than their traditional counterparts. In order to capitalize on this benefit, NPS should do a cost-analysis of the new vehicles they plan to purchase. This will lead to reduced costs for NPS which is extremely important, given the limited nature of their budget.

In Objective 2 of “Green Our Rides”, the NPS also states that they will “reduce fossil fuel consumption by 20 percent by 2025 from the 2005 baseline” (Jarvis 2012). However, the NPS does not explicitly state how they plan to accomplish this. Moreover, their 2013 performance review does not mention how they reduced fossil fuel consumption by 8 percent from 2012-2013 (“Green Parks Year In Review 2013” 2013). Therefore, this report will offer recommendations to NPS for creative transportation solutions that could reduce fossil fuel consumption in the national parks. These comparative alternatives that come from both past NPS initiatives and foreign national parks efforts are listed by location below:

- Yosemite National Park (1973): The NPS reduced the number of personal automobiles in the park by manipulating traffic patterns. The NPS forced personal automobiles to travel over 8 times longer than park shuttles to reach the same location. This inconvenience motivated many visitors to use park shuttles, and thus reduced fossil fuel consumption in the park (Roberts 1984).
- Milford Sound National Park (2005): Venture Southland- a New Zealand government agency- has explored several options to reduce personal vehicle traffic (and consequently

fossil fuel consumption) in Milford Sound National Park. Some of these options include a gondola lift system, “park and ride” shuttle stations, and a monorail system (“Milford Sound Transport: Issues and Options” 2005).

Perhaps the NPS has already implemented some of these solutions to reduce fossil fuel consumption in the national parks; it is hard to tell from the limited information provided in their performance review and GPP outline. However, if they have not, these are viable solutions that could help them achieve their goal of reducing fossil fuel by 20 percent by 2025 from the 2005 baseline.

Works Cited

About us. (2014, November 21). Retrieved from National Park Service website:

<http://www.nps.gov/aboutus/index.htm>

Bureau Highlights. (2014). Retrieved from U.S. Department of the Interior website:

<http://www.doi.gov/budget/appropriations/2014/highlights/upload/BH075.pdf>

Evaluating Climate Policy Options, Costs and Benefits. (2013, September 9). Retrieved from Environmental Protection Agency website:

<http://www.epa.gov/climatechange/EPAactivities/economics.html>

Environmental Protection Agency. (n.d.). Sustainability. Retrieved October 1, 2014, from Environmental Protection Agency website:

<http://www.epa.gov/sustainability/basicinfo.htm>

Environmental Protection Agency. (2014, March 18). Climate Change Impacts and Adapting to Change. Retrieved October 1, 2014, from Environmental Protection Agency website: <http://www.epa.gov/climatechange/impacts-adaptation/>

Executive Order 13514. (2014, September 19). Retrieved from Federal Facilities Environmental Stewardship & Compliance Assistance Center website:

https://www.fedcenter.gov/_kd/go.cfm?destination=Page&pge_id=3649&dialog=0

Frequently asked questions. (2014, October 10). Retrieved from National Park Service website: <http://www.nps.gov/faqs.htm>

Gorzelay, J. (2013, November 7). *Top Money-Saving Hybrid Cars*. Retrieved from Forbes website: <http://www.forbes.com/sites/jimgorzelay/2013/11/07/hybrid-cars-that-bring-the-most-bang-for-the-buck/>

Greenhouse Gas Emissions from a Typical Passenger Vehicle. (2014, May). Retrieved from Environmental Protection Agency website:

<http://www.epa.gov/otaq/climate/documents/420f14040.pdf>

Jarvis, J. B. (2012, April). *Green Parks Plan*. Retrieved October 1, 2014, from National Park Service website:

http://www.nps.gov/greenparksplan/downloads/NPS_2012_Green_Parks_Plan.pdf

Koontz, L., and B. Meldrum. (2014). *Effects of the October 2013 government shutdown on National Park Service visitor spending in gateway communities*. Natural Resource Report NPS/EQD/NRSS/NRR—2014/761. National Park Service, Fort Collins, Colorado.

Massachusetts Institute of Technology (Ed.). (n.d.). SMART Goals. Retrieved November 23, 2014, from <http://hrweb.mit.edu/performance-development/goal-setting-developmental-planning/smart-goals>

National Park Service. (2014, April 21). *National Park Service Overview* [Fact sheet]. Retrieved from the National Park Service website: http://www.nps.gov/news/upload/NPS-Overview-2014_04-21-2014.pdf

Obama, B. (2011, May 24). Presidential Memorandum--Federal Fleet Performance. Retrieved from The White House website: <http://www.whitehouse.gov/the-press-office/2011/05/24/presidential-memorandum-federal-fleet-performance>

Roberts, F. S. (1984). *Applied Combinatorics*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Scavo, R. M. (2014). A Mission for Sustainability amidst a Changing Climate. *The George Wright Forum*, 31(1), 53-62.

Scavo, R. M. (Ed.). (2013). *The Green Parks Plan: A Year in Review*. Retrieved October 1, 2014, from National Park Service website: http://www.nps.gov/climatefriendlyparks/downloads/SustainabilityNews_SP13.pdf

Sources of Greenhouse Gas Emissions. (2014, July 22). Retrieved from Environmental Protection Agency website:

<http://www.epa.gov/climatechange/ghgemissions/sources/transportation.html>

Venture Southland. (n.d.). Milford Sound Transport: Issues and Options. Retrieved

November 23, 2014, from

<http://www.venturesouthland.co.nz/Portals/0/Documents/Milford%20Issues%20and%20Options%20Vfinal.pdf>