National Park Service Southeast Region
Long Range Transportation Plan

Future Conditions Assessment Report

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1 Introduction

This Future Conditions Assessment report is the second in a series of interim deliverables that will inform the development of the Long Range Transportation Plan (LRTP) for the Southeast Region (SER) of the National Park Service (NPS). The Future Conditions Assessment is intended to explore trends within transportation, national parks, and the Southeastern U.S. that might influence future transportation needs at park units in the Southeast Region over a 20-year planning horizon.

To the greatest extent possible, this Future Conditions Assessment seeks to use quantitative analysis for future conditions in the Southeast Region; however, reliable, quantifiable projections for transportation-related trends and impacts at the regional level are relatively scarce. The first chapter of this report—Asset Management—relies heavily on quantitative analysis that builds on funding forecast and asset condition projections for the region. Quantitative projections for visitation, population, and demographics in the region also form the basis of the Visitor Experience, Access and Mobility chapter to establish region-specific trends.

Subsequent chapters in the report focus on broader trends in strategies and policies at the federal level, namely in the NPS and the U.S. Department of Transportation (USDOT). These chapters feature more qualitative analysis that, taken with the quantitative analysis in the Asset Management and Visitor Experience chapters, provide as complete a picture as possible about the trends and future conditions that will impact transportation needs in the Southeast Region over the next two decades.

2 Asset Management and Investment

This chapter provides a financial forecast for the Southeast Region based on anticipated future funding levels that will be available for transportation needs. The chapter also includes a projection of transportation asset condition based on the forecasted funding levels and assuming no change in the way in which region allocates and prioritizes its transportation project funds.

SER Funding Forecast

The SER funding forecast analysis is based on regional programs provided by regional and National staff. When program plans were not available, the team used the national-level funding forecast assumptions.

METHODOLOGY

Many of the funding programs used by the NPS publish regional-level programs of how they intend to invest their funds over the next several years. The regional project team consulted with staff working with the following programs to acquire the region-specific planned investment levels:

- Title 54 Non-Fee: Cyclic Maintenance, Repair/Rehabilitation, Line Item Construction[1]
- Title 54 Fee: Recreation Fee, Transportation Fee, Concession Franchise Fees
- Title 23: Federal Lands Transportation Program

These forecasts replaced the NLRTP-style (3% reduction) forecasts for these funding programs as they provide more certainty than broad program-level authorizations and appropriation amounts.

The National LRTP project team developed a forecast for NPS transportation finance using information from several data sources:

- The NPS budget office, which conducts forecast exercises servicewide and with individual units, suggested a one-time reduction to Title 54 (DOI) Non-fee program fund sources of 3 percent
- Moving Ahead for Progress in the 21st Century Act (MAP-21) held the NPS share of the Federal Lands Transportation Program constant at $240 million per year. MAP-21 eliminated and/or consolidated many discretionary fund programs from which NPS used to fund transportation, therefore Title 23 (U.S. DOT) funding for NPS transportation is expected to decline dramatically. MAP-21 eliminated the Title 49 FTA Transit in Parks (TRIP) program, from which the NPS received funding for its transit systems. MAP-21 and other legislation do not include earmarks, from which the NPS historically received funding for large-scale transportation improvements
- The SER project team consulted several regional-level programs to acquire the region-specific planned investment levels: Title 54 Non-Fee programs for Cyclic Maintenance, Repair/Rehabilitation, and Line Item Construction; Title 16 / 54 Fee programs for Recreation Fee, Transportation Fee, and Concession Franchise Fees; and, the Title 23 Federal Lands Transportation Program. These forecasts replaced the National LRTP-style (i.e., 3% reduction) forecasts for these programs as they provide more certainty than broad program-level authorizations and appropriation amounts

[1] Note that Title 54 previously was Title 16.

ANALYSIS

The SER forecasts approximately $69.3 million of available annual funding for its transportation network (Table 2-1). This figure represents a reduction in funding of $2.6 million, or 3.6 percent, when compared to average annual funding from FY06 through FY13. The bulk of this reduction comes from the elimination of programs under Title 23 following the implementation of MAP-21, including the elimination of many Scenic Byways Programs; the elimination of FHWA programs such as the Park Roads and Parkways program and the Public Lands Highway Program; and a moratorium on earmarks. These program cuts are forecast to result in a more than 11 percent reduction in Title 23 funding, or approximately $6.1 million. The cutting of the Paul S. Sarbanes Transit in Parks program under Title 49 accounts for another $0.8 million reduction in future funding.

The reduction in Title 23 funding is partially offset by an anticipated increase of $4.3 million in Title 54 funding. Both the Non-fee and Fee programs within Title 54 are projected to provide additional funding in the future, with increases of $3.1 million and $1.2 million, respectively. Within the Title 54 Non-fee program, an anticipated $2 million reduction in available Cyclic Maintenance funds is expected to be more than offset by additional funds available for Repair/Rehab and Line Item Construction. The Recreation Fee accounts for the bulk of the projected funding increase within the Title 54 Fee program.

Table 2-1: SER Funding Forecast

Funding Title/Program (Average Annual 2006-2013 in $ Millions)	Historical Average Annual Spending	Forecasted Annual Available Funding	Difference	Rationale
Title 54	$16.4	$20.7	$4.3	Mix of planned investment and projections
Title 54 Non-Fee	$15.1	$18.2	$3.1	Mix of planned investment and projections
Operational Base	$5.5	$5.3	- $0.2	Planned investment
Cyclic Maintenance	$4.6	$2.7	- $2.0	Based on national-level projections
Repair/Rehab	$1.9	$4.0	$2.1	Based on national-level projections
Emergency Storm & Flood Damage	$1.3	$1.3	$0.0	Based on national-level projections
Line Item Construction	$1.0	$4.2	$3.2	Planned investment
Other NPS Programs	$0.7	$0.7	$0.0	Planned investment
Title 54 Fee	$1.3	$2.5	$1.2	Assumes no changes in collections
Recreation Fee	$0.9	$1.8	$0.9	Planned investment
Transportation Fee	$0.4	$0.5	$0.1	Planned investment
Concessions Franchise Fees	$0.0	$0.2	$0.2	Planned investment
Title 23	$54.5	$48.4	- $6.1	Many programs eliminated
FLTP	$49.7	$47.7	- $2.1	Planned investment
Earmarks	$2.5	$0.0	- $2.5	Moratorium on earmarks
Other FHWA Programs	$0.9	$0.5	- $0.4	Program eliminated
Public Lands Highway - Discretionary	$0.7	$0.0	- $0.7	Program reauthorized
Scenic Byways	$0.5	$0.0	- $0.5	Most programs eliminated
Emergency Relief for Federally Owned Roads	$0.2	$0.2	$0.0	Program reauthorized
Other/External	$1.0	$0.3	- $0.8	TRIP eliminated
FTA TRIP/ATPPL	$0.8	$0.0	- $0.8	Program eliminated
Reimbursable Agreements	$0.3	$0.3	$0.0	Donations unaffected by policy shifts
Grand Total	**$71.9**	**$69.3**	**-$2.6**	

Note: $0.0 represents values <$0.1

UPDATED DATA AS OF SEPTEMBER 2016

Geared to reflect the principles of both the CIS and TCFO asset management best practices, the SER developed its LRTP investment scenarios in two steps. Initial scenarios used preliminary forecasted funding data and potential investment approaches. With those scenarios built out, the region identified what it believed would be the most optimal strategy (discussed in more detail in the Funding and Financial Analysis Technical Report). The region then discussed this strategy in greater detail with LRTP stakeholders internal and external to the NPS and updated the analysis using revised estimates of forecasted funding, prioritized project needs, and modeled outcomes (i.e., condition forecasts). This enhanced analysis, and the processes and data used to develop that analysis, are included in the updated information below.

Updated SER Funding Forecast

The SER forecasts $61.7 million of available annual funding for its transportation network (Table 2-2). This figure is 14 percent, or $10.2 million, lower than the average annual historical funding of $71.9 million. The bulk of this decrease comes from the $13.7 million reduction in Title 23 funding for programs eliminated under MAP-21. Cutting the TRIP program under Title 49 accounts for another $0.8 million reduction.

An anticipated increase of $4.3 million in Title 54 Non-Fee Repair/Rehabilitation and Line Item Construction program funding and Title 16/54 Fee funding will partially offset the reduction in Title 23 and Title 54 ONPS and Cyclic program funding. The Non-fee and Fee programs within Title 54 are projected to increase of $3.1 million and $1.2 million, respectively.

Impacts of the Tamiami Trail

Large scale project investment (i.e., mega-projects) commitments are important to recognize in the funding forecast as those dollars are already committed. For the SER, the planned improvements to the Tamiami Trail corridor (US Highway 41) represent an average annual reallocation of $8.4 million from its FLTP funding to this non-NPS owned asset for the years FY 2016 through FY 2020. This commitment of funds covers the first five years of the 20-year planning horizon for the SER LRTP. The $8.4 million reflects the NPS matching commitment from FLTP funds in response to the TIGER grant awarded to FDOT.

Table 2-2: SER Historical Average Annual Spending (FY 2006 – FY 2013) and Annual Funding Forecast (FY 2016 -- FY 2020) ($ in 2014 Millions)

Funding Title/Program	Historical Average Annual Spending	Forecasted Annual Available Funding	Difference	Rationale
Title 16 / 54	**$16.4**	**$20.7**	**$4.3**	**Mix of planned investment and projections**
Title 54 Non-Fee	**$15.1**	**$18.2**	**$3.1**	**Mix of planned investment and projections**
Operational Base	$5.5	$5.3	-$0.2	Based on national-level projections
Cyclic Maintenance	$4.6	$2.7	-$2.0	Planned Investment
Repair/Rehab	$1.9	$4.0	$2.1	Planned Investment
Emergency Storm & Flood Damage	$1.3	$1.3	$0.0	Based on national-level projections
Line Item Construction	$1.0	$4.2	$3.2	Planned Investment
Other NPS Programs	$0.7	$0.7	$0.0	Based on national-level projections
Title 16/54 Fee	**$1.3**	**$2.5**	**$1.2**	**Mix of planned investment and projections**
Title 16 Recreation Fee	$0.9	$1.8	$0.9	Planned investment
Title 54 Transportation Fee	$0.4	$0.5	$0.1	Based on national-level projections
Title 54 Concessions Franchise Fees	<$0.0	$0.2	$0.2	Based on national-level projections
Title 23	**$54.5**	**$40.8**	**-$13.7**	**Many programs eliminated**
FLTP	$49.7	$40.1	-$9.6	Planned investment
Earmarks	$2.5	$0.0	-$2.5	Moratorium on earmarks
Other FHWA Programs	$0.9	$0.5	-$0.4	Most programs eliminated
Public Lands Highway - Discretionary	$0.7	$0.0	-$0.7	Program eliminated
Scenic Byways	$0.5	$0.0	-$0.5	Program eliminated
Emer. Relief for Federally Owned Roads	$0.2	$0.2	$0.0	Based on national-level projections
Other/External	**$1.0**	**$0.3**	**-$0.8**	**TRIP eliminated**
FTA TRIP/ATPPL	$0.8	$0.0	-$0.8	Program eliminated
Reimbursable Agreements	$0.3	$0.3	$0.0	Based on national-level projections
Total	**$71.9**	**$61.7**	**-$10.2**	

Asset Management Trends

Moving forward, internal and external trends in the area of asset management and financial sustainability will help direct future funding and investment decision making. The following topics highlight some of the key trends in asset management and investment.

CAPITAL INVESTMENT STRATEGY

The Capital Investment Strategy (CIS) is an NPS strategy for prioritizing project investment to ensure effective and responsible project funding. The CIS is a tool that decision makers at all levels of the NPS have available to them to inform project investments and other asset management needs.

The purpose of the CIS is to help prioritize investments, focus on mission-critical assets, manage operations and maintenance, and ensure that the greatest impact can be made with available capital, maintenance and operational funds. The CIS uses a scoring strategy to evaluate projects on a number of different criteria: Financial Sustainability, Visitor Experience, Resource Protection, and Health & Safety. The four categories are weighted using a predefined algorithm to arrive at an overall project score. Projects can then be compared by score as needed; in theory the greater the score the higher the priority. The scoring strategy supports an asset management approach that emphasizes maintaining key assets and reducing the estimated value of deferred maintenance cost against those key assets.

Some of the key objectives in the Financial Sustainability strategy are to build only what can be maintained, right-size the asset portfolio, reduce liabilities, reduce resource consumption to promote sustainability, and eliminate non-essential development in order to emphasize the essential natural and cultural experience. The Health and Safety strategy places an emphasis on correcting unsafe or hazardous conditions within park units that pose a threat to visitors or staff. The Resource Protection strategy focuses on those historic, cultural, and natural resources that the NPS is tasked with protecting and preserving. Such tasks supported by the CIS could include preservation, repair, and restoration of assets. Visitor Use efforts would include investment in assets or resources that enable recreation, and serve as gateways to park units, contact stations, and interpretive assets.

Optimization of assets is another important aspect of the CIS. Park units prioritize transportation assets for investment and O&M based on a ranking that incorporates asset condition and the criticality of that asset to the park's mission. These rankings, known as Optimizer Bands (OB), range from 1 to 5, with OB 1 representing highest priority assets and OB 5 representing lowest. Assignment of assets to bands 1 to 3 not only signals the priority of the assets, but also entails a commitment by the park to dedicate a minimum amount of preventive maintenance (PM) funding to those assets (Table 2-3).

Table 2-3: Priority and PM Investment Floor by Optimizer Band

Optimizer Band	Priority	Minimum PM Investment
OB 1	Highest	55%
OB 2	High	50%
OB 3	Medium	25%
OB 4	Low	No minimum
OB 5	Lowest	No minimum

TOTAL COST OF FACILITY OWNERSHIP

Applying Total Cost of Facility Ownership (TCFO) concepts is considered by the NPS to be a vital part of financially sustainable infrastructure strategies and practices including transportation asset management.[2] It aligns closely with the intentions behind the CIS, especially the CIS Financial Sustainability component. TCFO is the full life-cycle cost of building, maintaining, and operating an asset until it needs replacement or decommissioning. This concept recognizes that assets require investment throughout their service lives until they need replacement or disposition and that preventive maintenance and facility operations activities are key to minimizing long-term costs. Implementation of the TCFO concept involves a shift-away from a "just fix it" or "run to failure" mentality to more holistic planning, making cost estimates and decisions that consider not just the maintenance backlog (DM) of an asset but the ongoing O&M need over its service life, need for replacement, and ultimately disposition.

The SER is using the concepts inherent to the CIS and TCFO and embedding them into all of its LRTP analyses and planning activities.

MAP-21

Moving Ahead for Progress in the 21st Century Act (MAP-21) is the current transportation funding bill which allocates funds to all aspects of the nation's transportation program. Transportation funds allocated to Federal Land Management Agencies, such as the NPS, are included under this funding bill.

As such, the core principles and priorities of MAP-21 are reflected in the projects funded in the NPS. The key principles of MAP-21 that are most applicable to the NPS transportation program include:

- Establish a performance-based program
- Support economic growth
- Enhance Alternative Transportation Systems

These trends are external to the NPS; however, they have a very clear and direct impact on operations and investment within the NPS.

Performance-based Program

Performance-based programs emphasize a data-driven approach to managing a transportation inventory. Development of a transportation asset inventory and LRTP goals, objectives, and benchmarks represent a first step toward data-driven investment decision making. By completing this process, the SER will have an established performance baseline, a clear vision for needs and investment, and the tools to collect performance data and assess progress in future years.

The performance-based program approach also encourages agencies to develop management systems, or inventory databases that provide users with the necessary tools to make informed decisions.

Support Economic Growth

Leveraging transportation systems to support economic growth is an emphasis of MAP-21. The approach to supporting economic growth through transportation takes on a slightly different approach within the NPS than it may on a state or local highway or roadway.

Within the NPS, supporting economic growth is achieved by supporting visitor experiences in park units. Reducing the backlog of deferred maintenance, maintained critical access, and providing effective transportation alternatives are the key approaches to supporting improved visitor experiences and ultimately economic growth through transportation in the NPS.

[2] For example, reference "Memorandum: Guidance for Addressing Facilities in Planning Documents", Associate Director, Park Planning, Facilities, and Lands, National Park Service, US Department of the Interior, January 4, 2016.

Enhance Alternative Transportation Systems

The NPS recognizes the benefits of alternative transportation system (ATS) within park units. This renewed emphasis from the USDOT reinforces the importance of providing multimodal transportation options for users while maintaining the message of MAP-21 which focuses on data-driven decision making and performance measures. Moving forward, the principles of the MAP-21 as applied to multimodal facilities will require the SER to identify critical transit and trail connections and measure performance using a data-driven approach. At this point, much of the framework is in place to collect and analyze data for transit systems.

3 Sustainable Operations

The NPS has adopted the principles of sustainable operations and continues to work toward achieving financial, social, and environmental sustainability. This chapter details practices and policies that the SER will pursue to achieve this balance.

Environmental Sustainability

CLIMATE CHANGE AND VULNERABILITY

Climate change refers to variation of weather patterns over a long period of time. While climate change has occurred throughout much of the planet's history, there is a concern that observed changes in temperature, precipitation, and sea level suggest that climate change has been occurring at an accelerating pace in recent years. As the planet has been warming, some of the primary effects are a gradual rise in sea level elevation as well as increased storm surge and wave action. This makes low-lying coastal areas vulnerable to flooding and erosion, and is a particular concern for the many seashore and coastal sites in the SER. In addition, the warmer environment has the potential to result in greater amounts of precipitation and more intense storms being observed.

While climate change can have a great effect on low-lying coastal areas, storms can also impact areas far away from the coast. Higher average temperatures may also result in change to the duration of seasons and an increase in the number of extreme heat days. Increases in frequency, intensity, and duration of extreme heat events will continue to affect public health, natural and built environments, energy use and production, and forestry.[3]

Inland parks in the Southeast Region have experienced significant impacts to their transportation assets from intense storms and droughts in recent years. During the Focus Park visits, Kennesaw Mountain National Battlefield Park reported that the combination of drought conditions and more intense precipitation has significantly degraded the condition of its trail system, as persistently dry conditions have turned trail surfaces to fine dust that washes away during heavy rain events. Blue Ridge Parkway and Great Smoky Mountains National Park both reported multiple major landslides in recent years that have resulted in significant damage to park roadways; in the case of Blue Ridge Parkway, each slide cost more than $5 million to repair. Blue Ridge Parkway and Great Smoky Mountains National Park both relied on Emergency Relief for Federally Owned Roads (ERFO) funding to cover a portion of the cost of roadway repairs from slides.

According to an NPS report that estimates the exposure of NPS assets to sea-level rise and associated storm vulnerability, more than 85 percent of Southeast Region coastal park assets, with a cumulative value of over $35 billion, are viewed as being highly vulnerable to sea-level rise.[4] Nine of the 13 coastal parks in the Southeast Region had the entirety of their asset portfolios categorized as high exposure (Table 3-1).

[3] NPS, National Park Service Southeast Region Climate Change Response Strategy and Action Plan [Draft], 2015.
[4] National Park Service, Adapting to Climate Change in Coastal Parks, 2015. Accessed at www.nature.nps.gov/geology/coastal/coastal_assets_report.cfm.

Table 3-1: Exposure of SER Coastal Park Assets to Climate Change Impacts

	Number of Park's Assets	Percentage of Park's Assets	CRV (million, $)	Percentage of CRV	Exposure Range
Big Cypress NPres	210	83%	$414.2	40%	High
Biscayne NP	68	100%	$67.9	100%	High
Cape Hatteras NS	559	100%	$1,173.3	100%	High
Cape Lookout NS	289	100%	$878.7	100%	High
Canaveral NS	167	100%	$88.4	100%	High
Castillo de San Marcos NM	54	100%	$26,571.8	100%	High
Cumberland Island NS	33	16%	$19.3	17%	Low
De Soto NM	10	100%	$3.4	100%	High
Everglades NP	493	100%	$657.1	100%	High
Fort Pulaski NM	52	100%	$286.3	100%	High
Fort Sumter NM	38	100%	$1,230.7	100%	High
Gulf Islands NS	355	81%	$3,930.2	80%	High
Timucuan EHP	42	38%	$9.9	35%	Intermediate
TOTAL	**2,370**		**$35,331.3**		

Source: NPS, Adapting to Climate Change in Coastal Parks

The effects of climate change likely will have a moderate to significant impact on transportation systems. Potential impacts include:[5]

- More frequent/severe flooding of underground tunnels and low-lying infrastructure, requiring drainage and pumping, due to more intense precipitation, sea level rise, and storm surge.
- Increased numbers and magnitude of storm surges and/or relative sea level rise potentially shorten infrastructure life.
- Increased thermal expansion of paved surfaces, potentially causing degradation and reduced service life, due to higher temperatures and increased duration of heat waves.
- Higher maintenance/construction costs for roads and bridges, due to increased temperatures, or exposure to storm surge.
- Asphalt degradation and shorter replacement cycles; leading to limited access, congestion, and higher costs, due to higher temperatures.
- Culvert and drainage infrastructure damage, due to changes in precipitation intensity, or snow melt timing.
- Increased incidence of landslides due to increased frequency and intensity of precipitation.
- Increased risk of vehicle crashes in severe weather.
- Reduced aircraft performance leading to limited range capabilities and reduced payloads.
- Restricted access to local economies and public transportation.

[5] U.S. Department of Transportation, Climate Adaptation Plan: Ensuring Transportation Infrastructure and System Resilience, 2014.

The NPS has been highly cognizant of these potential impacts of climate change, and has developed multiple guidance documents to provide direction for addressing the impacts of climate change going forward:

- The NPS *Climate Change Response Strategy* (2010) provides a framework for responding to climate change using four integrated components: science, adaptation, mitigation, and communication. Most relevant to the NPS transportation system are stated commitments to using adaptation planning and implementation at all levels; promoting ecosystem resilience, including prioritizing resources that are threatened by climate change; enhancing sustainable design, construction and maintenance of NPS infrastructure; and integrating climate change mitigation into NPS business practices, including substantially reducing the NPS's carbon footprint through environmentally preferable operations.
- *A Call To Action: Preparing for a Second Century of Stewardship and Engagement* (2011, updated 2014) establishes a vision for the second century of NPS operations, with a focus on providing exemplary stewardship and public enjoyment of the natural, cultural, and historical spaces that the NPS is charged with preserving and promoting. This report proposes 39 actions to support that vision, including a commitment Go Green (Action #23) by further reducing the NPS carbon footprint over 2009 levels.
- The NPS *Green Parks Plan* (2012) articulates a vision for more comprehensive adoption of sustainable practices across the Park Service. The plan establishes environmental performance targets and empowers staff to be agents of change, collaborate with stakeholders, and engage visitors to support this effort. The plan outlines nine strategic goals that focus on the impact of facilities on the environment and human welfare, including setting specific targets for reduction of greenhouse gas emissions and "greening" the NPS fleet and promoting alternative transportation modes.
- The NPS *Climate Change Action Plan* (2014) builds on previous climate change planning efforts, and is intended to guide implementation of the *Climate Change Response Strategy* while also affirming the NPS's commitment to implementing the *Green Parks Plan*. The plan identifies near-term priorities and assigns specific action items and roles for high-priority actions that correspond to guidance in previous planning efforts. Actions explicitly related to transportation include "right sizing" vehicle fleets, issuing a "no idling" policy for non-law enforcement or emergency vehicles, coordinating the Clean Cities NPS Partnership to fund transportation efficiencies, and implementing climate change guidance for LRTPs.

In 2015, the SER became the first NPS region to develop a region-specific Climate Change Response Strategy. The plan identifies specific actions the Region will take to manage resources in a manner that is responsive to the most up-to-date climate science. Those actions, which are organized by four goals areas, include:[6]

- Advancing workforce climate literacy through staff webinars, a quarterly newsletter, and access to training in vulnerability assessment, scenario planning, and climate smart adaptation.
- Supporting communication with visitors through the NPS Climate Change Leadership Series for Superintendents, CCRP Climate Change for Interpreters training, implementation of the Long-Range Interpretive Plan for Energy Conservation and Sustainability, youth education programs on sustainability, and outreach materials on climate change science and impacts.
- Improving sustainability by implementing the regional plan for decreasing facility energy, water, and fuel usage, pursuing Environmental Management Program funding and Flexible Park Base Sustainability funding, encouraging park units to become certified Climate Friendly Parks, and investing in alternative energy and efficiency improvements.

[6] NPS, National Park Service Southeast Region Climate Change Response Strategy and Action Plan [Draft], 2015.

- Supporting climate adaptation by continuing to incorporate climate change information into park foundation documents, including indicators of climate change and a climate change impact brief in the State of the Parks efforts, coordinating with the planning and operations of Landscape Conservation Cooperatives, participating with the Climate Change Response Program in conducting scenario planning and climate smart adaptation, and identifying and prioritizing potential adaptation actions as part of the Resource Stewardship Strategy.

When asked in the SER LRTP survey, superintendents at SER park units indicated how vulnerable the transportation facilities and networks are to a number of climate change issues. A substantial majority of SER park units indicated that they perceived their transportation facilities were extremely to moderately vulnerable to changes in weather/precipitation patterns due to climate change. Specifically, most SER superintendents perceive their park units to be extremely to moderately vulnerable to climate change-related changes in precipitation patterns (81%), increased surface runoff (80%), and extreme weather events (e.g., hurricanes, flood; 78%). The future conditions of SER transportation facilities are dependent on these fluctuations in weather patterns from climate change, and park managers will need to be cognizant of these potential impacts to their transportation facilities in regards to budget planning, maintenance efforts, and impacts on transportation-related visitor experience.

Southeast Region parks are already taking steps to adapt their transportation facilities to the impacts of climate change. Gulf Islands National Seashore has realigned Fort Pickens Road—which was closed from 2004 to 2009 due to storm damage—in an attempt to adapt to sea-level rise and severe weather events. San Juan National Historic Site accounted for sea-level rise in the design of the Paseo del Morro, a waterfront walkway that serves as one of the park's primary transportation assets.

CLIMATE FRIENDLY PARKS

The NPS *Climate Change Action Plan* includes an action item to increase the number of Climate Friendly Parks, and the SER will continue to work toward that goal. Seven park units in the SER had attained Climate Friendly Park certification as of August 2015. Another two parks are in the process of becoming Climate Friendly certified, and will continue to move forward with activities to attain certification. Mammoth Cave National Park has completed baseline data collection, but still must conduct staff training and complete an Action Plan. San Juan National Historic Site needs to complete an Action Plan in order to become certified.

UPDATED DATA AS OF SEPTEMBER 2016

As of June 2016, 12 Southeast Region park units were certified as Climate Friendly Parks. As a supplement to parks' efforts to attain CFP certification, WASO has been conducting workshops on vulnerability and adaptation with park units in the region. WASO conducted workshops at seven Southeast Region parks in 2015, with plans to hold workshops at another seven parks by the end of 2016.

Social Sustainability and Livability

Social sustainability and livability are at the forefront of the NPS vision for the future. *A Call to Action* highlights this commitment to livability by promoting a theme of Connecting People to Parks, one of four goals around which the NPS builds its vision for stewardship. In order to Connect People to Parks in its second century of operation, the NPS must:[7]

- Develop and nurture lifelong connections between the public and parks—especially for young people—through a continuum of engaging recreational, educational, volunteer, and work experiences.
- Connect urban communities to parks, trails, waterways, and community green spaces that give people access to fun outdoor experiences close to home.
- Expand the use of park as places for healthy outdoor recreation that contributes to people's physical, mental, and social well-being.
- Welcome and engage diverse communities through culturally relevant park stories and experiences that are accessible to all.

A Call to Action supports this livability goal through a series of action items, several of which are built upon critical transportation-related elements:[8]

- In My Back Yard (Action #4) commits to improving urban residents' awareness of and access to recreational and cultural offerings by promoting safe and enjoyable connections from parks to a variety of sustainable transportation options that align with urban populations' needs.
- Parks for People (Action #5) commits to enhancing connections for densely populated, diverse communities to parks, greenways, trails and waterways to improve close-to-home recreation and natural resources conservation.
- Follow the Flow (Action #12) commits to supporting communities' efforts to expand access to water-based recreation.

As evidenced by the goals and actions articulated in *A Call to Action*, the NPS anticipates that urban park units, and connecting those park units to their surrounding communities, will be a critical component of NPS operations going forward. The NPS *Urban Agenda* (2015) calls on all NPS employees to be relevant to all Americans and work collaboratively both internally and externally to better serve communities. This commitment to an increased focus on the relevance, connectivity, and inclusiveness of urban parks is summed up by NPS Director Jonathan Jarvis in the foreword to the Urban Agenda: "It is time that the NPS strategically organized its many urban parks and programs towards building relevancy for all Americans, to connect with their lives where they live, rather than only where some may spend their vacation."[9]

[7] NPS, A Call to Action, 2011 (Updated 2014).
[8] NPS, A Call to Action, 2011 (Updated 2014).
[9] NPS, Urban Matters: The Call to [Urban] Action, 2015.

UPDATED DATA AS OF SEPTEMBER 2016

In support of the Urban Agenda, the National Park Service has identified 10 model cities and will be dedicating resources to enhancing collaboration and outreach efforts in those cities, including deployment of NPS Urban Fellows in each city.

Jacksonville, Florida—one of the 10 model cities—is home to two Southeast Region park units: Timucuan Ecological and Historic Preserve and Fort Caroline National Memorial. Those parks, with support from an NPS Urban Fellow, have already begun enhancing their work with local agencies to find innovative ways to meet community needs and connect local residents to educational and recreational opportunities in the parks.

Ongoing activities include a partnership between the two NPS units and the City of Jacksonville to arrange summer camp field trips to the parks for underserved youth. During a five-week period in summer 2016, Fort Caroline National Memorial partnered with the Jacksonville Children's Commission and the U.S. Food and Drug Administration to provide free lunches to all park visitors under the age of 18. Other collaborative efforts are underway to connect more city residents to blueway opportunities in the area.

4 Safety

The NPS is developing a Transportation Safety Management System (TSMS) to improve safety for its visitors and staff. On the national level, the NPS will center its safety efforts on better collecting and integrating of safety data to improve decision making and on implementing proven safety countermeasures to effectively allocate limited safety funds. The SER will use the TSMS to identify locations for targeted safety studies and for implementing the most effective countermeasures. The Region will continue to focus on mitigating the vehicle crash types most common to the Region and along those roadways where the majority of crashes occur. The Region will also expand its efforts to address safety needs of all transportation modes, including trails, transit and boats.

Transportation Safety Management System

The NPS is working with FHWA to develop a TSMS for use in managing traffic safety in the NPS Park Roads and Parkways Program. The TSMS that will bring together data on crashes, traffic volume, and roadway features and condition to identify the most cost-effective opportunities to improve safety.

Accurate data on where, when, and why crashes occur are necessary to make programmatic, performance-based decisions related to safety investments. The Department of Interior has initiated a new reporting system, the Incident Management and Reporting System (IMARS), to replace the obsolete Servicewide Transportation Analysis and Reporting System (STARS) as the Department of the Interior's primary traffic safety management system. IMARS is designed to record, store, and analyze all incidents occurring on federal lands.

Among the incidents recorded in IMARS are motor vehicle crashes; IMARS will eventually be the primary source of NPS crash data. In the meantime, the WASO Traffic Safety Program is compiling recent (post-2005) crash data on a park-by-park basis and it is these data that will be the primary resource used for the Region's assessment of priority safety issues.

During the Southeast Region Focus Park visits, numerous NPS staff members expressed frustration with IMARS. This frustration—due in part to technical glitches and in part to the level of effort required to enter data into the system—has led to inconsistent use of the system by NPS staff, limiting the utility of available crash data. The WASO Traffic Safety Program is currently compiling recent (post-2005) crash data on a park-by-park basis, but a comprehensive database of regionwide crash data since 2005 does not exist at this time.

Park staff also noted that safety incident reporting can be dependent on jurisdiction or facility ownership. In cases where local or state law enforcement has jurisdiction, crash data may not be shared with NPS staff or may not be collected in a manner consistent with NPS standards. The region should consider working with WASO to establish a protocol for crash data sharing and reporting between the National Park Service and local and state law enforcement.

Motor Vehicle Safety

Crash prevention efforts will remain focused on the parks and roadways with the highest rates of personal injury crashes, with some targeted efforts in other parks to address know crash hot spots. The STARS data from 1995–2005 shows that Natchez Trace Parkway, Blue Ridge Parkway, and Great Smoky Mountains National Park accounted for approximately 88 percent of both fatal crashes and injury crashes in the Region, despite having only 63 percent of lane miles in the region and only half of the region's visitation. It is likely that the additional crash data being compiled by the WASO Traffic Safety Program will confirm the need to focus on those three parks, but the crash data will also help identify crash hot spots at parks throughout the Region. At the present time only some of the crash hot spots are recognized and they are being addressed in an opportunistic manner.

USDOT SAFETY AGENDA

Visitor and staff safety on the transportation network is always a key investment priority. The USDOT safety agenda is focused on making data-driven decisions in targeting hazardous road locations or features.

The first priority is to prevent crashes and correct known issues. This can be accomplished using available data to develop a management system and safety metrics.

The secondary approach is to predict potential locations or road features that may present a crash risk. This could be completed using available data through modeling, working with park unit representatives to identify potentially hazardous locations, or completing Roadway Safety Audits.

More recently, pedestrian and bicycle safety has become a focus of the USDOT safety program due to the role of transportation in fostering livable communities. Reducing pedestrian and bicycle crashes within park units directly contributes to improving the health and safety of all visitors and staff to the NPS.

Additionally, the USDOT Safety Improvement Program requires that roadway signage must meet minimum retroreflectivity standards established by the *Manual on Uniform Traffic Control Devices*.

ROAD SAFETY AUDITS

Road safety assessments (RSAs) have proven to be an effective tool for improving the safety of all roadway users. This formal safety evaluation, conducted by an independent and multidisciplinary team, identifies potential road safety issues and opportunities for improvement. Originally RSAs were predominantly sponsored by FHWA; however, RSAs have now received widespread adoption by state, local, and other agencies to proactively improve roadway safety. The success led FHWA to include the RSA as one of its nine "proven safety countermeasures."[10]

The NPS and the SER have recognized the utility of using RSAs to identify safety issues and develop potential countermeasures. Seven SER park units have conducted some type of safety study or assessment since 2007, with two parks—Blue Ridge Parkway and Cumberland Gap National Historical Park—conducting a formal RSA on park roads. The value of RSAs can be particularly high for addressing isolated crash hot spots in smaller parks. The format of an RSA, with its hands-on participation by people from the park, state and local community, can not only result in effective solutions to safety issues, but can lead to more effective partnerships on future projects.

[10] FHWA, Nine Proven Crash Countermeasures, available at http://safety.fhwa.dot.gov/legislationandpolicy/policy/memo071008/npccacsc/

Alternative Transportation Safety

The safety concerns for the SER are not specific to motor vehicles. The need to enhance pedestrian and bicycle safety along roadways and on trails will only increase as policies are implemented to increase multimodal access and mobility. The SER is also dependent on water transportation for accessing many of its parks, and has several transit systems. Both the water transportation and transit systems have their own unique safety issues and concerns.

The incident data collected by IMARS system could ultimately help identify alternative transportation safety issues that need to be addressed. In the meantime, alternative transportation issues can begin to be addressed by targeted studies of high-activity locations. For transit systems, the studies can focus on loading areas and bus stops, including travel paths to and from bus stops. Safety on-board boats is generally regulated by US Coast Guard regulations, so water transportation safety studies can focus on dock areas. Bicycle activity on roadways and trails continues to increase rapidly and safety studies for those locations can be done in a manner similar to Road Safety Audits.

Almost all respondents to the SER transportation survey reported that as the number and demographic characteristics of their historically observed visitation is anticipated to change over the next 10 years, these changes will require an increased need for operations and maintenance resources (89%) and an increased need for law enforcement staff (85%). In addition, a large majority (80%) of the respondents reported that safety improvements are of high or highest funding priority for their unit for transportation improvements. A majority (59%) reported that safety improvements will address a visitor experience need, and just over one-third (37%) reported that safety improvements will address a transportation system need.

5 Visitor Experience, Access and Mobility

In 2016, the NPS will commemorate the Organic Act and celebrate the centennial of the origin of the NPS. As the NPS prepares for this celebration, the service has developed documents and action plans that will help the NPS "prepare for a second century of stewardship and engagement." As the NPS prepares for the second century of their service, changes in visitation, visitation patterns, and the demographics, motivations, and expectations of visitors will occur in the coming years and beyond. These future visitation trends will require changes to how the NPS manages and plans for visitors' access to the many park units within the NPS and providing for quality visitor experiences.

Within the report *The Future of America's National Parks*,[11] some of the expected trends that will "reshape our society and make unprecedented demands of preservation, education, and recreation" in the NPS are detailed. Specifically, the report highlights the following areas of change that will impact the NPS:

- Changing demographics: a larger, older, and more diverse population.
- Population migration: urban and suburban development; population shifts.
- Workers value time over money: leisure time expected to increase in the next five years.
- Children disconnected from the outdoors: including increased use of electronic devices.
- A wired America: balancing opportunities to use technology within NPS settings, while offering areas free of technology.
- The changing planet: climate change, weather patterns, and sea level rise.
- Retiring employees: average age of NPS employees is 47 years old.
- Charitable giving trends: to increase giving to national parks.

Additionally, the NPS has issued *A Call to Action*, which details the vision and goals of the NPS to achieve a "shared vision for 2016 and our second century."[12] The call to action details the following aspects of the vision and goals for a second-century NPS that:

- Connects people to parks
- Advances the education mission of the NPS
- Preserves America's special places
- Enhances professional and organizational excellence.

[11] US Department of Interior, The Future of America's National Parks: A Report to the President of the United States by the Secretary of the Interior Dirk Kempthorne, 2007.
[12] NPS, A Call to Action: Preparing for a Second Century of Stewardship and Engagement, 2011 (Updated 2014).

A Call to Action also states that:

> *In our second century, we will fully represent our nation's ethnically and culturally diverse communities. To achieve the promise of democracy, we will create and deliver activities, programs, and services that honor, examine, and interpret America's complex heritage. By investing in the preservation, interpretation, and restoration of the parks and by extending the benefits of conservation to communities, the National Park Service will inspire a "more perfect union," offering renewed hope to each generation of Americans.*

This quote highlights the need to understand the changing demographic and visitation trends within the NPS, to more effectively deliver the activities, programs, and services of the NPS to better serve current and future generations of visitors. These future trends in visitation and visitor characteristics within the SER are described in the following sections, including how these future conditions will impact the transportation-related visitor experience (TVE).

During November 2014 through January 2015, RSG worked in partnership with the NPS, Federal Highway Administration Eastern Federal Lands Highway Division (EFLHD), and VHB to administer a transportation-related survey to the superintendent at each park unit within the SER.[13] The purpose of the survey was to collect information that will help the NPS develop an LRTP for the SER. Results from this survey are described in some detail within this report to understand future TVE trends as identified by park unit superintendents.

[13] RSG, National Park Service Southeast Region Long-Range Transportation Plan: Transportation Survey Results, 2015.

Future Conditions Assessment within the SER – Summary

Table 5-1 presents a summary of the future conditions assessment of the visitor experience within the SER. More detailed information about these data are presented in the following sections.

Table 5-1: Visitor experience trends and future conditions in the SER

	Trend	Anticipated Future Condition	Potential Implications	Relative Impact on TVE/Phases
Park Visitation				
SER	◖ Relatively flat visitation from 2005 through 2014 ◖ Decline in visitation 2005 to 2008 ◖ 1% annual increase since 2010 through 2014	◖ Continued moderate increase in visitation across the region (2010-2014 trend) ◖ 40% of superintendents expect visitation to "sharply increase" in next 10 years (10% increase or more)	◖ Potential for increase congestion and crowding with park units ◖ Potential for resource damage and degraded visitor experiences	●●●●● 1,2,3,4,5,6
Demographics				
US Population	◖ Population of the US continued to increase, reaching 316 million in 2013 ◖ Population growth has slowed since a spike in the '90s	◖ General increase in population, up 40% from 2007 to 2050 ◖ Population projected to increase, although slower than in previous decades, projected to reach 400 million by 2051	◖ Potential for general increase in visitation to SER park units ◖ Potential for resource damage and degraded visitor experiences	●●●○○ 1,2,3,4,5,6
Population Density and Migration	◖ Between 2005 and 2010, the south experienced significant gain due to population migration ◖ Metro areas grew faster than non-metro areas (2012-2013) ◖ 4 of the 10 fastest growing metro areas in the US are in the SER (2012-2013)	◖ Continued migration of populations to more urban/metro areas, particularly within the SER with close to half of SER park units being in urban/suburban areas ◖ Migration to coastal areas of the country, with close to one-third of SER park units in coastal areas	◖ Shift of visitation to more urban/coastal park units, impacting resources and visitor experiences ◖ Potential for resource damage and degraded visitor experiences	●●○○○ 1,2,3,4,5,6
Race/Ethnicity	◖ Between 2000 and 2010, the Hispanic population grew by 43% (from 13% of total population to 16%) ◖ African American population grew by 6% between 2000 and 2010 ◖ White population only grew by 1% between 2000 and 2010	◖ Continued increase in diversity of population ◖ Hispanic population projected to grow from 17% in 2012 to 31% by 2060 ◖ African American population projected to grow 2% by 2060 ◖ White population projected to decrease by 10% by 2060	◖ Increase in diversity of visitation, bringing different backgrounds, motivations, and expectations about their visitor experience within the SER ◖ TVE requirements (e.g., mode of travel, activities participated in) will vary by racial/ethnic group	●●●○○ 1,4,6

	Trend	Anticipated Future Condition	Potential Implications	Relative Impact on TVE/Phases
Age	◖ Aging population of the US, and of SER NPS visitors ◖ Proportion of the population 85 and older has increased from 9% to 14% from 1980 to 2010 ◖ 53% of SER visitors are over the age of 45; 23% are over the age of 60	◖ Continued increase in the size and proportion of the older population ◖ 115% increase in population between ages 65 and 84 projected between 2000 and 2050 ◖ 390% increase in population 85 years old or older projected between 2000 and 2050	◖ Older visitors bring different motivations and expectations about their visitor experience ◖ Older populations have higher likelihood of disabilities and accessibility is a key concern within SER park units	●●●●○ 1,2,3,4,5,6
Transportation Mode	◖ Recent increase in percentage of households without a private vehicle, up from 8.7% in 2007 to 9.3% in 2011 ◖ Changing demographics impact choice of transportation mode ◖ Currently, almost all (96%) of SER park units are accessible via private vehicle, while fewer (85%) are accessible via transit	◖ Percentage of households without a private vehicle projected to continue to increase due to aging population and challenging economic times ◖ Availability of alternative modes of transportation (particularly in urban areas) projected to increase	◖ Reliance on alternative modes of transportation for all travel will change how visitors and potential visitors access and travel within SER park units ◖ Pre-trip information more important for visitors not arriving via their own private vehicle	●●●○○ 1,2,4,5
Technology				
ITS	◖ Increased use of ITS in SER park units from 2000 to 2010 ◖ Increased use of newer technologies, including mobile phone apps	◖ More SER park units expected to use ITS, particularly for pre-trip and travel information ◖ Increased use of social media and other "new" technologies to provide transportation information	◖ ITS will impact travel patterns, expectations, and trip characteristics of visitors to the SER ◖ Expectations about the TVE will be greatly impacted by the appropriate use of (or lack of) ITS	●●●○○ 1,2,3,5
Social Media	◖ Use of social media within NPS has been increasing, with over 240 Facebook pages and 210 Twitter accounts ◖ Use of social media among US adults has continued to increase from 8% of online adults using Facebook in 2005 to 72% in 2014	◖ Use of social media among adults expected to continue to increase, particularly in older populations ◖ Use of social media within SER park units expected to increase, particularly for providing transportation-related information (e.g., Twitter and Facebook posts)	◖ Use of social media to provide information (particularly transportation-information) will impact visitors' expectations and travel characteristics for SER visitors	●●○○○ 1,2,4,5,6

	Trend	Anticipated Future Condition	Potential Implications	Relative Impact on TVE/Phases
Smartphone Usage	◖ Smartphone ownership among US adults has increased 100% since 2011 (to over 60% of adults owning a smartphone) ◖ Smartphone ownership has increased among all age groups, although ownership among adults 65 and older remains low (19%)	◖ Ownership and use of smartphones to connect with SER park units expected to continue to increase, particularly among older populations ◖ Use of mobile applications in SER park units expected to increase	◖ Many visitors will expect to remain connected during their visit to SER park units ◖ Use of mobile applications can assist SER visitors with travel planning and interpretation and education during their visit	●●○○○ 2,3,4,5
Climate Change	◖ Temperature increases experienced in US (0.74°C) over past 100 years ◖ Changes in precipitation patterns linked to climate change	◖ Continued temperature increase expected, 1.6-6.3°F by 2100, resulting in changes in precipitation and weather ◖ Large majority of SER park units perceive their park to be extremely to moderately vulnerable to: changes in precipitation patterns (81%), increased surface runoff (80%), and extreme weather events (78%)	◖ Potential shift in visitation due to changes in weather patterns and temperature ◖ Potential impact on transportation facilities due to impacts from climate change (e.g., runoff and road washouts, increased sea level) and resultant impact on TVE	●●●○○ 1,4

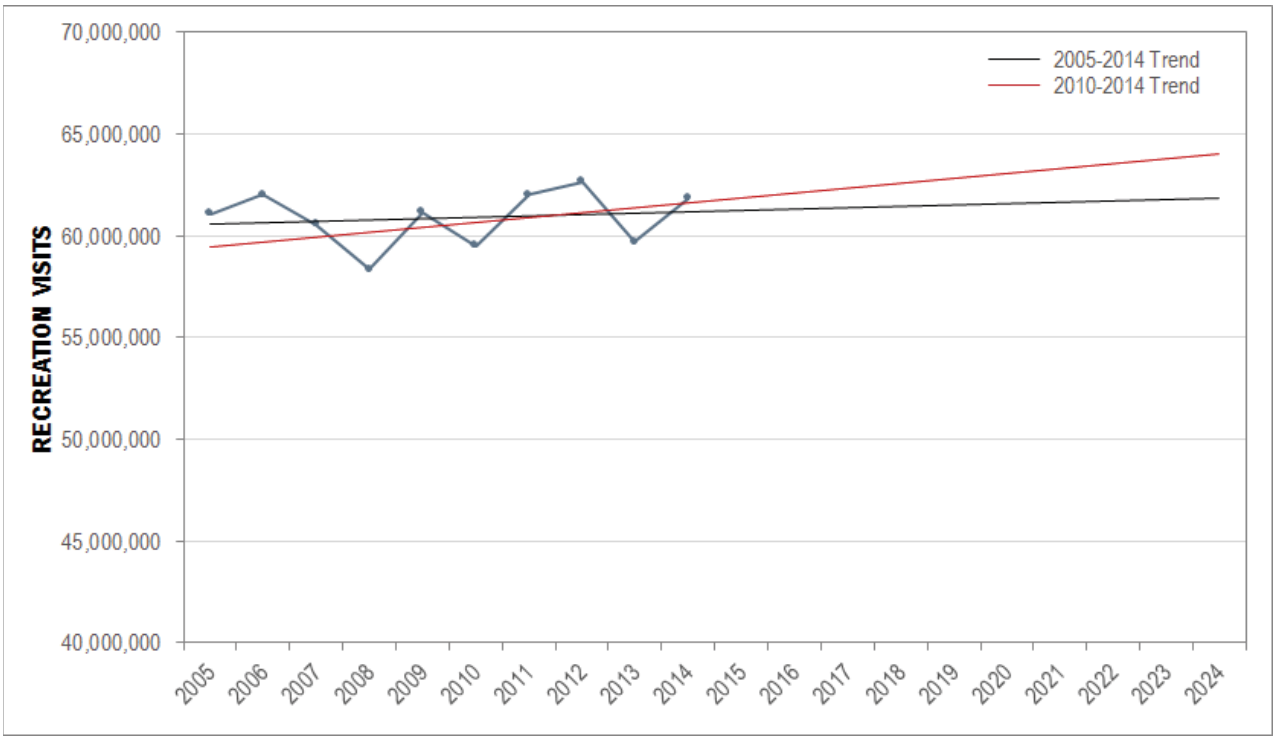
●○○○○ → ●●●●●
Low High

Phases of TVE: 1=Travel planning; 2=Travel to park; 3=Arrival and Orientation; 4=Park experience; 5=Departure; 6=Recollecting

Visitor Use and Visitor Characteristics Trends within the SER

The NPS Public Use Statistics Office (PUSO) collects information about visitor use within most of the NPS units within the nation. Within the SER, PUSO collects visitor use statistics for 63 of the 66 units in the region. Figure 5-2 displays the total annual recreation visitation for the SER for the past 10 years, from 2005 through 2014. During 2014, recreation visits to the SER were under 62 million, up from 59.7 million during 2013. During 2014, the SER accounted for close to one-quarter of the total visitation across all NPS units; nationally the NPS hit its highest visitation level to date with over 292 million annual recreation visits, with three of the top ten visited park units being located within the SER (Blue Ridge Parkway, Great Smoky Mountains National Park, and Natchez Trace Parkway).[14] This indicates an even further trend towards increased visitation within the NPS, and the SER as well.

Figure 5-2: SER Visitation, 2005-2014, with trend analysis included through 2024



Source: NPS, Public Use Statistics Office, 2015

VISITATION TRENDS WITHIN THE SER

While visitation has remained fairly flat over the past 10 years in the region, visitation has averaged an annual growth of approximately 1% per year since 2010. If trends from the past 5 years continue, visitation will reach close to 65 million visitors within the next 10 years. Even if visitation does not climb as much as it has in the past 5 years, the overall trend from 2005 to 2014 indicates that visitation will likely continue to increase over the next 10 years. When SER park superintendents were asked, close to half (41%) of SER park units reported that they expect their unit's visitation to "sharply increase" within the next 10 years (a 10% increase in visitation or more).

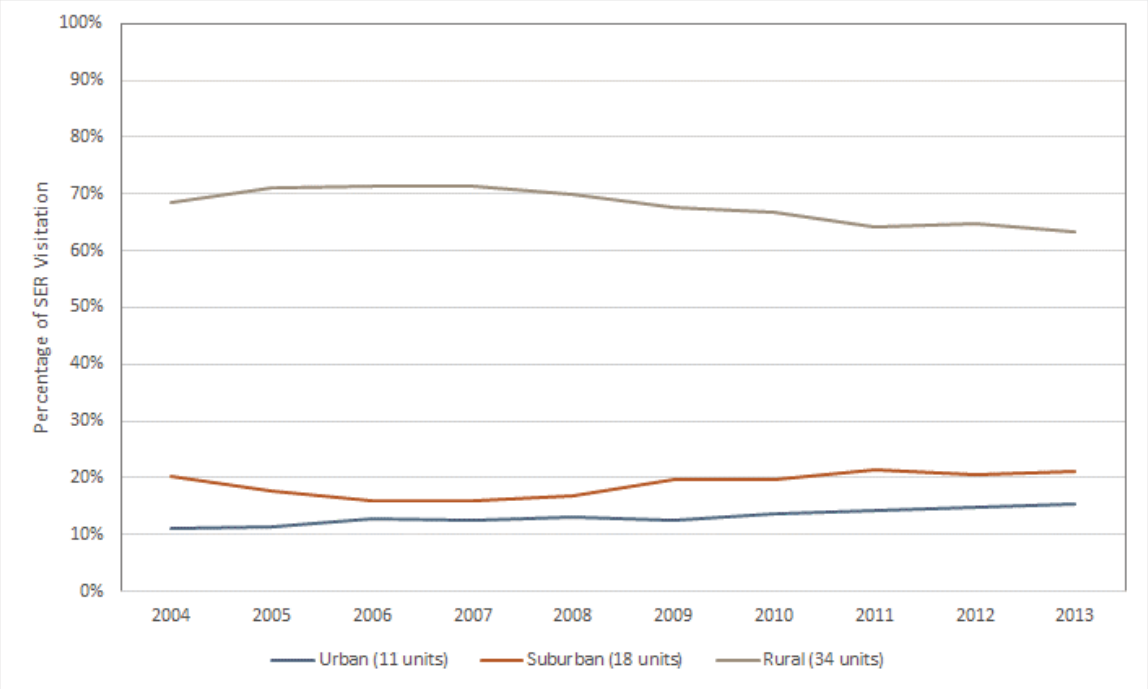
The five-year trend projected increase in visitation over the next 10 years will likely bring with it the potential to increase traffic and parking congestion, degrade natural and cultural resources, cause for crowding at attraction sites and visitor centers, and increase demands on the transportation networks of

[14] NPS, Public Use Statistics Office, 2015.

SER park units. These changes are likely to impact the TVE for visitors in the SER. In particular, impacts may be felt during each phase of the TVE,[15] depending on the park unit and visitor, and extend across all factor groups of the TVE.[16] It should be noted that while overall visitation within the SER has generally been increasing over the past 5 years, visitation trends vary across individual park units within the SER. Some park units have experienced declines in visitation or remain relatively flat, while others have experienced larger increases. These individual park unit visitation trends will impact park management and the visitor experience within each specific park unit.

In addition to an overall visitation change in SER recreation visitors over the past 5 years, the proportion of visitors to SER park units by population classification[17] has changed through the years (Figure 5-3). Specifically, the proportion of overall visitors that visit rural park units in the SER has started to show a decline compared to the proportion of visitors who visit urban and suburban park units. That is, while the number of park units classified as rural has remained the same, the proportion of SER visitors has shown a slight decline for rural park visitation. These shifts in visitation, while slight, may be indicative of demographic or motivational changes among SER park visitors. These changes may impact how SER park managers develop or alter transportation within their park units. For example, rural park units may undertake studies to understand the potential for urban connections with their park units, through inter-city transit. Additionally, these shifts in visitation may be a sign of visitation shifts among urban residents. In *A Call to Action*, the NPS has identified urban residents' awareness of and access to NPS units as a goal for connecting people to parks.

Figure 5-3: Share of SER visitation by park unit population classification



[15] Phases of TVE include: travel planning, travel to park, arrival and orientation, park experience, departure, and recollecting.
[16] Factor groups of TVE include: communication, wayfinding, transportation infrastructure, operations, and safety.
[17] Population classification park types were consolidated into: Urban, Suburban (Suburban and Outlying), and Rural (Rural and Remote). Park units classified as "Mixed" were reclassified based on the proportion of the park unit that lied within the other classification types.

POPULATION CHARACTERISTIC TRENDS WITHIN THE SER

As mentioned within *The Future of America's National Parks*, changing demographics of national park visitors is one of the major trends in the US that will impact management of and demand for the NPS. Specifically, the report mentions the following potential changes to visitor demographics between when the report was written (2007) and 2050:

- Forty percent increase in the population of the U.S.
- The Hispanic population will increase from 13 percent to 25 percent of the population
- The African American population will increase by two percent
- The white population will decline by 10 percent
- The number of people between 65 and 84 years old will increase by 115 percent
- The number of people over the age of 85 will increase by 390 percent[11]

Therefore, it is important to describe and understand these demographic trends within the SER to help predict and manage for quality future visitor experience conditions. Specifically, potential implications of these population and demographic changes include:

- Population migration to/from SER park units, potentially impacting overall visitation levels
- Visitors' motivations, expectations, and requirements for their experience within SER park units
- Accessibility needs of current and potential visitors (e.g., due to an aging population, household income and vacation constraints, racial and ethnic differences in travel modes)

SER Demographics

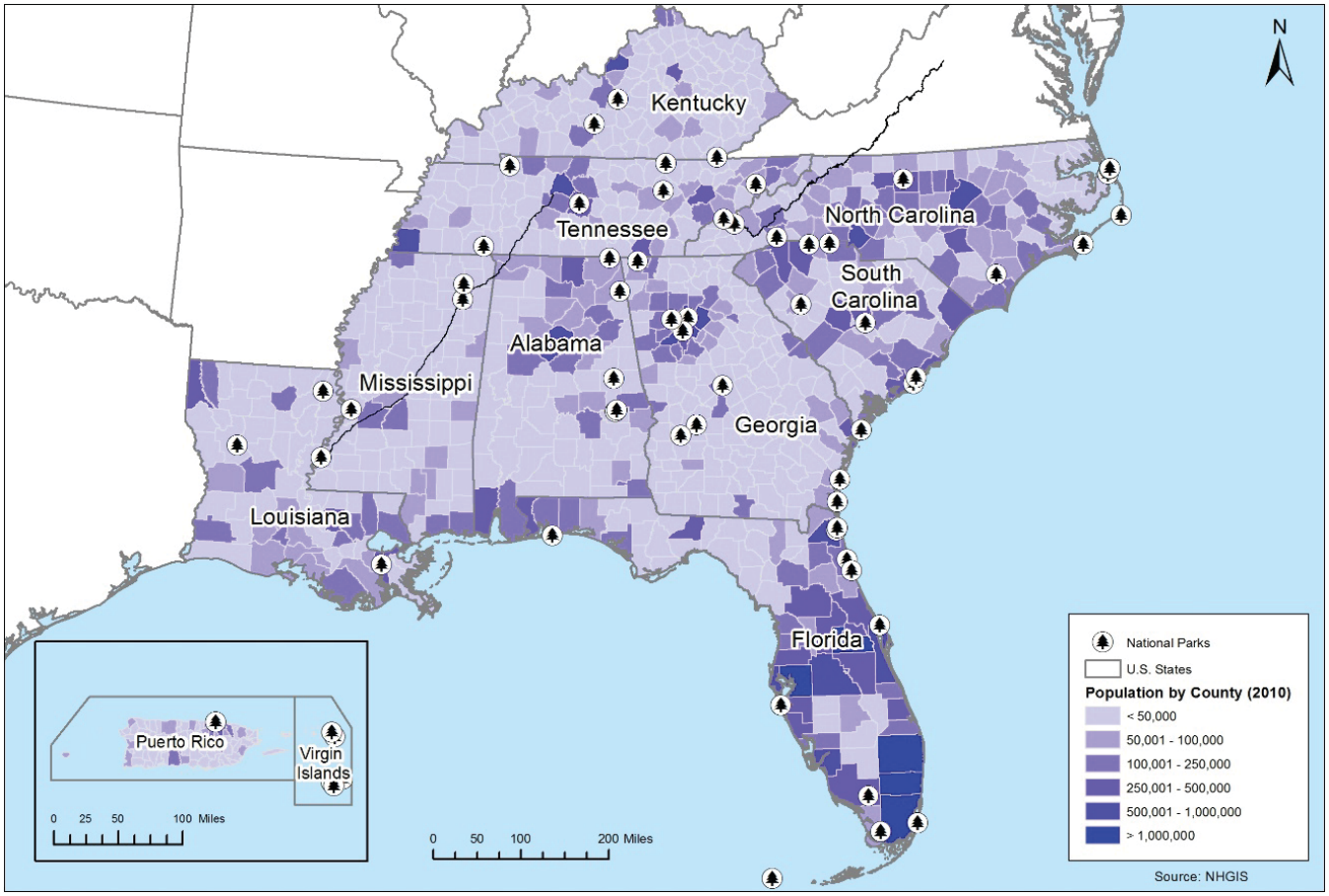
Population size, demographic makeup, and migration trends within the coming years are an important dimension of potential visitation within the NPS. Population within the US has continued to increase, reaching over 316 million in 2013, although growth of this population has slowed, compared to the growth experienced within the 1990's.[18] US Census data were reviewed within the SER to understand the population within which SER parks are located, and demographic trends of this population. Figure 5-4 displays the population from the most recent Census at the county-level within the SER.

Additionally, US Census data indicate that metro areas grew faster than non-metro areas between 2012 and 2013, with four of the top ten fastest growing metro areas located within the SER.[19] Many of the park units within the SER are within large population centers of the SER (46% are located within urban and suburban areas), while others are in more remote/rural areas of the region (54% of SER park units). With so much population increase occurring in these large metropolitan areas, the SER should make it a priority to work with these urban communities to connect these residents with SER park units (as indicated within *A Call to Action*). Additionally, partnerships could be made to help develop connections between urban residents and SER park units, both within and outside of these urban areas (e.g., regional planning commissions).

The makeup of local and nonlocal visitors to SER park units will vary from unit to unit, and the population size and location of SER park units within these population centers will influence this makeup. As mentioned in the Baseline Conditions Assessment report, close to one-third (38%) of SER park visitors were residents of the state within which the park unit was located, indicating a large proportion of non-local visitors to SER park units.

[18] US Census data, 2014.
[19] US Census, County and Metro Population: 2012 to 2013, 2014.

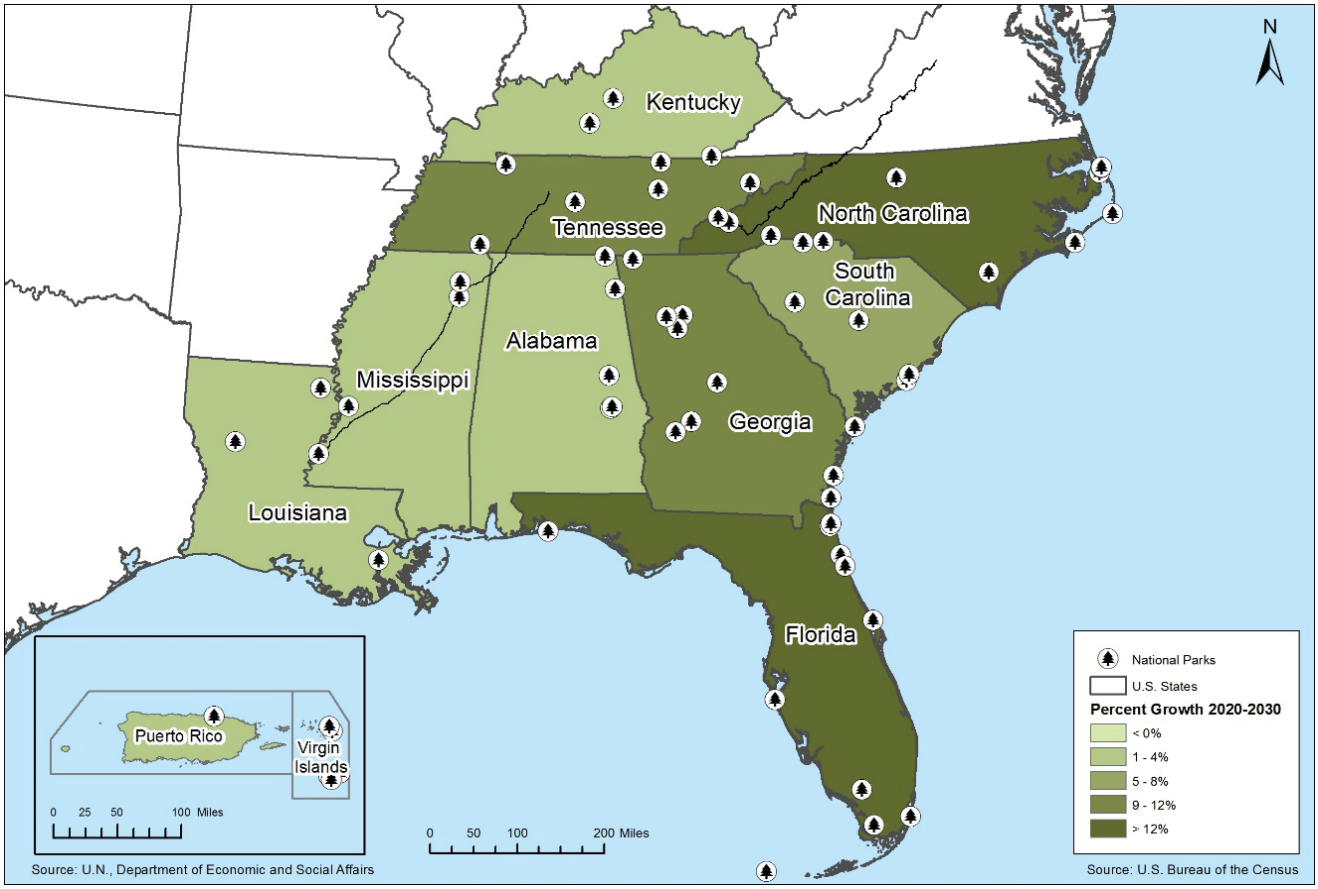
Figure 5-4: Population within the SER, by county (2010)



Between 2005 and 2010, the south experienced significant gain in population due to migration of the US population, the highest gain experienced by any region within the US.[20] In most of the states within the SER (five of nine), the population is expected to increase in size (Figure 5-5). The majority of SER park units reside within these states. Additionally, migration of populations to more coastal areas is expected to increase in the coming years, where close to one-third of SER park units are located.[11] This population change has the potential to increase visitation within a majority of SER park units, which correlates to the perception of the large majority of SER park units that are expecting to experience an increase in visitation over the next 10-years (as discussed previously). This increase in visitation has the potential to influence natural and cultural resource damage, and potentially degrade visitor experiences.

[20] US Census, Geographical Mobility: 2005 to 2010, 2012.

Figure 5-5: Forecast population change within the SER, by state (2020-2030)



Potentially more impactful to visitation within the SER is the demographic makeup of the population, in terms of gender, age, and race or ethnicity. Within *A Call to Action*, the NPS identifies a primary goal for connection people to parks of "welcoming and engaging diverse communities through culturally relevant park stories and experiences that are accessible to all."[21] Figure 5-6 displays the distribution of racial and ethnic groups within the SER. In addition, it is projected that the makeup of racial and ethnic groups within the United States will greatly change in the next 10 to 30 years, developing into a more diverse makeup of racial and ethnic groups. In particular, between 2000 and 2010, the Hispanic population grew by 43%, while the White-only population grew by 1%.[22] Additionally, the US Census predicts that the proportion of the population that will be Hispanic will increase from 17% in 2014 to just under 30% by 2060, while the white population will decrease by close to 20% during the same period.[23] Non-white racial and ethnic groups have experienced the largest percent changes in recent years (Figure 5-7),[24] and are projected to continue to experience the largest changes in the SER. These varying demographic groups bring different backgrounds to their visit, and take away different meanings of their visitor experience within national parks. Additionally, various demographic groups will have differing visitation patterns and activities participated in, including their use of the transportation network within the SER. This change in demographics will need to be reflected in how park units within the SER are managed to meet the needs of these visitors. Additionally, different racial and ethnic groups have different transportation preferences and patterns, as discussed in the next section.

[21] NPS, A Call to Action: Preparing for a Second Century of Stewardship and Engagement, 2011 (Updated 2014).
[22] US Census, Overview of Race and Hispanic Origin: 2010, 2011.
[23] US Census, Projects of the Size and Composition of the U.S. Population: 2014 to 2060, 2015.
[24] US Census, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2014, 2014.

Figure 5-6: Distribution of racial and ethnic groups within the SER (2010)

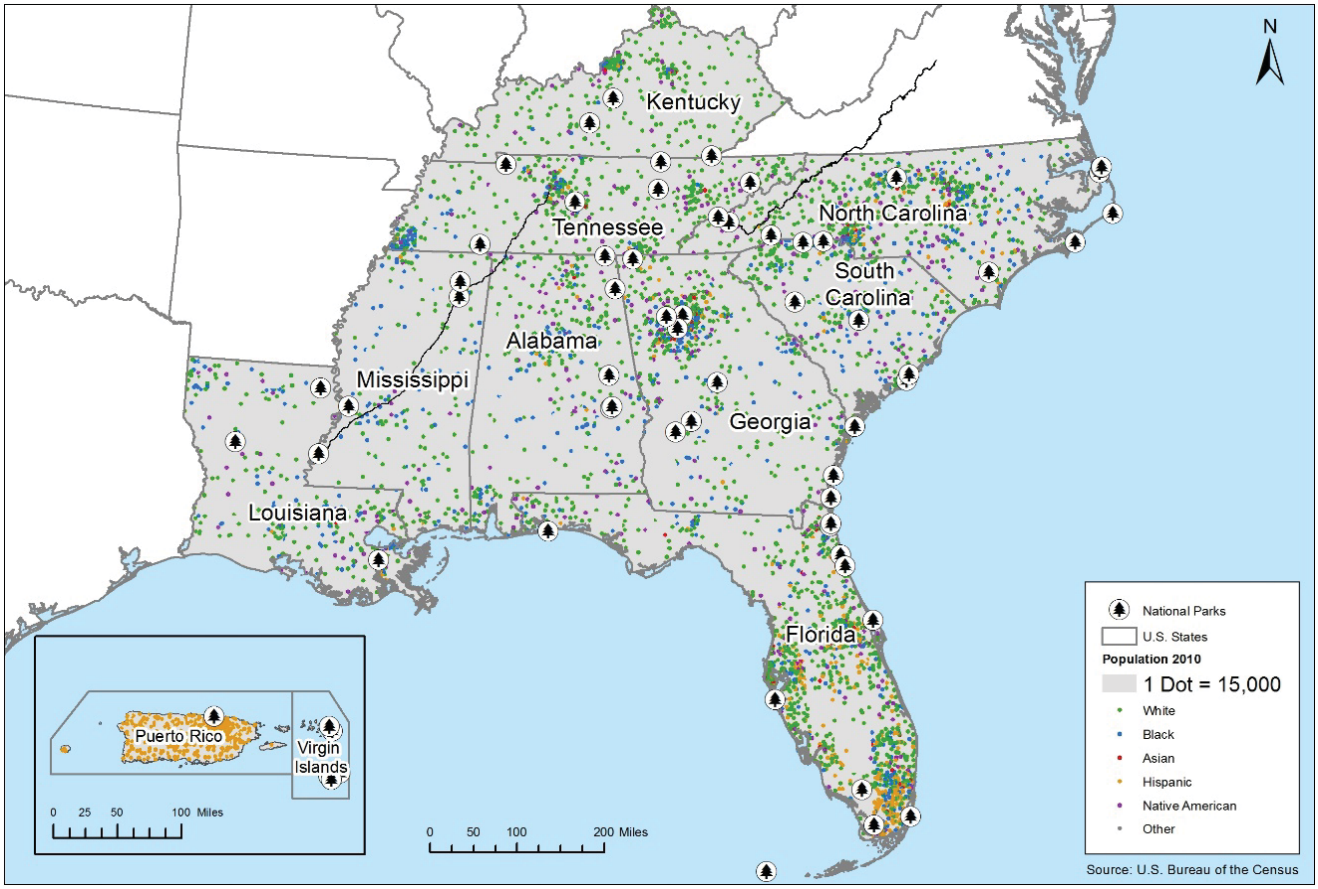
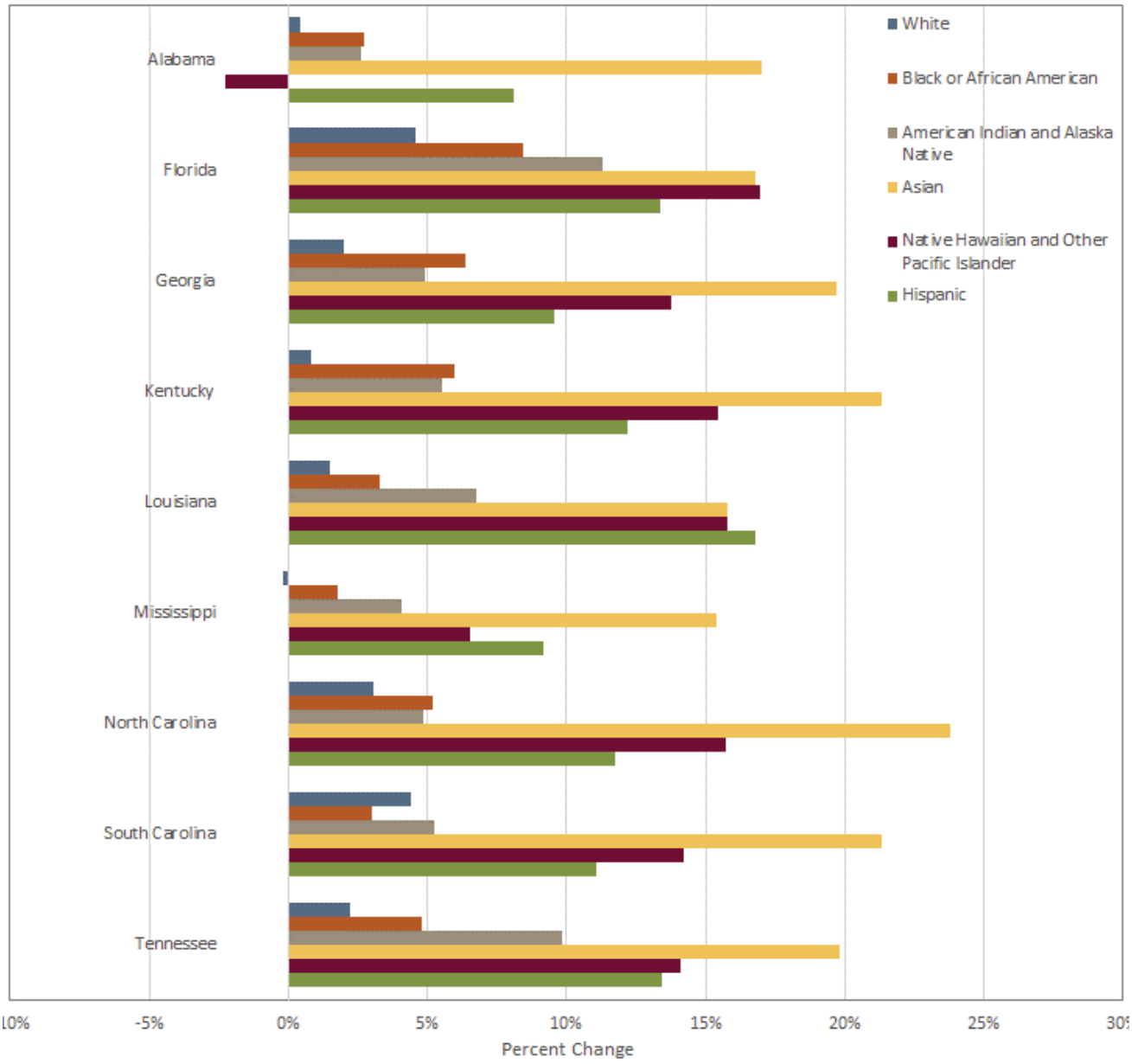


Figure 5-7. Percent change of racial and ethnic groups within the SER (2010-2014)



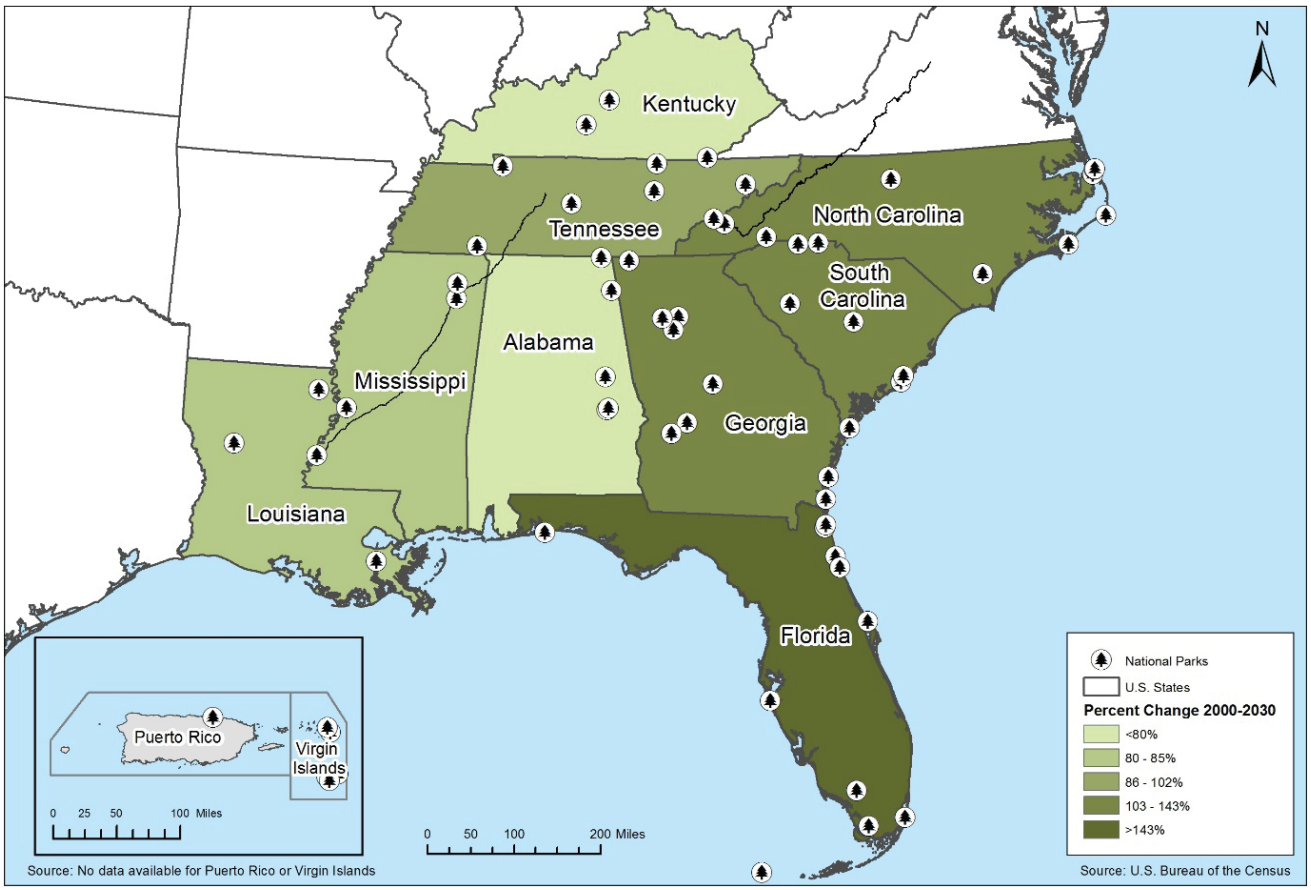
Source: US Census Bureau, 2015.

An aging population of the US will also impact visitation characteristics of SER park units. Specifically, based on VSP data collected at a number of park units, the majority of SER park visitors are over the age of 45 years old, and close to one-quarter (23%) are over the age of 60. The population of the US has also been getting older, with the proportion of the population 85 years old or older increasing from 9% to 14% from 1980 to 2010. Additionally, the US Census is predicting a further increase in the proportion of the population that is 65 or older. Specifically, between 2010 and 2050, the number of Americans 65 years old or older is expected to more than double.[25]

[25] US Census, The Next Four Decades: The Older Population in the United States: 2010 to 2050, 2010.

Based on US Census projections, many states within the SER are expected to experience a more than doubling in population aged 65 years old or older by 2030 (Figure 5-8). Similar to diverse racial and ethnic groups, older populations will have different motivations and expectations about their visitor experiences within SER park units. Additionally, older populations have a higher likelihood of disabilities and accessibility needs,[26] which is expected to have an impact accessibility of SER park units.

Figure 5-8: Forecasted percent change in the proportion of the population 65 years old or older (2000-2030)



TRANSPORTATION MODE SHIFTS

As mentioned in the Baseline Conditions Assessment report, visitors can access almost every SER park unit via their personal vehicle (96%) or via transit/shuttle bus (85%) or commercial tour bus (85%). The mode of transportation by which visitors access and travel within SER park units impacts almost every phase of their TVE. Mode choice among SER visitors may be related to demographic factors such as age, ethnicity, household income, and place of residence (e.g., urban vs. rural). A report by the US Department of Transportation that focused on long distance transportation patterns (the majority of which are for "pleasure" or leisure), provides additional details about mode choice among traveling Americans. Specifically, those travelers that are traveling long-distances (greater than 50 miles) for pleasure are most likely to use their personal vehicle (90%) compared to air travel (7%), bus (2%), or train (0.5%).[27] Mode choice varied significantly based on geography, specifically between those who lived in rural areas versus those that lived in urban areas. Americans who lived in rural areas (95%) were much more likely than those in urban areas (87%) to use their personal vehicle, regardless of the trip purpose, compared to public transportation (air or bus).

[26] American Community Survey Reports, *Older Americans with a Disability: 2008-2012*, 2014.
[27] US Department of Transportation, Findings from the National Household Travel Survey, 2006.

The American Association of State Highway and Transportation Officials (AASHTO) surveys commuting Americans to understand their mode choices and trends over time. In particular, from the 1960s through 2010, the percentage of households without a vehicle decreased over time. As of 2011, the percentage of households without a vehicle has started to increase, the first time in many decades, and is expected to continue to decrease in coming years. The report notes that this increase in households without a vehicle is due in part to the following factors: an aging population; challenging economic times and fluctuating energy costs; and an increase in the availability of alternative travel modes, such as walking, biking, and transit.[28]

Additionally, the AASHTO report notes that the percentage of homes without a vehicle increases as the density of the population increases from rural to more urban areas, as urban areas tend to have higher concentrations of alternative travel modes. Lastly, the report indicates the differences between the percent of households without a vehicle in racial groups. Non-white racial groups have a higher likelihood of living in a zero vehicle household.[28] These trends in the percentage of households that have no private vehicle indicate changes in travel patterns within the United States, particularly in households within urban areas. These populations of visitors and potential visitors to SER park units will require alternative transportation modes to access and travel within parks, potentially different than today. This will require additional trip planning and information sharing between SER park units and potential visitor populations during the early phases of the TVE. This also provides additional opportunities to include interpretive and education programs through visitors' TVE traveling within SER park units.

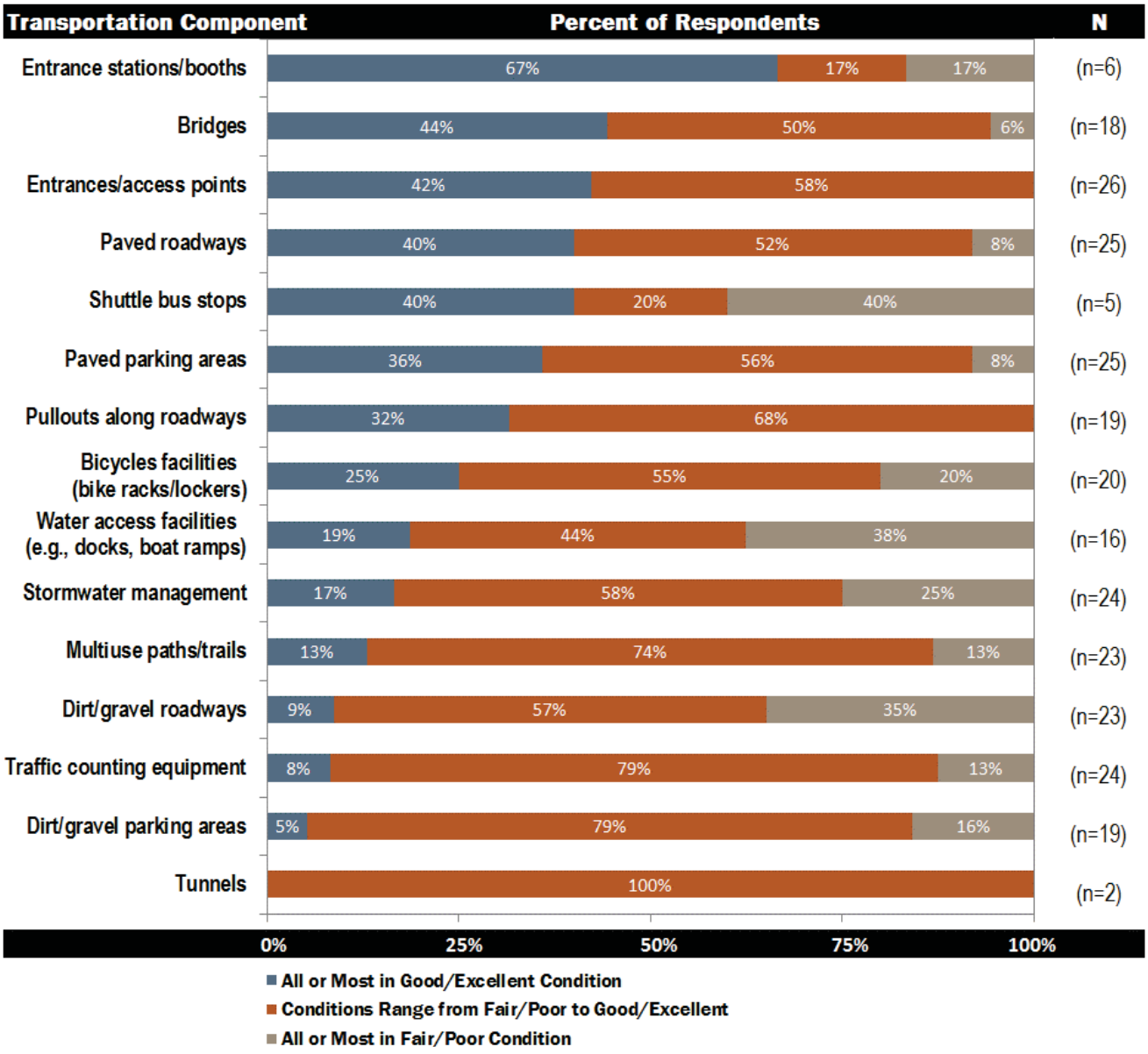
Transportation-Related Visitor Experience (TVE) Trends within the SER

CONDITION OF TRANSPORTATION COMPONENTS AND TVE

Within the SER Transportation Survey, park staff were asked to indicate the perceived current condition of a number of transportation components within their park (Figure 5-9). Most of the transportation components were perceived as being in good/excellent condition; however, a substantive proportion of SER park units (40%) noted that all or most of their shuttle bus stops were in fair/poor condition. Additionally, a substantive proportion of SER park units (38%) indicated that all or most their water access facilities (e.g., docks, boat ramps) were in fair/poor condition. These alternative transportation systems (i.e., transit and water access modes) are important to the TVE, and the future condition of these facilities is likely to impact overall use of these facilities (visitors may be less likely to use poorly maintained facilities). Additionally, visitors' experiences on these alternative transportation facilities (i.e., transit and water access modes) will likely be impacted by the condition of these facilities. For example, visitors' park experience will be impacted by their ability to appropriately access shuttle stops and water transit facilities. Within the SER Transportation Survey, park staff were asked how they would expect their unit's visitation trend over the next 10 years would impact transportation needs within their unit. Every park unit identified that visitation trends would increase the need for at least one of the listed transportation components, with most park units (89%) identifying that visitation trends over the next 10 years would increase the need for operations and maintenance resources for maintaining many of the transportation facilities included in Figure 5-9.

[28] American Association of State Highway and Transportation Officials, *Commuting in America 2013: The National Report on Commuting Patterns and Trends*, Washington, DC, 2013.

Figure 5-9. Perceived condition of transportation components within SER park units



Source: NPS SER LRTP Transportation Survey Results. RSG, February, 2015.

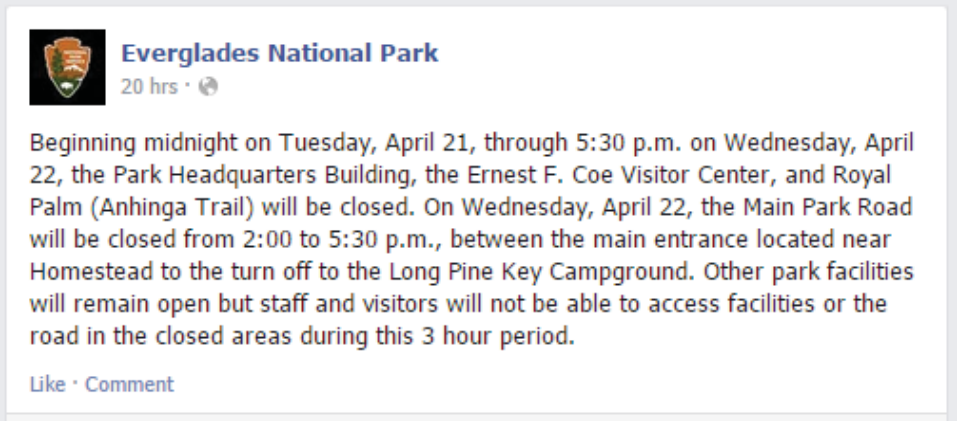
Intelligent Transportation Systems

As mentioned within the Baseline Conditions Report, the use of intelligent transportation systems (ITS) in the NPS likely will impact visitor experiences within the SER, particularly as it relates to the TVE. Specifically, ITS can be used to relay information about traffic congestion and parking availability, which may alter visitors trip planning and travel patterns. Use of ITS has increased within NPS units with more units within the SER using ITS than in 2000, and more units within the SER adopting ITS since 2011. Intelligent transportation systems within NPS units are likely to be important to relay this information to visitors in the future, particularly to help moderate visitors' expectations and improve their visitor experience within SER park units. Additionally, ITS can be used to manage park use and correspondingly impact the transportation conditions within SER park units. The technologies used to relay transportation-related information is changing and will continue to develop with newer, more advanced technologies in the future. Park units within the SER will need to keep up with these new ITS technologies to positively impact visitors' experience.

One technology that has been increasing in use within national parks is the use of social media, including the use of smartphone applications. An *Interim Directors Order for Social Media* was released in 2011, which denotes the importance of the use of social media by the NPS for informing visitors about park resources and conditions (including transportation-related conditions). In particular, the Directors Order states that "the effective use of social media in support of the NPS's mission is an important skill set in the 21st century." As of 2012, the NPS maintained over 240 Facebook pages, 210 Twitter feeds, 70 YouTube channels, and had posted over 36,000 photos on Flickr. While the use of social media has been used to engage visitors and provide interpretive information, social media can also be used to impact the TVE by providing transportation-related information during all phases of the TVE. These impacts could be to alter visitors' expectations about the TVE, or to alter travel patterns to off-peak times or areas.

As of 2011, only 10 park units within the SER were using some form of social media to share traveler information, and all were using Twitter, although this number has definitely increased since 2011. While social media within national parks is increasing (up from almost no SER park units using social media in 2000), its use for disseminating transportation-related information has been limited, and this is an area where visitors are likely to expect information about transportation and park conditions that will be expected directly impact their visitor experience. For example, Everglades National Park used their Facebook page feed to inform visitors about area and road closures during an Earth Day celebration in April 2015 (Figure 5-10). This information helps visitors know ahead of time about the transportation condition of the park, and helps alter their travel times to other times of day or areas of the park. In addition, the use of social media can be used to further connect with potential SER park visitors, including younger generations of park visitors (as stated as a key goal within *A Call to Action*).

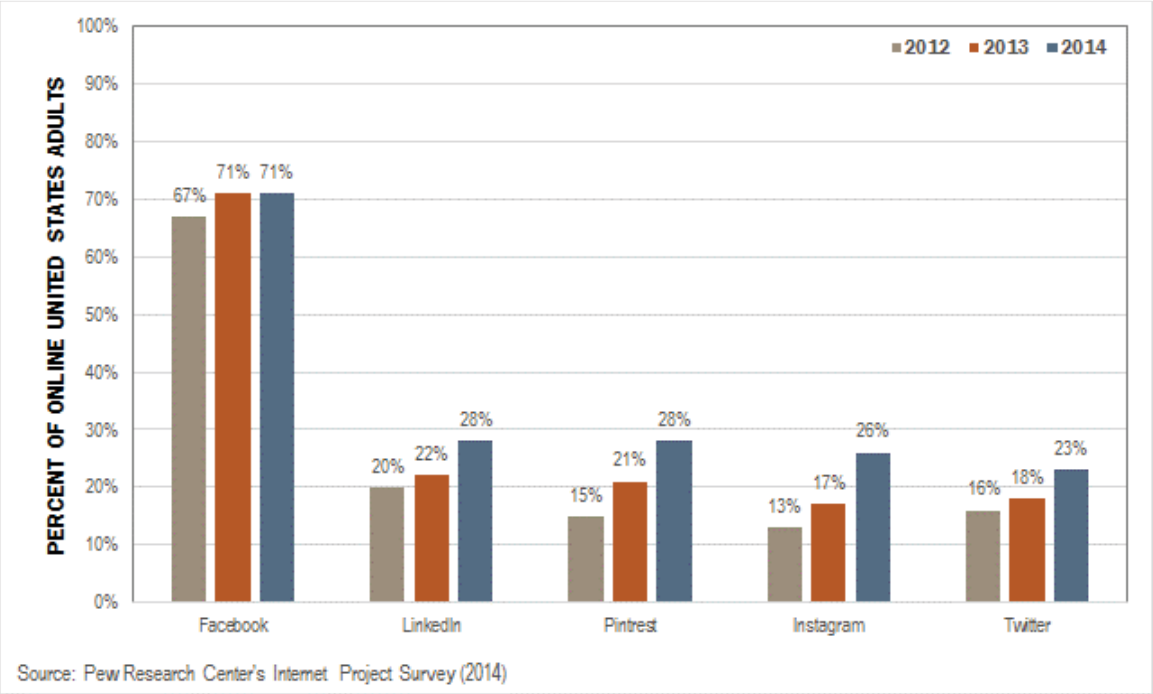
Figure 5-10: Everglades National Park use of Facebook to share road closure information



Source: Everglades National Park, 2015.

According to the Pew Research Center, usage of social media among US residents has been increasing, with close to three-quarters (71%) of online adults (58% of all adults) using Facebook (up from only 8% in 2005), and one-quarter using LinkedIn, Pinterest, Instagram, and Twitter (Figure 5-11). This information further indicates that park units within the SER should be using these social media outlets to reach visitors and potential visitors, and could use these outlets to share information related to the TVE. Visitors to SER park units are also expected to use these same social media outlets to share their experiences and recollect their experience with friends and family.

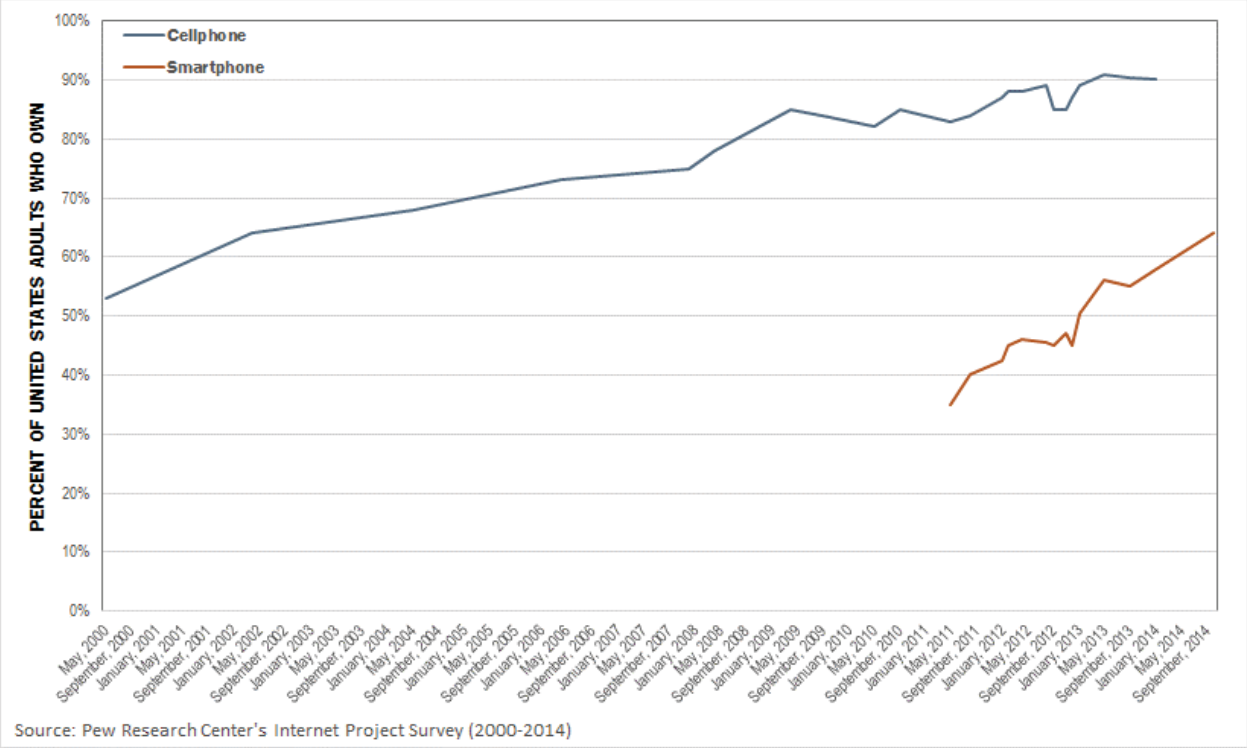
Figure 5-11: Social media usage among online United States adults (2014)



Source: Pew Research Center's Internet Project Survey (2014)

Additionally, the proliferation of smartphone ownership among US adults has also seen a sharp increase. Specifically, while over 90% of US adults own a cellphone, over 60% now own a smartphone as of the end of 2014, compared to less than 40% in the beginning of 2011 (Figure 5-12). The report speculates that this figure is expected to increase even higher, with even a higher proportion of the adult population within the US owning a smartphone. This suggests that visitors to SER park units will likely continue to remain connected during their park visit (if coverage allows), including while they are traveling to and from SER park units. Park units within the SER could provide transportation-related information and interpretation to visitors through multiple venues to impact the many phases and factors of the TVE, including through smartphone apps. A number of park units within the NPS have used smartphone apps to provide travel information, and interpretation while visitors are onsite in the park.

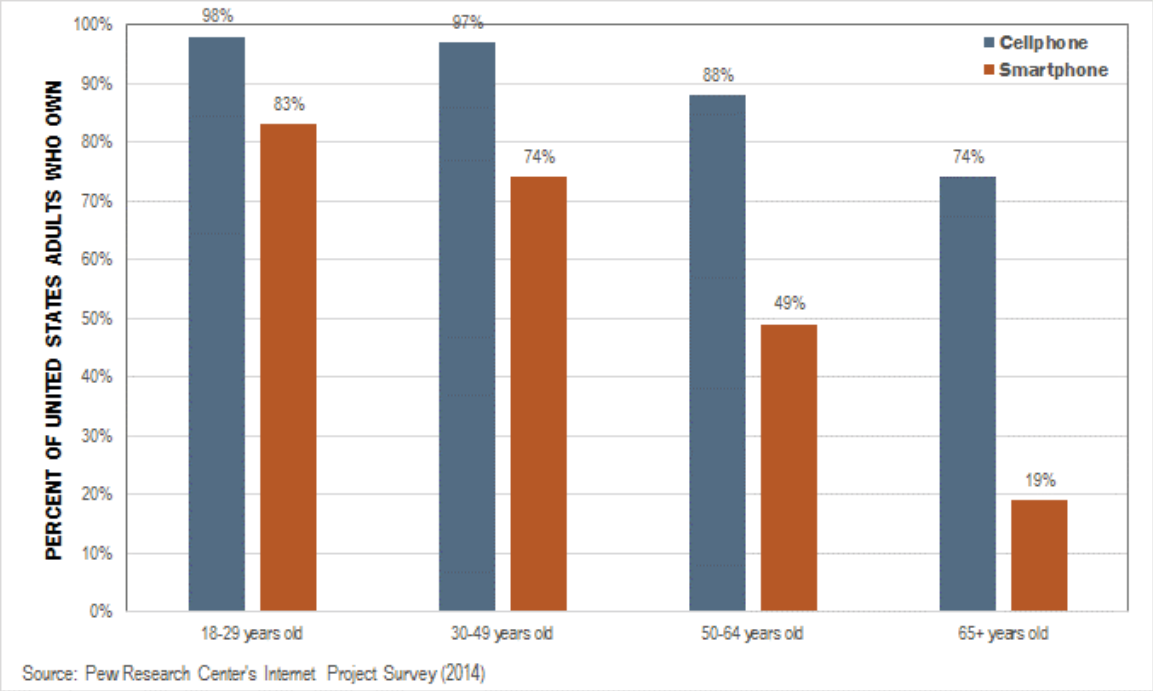
Figure 5-12: Cellphone and smartphone ownership among United States adults (2000-2014)



Source: Pew Research Center's Internet Project Survey (2000-2014)

While use of social media has been increasing, and is likely to continue to increase, it should be noted that differences exist in social media use and smartphone ownership among age groups. Specifically, while over half (58%) of all US adults use Facebook, only one-third (31%) of adults 65 years of age or older use Facebook. The percentage of older adults who use Facebook has been increasing, although still remains low compared to younger age groups. Additionally, as mentioned previously, smartphone ownership has been increasing from 2011 through 2014 within the US, although it still remains relatively low for adults 65 years old and older at 19 percent (Figure 5-13). These differences in social media and smartphone ownership among age groups should be considered by SER park units. As the age of visitors to SER park units gets older (as described previously), identifying how best to provide information and impact the TVE among these older populations will need to considered and planned for in the future. The Needs Assessment for the SER will include information about how best to positively impact the TVE of these populations.

Figure 5-13: Cellphone and smartphone ownership among United States adult age groups (2014)



Within the US Department of Transportation's *ITS Strategic Plan for 2015-2019*, USDOT identifies two main priorities for advancing ITS technology into the future. These priorities include *Realizing Connected Vehicles (CV)* and *Advancing Automation*.[29] Both of these priorities focus research and funding on the latest innovations in ITS technologies. Connected vehicles allow for safer roadways (fewer crashes including fatal crashes), greater mobility and reduced congestion, and more environmentally friendly travel (resulting in fewer greenhouse gas emissions). Connected vehicle technology is already being incorporated into vehicles, and is projected to be included in over a quarter a billion vehicles on the roadway, with over 50 billion connected devices worldwide, by 2025.[30] The goals of the *Advancing Automation* priority of the *ITS Strategic Plan* include to provide more efficient and effective transportation systems. This priority ties very closely with the *Realizing Connected Vehicles* priority, and advances in technology in one realm will impact the other. These advances in technology, along with others not mentioned here, will need to be followed and kept up with by SER park units. Maximizing the use of such technologies will lead to safer travel within SER park units, along with higher quality visitor experiences.

[29] US Department of Transportation, *ITS Strategic Plan: 2015-2019*, 2015.
[30] ABI Research, "Cellular M2M Connections Will Show Steady Growth to Top 297 Million in 2015," 2010.

6 Resource Protection

Natural and cultural resource stewardship is fundamental to the NPS mission, which calls for preserving unimpaired the natural and cultural resources and values of the national park system. The NPS will continue to work to identify and implement context-sensitive solutions in its transportation projects to minimize the impact of the transportation system on NPS natural, cultural, and historical assets.

A Call to Action Guidance

In support of the goal to preserve special places, *A Call to Action* includes several action items dedicated to resource protection:

- Enjoy the View (Action #38) expresses a commitment to "protect clean, clear air and spectacular scenery now and for future generations." Specifically, the NPS will work with other federal agencies, tribes, and local partners to create Viewshed Cooperatives to assess air pollutants and preserve natural and historical viewsheds.
- Starry, Starry Night (Action #27) commits to fighting light pollution and protecting natural darkness as a precious resource in and around NPS units.
- What's Old is New (Action #25) commits to modernizing historic preservation technologies and promoting sustainability in the preservation of historic assets.
- Crystal Clear (Action #37) commits to protecting watershed health by improving water quality, protecting aquatic habitat, and ensuring adequate flows for public enjoyment.

Innovative and Sustainable Transportation Evaluation Process and Guidance (INSTEP)

A Call to Action supports informed decision making with its goal to preserve America's special places by cultivating excellence in science and scholarship as a foundation for park planning, policy, decision making, and education. The National Park Service continues to face challenges with quantifying transportation-related impacts on NPS resources, but it is making significant strides forward in doing so. One important means of doing so is the Innovative and Sustainable Transportation Evaluation Process and Guidance (INSTEP) process currently under development. INSTEP is intended to be a green infrastructure rating system that is applicable to projects within the National Park Service.

The INSTEP process will involve scoring new transportation projects at various phases of development and implementation to rate the project's ability to avoid, minimize, or mitigate negative environmental impacts caused by facilities and users. The score will help inform decision making on sustainable transportation facilities and operations. In addition, through the collection of data and scores, the INSTEP process will allow for a long-term performance-based database with project-level data that can be used to inform cost/benefit discussions, provide a source of best practices and sustainability guidance, and improve the NPS's capacity to monitor resource conditions over time.[31]

[31] NPS, National LRTP, 2014 [Draft].

INSTEP uses 31 criteria over seven categories to evaluate potential projects through planning, design, construction, and operations and maintenance:

- Project Planning Context
- Natural Resources
- Cultural Resources
- Visitor Experiences
- Energy and Climate Change
- Materials and Construction
- Innovation and Custom Strategies

The purpose of using such criteria is to ensure that innovative and sustainable practices are being incorporated into projects at every step in the planning and design process. Table 6-1 emphasizes how the goals and priorities of INSTEP align with the goals and objectives of the Southeast Region LRTP.

Table 6-1: Alignment of SER LRTP Goals and INSTEP Goals

Southeast Region LRTP Goals	INSTEP Goals
Sustainable Operations – Sustainably manage transportation assets and services	• Improve operational efficiency and reliability. • Provide educational opportunities on sustainability to employees. • Incorporate methods and materials that ensure system longevity.
Asset Management – Allocate transportation funding to ensure the long term viability of transportation systems	• Optimize allocation of financial resources to meet mission critical objectives. • Reduce life-cycle costs and resource consumption. • Encourage new and innovative approaches to sustainable design, and how we operate and maintain our facilities.
Safety – Provide a safe transportation system for all users	• Protect public and employee health, safety, and welfare.
Visitor Experience – Maintain and enhance the quality of the park visitor experience	• Provide for visitor enjoyment and access. • Provide equitable benefits and access to employees and the public to the maximum extent possible. • Provide educational opportunities on sustainability to the public.
Resource Protection – Protect and preserve natural and cultural resources	• Protect, enhance, and restore cultural and natural resources. • Conserve natural resources to the maximum extent possible.

Development of such quantitative evaluation processes are critical to the ability of the NPS to maintain and sustain a transportation system that is sensitive and responsive to resource conditions and that seeks to minimize resource impacts. In its report *Revisiting Leopold: Resource Stewardship in the National Parks*, the Science Committee of the National Park Service Advisory Board highlighted the need for context-sensitive, science-informed decision making at all levels of planning in the NPS:

> *Because ecological and cultural systems are complex, continuously changing and not fully understood, NPS managers and decision makers will need to embrace more fully the precautionary principle as an operating guide. Its standard is conservative in allowing actions and activities that may heighten impairment of park resources and consistent in avoiding actions and activities that may irreversibly impact park resources and systems. The precautionary principle requires that stewardship decisions reflect science-informed prudence and restraint. This principle should be integrated into NPS decision making at all levels.*[32]

[32] NPS, Revisiting Leopold: Resource Stewardship in the National Parks – A Report of the National Park System Advisory Board Science Committee, 2012.

Visitor Experience, Transportation, and Resource Protection

The transportation system use in visitor management will continue as a tool for resource protection. System elements such as transit services are used to meter visitation at high-visitation sites so that the resources are not physically overwhelmed. System elements such as trails can also be used for resource protection. Trail access can sometimes replace automobile access and thereby mitigate adverse effects of automobiles on natural and cultural resources.

The transportation system role in interpretation and education will also continue. Transit services provide opportunities for interpretation and education about resource protection. Even a construction project can provide educational opportunities related to resource protection. How a project is designed, the methods of construction, and the materials used are all topics that can be used to highlight the consideration of resource protection in the project.

Roadways and Resource Protection

Tools such as INSTEP will be used to achieve roadway designs that minimize impacts on resources. Roadways create issues with stormwater runoff, habitat fragmentation, and wildlife behavior. The impacts to water habitat can be particularly dramatic. Aquatic organism passage will continue to be incorporated into the design of culverts in roadway projects, but a focus on improving existing culverts is needed. A complete inventory and assessment of the design and condition of existing culverts will be a priority due to the benefits provided not only to water resources, but also the benefits to asset management by minimizing the potential for damage by blow outs during storm events.

Wildlife-vehicle collisions will be an important element of future transportation planning. Better data are needed on the specific locations where these collisions occur so that they can be targeted for improvements that will protect both drivers and wildlife.

** UPDATED DATA AS OF SEPTEMBER 2016**

Transportation Resource Stewardship Planning Tool

The Transportation Resource Stewardship Planning Tool (TRSPT), formerly known as the Resource Stewardship Guidance Tool, was developed through the national long range transportation planning process. The purpose of the tool is to use site-specific resource data to guide transportation decision making. The tool compiles data from internal and external resources, accounting for activity on both the local and regional level. The following topics can be evaluated through the TRSPT:

- Context: Protect and enhance natural and cultural resources through the environmentally responsible context-sensitive design and integration of transportation systems.
- Natural: Maintain a high standard of natural resources by identifying, interpreting, protecting, and mitigating impacts.
- Cultural: Maintain a high standard of cultural resource stewardship by finding, interpreting, protecting, and mitigating impacts to all cultural resources.
- Natural Setting: Protect the natural setting of cultural and natural resources.
- Regional Stewardship: Support local and regional efforts to preserve natural and cultural resources.
- Climate Change and Sustainability: Plan for the impacts of climate change and transportation actions to cultural and natural resources through science, adaptation, mitigation, and communication.
- Community: Connect people to parks and help communities protect what is special to them, highlight their history, and retain or rebuild their economic and environmental sustainability.
- Leadership: Provide leadership in protecting and enhancing natural and cultural resources in transportation planning for other agencies.

What makes this tool particularly unique and valuable to the Southeast Region is that an early version of the tool was built using data sources for SER states and park units. In the current version of the tool, the strategies and outputs could be viewed as "calibrated" to the Southeast Region.

Wildlife-Vehicle Collisions

Wildlife-vehicle collisions are the most common type of vehicle crash among SER park units, but the magnitude of impact on wildlife is not fully measured.[33] The wildlife species is not always recorded in crash records and many wildlife-vehicle collisions with no damage to the vehicle are not reported.

Achieving fewer interactions between wildlife and vehicles protects the wildlife, improves visitor safety, and decreases park operation costs in responding to crashes. A key objective of the Fixing America's Surface Transportation (FAST) Act is to improve safety, and the legislation includes funding eligibility for projects that reduce vehicle-caused wildlife mortality and restore habitat connectivity. Often roadways that most affect wildlife are not NPS owned and working with partners on wildlife crossings and fencing is needed. This was done at Big Cypress National Preserve on a non-NPS roadway traversing the park.

Development Pressures and Impacts

Urbanization and population growth around park units affect natural and cultural resources through development pressures and changes in the amount and type of visitation.

Development pressures have broad impacts that include increased numbers of commuters using park roads, compromised viewsheds, night sky degradation, and barriers to potential future park expansion. It is important for parks to actively maintain long-term partnerships with regional and local planning agencies so that park issues are understood by all and adverse development impacts can be mitigated when opportunities arise.

Development adjacent to SER parks i has also led to more visitors using park units for active recreational opportunities not directly linked to park purpose. Resource impacts from social trails are common at many parks and there can be resource impacts even on designated trails. At Kennesaw Mountain National Battlefield Park, a combination of persistently dry conditions and increased trail use has led to trail surfaces being washed away more easily during storm events and resulted in cultural artifacts being exposed.

Parks are addressing active recreational use directly through management strategies and are using the increased visitation as a means of increasing people's appreciation and support of the park. At Guilford Courthouse National Military Park separate travelways have been delineated for pedestrians, bicyclists, and cars on the auto tour road. Chickamauga and Chattanooga National Military Park host monthly "historical bike tours" through the Chickamauga Battlefield during which rangers talk about the history of the battlefield. Loaner bicycles are available through support from the park's Friends Group and a local bicycle club.

[33] National Park Service, Servicewide Traffic Accident Reporting System (STARS). Accessed April 2015.

7 Next Steps

This Future Conditions Assessment report is the second in a series of interim deliverables that will inform the development of the SER LRTP. Subsequent interim deliverables will include:

- The **Needs Assessment**, which will assess the Future Conditions against the Baseline Conditions to identify the anticipated gap in available resources—or needs—for the region's transportation system.
- A **Strategies Analysis**, which will be conducted to examine a range of investment strategies for the SER transportation system. The Funding and Financial Analysis Technical Report will document this process, along with the identified preferred investment strategy for the SER LRTP.

The findings of this Future Conditions Assessment, taken with the findings of the previously completed Baseline Conditions Assessment, are intended to establish a framework from which to develop an assessment of need for the SER.