National Park Service
U.S. Department of the Interior

NPS Strategic Investment and Asset Inventory Report FY 2022–2026

Contents

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ATTACHMENT A – NPS INVESTMENT STRATEGY FY 2022–2026

The purpose of this document is to respond to the Federal Highway Administration's (FHWA) May 19, 2022, request to provide an investment strategy (or as codified in law, the National Park Service's [NPS] application) to support legislative requirements per performance management under Title 23 USC 203(b)(2) and planning under 23 USC section 201(c). The National Park Service is authorized from the Highway Trust Fund through the Infrastructure Investment and Jobs Act (IIJA) over $1.7 billion to improve NPS transportation assets under the Federal Lands Transportation Program (FLTP) between 2022 and 2026.

As outlined below, the National Park Service's investment strategy supports performance management and aligns resource and asset management and planning goals to meet the Federal Highway Administration's stewardship expectations. Meanwhile, in the FHWA review of this package, the National Park Service requests collaborative discussion to ensure that the National Park Service continues to meet expectations for both performance management and planning.

The following paragraphs provide the NPS response to topics requiring a reply, as identified in the Federal Highway Administration's letter and outline titled *Federal Lands Transportation Program Instructions for Fiscal Years 2022–2026*, dated May 19, 2022.

TOPIC 1: PURPOSE

Federal Highway Administration background, laws, information, and explanations. **No NPS response required.**

TOPIC 2: INVESTMENT STRATEGY

Federal Highway Administration background, laws, information, and explanations. **No NPS response required.**

TOPIC 3: INVESTMENT STRATEGY COMPOSITION, DESCRIPTIONS OF FEDERAL LANDS MANAGEMENT AGENCY'S APPROACHES, AND/OR METHODOLOGIES

a. Describe your agency's decision-making strategy and method for including eligible assets into your agency's official inventory.

NPS Response: All NPS transportation assets open to the public are part of the NPS official inventory. As of the end of FY 2022, first quarter, NPS transportation assets, including paved roads, unpaved roads, parking, bridges, tunnels, transit, trails, and technology, have a current replacement value of about $39.9 billion and is spread across the United States and territories in a variety of urban and rural areas, as well as extreme climatic zones. The National Park Service manages 423 individual units, covering more than 85 million acres in all 50 states, the District of Columbia, and US territories.

The NPS transportation assets, as presented in the FY 2022 NPS Greenbook Budget, include:

Paved roads (miles)	5,690
Paved parking lots	6,100
Unpaved roads (miles)	7,000
Bridges	1,451
Tunnels	63
Transit systems (buses, ferry, railroads, and support assets in 60 parks)	96

As documented in the *NPS National Long Range Transportation Plan, July 2017* (NLRTP), and more fully articulated later, the NPS transportation portfolio also includes trails, trail bridges and tunnels, waterways, docks, marinas and waterfront assets, and railroad assets.

All transportation assets are important to the safety, mobility, enjoyment, and education of the public, in balance with meeting our mission to protection the resources in each unit as codified by Congress. Of the National Park Service's 297 million visitors in FY 2021, the vast majority arrive to and travel through parks on the NPS road system, contributing $20.5 billion in spending and supporting 323 thousand jobs in 2021 (*2021 NPS Visitor Spending Effects Report*).

The National Park Service has cascading requirements from the Office of Management and Budget that aligned with *Department of Interior Construction Capital Planning and Investment Control for Construction and Leased Spaces Guide*, August 2020, and Executive Order 13327, "Federal Real Property Asset Management" (February 4, 2004). One key guidance is the "NPS Facility Investment Strategy, October 2021," which includes the NPS four investment pillars: Invest in Our Future, Invest in Our Visitors, Invest in Our Workplace, and Invest in Our Heritage.

The National Park Service has an Investment Review Board (IRB) committee comprising senior executive service managers who provide a servicewide policy perspective for and oversight of major asset investments by the National Park Service, including major Federal Lands Transportation Program (FLTP)-funded projects. The IRB committee includes external advisors, such as a FHWA senior manager, currently held by the director of the Eastern Federal Lands Highway Division Office. The committee reviews major projects at significant milestones such as at project's concept stage and approval of project construction.

The National Park Service has recently implemented a new FLTP funding policy to capitalize on the performance successes of the past for roads and bridges and pivot to a heightened focus on multimodal transportation needs. The new direction recognizes the need to encompass visitor mobility in all modes and a focus on visitor experience, resource protection, equity, safety, climate resiliency, and innovation. Importantly, the secretary of the interior and the secretary of transportation signed a memorandum of understanding on November 17, 2021, pledging to work together to improve transportation in and around

national system units in deploying innovative technologies, leveraging technical skills, developing information exchanges and facilitation of partnerships. These adjustments will also be updated in the revision of the 2017 NPS national long range transportation plan (renamed the NPS National Transportation Strategy), which is due to be completed in the third quarter of 2023.

b) Describe your agency's strategy for incorporating data into the integrated planning effort in cooperation with the Federal Lands Highway, state, and metropolitan planning organizations during the effective period of the Infrastructure Investment and Jobs Act.

NPS Response: The Federal Highway Administration and the National Park Service will continue to work closely at the unit level to coordinate local needs with state and local transportation officials to develop projects of mutual interest and importance to improve public access and mobility in and around national parks. Specifics are documented in a jointly signed letter (attachment D-1) between the National Park Service and the Federal Highway Administration on integrated planning, dated December 8, 2021. This letter was a product of the jointly charted Leadership Collaboration Committee, comprising senior executive service members and senior managers from both agencies to cooperate in such joint matters as integrated planning.

Over the years, the National Park Service has completed projects beyond its financial capabilities, such as the Arlington Memorial Bridge, Washington, DC; Foothills Parkway "missing link," Tennessee; Zion transit bus replacement, Utah; and Tamiami Trail, Florida. These projects of regional significance to the local and state departments of transportation, elected officials, and local public users successfully collaborated with stakeholders for partnership funding, including state funds and US Department of Transportation (USDOT) grants. With the multiple grant opportunities provided for in the Infrastructure Investment and Jobs Act, the National Park Service developed the NPS Bipartisan Infrastructure Law Transportation Grants Strategic Plan and draft program of candidate projects (attachment D-2) to work closely with partners to pursue USDOT grants and state contributions that are of mutual benefit to the National Park Service and state and metropolitan planning organizations.

The secretary of transportation and states are required to support the successful integration of federal land management transportation needs through the planning process in Title 23, sections 134 and 135. Federal Lands Highway Offices share and coordinate the NPS multiyear program of projects, as well as the *NPS National Long Range Transportation Plan, July 2017*, with each of the states, metropolitan planning organizations, and local jurisdictions.

c) Describe how asset management data informs decision-making in your agency's development of a multiyear programming of projects that comprises your agency's four-year Transportation Improvement Program.

NPS Response: Both asset management and NPS resource data provide the foundational planning information to identify, document, and scope the problem and analyze and weigh solutions to develop options and recommendations. The same data support scoping projects, developing project-level design and generating plans, surveys, and engineering specifications.

The asset management data is used in a formula for the distribution of FLTP funds to the field and supports performance-based modeling, tracking, monitoring to develop projects that, when cumulatively gathered, support meeting performance goal targets.

To prioritize annual funding allocations, the National Park Service implements a performance-based investment strategy, using analytical tools and modeling from the management systems to maximize investment decisions. Management system information on pavement, bridge, congestion, and safety information influence project prioritization. Federal Lands Transportation Program dollars are distributed by formula to regions based on transportation asset inventory, condition performance metrics, visitation/traffic, and accident fatalities to focus FLTP funds towards reaching performance metrics, such as state of good repair, reduction of bridge deficiencies, safety improvement, and address high-use federal recreational sites or federal economic generators.

All projects are submitted through the NPS Project Management Information System (PMIS), including the FLTP funds for project identification, prioritization, tracking, monitoring, funding, and reporting. The NPS PMIS project justification method considers and prioritizes projects.

d) Life cycle planning is an important part of asset management. See the appendix C table for the requested information.

NPS Response: In reference to appendix C table, the National Park Service, in cooperation with FHWA engineers, has deployed robust life cycle performance-based strategies for paved roads and bridges. Paved roads and bridges, as well as roadway safety, have modeling capabilities to help use the data and analysis outputs to influence decisions. The National Park Service is deploying the transit systems vehicle health index (VHI) to collect and monitor data and set priorities. The National Park Service, with FHWA staff, is using geographic information systems to organize and spatially display the output for interpretation by both experts and decision makers. Management system data is used in the allocation of funds to the field, selection of projects and the development of plans, and survey and engineering specification for construction award. In addition, data from the management systems is used to influence budget decisions to stretch limited dollars, identify the best use of available funding, and inform strategic investment policy. The FLTP management systems support leveraging FLTP dollars for contribution by many other funding streams.

1. Describe the federal lands management agency's current practice of life cycle planning, and/or how the agency plans to incorporate it over the next five years. Please include:

A. Cost to maintain or replace all transportation assets within your agency's official inventory

NPS Response: The national long range transportation plan of July 2017 (pages 54 and 59 figures 4–11) identified that needs for the highest-priority transportation assets (paved roads and bridges and parking lots in functional classes 1, 7 and subset of 2, transit and critical other transportation assets) alone account for $676 million per year of the total $1.5 billion annual need for transportation assets. For clarification, this total includes annual transportation needs (i.e., planning, capital investment, facility operation, preventive

maintenance, recurring maintenance, component renewal, and administrative). The national transportation strategy under development will provide an update of need.

As articulated in the FY 2023 greenbook, the replacement cost for all transportation assets is approximately $39.9 billion. Roads, parking areas, and bridges represent some 80% of the total portfolio of transportation assets. The other assets—trails, trail bridges and tunnels, transit, waterways, docks, marinas, and railroad assets—make up the other approximate 20%. For more information see the national long range transportation plan, page 25, table 3–1. The National Park Service is currently updating the long-range transportation plan, which will provide new numbers for future annual needs, as well as replacement costs.

B. Cost to operate transit systems funded through the Federal Lands Transportation Program (as applicable)

NPS Response: Currently, no FLTP funds are used to operate NPS transit systems. The National Park Service has been successful in employing business models under the NPS Transportation Fee Program to fund operations. Meanwhile, the National Park Service is cautiously exploring the possibility of using FLTP dollars in the future to supplement shortfalls and to support project start-ups. Those actions require approval from the senior executive in Washington. Additional details on transit operational costs and NPS business models can be provided separately (as requested).

C. Describe how the federal land management agency plans to implement and/or enhance the specific management systems below under the Infrastructure Investment and Jobs Act, and explain how information from these systems will be used to support programming decision making:

i. Pavement management system information

NPS Response: The National Park Service manages the Road Inventory Program (RIP) in collaboration with the FHWA Eastern Federal Lands Highway Division (EFLHD) to maintain a comprehensive inventory and condition assessment of all paved roads and paved parking areas in the national park system. The RIP information and completed construction information are delivered to the pavement management system, which is maintained and operated in collaboration between the National Park Service and the Eastern Federal Lands Highway Division.

The pavement management system is an analytical process that can model current and future pavement conditions, which gives the National Park Service a budget and condition performance-based pavement resurfacing, repair, and rehabilitation program. The pavement management system is used to produce budget recommendations for specific network pavement conditions. The pavement management system provides life-cycle-based information, which is used for project development and project prioritization.

The National Park Service uses Pavement Condition Rating (PCR) to identify the condition of its paved assets. This metric can be scaled from small to large, applying to an individual asset or to the entire paved network. The National Park Service, with technical assistance from the Eastern Federal Lands Highway Division, has determined that a network PCR of 85

is the best condition target that would allow the National Park Service to use pavement asset management best practices to manage its network.

By using performance management tools like the pavement management system, the National Park Service has identified a higher-priority subset of its paved road and paved parking network. This paved road and paved parking area subnetwork contains all functional class (FC) 1 and FC7 routes, as well as a specific assortment of FC2 routes. These routes are traditionally prioritized above other paved NPS assets. Each park unit with paved assets contains at least one of these higher-priority assets.

In the future, the National Park Service and the Eastern Federal Lands Highway Division will continue to explore improved business practices to calculate the cost of ownership of assets from cradle to grave. The National Park Service and the Eastern Federal Lands Highway Division have collaborated to better define pavement project unit costs by identifying cost factors specific to geographic locations. The National Park Service and the Eastern Federal Lands Highway Division will continue to improve paved road project costs by investigating a systematic approach to paved road project costs and investigating how different components, such as pavement, drainage, and retaining walls, contribute to the overall cost.

ii. Bridge management system information

NPS Response: The National Park Service manages the Bridge Inspection Program in collaboration with Eastern Federal Lands Highway Division to maintain a comprehensive inventory and safety assessment database of all major transportation bridges and tunnels in the national park system. The inspection program is compliant with National Bridge Inspection Standards.

The primary purpose of the bridge inspection is to ensure individual structure safety. The inspection also gathers data about bridge condition that are used in bridge project development, prioritization, and programming. The two primary outputs are Priority of Improvement and Bridge Health Index.

The Priority of Improvement is a rating assigned to the structure by the senior engineer on that structure's inspection team. The rating is safety focused and identifies the urgency of deficiencies. Most NPS bridges have a low urgency to address deficiencies. Of those structures with higher deficiencies, some will require extensive rehabilitation to properly address deficiencies, and some will require modest effort, such as reattaching loosened guardrail or replacing popped-up bridge deck joint armor.

The Bridge Health Index is a metric that identifies bridge conditions and is based upon identified inspection deficiencies. This metric can be scaled from small to large, applying to an individual asset or to the entire paved bridge network. The National Park Service, with technical assistance from the Eastern Federal Lands Highway Division, has determined that a bridge network Bridge Health Index of 93 is the best condition target that would allow the National Park Service to use bridge asset management best practices to manage its network.

The Bridge Management System is maintained and operated in collaboration between the National Park Service and the Eastern Federal Lands Highway Division. The Bridge Management System is an analytical process that can model current and future bridge

conditions that gives the National Park Service a budget and performance-based bridge information. The Eastern Federal Lands Highway Division provides a repair project scope and estimate of the repair. Repairs can be rehabilitations or replacements. The division also provides the current condition of the bridge (good, fair, poor). In addition, they help estimate the remaining life of a bridge before it must be weight posted, replaced, or removed from service.

The Bridge Management System is used to produce budget recommendations for specific bridge or bridge network. The Bridge Management System provides life-cycle-based information, which is used for project development and project prioritization.

Routinely, bridge reports are generated for the NPS park, regional staff, and Washington Office officials. The bridge management system is used to help establish realistic bridge performance metrics and inform investment decisions.

Currently, the National Park Service and the Eastern Federal Lands Highway Division are incorporating the trails bridges and tunnels into the program. In the future, the National Park Service and the Eastern Federal Lands Highway Division will continue to explore improved business practice to calculate the cost of ownership of assets from cradle to grave.

iii. Congestion management system information, where applicable

NPS Response: Traffic congestion and visitor use patterns are evolving at national parks. Once traffic congestion is persistent, a park enters a new management era, requiring a new, holistic approach. A balance of operational changes, adjusting capacity (or using existing capacity more effectively), and adding capital investments/new services help parks invest wisely and minimize unintended consequences. The 2020 revised congestion management toolkit offers parks a variety of choices to improve congestion management, featuring over 40 tools across nine categories. Currently, congestion assessments have been completed at 21 parks servicewide. Currently, the National Park Service's focus is on park-by-park needs. In the future, the program will be broadened to take a holistic, national approach to managing transportation congestion.

iv. Safety management system information (if applicable), including fatality and serious injuries

NPS Response: Gathering quality transportation crash data is critical to a safety management system. Presently, the Department of the Interior's Incident Management, Analysis and Reporting System (IMARS) is the system of record for all NPS law enforcement incident reports, including crash reports recorded in the Model Minimum Uniform Crash Criteria (MMUCC) compliant crash module. The NPS Park Facility Management Division (PFMD) Transportation Branch manages a crash database called the Crash Data System that stores only non-personally identifiable information from crash reports for analysis and transportation performance management purposes for the Transportation Safety Management System (TSMS). Crash Data System maintenance efforts include crash reports from 1990 to present day, migrating all data to a consistent schema matching the IMARS MMUCC compliant crash module and ensuring that location information is available in the appropriate format for analysis. Discussions continue around updating crash investigation and crash reporting training for NPS law enforcement staff, in support of crash data quality

improvement. Related performance indicators can be established as the National Park Service develops complete and quality safety data.

In further developing the TSMS processes that lead to actionable safety decision-making information in support of project programming, the National Park Service is building a multidisciplinary "4E" (emergency response, education, engineering, law enforcement) transportation safety program approach. This includes providing data-driven annual regional transportation safety briefings and partnering with the Federal Highway Administration to implement the Safety Analyst, which is the FHWA and NPS tool used to analyze crashes and safety mitigation strategies.

Subsequent safety-related technical assistance at the location, project, corridor, or network level (e.g., road safety audits, road safety assessments, safety implementation plans, park road safety plans) is programmed by NPS regions in support of project programming decisions, in coordination with the NPS PFMD Transportation Branch, as appropriate. Related performance indicators can be established around the delivery of regional transportation safety briefings as an ongoing process central to the Transportation Safety Management System.

In support of the Complete Streets concepts, related to equitable streets and networks that prioritize safety, comfort, and connectivity to destinations for all people who use the street network, the National Park Service is including actionable vulnerable road user (VRU)-focused safety data elements into targeted annual regional transportation safety briefings such as posted speeds where VRU injuries and fatalities are most common, percentages of injury and fatal VRU crashes occurring at crosswalk locations, and percentages of injury and fatal VRU crashes occurring along the road.

v. Other management systems

NPS Response: The National Park Service and the Central Federal Lands Highway Division (CFLHD) jointly cooperate to manage the NPS Traffic Count Program. Currently, the Central Federal Lands Highway Division, in cooperation with the National Park Service, manages some 122 permanent count stations in 33 parks with high traffic volumes and/or notable traffic safety concerns. The Traffic Data Program includes installation, maintenance, and continuous data gathering using the permanent traffic monitoring equipment. The information is used by transportation planners, programming, design, and safety engineers. The traffic counts and traffic growth rates are used by transportation planners to develop long-range and near-term park-level traffic plans. The traffic counts influence the programming of projects as a factor to distribute the funding to the field via formula. Safety engineers use the traffic data to provide an important industry standard safety metric (crash rate: crashes/traffic volume) for articulating the relative frequency of road crashes. Designers use the traffic data for developing the specific capacity and final blueprint specifications. The biannual park-specific traffic coverage counts are instrumental in park operations, planning studies, and asset management strategies.

e) Identify resource management initiatives that are unique and not cited in the body of this guidance, which the federal lands management agencies intend to fund in fiscal years 2022–

2026 with 23 USC 203 and/or 23 USC 201 funds. Explain how these initiatives affect performance-based planning and programming goals.

NPS Response: In cooperation with the Department of the Interior and participating FLTP agencies, the National Park Service is participating in an initiative to identify both mutual and unique mission critical performance-based planning and programming goals to kick-start data collection and develop performance targets that will lead to reporting accomplishments in meeting specifically NPS mission-related resource management performance goals. Additionally, the subsequent update of the national long range transportation plan will begin to also set the stage for further consideration of critical resource management areas as they relate to transportation facilities.

TOPIC 4: HIGH-USE FEDERAL RECREATIONAL SITES OR FEDERAL ECONOMIC GENERATORS (HUG-EC)

NPS Response: All NPS-managed parks have a high-use recreational value and/or economic generation to the states and communities they reside in. High-use federal recreational sites or federal economic generators vary based on the planning and programming priority identified in the various funding programs. In addition, HUG-EC is one of many performance factors identified in law with no suggested weight given to each factor. As such NLRTP goals and objectives, various asset management and performance approaches, and subsequent multiyear programing all set NPS priority. By using performance management tools like the pavement management system, the National Park Service has identified a higher-priority subset of its paved road and paved parking network. This paved road and paved parking area subnetwork contains all functional class (FC) 1 and FC7 routes, as well as a specific assortment of FC2 routes. These routes are prioritized above other paved assets. Each park unit with paved assets contains at least one of these higher-priority assets. Note that all motor vehicle bridges are higher-priority assets, regardless of the functional class of the route they carry. Additionally, all transit systems continue to be highest-priority assets and services based on the 2017 national long range transportation plan.

TOPIC 5: SECRETARY OF TRANSPORTATION'S PERFORMANCE GOAL AREAS

a) State of Good Repair of Transportation Facilities. The condition performance reporting template is found in attachment C.

NPS Response: The national long range transportation plan provides performance goals. The following paragraphs provide updates. In addition, the National Park Service is in the process of updating the national long range transportation plan, which will include updated performance goals. The National Park Service has provided attachment C following the FHWA outline, May 19, 2022, letter and attached instructions, and appendix B template.

Roads:

NPS Response: See topic 3(d)(1)(c)(i) above and the NPS attachment C using the Federal Highway Administration's, May 19, 2022, letter and attached instructions, and appendix B template.

Bridges:

NPS Response: See topic 3(d)(1)(c)(ii) above and the NPS attachment C using the Federal Highway Administration's, May 19, 2022, letter and attached instructions, and appendix B template.

Parking Lots:

NPS Response: See topic 3(d)(1)(c)(i) above and the NPS attachment C using the Federal Highway Administration's, May 19, 2022, letter and attached instructions, and appendix B template.

Trails:

NPS Response: Transportation trails provide a multimodal connection for visitors to access areas of the park. Examples include trails to or from a bus or rail station. Transportation trails identified in this inventory may serve this function without directly connecting to an NPS transportation system (e.g., a trail provides a connection to a municipal transit station or to a broader regional trail system).

The NPS definition of a transportation trail is as follows:

"Accommodates pedestrians and/or bicycles and connects to a larger transportation system including land and water-based transit and/or regional trail systems or direct connections to a community. A transportation trail provides functional access to a destination via non-motorized modes, AND provides an alternative to motorized transportation, enabling people to switch from motorized to non-motorized modes. Subsistence trails that are important for people living off the land also may be transportation trails, even if they do not meet the above criteria." See the NPS attachment C using the Federal Highway Administration's, May 19, 2022, letter and attached instructions, and appendix B template.

Transit/Alternative Transportation Systems:

NPS Response: The National Park Service maintains a large and diverse inventory of alternative transportation systems (ATSs). An alternative transportation system is defined as a group of real property assets, fleet, and/or vessels that are interrelated through business practices and whose primary function is to provide for the motorized and nonmotorized conveyance of park visitors to and from or within a park without the use of personal transportation. Alternative transportation systems are critical to the NPS mission of resource protection and visitor experience at parks where traffic volume on existing roadways and parking areas are at or over the design capacity to align service with a park's desired conditions and visitor capacity. In many cases, these transport systems are the only means to visit the park or portions of the park.

To date, assets comprising an alternative transportation system have been managed independently without recognition of their critical interconnected role with a park's facility program. As a complex system of real property assets and fleet, alternative transportation systems pose unique challenges to NPS asset management. The Alternative Transportation

System Life-Cycle Asset Management (ATSLAM) initiative has developed a transit asset management approach to effectively manage and recapitalize ATS infrastructure and fleet.

Alternative Transportation Systems Real Property: All NPS-owned, leased, or otherwise managed real property must be entered into the Facility Management Software System (FMSS)—the service's facility management database. This includes real property constructed for or serving as part of an alternative transportation system.

To identify and validate all real property assets that support the alternative transportation systems, the National Park Service compiled the inventory as part of Alternative Transportation System Life-Cycle Asset Management. Alternative transportation systems supporting locations, or assets, are defined as all locations that directly support an alternative transportation system, including location records with children asset records that support an alternative transportation system. In total, 2,206 FMSS locations with a status of operating, inactive, or excess were identified. This effort served as an important milestone in the development of a holistic transit asset management approach that considers both real property and fleet. Going forward, ATS asset locations will be refined and the National Park Service will focus on the condition of ATS assets to strive toward a state of good repair with future investments.

Common ATS real property inventory includes the following:

Roads/railways are the structural elements that allow for the movement of an agency's fixed-guideway vehicles. Guideway assets are broadly categorized into track elements, above-grade structures (bridges), below-grade structures (tunnels), and ancillary structures (e.g., passenger and maintenance access and retaining walls). Roads, roadway bridges, and associated parking lots are identified as supporting transit. These assets are not "double counted" in our overall inventories. This identification could, however, lead to additional priority for improving a road asset with category 1 funds.

- Facilities refers to the structures that enclose or support maintenance, operations, and administrative activities. Facilities also house specialized equipment that supports the operations and maintenance of the vehicles (e.g., fueling and washing facilities). Other examples include the grounds, roofs, mechanical and electrical equipment, plumbing, and all fixed equipment at a bus or rail maintenance or administrative facility.

- Systems include a diverse set of monitoring and control systems that support core operational functions. All these systems are critical to the transit system, providing power (including all building substations, third rail, and catenaries) communications, revenue collection, security, and safety controls (e.g., radio, GPS, video surveillance, farebox, and wireless). Some of these components are considered "equipment" and would not be captured in the ATSLAM inventory.

- Stations provide shelter for customers. Examples include bus/rail station structures, benches, communication media, and passenger waiting areas.

- Transportation trails provide a multimodal connection for visitors to access areas of the park.

- Fleet: In FY 2021, 722 vehicles and vessels operated in 62 systems in 43 parks. Alternative transportation systems are still recovering from COVID-19 impacts and as a result have not reached 2019 levels of 835 vehicles and vessels operating 95 systems in 60 parks. We anticipate that all these systems will be operational during the life of the Bipartisan Infrastructure Law. The system of record for NPS fleet asset records is in the Financial and Business Management System (FBMS). The FBMS fleet module is the system of record for all Department of the Interior fleet inventory and fleet maintenance activities. To allow for the identification of NPS-owned transit fleet, Alternative Transportation System Life-Cycle Asset Management led an effort to tag transit fleet in the Financial and Business Management System. The inventory is annually reported in the National Transit Inventory and includes performance measures that correspond to program goals (appendix B of the National Transit Inventory) and the *NPS National Long Range Transportation Plan, July 2017*: visitor experience, operations, environmental impact, and asset management. The fleet data in the Financial and Business Management System includes standard vehicle data—vehicle classification, age, and other data. The National Park Service is migrating toward a telematics platform to digitally collect vehicle data to assist with vehicle management and maintenance.

- VHI assessment: A Vehicle Health Index (VHI) process was developed to provide a data-driven approach to understanding transit fleet condition across the National Park Service's portfolio of fleet assets. The Vehicle Health Index was developed from industry standard approaches to fleet condition assessment in coordination with NPS fleet experts. The VHI assessment consists of a series of rapid-visual and diagnostic tests for each of the following vehicle subcomponents: engine, battery, drivetrain, electrical, suspension/steering, HVAC, structure, interior, exterior, wheelchair safety, and safety systems. Resulting scores roll up to a total vehicle score, the official VHI metric. Vehicle Health Index assessments will enhance existing asset management practices by providing consistent, point-in-time assessments of fleet condition. Once inspections are completed, condition information is scalable to the park, region, and national level. This is significant, as the National Park Service has lacked complete vehicle condition data. The Vehicle Health Index enables a data-driven approach to transit asset management with improved, consistent data than what is currently available in NPS data systems. To ensure VHI data is reflective of the actual condition of the NPS transit fleet, it is recommended that VHI assessments are completed at least every three years and after major repair needs arise or are resolved that significantly affect the existing vehicle condition.

- VHI Assessment Tool: The VHI Assessment Tool will be used to complete VHI assessments. The VHI Assessment Tool is an Excel-based template that enables mechanics to record inspection results. The tool generates scores for each vehicle subcomponent and a total vehicle score. There are two versions of the VHI Assessment Tool, one each for internal combustion engine (ICE) vehicles and electric vehicles. These tests are similar but account for the unique components to ICE vehicles and electric vehicles. Each subcomponent and their associated tests are assigned with different weightings to generate a total vehicle score. The VHI

Assessment Tool has been piloted in three parks – Harpers Ferry, Yosemite, and Cape Cod. The remaining NPS-owned fleet will be assessed using the tool in the first half of FY 2023.

Electric Vehicles Charging Stations:

NPS Response: The NPS five-year electric vehicle (EV) workplan includes EV supply equipment (EVSE) and has the following goals and desired outcomes:

Meet the administration and department's goals outlined in Executive Order 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability," including 100% zero-emission vehicle acquisitions by 2035, including 100% zero-emission light-duty vehicle acquisitions by 2027; contribute to regional EVSE corridors and fill gaps in EVSE networks, particularly in rural and disadvantaged communities; take a proactive approach to EV transition, leading by example and preparing for new programs and opportunities; pursue funding opportunities, programs, and partnerships to support EV fleet conversion and the development of utilities and EV supply equipment; develop a coordinated and consistent approach across NPS offices, regions, and parks; and develop successful and sustainable partnerships with federal, state, local, and tribal partners.

The following includes a summary of EV supply equipment owned and operated by the National Park Service or provided by some other entity through another business model. These include EV supply equipment for administrative fleet, transit fleet and public use.

Currently, there are charging stations at 131 locations: 180 level 1 chargers; 374 level 2 chargers; and 18 DC fast chargers. The National Park Service is waiting on guidance from the Department of the interior on asset management practices for EV supply equipment. Charging station locations are updated often and can be provided under separate request.

Administration's Strategic Priorities:

NPS Response: The Department of the Interior plays a central role in how the United States stewards its public lands, increases environmental protections, pursues environmental justice, and honors our nation-to-nation relationship with tribes. Our mandate from President Biden is clear: we must address the four intersecting challenges of COVID-19, economic recovery, racial equity, and climate change. We have no time to waste in taking action to protect public lands, the environment and Americans' lives and futures. The Department of the Interior is ready to take the bold action desperately needed to ensure that communities of color and indigenous, urban, and rural communities benefit from an aggressive and whole-of-government response.

To meet the scope of our challenges and the multiple, overlapping crises, we are:

Identifying steps to accelerate responsible development of renewable energy on public lands and waters. We are investing in climate research and environmental innovation to incentivize the rapid deployment of clean energy solutions, while reviewing existing programs to restore balance on America's public lands and waters to benefit current and future generations.

Strengthening the government-to-government relationship with sovereign tribal nations. We understand that tribal sovereignty and self-governance, as well as honoring the federal trust responsibility to tribal nations, must be the cornerstones of federal Indian policy.

Making investments to support the administration's goal of creating millions of family-supporting and union jobs. This strategy includes establishing a new Climate Conservation Corps Initiative to put a new generation of Americans to work conserving and restoring public lands and waters, increasing reforestation, increasing carbon sequestration in the agricultural sector, protecting biodiversity, improving access to recreation, and addressing the changing climate.

Working to conserve at least 30% of our lands and waters by the year 2030. We will work to protect biodiversity, slow extinction rates, and help leverage natural climate solutions by conserving 30% of America's lands and waters by 2030. This strategy relies on support for local, state, private, and tribally led nature conservation and restoration efforts that are underway across America.

Centering equity and environmental justice. The impacts of the multiple crises in the United States are not evenly distributed in our society. Communities of color, low-income families, and rural and indigenous communities have long suffered disproportionate and cumulative harm from air pollution, water pollution, and toxic sites. At every step of the way, the Department of the Interior will engage diverse stakeholders across the country, as well as conduct formal consultation with tribes, in recognition of the US government's trust responsibilities.

TOPIC 6: FEDERAL LANDS MANAGEMENT AGENCIES SECRETARIES PERFORMANCE GOALS

The US Department of the Interior FY 2022–2026 Strategic Plan outlines and provides support to the four strategic goal areas. On November 11, 2021, the Secretary of the Interior Deb Haaland and Secretary of Transportation Pete Buttigieg signed a memorandum of understanding to strengthen coordination between our two departments regarding infrastructure investments and the deployment of innovative technologies at the National Park Service, including innovative technology pilots, shared mobility integration, the electrification of major transit fleets, and additional electric vehicle charging stations, which will guide the departments' efforts to build world-class transportation systems that provide enhanced access for car-free trips, interpretation, education, and enjoyment opportunities to visitors who want to experience public lands. Interior Secretary Deb Haaland remarked during the signing ceremony, "When we talk about and plan around access, we must do so with an eye toward equity. I look forward to working closely with Secretary Buttigieg and his team to ensure that sustainability and equitable access to parks and public lands remain hallmarks of our work." Our mutual secretaries have challenged us to make a difference during their administration in these areas.

TOPIC 7: FLTP ACCOMPLISHMENT REPORT

The National Park Service reports annually since FY 2014 on the NPS FLTP accomplishments of our transportation program as required by the Federal Highway Administration FLTP implementation guidance. The National Park Service plans to continue reporting accomplishments using the Federal Highway Administration's, May 19, 2022, letter and attached instructions, and appendix C template.

Past, present, and future annual accomplishments reports are posted on our website. The National Park Service, in cooperation with the Federal Highway Administration in their roles as engineer and construction contract service providers, develop this report annually by the required April time line.

ATTACHMENT B – NPS ASSET INVENTORY

The purpose of this document is to respond to the Federal Highway Administration's (FHWA) May 19, 2022, request to provide an investment strategy (or as codified in law, the National Park Service's [NPS] application) to support legislative requirements per performance management under Title 23 USC 203(b)(2) and planning under 23 USC section 201(c). The National Park Service is authorized from the Highway Trust Fund through the Infrastructure Investment and Jobs Act (IIJA) over $1.7 billion to improve transportation under the Federal Lands Transportation Program (FLTP) between 2022 and 2026.

In response to the Federal Highway Administration's request, all NPS transportation assets open to the public are part of the NPS official facility inventory. As discussed in the NPS investment strategy under separate cover, all NPS-managed parks have a high-use recreational value and/or are economic generators to the states and communities in which they reside. The remainder of this document more fully explains the NPS position.

The National Park Service transportation portfolio has a current replacement value of approximately $39.9 billion and is spread across the United States and territories in a variety of urban and rural areas as well as extreme climatic zones. The National Park Service manages 423 individual units covering more than 85 million acres in all 50 states, the District of Columbia, and US territories.

The NPS transportation assets, as presented in the FY 2022 NPS Greenbook Budget, include:

Paved roads (miles)	5,690
Paved parking lots	6,100
Unpaved roads (miles)	7,000
Bridges	1,451
Tunnels	63
Transit systems (buses, ferry, railroads, and support assets in 60 parks)	96

As documented in the *NPS National Long Range Transportation Plan, July 2017 (NLRTP)*, and more fully articulated later, the NPS transportation portfolio also includes trails, trail bridges and tunnels, waterways, docks, marinas and waterfront assets, and railroad assets. All transportation assets are important to the safety, mobility, enjoyment, and education of the public, in balance with meeting our mission to protection the resources in each unit as codified by Congress. Of the National Park Service's 297 million visitors in FY 2021, the vast majority arrive to and travel through parks on the NPS road system, contributing $20.5 billion in spending and supporting 323 thousand jobs in 2021 (*2021 NPS Visitor Spending Effects Report*).

Over the past several years, the National Park Service has invested in the top 20 visited parks through various funding streams. Federal Lands Transportation Program dollars are critical to support the NPS transportation system network. However, funding streams such as Great American Outdoor Act, Recreational Fee, and Repair and Rehabilitation have invested over $1 billion in projects to support the NPS mission. Although the National Park Service understands the importance of meeting the needs of the most-visited parks, all the park units across the national park system have mission-critical needs.

As outlined below, the National Park Service's transportation network inventory supports performance management, aligns resource and asset management and planning goals to meet the Federal Highway Administration's stewardship expectations. Meanwhile, in the FHWA review of this submittal, the National Park Service requests ongoing collaborative discussions regarding stewardship and oversight expectations associated with Title 23, sections 201 and 203.

The following paragraphs provide the National Park Service's response to individual topics identified in the Federal Highway Administration's letter and attachments, *Subject: National Federal Lands Transportation Facility Inventory Update, May 19, 2022*.

Item 1: Per FHWA letter, Subject: National Federal Lands Transportation Facility Inventory update, dated May 19, 2022, request: "… please provide a brief description of how your agency selected assets for his subset along with your submittal. See attachment 1 for examples … applicable to roads."

NPS Response: As discussed in the NPS investment strategy (attachment A), all NPS-managed parks have a high-use recreational value and/or are economic generators to the states and communities surrounding parks. High-use federal recreation sites or federal economic generators (HUG-EC) vary based on planning and programming priority identified in the various funding programs. In addition, HUG-EC is one of many performance factors identified in law, with flexibility in the weight given to each factor. As such, NLRTP goals and objectives, various funding criteria, asset management targets, asset management performance, and multiyear programing sets priority. For instance, by using performance management tools like the pavement management systems, the National Park Service has identified a higher-priority subset of its paved road and paved parking network. This paved road and paved parking area subnetwork contains all functional class (FC) 1 and FC7 routes, as well as a specific assortment of FC2 routes. These routes are prioritized above other paved assets. Each park unit with paved assets contains at least one of these higher-priority assets. Note that all motor vehicle bridges are higher-priority assets, regardless of the functional class of the route they carry. The National Park Service is pursuing performance factors, including goals and targets for all the transportation assets open to the public. However, a comprehensive performance-based program is being stepped over time to meet the most urgent assets first to be practical with the available dollars and staffing resources available.

Regarding the National Highway System, the National Park Service is concerned that neither the Federal Highway Administration nor the states ensured appropriate and collaborative coordination for designating any and all portions of the National Highway System that are owned and operated by the federal land management agencies or specifically, the National

Park Service. Although only a small portion of the national park system is designated a portion of the National Highway System, the National Park Service requests that the Federal Highway Administration and states to do a better job of coordination and collaboration, as required by Title 23, section 134 and 135 (see for example, regulations, 470.109[d]).

The National Park Service is authorized by Congress as a unique authority to meet the NPS mission of balancing visitor access and protection of resources, which is very different from the US Department of Transportation and the states, and we ask dutifully that our authorities and mission be respected.

As we look forward, the National Park Service is encouraged with the shift in outreach to be more inclusive of the federal lands management agencies. In the secretary's responsibility to look out for federal transport needs, the National Park Service suggests exploring designated federal lands management agency network of roads and highways using the Interstate Highway System as the backbone and connectors focused on access, connectivity, and mobility to, from, and around federal units, which are economic engines for local, regional, and state communities. This network would support better integration of federal needs with the states in such matters as the Federal Lands Access Program and the Bipartisan Infrastructure Act new electric vehicles, alternative fuel corridors, and national electric vehicle infrastructure initiatives by states and federal agencies.

Item 2: Per FHWA letter, Subject: National Federal Lands Transportation Facility Inventory update, dated May 19, 2022, request: "identify the Federal lands transportation system and determine the relative transportation needs among Federal land management agencies"

NPS Response: The National Park Service identifies the systems below in the modal categories per the FHWA requested Table 1, FLTFI Dashboard Information, attachment C. Paved roads, bridges, and parking lots are inventoried on a routine cycle by the Federal Highway Administration, Federal Lands Highway Eastern Division (FLHED), which has provided the engineering technical expertise and oversight in the collection of these assets. The Federal Lands Highway Eastern Division supports the National Park Service in the collection, analysis, management, and project construction of the NPS transport networks. The Federal Lands Highway Eastern Division collects, organizes, and maintains the data and has access to the NPS information. Meanwhile, the paved roads, bridges, and parking lots are listed below with links. In reply to the second part of the question, the National Park Service would suggest that our park units across the country continue to have the greatest, or as a minimum, equal relative transportation needs among the federal land management agencies authorized by Congress to participate in the Federal Lands Transportation Program.

Paved roads: Although available at the Federal Lands Highway Eastern Division, the National Park Service can make available upon request.

Bridges: Although available at the Federal Lands Highway Eastern Division, the National Park Service can make available upon request.

Alternative transportation systems: NPS National Transit Inventory

Alternative transportation system relevant assets, including transportation trails: The National Park Service can make available upon request.

Geographic information systems, transportation network: National Park Service and National Highway System Shared Assets

National Transportation System Inventory: The National Park Service can make available upon request.

Item 3: Per FHWA letter, Subject: National Federal Lands Transportation Facility Inventory update, dated May 19, 2022, request: performance goals, condition measures, and targets for fiscal years 2022–2026, based on authorized amounts in the Infrastructure Investment and Jobs Act, will be required, at a minimum, for federal lands transportation facilities accessing HUR-EG (e.g., paved and unpaved road, bridges, and trails) in the FLMA investment strategy document:

NPS Response: See attachment C.

Item 4: Per FHWA letter, Subject: National Federal Lands Transportation Facility Inventory update, dated May 19, 2022, request: "Please provide your updated FLTFI with the HUR-EG identified by September 30, 2022. See attachment 2 for details about the submittal and information . . ."

NPS Response: See item 2 and 3 above.

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ATTACHMENT C – NPS INVESTMENT STRATEGY AND NETWORK TABLE 1

National Park Service Table 1

System			Inventory	Inventory Condition Good	Inventory Condition Fair	Inventory Condition Poor	Current Network Condition	2026 Condition Target % Good	Collection Methodology	Notes
All FLTFI/HUR-EG	NBI	1460 # of Bridges and Tunnels	6,757,355 Square Feet (bridge deck area)	N/A	N/A	N/A	93 (BHI)	90 (BHI)	Bridge Inspection Program	Bridge measures performance according to a National Bridge Health Index (BHI).
All FLTFI/HUR-EG	Paved	5,500 Road Centerline Miles	5,500 Lane Miles	N/A	N/A	N/A	82 Pavement Condition Rating	80 PCR	Road Inspection Program	The National Park Service (NPS) does not have GFP % for paved roads. Data is from the FY 2021 NPS Accomplishments Report and the NPS Long Range Transportation Program.
All FLTFI/HUR-EG	Unpaved	7,000 Road Centerline Miles	7,000 Lane Miles	N/A	N/A	N/A	No Network-Level Condition Data	No Network Condition Target	Facility Management Software System	The National Park Service does not have condition data for unpaved roads. Data is from the NPS National Long Range Transportation Plan.
All FLTFI/HUR-	Paved	285.03 Trail Centerline		37%	9%	36%		50%	Parametric	~52 paved trail miles were not

System			Inventory	Inventory Condition Good	Inventory Condition Fair	Inventory Condition Poor	Current Network Condition	2026 Condition Target % Good	Collection Methodology	Notes
EG		Miles								evaluated and included in inventory condition.
All FLTFI/HUR-EG	Unpaved	708.65 Trail Centerline Miles		42%	13%	38%		50%	Parametric	~48.7 unpaved trail miles were not evaluated and included in inventory condition.
All FLTFI/HUG-EG	Unpaved	35.09 miles Transportation Trails/Admin (Carriage) Roads		44%	56%			50%	Parametric	Paved transportation trails considered in 1100 more than likely share the road with vehicles.
All FLTFI/HUG-EG	Paved	5,300 # of Parking Lots	120 million Square Feet				67 Pavement Condition Rating	56 PCR	Road Inspection Program	The National Park Service does not have GFP % for paved parking lots.
All FLTFI/HUG-EG	Unpaved	Unknown # of Parking Lots	Unknown Square Feet				No Network-Level Condition Data	No Target Established		The National Park Service does not have inventory or condition data for unpaved parking lots. Paved roads and parking lots are priority using limited financial resources and staffing.

Transportation Facility Inventory Notes:

- All paved road, parking area, bridge, and tunnel inventory and condition data were collected and analyzed by the Federal Highway Administration and the Eastern Federal Lands Highway Division.
- Current inventory and condition data for paved road, bridge, and tunnel assets are from the FY 2021 NPS Annual Accomplishments Report.
- Current inventory data for paved parking areas comes from the National Park Service's Facility Management Software System, the NPS corporate database. Current condition data for paved parking areas comes from the FY 2021 NPS Annual Accomplishments Report.
- Paved road, parking area, bridge, and tunnel target conditions are from the NPS National Long Range Transportation Plan, published in 2017. That document is in revision.
- The National Park Service does not currently calculate Good, Fair, and Poor percentages for paved or unpaved roads or parking areas. These data are not required in the NPS Annual Accomplishments Report.
- The National Park Service has not collected condition data for its unpaved roads and parking areas.

Condition targets are pending the national transportation strategy, due third quarter, 2023.

Trails Good, Fair and Poor are based on the following:

Facility Condition Index

The Facility Condition Index rates the condition of a facility or asset at a particular point in time. It is calculated by dividing the projected cost of repairs by the current replacement value of an asset.

Good:	Less than or equal to 0.1
Fair:	0.101 – 0.15
Poor:	0.151 – 0.5
Serious:	Greater than 0.5

December 8, 2021

Subject: Integrated Transportation Planning

This memorandum communicates the importance of National Park Service (NPS) regions and parks participating in integrated transportation planning. Together, the Federal Highway Administration's (FHWA) Office of Federal Lands Highway (FLH) and the NPS are prioritizing multi-agency coordinated transportation planning (integrated planning), bringing together State Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), and the Federal Land Management Agencies (FLMAs) for a comprehensive dialogue on transportation challenges which require coordinated planning.

To capitalize on the momentum and continued growth of this initiative, we are requesting the NPS and other FLMA's actively engage in ongoing and future integrated planning efforts. The objective is to build upon the accomplishments of existing coordination efforts and realize additional, holistic benefits from sustainable, integrated planning relationships across FLMA's, State DOTs, MPOs, and FHWA.

Background

Integrated planning builds on the transportation planning already being carried out by State DOTs, MPOs, and FLMAs to satisfy the transportation planning requirements of Title 23 United States Code (U.S.C.) Sections 134, 135, and 201. These statutes establish "continuing, cooperative, and comprehensive" (3-C) transportation planning and programming processes for State DOTs, MPOs and FLMAs. Integrated planning supports the alignment and coordination of these planning processes across agencies.

Additionally, integrated planning is directly supportive of the National Park Service's Director's Order #2 regarding civic engagement and consistency with other Federal, Tribal, State, and local policies, plans, and programs in Park Planning; and Director's Order #87D regarding NPS' participation in all transportation planning studies and planning processes with State and local governments, Federal agencies, and regional planning bodies and citizen groups.

Finally, this initiative has also been incorporated into FHWA's Enterprise Performance Plan; as such, all FHWA units, including FLH Divisions, FHWA Federal-aid Division Offices, and others, will be responsible for supporting integrated planning throughout their work.

Initiative Vision and Goals

The joint vision for integrated planning is: "Open communication and coordination between State Departments Transportation (DOTs), Metropolitan Planning Organization (MPOs), local governments, and FLMAs in support of improving and implementing a Continuing, Cooperative, and Comprehensive (3C) transportation planning process."

The goals of this initiative are:

- Partner Engagement: Support engagement between transportation system owners that is mutually beneficial and at the appropriate level
- System Preservation: Maintain and manage a transportation program that addresses current and future needs
- Safety: Provide a safe and reliable transportation system to and within Federal lands.
- Economic Generation: Support transportation networks that contribute to local economies while preserving the goals and objectives of FLMAs

Integrated planning supports these goals by aligning planning processes, developing shared needs, and identifying eligible funding opportunities to improve access to Federal lands. The focus is to expand capacity in our transportation planning efforts, by improving information and data sharing, enhancing economic development, expanding funding opportunities, and leveraging the resources of partners.

The NPS is updating its Long-Range Transportation Plan and will be refreshing its goals, objectives, and strategies to include emerging priorities. Those priorities could include leveraging state and local partnerships to improve connections and access to underserved communities; collectively addressing the impacts of climate change and improving the resiliency of transportation system infrastructure and enhancing visitor experience while protecting resources. Integrated planning assists in coordinating needs and resources related to agency priorities.

Integrated Planning Implementation

FHWA, in partnership with the NPS and other FLMAs, will continue to support and stand up integrated planning efforts at a multitude of levels including statewide, regional/sub regional or at a unit or park. Effectively identifying and aligning the joint needs of FLMAs with State DOTs and MPOs through stakeholder working groups, feasibility studies, and many other planning activities familiar to the NPS are important actions.

As we continue to implement integrated planning in a flexible manner, we are requesting NPS regions and parks to actively engage in coordination opportunities. This may take the form of participation in advisory or working group meetings and discussions; providing input into transportation planning processes; participating in data-sharing between partners; defining and sharing transportation challenges; and identifying innovative solutions that support the needs of NPS and its partners. In each case, integrated planning presents an opportunity to leverage resources and funding both inside and outside the NPS's transportation and planning programs.

Conclusion

Transportation planning success will look different in each state given the unique challenges, requirements, and opportunities in and around a specific NPS unit. Defining success and developing the necessary strategies to attain it, hinges on defining a shared need and building relationships between external transportation planning partners.

As stated, we are requesting each region and park to work with the NPS's Transportation Planning Program to strengthen existing partnerships and support FHWA, State DOTs, and MPOs in standing up future coordination efforts.

To ensure the transportation priorities and needs of the NPS are being addressed we are requesting each NPS region and FLH division develop a short list of locations where integrated planning with the State DOT or MPO could be beneficial. Specifically, locations where transportation-related issues extend beyond jurisdictional boundaries and where resources and funding may be leveraged to address a shared or common need. This information will be used to develop an integrated planning strategy for all FLMAs.

To support the development of a FLMA integrated planning strategy, the NPS's Transportation Planning Program and FLH Division Planners will conduct the following outreach during the first half of fiscal year 2022:

- FLH Planning Divisions will outreach to other FLMAs, FHWA Federal-Aid Division Offices, State DOTs, and MPOs to understand priority needs and locations
- NPS's Transportation Planning Program will outreach to each NPS region (Transportation and Planning programs) to understand priority needs and locations

For further information about Integrated Planning in your NPS region, please contact one of the following.

Joe Regula, Park Planning and Special Studies (PPSS) joe_regula@nps.gov
Erica Cole, Park Facility Management Division (PFMD) erica_cole@nps.gov

For further information about Integrated Planning at FHWA, please contact one of the following.

Aung Gye (FLH) aung.gye@dot.gov
Theresa Hutchins (HEPP) theresa.hutchins@dot.gov

MICHAEL CALDWELL
Digitally signed by MICHAEL CALDWELL
Date: 2021.12.08 08:33:59 -05'00'

Mike Caldwell, Acting Associate Director,
Park Planning, Facilities and Lands
National Park Service

TIMOTHY G. HESS
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Date: 2021.12.08 10:16:14 -05'00'

Tim Hess, Associate Administrator
Office of Federal Lands Highway
Federal Highway Administration

National Park Service
U.S. Department of the Interior

Park Planning, Facilities and Lands Directorate
Park Facility Management Division
Washington, D.C.

National Park Service
Current State of Transportation Priorities and Needs
September 2021

Figure 1. Clockwise from top left: Indiana Dunes National Park; Foothills Parkway; Zion National Park; Parking lot erosion at Gateway National Recreation Area after Hurricane Sandy (Source: NPS)

Internal Use Only

… to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

National Park Service
Organic Act. 54 USC 100101

TABLE OF CONTENTS

Acronyms and Abbreviations

BHI	Bridge Health Index
CRV	Current Replacement Value
DOI	Department of the Interior
DOT	Department of Transportation
ERFO	Emergency Relief for Federally Owned Roads
EV	Electric vehicle
FAST Act	Fixing America's Surface Transportation Act
FCI	Facility Condition Index
FHWA	Federal Highway Administration
FLAP	Federal Lands Access Program
FLMA	Federal Land Management Agency
FLTP	Federal Lands Transportation Program
GAOA	Great American Outdoors Act
INFRA	Infrastructure for Rebuilding America
ITS	Intelligent Transportation System
NLRTP	National Long Range Transportation Plan
NPS	National Park Service
NSFLTP	Nationally Significant Federal Lands and Tribal Projects
O&M	Operations & Maintenance
PCR	Pavement Condition Rating
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
TSP	Transportation Safety Program

Figure 2. Grand Canyon National Park (Source: NPS)

EXECUTIVE SUMMARY

The National Park Service (NPS) protects America's most treasured landscapes and historic sites. Over 300 million people visit America's national parks each year, utilizing a federally owned multimodal transportation system. The maintenance of these assets—and the preservation of the public's access to our national parks—is a *federal responsibility.*

The NPS actively invests in preserving and improving its transportation system, including the roads, bridges, transit systems, front country trails, and ferries that provide critical access to and within parks. The NPS and its U.S. Department of Transportation partners maintain this infrastructure using transportation industry standards and performance-based, data-driven decisions.

Today, the NPS transportation system faces major challenges, including overcrowding in some parks, visitation challenges in others, and disruption from the pandemic. The NPS needs to keep pace with rapidly changing technologies and maintain aging infrastructure and transit fleets that are reaching the end of their service life. The NPS also faces damage from natural hazards, climate change and severe weather and needs to make its infrastructure more resilient while also reducing carbon emissions and encouraging alternative fuels and sustainable design solutions. The NPS is a great venue to introduce, educate, and showcase transportation innovation to the public.

NPS visitors spent $21 billion in local and regional economies in 2019 and supported 341,000 jobs nationwide. By providing access to visitors, NPS transportation systems are integral to facilitating this economic activity.

Figure 3. Cape Cod National Seashore (Source: NPS)

The National Park Service Transportation Mission

To preserve and protect resources, while providing safe and enjoyable access to and within the national parks, using sustainable, appropriate, and integrated transportation solutions.

The NPS Transportation System:

4,600
Miles of front country trails

100
Transit systems including bus, ferry, and railroads (over 40 million boardings annually)

5,500
Miles of paved roads

400
Miles of unpaved roads

1,400
Bridges

60
Tunnels

6,100
Paved Parking Areas

To address these challenges, the NPS is pursuing three strategic themes to maintain and modernize its transportation system:

- **Theme 1: Protect the Climate and Advance Resource Protection.** The NPS is striving to meet its mission to protect and preserve natural and cultural resources by reducing transportation carbon emissions and preparing its assets for extreme weather events and climate change impacts. The NPS needs to invest more in low and no carbon transportation options like transit, electric vehicles, and trails for walking and biking. Strategies like using engineering and nature-based solutions to protect assets, relocating assets to higher elevation, or redesigning access and developing redundant travel routes help to protect natural resources and enhance overall system resilience to climate change. It is critical to utilize new approaches, materials, and technologies to ensure that the NPS transportation infrastructure is sustainable, nimble, and resilient to man-made and natural disasters.
- **Theme 2: Enhance Visitor Experience and Connect Diverse Communities.** To improve equitable access for visitors and connect parks and communities, the NPS needs to create a 21st century transportation system through investments in transit, trails, and technology. The NPS digital footprint needs to increase to accommodate online trip planning, improve modal choices and connectivity, and address congestion. Multimodal transportation investments will ensure a national park system that is responsive to increased visitor demand, enables car-free trips, champions smart and innovative infrastructure solutions, and benefits and strengthens partnerships with nearby communities. These investments also advance NPS resource protection goals – each year NPS transit systems contribute to eliminating over 480 million passenger vehicle miles from the road and reduce CO_2 emissions by nearly 180,000 metric tons.
- **Theme 3: Reinvest in the System and Make Legacy Investments.** The NPS needs to make critical investments to maintain and improve the condition of roads and parkways, parking areas, transit infrastructure, trails, bridges, and tunnels and provide a safe, efficient, and resource sensitive transportation system for visitors. To improve safety, roads with a higher number of crashes need to be investigated and solutions defined according to a 4E framework (education, emergency response, enforcement and engineering). To leverage limited funding, the NPS pursues grants and strategic partnerships with state and local governments to fund priority megaprojects across the country.

Multiple funding sources support NPS transportation systems. The Federal Lands Transportation Program (FLTP), established in 23 U.S.C. 203, is one of the primary funding sources for NPS transportation infrastructure; from 2016-2020 the program was funded by the Fixing America's Surface Transportation (FAST) Act. The NPS authorized and appropriated funds, as well as other NPS programs, contribute to transportation infrastructure and maintenance needs. Transit systems are supported by business models such as concessionaires and partnerships with local gateway communities. In addition, the Great American Outdoors Act (GAOA) provides significant, necessary funding for major road and bridge projects.

However, to maintain a high quality, multimodal transportation system and address key transportation priorities, the NPS requires additional funding. Limited funding over many years has stretched resources to provide dependable, safe, and modernized transportation and to sustain protection of delicate ecosystems and historical sites. Based on condition modeling and information collected from NPS regions, the NPS has identified **$930 million** in annual investment needs. This funding will enable the NPS to improve its multimodal transportation assets systemwide to a state of good condition, reduce emissions and adapt infrastructure to climate change, expand equitable access and provide modal choice for visitors, and maintain the improvements gained with GAOA funding.

Figure 4. Grand Canyon National Park, South Rim Entrance (Source: NPS)

NPS Transportation Systems Needs

Theme	Category	Annual Need	5-year Need	Expected Outcome
1: Protect the Climate and Advance Resource Protection	Alternative and Electric Vehicles	$26 M	$130 M	Electrify transit buses and expand the electric vehicle charging network
1: Protect the Climate and Advance Resource Protection	Sustainability and Climate Resilience	$20 M	$100 M	Implement projects to reduce vulnerability to climate change
2: Enhance Visitor Experience and Connect Diverse Communities	Transit, Ferry, and Railroad Systems	$160 M	$800 M	Replace and upgrade transit systems to continue to support over 45 million passenger boardings/year, avoiding 16.8 million personal vehicle trips annually
2: Enhance Visitor Experience and Connect Diverse Communities	Existing Front Country Trails, Improvements, and Connections	$104 M	$520 M	Improve systemwide average to good condition; invest in major trail projects and construct links in the trail network
2: Enhance Visitor Experience and Connect Diverse Communities	Emerging Mobility Research & Implementation	$20 M	$100 M	Improve access, manage congestion, and communicate to visitors
3: Reinvest in the System and Make Legacy Investments	Paved Roadways	$400 M	$2,000 M	Improve systemwide average to good condition (Pavement Condition Rating of 85)
3: Reinvest in the System and Make Legacy Investments	Paved Parking Areas	$110 M	$550 M	Improve systemwide average to good condition (Pavement Condition Rating of 85)
3: Reinvest in the System and Make Legacy Investments	Bridges and Tunnels	$90 M	$450 M	Maintain systemwide average in good condition (Bridge Health Index of 93)
	Total	**$930 M**	**$4,650 M**	

Figure 5. Acadia National Park (Source: NPS)

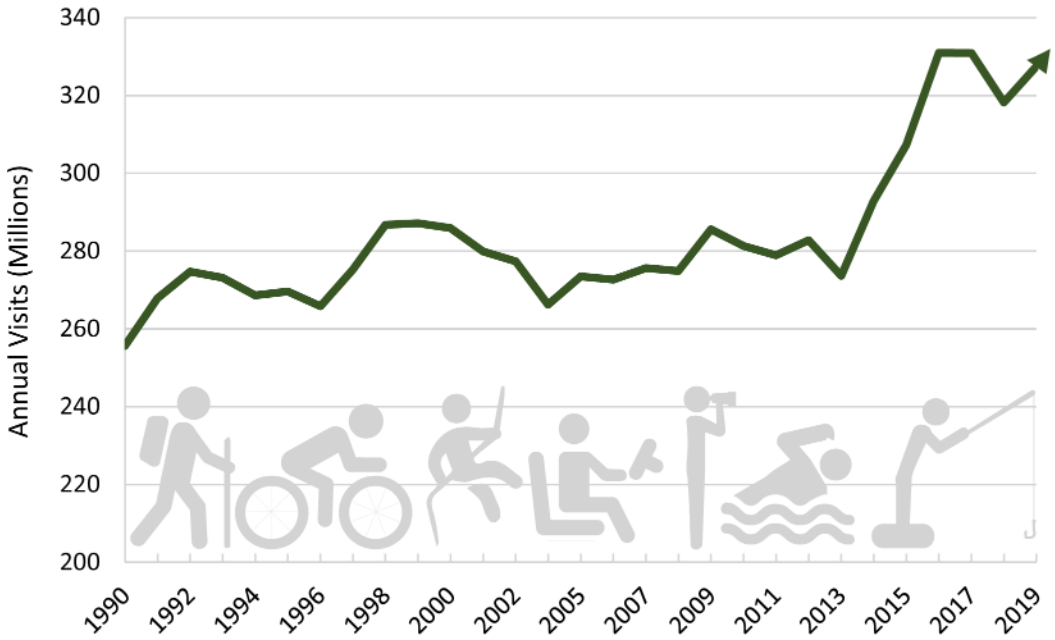
1. INTRODUCTION

On an average day, nearly 900,000 people visit America's national parks. These visitors rely on an extensive, multimodal transportation system—roads, bridges, transit systems, front country trails, ferries, and associated technology—to access America's most significant natural and cultural sites. The care of our national parks—and the preservation of the public's access to them—is a federal responsibility.

Improving and repairing national park infrastructure is not merely an expense, it's an investment in America. Each dollar invested in our parks returns $10 to the U.S. economy through visitor spending. In 2019, 327 million visitors spent an estimated $21 billion in local gateway regions while visiting national parks. These expenditures supported a total of 341,000 jobs and $41.7 billion in economic output in the national economy.[1]

The NPS transportation system faces many challenges, including record-setting visitation in many parks (see Figure 6), rapidly changing technologies, damage from climate change and severe weather, and antiquated and aging infrastructure. Many NPS trails, transit systems, roads, bridges, parking lots, and tunnels are in need of repair, rehabilitation, and reinvestment. Moving forward, the NPS must address these challenges while protecting resources and enhancing equitable access for visitors.

Figure 6: NPS Recreational Visits, 1990-2019



This document looks at the condition and needs of the NPS transportation system and the accomplishments from 2016-2020. It discusses funding strategies that will allow the NPS to achieve performance goals, improve the condition of its transportation assets, respond to climate change, and better serve visitors.

[1] 2019 National Park Service Visitor Spending Effects Report. https://www.nps.gov/subjects/socialscience/vse.htm

This Resource Paper includes the following sections:

- ***NPS Transportation Today***
  Describes NPS transportation facilities, uses, characteristics, and economic benefits.

- ***Transportation Program Accomplishments***
  Outlines NPS accomplishments made with funding in concert with transportation priorities.

- ***Protect the Climate and Advance Resource Protection***
  Describes how the NPS is striving to "green" its fleet and other transportation infrastructure and making strategic investments to address climate change vulnerability.

- ***Enhance Visitor Experience and Connect Diverse Communities***
  Describes strategies the NPS is pursuing to enhance multimodal infrastructure systems and incorporate emerging mobility to provide equitable access and connect communities.

- ***Reinvest in the System and Make Legacy Investments***
  Describes roadway and other infrastructure needs, lifecycle investment strategies, and innovative finance mechanisms needed to achieve goals.

Figure 7. Grand Teton National Park (Source: NPS)

Figure 8. Bryce Canyon National Park (Source: NPS)

2. NPS Transportation Today

The NPS transportation system includes an extensive network of trails, transit systems, roads, bridges, and tunnels that respond to the access needs of a diverse set of visitors. More than a means of transportation, this system provides the basis of the premiere American park experience. Few national park visitors take the time to consider the significance of the roads or other means of access they use, yet this infrastructure is integral to the "central challenge of park stewardship: balancing preservation and access in America's most treasured landscapes."[2]

Today, the NPS multimodal transportation system provides visitors with options for how to access and travel within parks. Roads and parkways connect with buses, ferries, trains, and trails, allowing for multimodal or car-free trips. When integrated with local and regional transportation networks, the parks' transportation services provide visitors with seamless access, and frequently improve the mobility and quality of life of local residents. The NPS is also focused on improving the safety of its transportation system.

In 2019, the National Park Service recorded **327.5 million recreational visits**, with an average of **over 897,000 visits daily.**

This number of visits is roughly equivalent to:

- **18 times** the daily attendance of Disneyland Park
- **160 percent** of the daily weekday ridership on Washington D.C.'s Metrorail
- **3 times** the daily passengers through Hartsfield-Jackson Atlanta International Airport

The FAST Act authorizes an average of $284 million per fiscal year ($1.4 billion total) for the NPS portion of the Federal Lands Transportation Program (FLTP) between 2016 and 2020 (see Figure 9).[3] Additional NPS transportation investments are derived from other sources, including fee revenue and NPS appropriations under Title 54 of the U.S. Code.

The NPS pursues a performance-based planning approach and focuses its limited resources on high priority transportation assets. This approach is guided by the NPS Transportation Program Investment Strategy and the NPS National Long Range Transportation Plan (NLRTP). The Investment Strategy (2016) defines the FLTP transportation system, provides baseline data, and aligns decision-making with performance goal areas. The NLRTP (2017) establishes a strategic, 20-year framework for transportation investment and identifies performance measures to report on progress.

The NPS Federal Lands Transportation Program network is composed of approximately:

4,600
Miles of front country trails connecting to primary park features, including **1,000** trail bridges, and **40** trail tunnels

100
Transit systems including bus, ferry, and railroads (over 40 million boardings annually)

5,500
Miles of paved roads

400
Miles of unpaved roads

1,400
Bridges

60
Tunnels

6,100
Paved parking areas

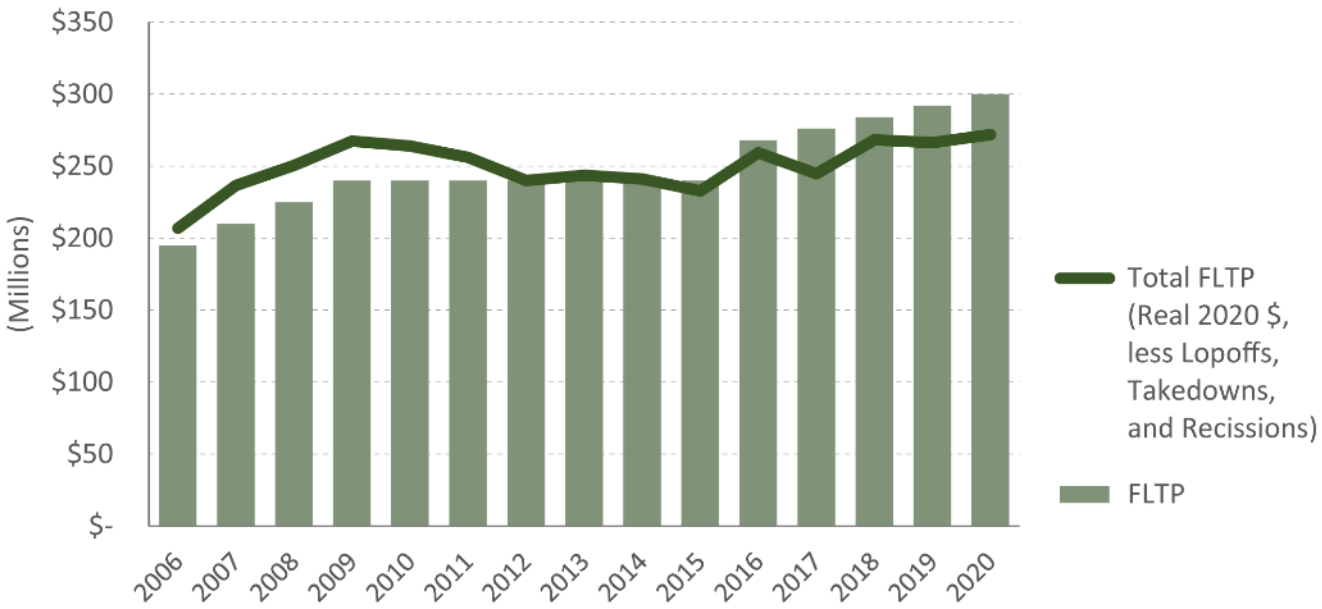
[2] National Park Roads: A Legacy in the American Landscape by Timothy Davis, Charlottesville: University of Virginia Press, 2016
[3] The FAST Act was extended through FY21 at FY20 funding levels.

The NPS partners with the U.S. DOT to select projects based on sophisticated data systems and industry best practices:

- **Pavement and bridge management data and modeling**: FHWA routinely collects road and bridge condition information on behalf of the NPS. This data is used to identify and prioritize infrastructure projects and maintenance activities.
- **Asset management and condition information**: NPS staff use asset management information to track real property and transit fleet maintenance and repair needs.
- **Traffic and transit passenger count data**: NPS staff collect traffic and transit passenger counts using a variety of automated technologies and approaches. This data helps inform project prioritization, including congestion management decisions and safety countermeasures.
- **Congestion management data and analysis**: NPS staff rely on traffic and transit passenger counts, described above, and survey data to identify high-use recreation areas and implement appropriate infrastructure and management tools.
- **Crash data and analysis**: NPS staff collect crash data using a department-wide law enforcement records management system. NPS and its partners analyze this data, conduct road safety audits, and implement context-sensitive safety countermeasures.

The NPS annual transportation investment needs greatly exceed available funding. As necessary maintenance work is delayed, significantly more funding is required to achieve performance goals and make investments that serve current visitors and future generations. Available funding has remained relatively flat since 2006 due to escalating construction costs, inflation, and administrative adjustments to funding levels (e.g., lop-offs and takedowns) (see Figure 9).

Figure 9: NPS Federal Lands Transportation Program (FLTP) funding, fiscal years 2006-2020[4]



[4] Multiplier used to adjust values to real 2020 dollars is generated from the Bureau of Economic Analysis, National Income and Product Accounts, Table 1.1.9 "Implicit Price Deflators for Gross Domestic Product (GDP)" (July 2021). The multiplier is calculated for a given year using the percent change in GDP from the base year of 2020 plus one. The multiplier for the base year of 2020 is one.

The Great American Outdoors Act (GAOA) provides significant, necessary funding for major transportation projects. This additional funding will allow the NPS to accomplish large, complex projects (e.g., road reconstruction and replacement of bridges at the end of their service life) not typically viable within FLTP funding levels and lead to a reduction in the backlog of needed maintenance and repairs. However, due to the scale of these needs, GAOA will fund a relatively small number of transportation assets across the system. In addition, U.S. DOT discretionary grant programs like Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program, Rebuilding American Infrastructure with Sustainability and Equity (RAISE)[5], and Infrastructure for Rebuilding America (INFRA) have provided needed reinvestments in large and complex megaprojects across the NPS. These projects would not be possible without these programs.

Figure 10. Foothills Parkway (Source: NPS)

[5] Previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) discretionary grant programs.

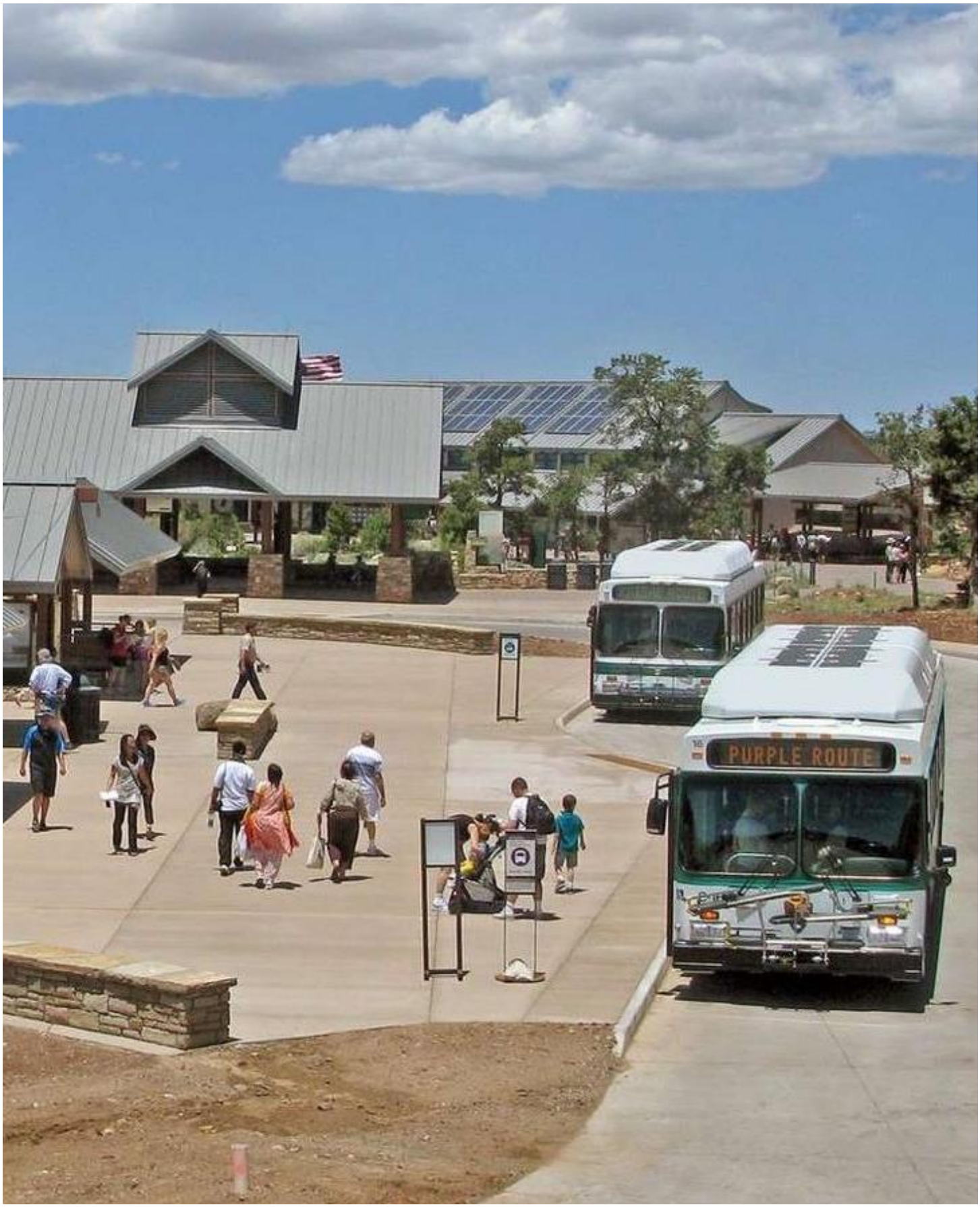


Figure 11. Grand Canyon National Park (Source: NPS)

3. NPS Transportation Program Accomplishments (2016-2020)

The NPS and its DOT partners are actively investing this funding to preserve and improve the NPS transportation network (see Figure 12). The NPS is also strengthening its management systems, helping the bureau make performance-based, data-driven decisions.

The Federal Highway Administration estimates that every $1 billion invested in highway construction yields approximately 13,000 jobs for on-site construction and direct and indirect suppliers.

From 2016-2020. NPS invested $1.4 billion dollars, creating over 19,000 construction jobs in communities across the country.

From 2016-2020 the NPS has:

- Improved over 2,650 centerline miles of paved road. The NPS met the performance target to protect the federal investment from further deterioration across the network.
- Rehabilitated over 470 bridges, maintaining the servicewide bridge health index at 93 percent. The NPS met the performance target to protect the federal investment form further deterioration across the network.
- Operated 100 transit systems and accommodated over 43 million passenger boardings annually; operated 81 percent of the systems with private partners and public contractors.
- Avoided nearly 180,000 metric tons of CO_2 annually through the use of transit systems.
- Completed 76 transit improvement projects, including transit fleet, rail, facility, and water infrastructure projects.
- Constructed or improved 40 non-motorized trail and pedestrian bridge projects.
- Maintained industry standard pavement and bridge inspection programs.
- Developed a congestion management system and launched a safety management system.
- Completed its first performance-based, national long-range plan and seven regional plans.
- Implemented a transit lifecycle management initiative.
- Secured over $500 million in state/local partner funding and outside grants for transportation projects in the last six years. For every $1 of NPS funding invested in partnership projects, the bureau leveraged $4 in outside public funding sources.
- Maintained a funding obligation rate for the FLTP of over 94 percent annually.

The annual NPS FLTP Accomplishment Reports provide additional details and accomplishments.

The NPS received an average of $284 million annually through the authorization under the FLTP. The bureau spent its allocations efficiently and leveraged a significant amount of partner funding to improve the condition of its transportation system and meet other congressional and resource mandates. The table below outlines each need category identified in the 2013 Reauthorization Resource Paper, associated funding expended between 2016 and 2020, performance goals, and NPS accomplishments.

NPS Goals and Accomplishments between 2016-2020

Category	Needs Identified (2013*)	Approximate Expenditures between 2016-2020	Performance Goal Identified (2013*)	NPS Transportation Accomplishments (2016-2020)
Transit	$70 million/year for transit, technology, and trails	$15 million/year for transit, technology, and trails	Address growing deficiencies in the transit system including the need to reduce the number of aging and unsafe facilities and equipment needs beyond industry life-cycle replacement guidelines.	Operated 100 transit systems and accommodated over 42 million passenger boardings annually with private partners and public contractors. Completed 76 transit improvement projects.
Technology	Same as above	Same as above	Continue to invest in ITS strategies to cost-effectively help manage visitor demand on NPS lands such as travel and traffic management, incident management and real-time transit and weather condition information.	Implemented ITS systems at Acadia National Park, Blue Ridge Parkway, and Cape Cod National Seashore.
Trails	Same as above	Same as above	Improve trails and establish a program to provide a steady stream of repair, rehabilitation and reconstruction funding to care for front country trails throughout the system, to provide connectivity between modes and to local communities.	Constructed or improved 40 non-motorized trail and pedestrian bridge projects. Trail condition was expected to degrade slightly from 0.10 FCI to 0.127 FCI between 2015 and 2020.
Paved roads and paved parking areas	$570 million/year	$180 million/year‡	Improve Pavement Condition Rating to 85 out of 100.	Rehabilitated over 2,650 centerline miles of paved road, improving the servicewide pavement condition rating from 81 to 83.
Bridges and tunnels	$120 million/year	$97.6 million/year‡	Maintain Bridge Health Index at 0.92 out of 1.0.	Rehabilitated over 470 bridges, improving the servicewide bridge health index from 0.92 to 0.93.
Roadway safety	N/A	N/A	Completion of a fully functional transportation safety management system and a comprehensive traffic count program.	Launched a transportation safety program and implemented a traffic count program and congestion management program using industry best practices and available data.

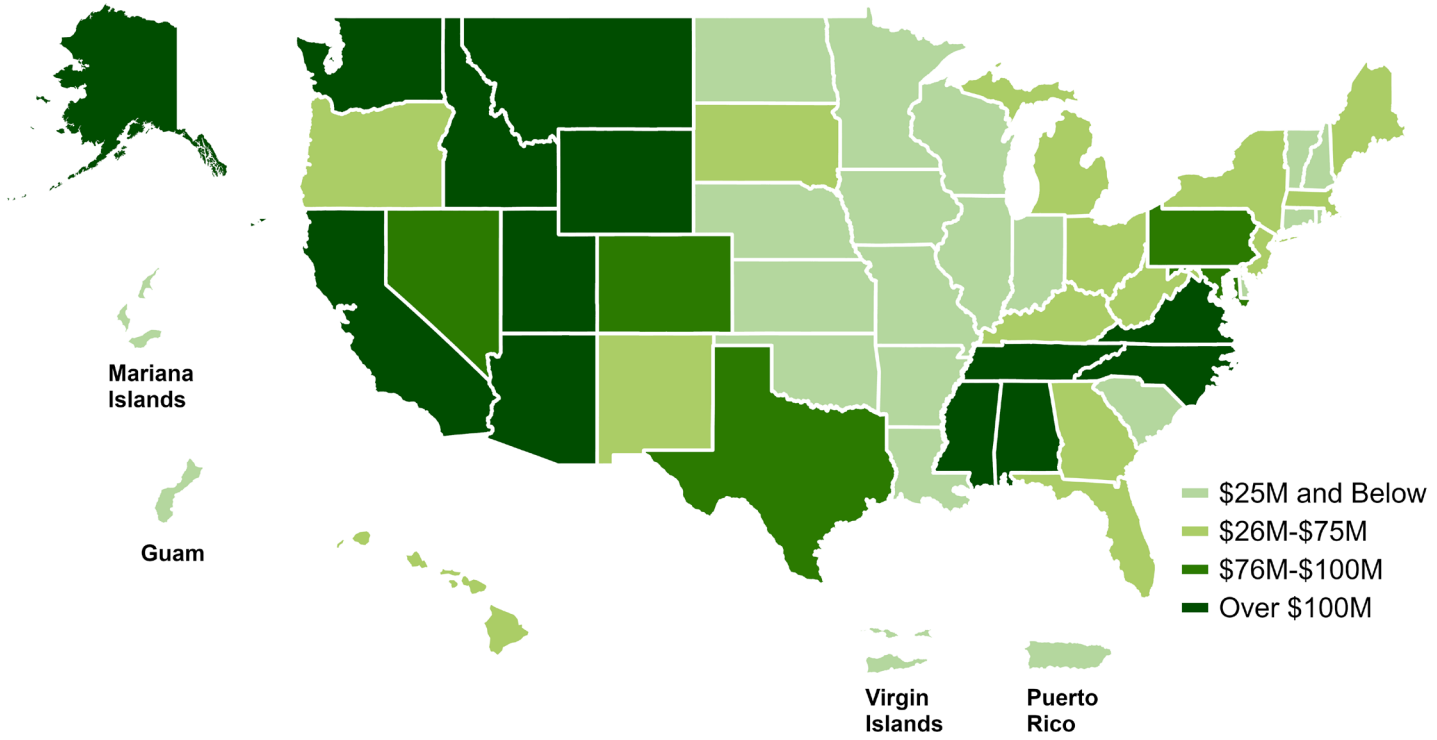
Category	Needs Identified (2013*)	Approximate Expenditures between 2016-2020	Performance Goal Identified (2013*)	NPS Transportation Accomplishments (2016-2020)
Foothills Parkway	$10 million/year	$0	Spend $60 million over the six years ($10 million/year) of the reauthorization bill to complete the congressionally mandated Sections E and F of the Foothills Parkway.	Completed Section E and F of the Foothills Parkway in fall 2018. The NPS leveraged a variety of outside funding, including discretionary and partner funds, to complete the project.
Megaprojects	$200 million/year	$16 million per year+	Rehabilitate large and/or unique transportation assets.	Leveraged partnership funding (Virginia and D.C. Highway Trust Fund, Nationally Significant Freight and Highway Projects grant, and the NPS Line Item Construction Program) to complete the reconstruction of the Arlington Memorial Bridge in Washington, D.C.
Performance management	N/A	N/A	Continue to develop a performance-based transportation system through implementing long-range planning, performance management, and asset management systems.	Completed the first performance-based, national long range plan and seven regional plans.

* Information from 2013 Reauthorization Resource Paper

‡ Average annual funding from FY16-FY20 as reported in the annual NPS FLTP Accomplishments Report

+ The NPS FLTP Expenditures for the Megaprojects category was approximately $16 million per year for the Arlington Memorial Bridge reconstruction, which is also counted in the Bridges and Tunnels category

Figure 12: NPS Funding Needs by State, 2021-2026 (as of 2019)



3.1 Examples of Funding Needs

Crater Lake National Park, Oregon

The 1.1-mile long Cleetwood trail provides the sole visitor access to Crater Lake, serving most of the 60,000 summer visitors. Over 1.1 miles (1.7 km) the trail drops 700 feet (213 meters) in elevation (the equivalent of 65 flights of stairs) through a series of long switchbacks. The trail surface is crushed pumice, which is similar to fine sand, and when it is dry, the pumice is loose and slippery under foot. Snow melt causes significant erosion and degradation of the trail. An investment of over $20 million is needed to address critical safety issues and maintenance needs, including mitigating nine unstable slopes, reconstructing the trail retaining walls, grades and cross slopes to make the trail level and stable, and rehabilitating the failing bulkhead and floating docks at the marina.

Figure 13. Cleetwood trail leading to Crater Lake (Source: NPS)

Climate Change Assessments in North Cascades, Mount Rainier, and Olympic National Parks, Washington

Figure 14. Cascade River Road, August 2013. Heavy rain mobilized river debris clogging a culvert. The road washed out, stranding 70 visitors and their vehicles for 2 days. (Source: NPS)

Climate change presents an array of challenges to transportation infrastructure in the Pacific Northwest's largest National Parks – North Cascades, Mount Rainer, and Olympic. These challenges are concentrated in the parks' major river corridors – dynamic channels in which glaciers, rivers and sediment flow down from the mountains. As precipitation patterns change, glaciers recede and rivers aggrade, these processes pose an increased risk to park infrastructure.

Many of the parks' critical access routes run parallel to the rivers in these hazardous corridors. As a result, park roads in these sensitive locations are extremely vulnerable to environmental hazards and frequently experience infrastructure failure. These parks are working to develop a resiliency plan that will identify the level of investment required for cost-effective, long-term transportation investments and secure park access for visitors.

Isle Royal National Park, Michigan

Isle Royale National Park owns and operates the passenger and freight vessel *Ranger III*. The ship is the operational lifeline of the park. *Ranger III* transports staff, visitors, baggage, food, fuel, small boats, construction materials, trash, and other cargo to and from Houghton, MI, and Isle Royale. *Ranger III* was built in 1958, is 63 years old, is reaching the end of its useful life, and needs extensive rehabilitation. Replacement costs are estimated to be around $40 million for construction of a new vessel.

Figure 15. The Ranger II Ferry serving Isle Royal National Park (Source: NPS)

Clara Barton Parkway, Maryland/Washington, D.C.

From July 2020 to early 2021, the National Park Service repaved the entire Clara Barton Parkway, from Chain Bridge in Washington, D.C. to Macarthur Boulevard at Carderock, MD. The project consisted of repaving more than 8.8 miles of roads and ramps, placing more than 36,000 tons of new asphalt, installing more than 270 new signs, and re-striping more than 310,000 linear feet of pavement markings. Additional investment of over $50 million is needed to rehabilitate bridges and a cantilevered portion of the Parkway. This investment will address significant safety issues on one of the most heavily traveled roadways and trails in the service, which otherwise is at risk of closure within five years, as estimated by FHWA.

Figure 16. Cantilevered portion of the Clara Barton Parkway (Source: NPS)

Figure 17. Gateway National Recreational Area (Source: NPS)

4. Theme 1: Protect the Climate and Advance Resource Protection

The NPS is striving to meet its mission to protect and preserve natural and cultural resources by reducing transportation carbon emissions and to prepare its assets for extreme weather events and climate change.

To reduce carbon emissions, the NPS needs to invest in low and no carbon and quiet transportation options like transit, electric vehicles, and trails for walking and biking. Additionally, the NPS is working to update its fleet with clean energy transit vehicles as existing vehicles reach the end of their useful life.

The NPS is working to identify and then implement a range of design, maintenance, and operational strategies to increase the resilience of transportation infrastructure investments. Strategies like using engineering and nature-based solutions to protect assets, relocating assets to higher elevation, or redesigning access and developing redundant travel routes help to protect natural resources and enhance overall system resilience.

4.1 Greening the NPS Fleet and Transportation Infrastructure

In 2019, 48 percent of the NPS-owned transit fleet used alternative fuels, including electric, hybrid-electric, propane, compressed natural gas (CNG), and biodiesel. Reducing transportation-related carbon emissions and noise impacts by investing in electric and alternative fuel vehicles is an NPS priority. This includes using alternative fuels vehicles in transit systems and in park staff vehicles, as well as building out an electric vehicle charging network that is supported by renewable energy and can be used by visitors.

4.1.1 Alternative Fuels for Transit Vehicles

National parks like Acadia and Zion were early proving grounds for alternative fuel technologies in the form of propane shuttles that limit the environmental impacts of heavy-duty vehicles and buses operating in extremely sensitive natural surroundings. Now that these vehicles have reached the end of their useful life, investing in the latest generation of low or no-emission vehicles supports NPS transportation program goals to demonstrate leadership in environmentally responsible transportation and provide quality transportation experiences that enhance park visits, effectively manage increasing vehicle congestion, and provide mobility options.

Several alternative fuel bus systems have been piloted at national parks. Rocky Mountain National Park's most recent service contract called for "greening" the shuttle fleet, so the contractor installed diesel particulate filters to the existing diesel buses and added two hybrid electric buses to the fleet (see Figure 18). Zion National Park had the opportunity to demonstrate battery electric buses for several weeks in 2017. Through a partnership agreement, the National Renewable Energy Laboratory independently reviewed the operational results of the demonstration buses. The preliminary study showed that electric buses can result in notable benefits such as improved efficiency, reduced emissions, and lower operating costs.[6] As battery electric bus technology matures, it is

Figure 18: A hybrid electric bus at Rocky Mountain National Park (Source: NPS)

[6] National Park Service Bus Electrification Study Interim Report. National Renewable Energy Lab. Andrew Kotz, Leslie Eudy, Kay Kelly, and Ken Kelly. 2018

reasonable to expect improved performance. Studies such as this one will inform NPS fleet replacement decisions in the near future.

If the NPS were to replace all traditional-fueled transit vehicles with alternative fuel vehicles (battery electric, hybrid, or compressed natural gas vehicles), it would achieve significant operational savings while maximizing the visitor experience through reduced environmental impacts on public lands. Based on the results from the study at Zion and 2016 NPS vehicle mileage information, the NPS could save between $900,000 and $1.4 million per year on fuel costs depending on the mix of alternative vehicles deployed. However, a large barrier to implementation is the upfront fleet acquisition costs for electric vehicles. Electric transit vehicles for use in the NPS have significantly higher upfront costs than conventional-fueled vehicles. The average cost is estimated at $450,000 per electric transit vehicle, although parks that require larger vehicles, such as Zion, can expect the cost to be from $1 - $1.5 million per vehicle.

4.1.2 Electric Vehicles

At the same time as the NPS is considering alternative fuel vehicles for its transit systems, electric and alternative fuel engines are becoming more common in private passenger cars. It is important for NPS visitors with electric vehicles (EVs) to have a place to charge their vehicles at and on the way to their destinations. The NPS aims to ensure its facilities can accommodate this shift to EVs and other alternative fuels by providing access to alternative fueling stations. As of 2017, there were approximately 50 existing EV charging stations at national parks. Since then, an additional 120 charging stations for park visitor use have been donated to the NPS through a public private partnership and are being installed.

As the NPS explores opportunities for expanding electric and other alternative fueling infrastructure and support the President's goal of creating a national network of 500,000 chargers,[7] it will continue to pursue creative partnerships with private, local, and federal partners. For example, the NPS, in partnership with the U.S. DOT Volpe Center and the National Renewable Energy Laboratory, has worked to identify and map existing and proposed EV-accessible routes connecting NPS units to key population centers and transportation hubs, and to identify potential gaps in EV charging station infrastructure along proposed routes. This analysis could help the NPS determine how to prioritize efforts to address the identified gaps in the EV network at a nationwide scale.

The NPS has identified an annual funding need of **$26 million** to electrify transit buses and expand the electric vehicle charging network.

Category	Annual Need	5-Year Need	Expected Outcome
Alternative and Electric Vehicles[8]	$26 M	$130 M	Electrify transit buses and expand the electric vehicle charging network

[7] See White House Fact Sheet Biden Administration Advances Electric Vehicle Charging Infrastructure: https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-biden-administration-advances-electric-vehicle-charging-infrastructure/

[8] This estimate is distinct from the cost of vehicle/vessel recapitalization and facilities discussed in Section 5.1.

TRANSIT ELECTRIFICATION SUCCESS STORY: ZION CANYON SHUTTLE

The Zion Canyon Shuttle, established in 2000, carries nearly 6.8 million passengers per year and provides seasonal service to key park destinations, with connections to lodging and businesses in the town of Springdale, Utah. Zion National Park is in the process of replacing its 21-year-old transit fleet with new zero-emission, battery-electric transit buses. The new fleet will include 30 battery-electric buses and 31 charging stations to replace the current propane-powered transit fleet. Engineering and service connections have been completed for the first phase of electric charging station installation in 2021 and delivery of new battery electric buses will occur periodically over the next several years. The NPS was awarded $33.4 million in fiscal year 2020 NSFLTP funds for this fleet replacement.

Figure 19: New zero-emission, battery-electric bus ready for delivery to Zion National Park (Source: NPS)

4.2 Climate Change Resilience

Climate change has increased the frequency of extreme weather events and natural disasters, severely impacting transportation systems and facilities on public lands. To understand which assets are vulnerable to extreme weather, NPS developed a Coastal Hazards and Sea-Level Rise Asset Vulnerability Assessment Protocol, in partnership with the Program for the Study of Developed Shorelines at Western Carolina University, which established a standard methodology and set of best practices for conducting vulnerability assessments for coastal facilities. Approximately 20 coastal NPS units have completed vulnerability assessments, evaluating the vulnerability of structures and transportation assets to coastal hazards and sea-level rise. NPS plans to complete approximately 20 additional coastal vulnerability assessments in the coming years. These vulnerability assessments will inform investments in roadway infrastructure to ensure the longevity of investments (see Section 6.1).

The vulnerability assessments conducted to date found that access roads and other transportation infrastructure are highly vulnerable to coastal hazards and sea-level rise, with a current replacement value (CRV) of over $1.7 billion. The next step is to conduct rapid resiliency assessments to evaluate options for each transportation infrastructure asset and determine how to manage them in a resilient and sustainable manner going forward. Strategies could include using engineering and nature-based solutions to protect assets (for example, moveable boardwalks, permeable pavement, or constructed wetlands), relocating assets to higher elevation, or redesigning access and developing redundant travel routes. For example, at the Cape Cod National Seashore, a coastal parking lot for Nauset Light Beach is being lost due to accelerated erosion from sea level rise and increased coastal storms. Rather than rebuilding it, the park is assessing the feasibility of moving the parking lot inland and providing a tram service for visitors to access the beach. In partnership with the state of Florida, NPS is raising the Tamiami Trail (U.S. Highway 41) to restore seasonal water flow to Everglades National Park. The project will improve ecological connectivity and replenish aquifers across south Florida, making the state's freshwater supply more resilient to climate change.

Non-coastal parks also face risks from natural hazards and climate change. A similar process will be required to assess the vulnerability of NPS transportation infrastructure and assets to other hazards, such as glacier recession, permafrost thaw melt, riverine flooding, and wildfires, and to develop and implement resilient strategies for the vulnerable assets.

Investments are also needed to help parks address infrastructure damage as a result of severe weather. The Emergency Relief for Federally Owned Roads (ERFO) Program was established to assist federal agencies with the repair or reconstruction of federally owned transportation facilities that have suffered damage from a natural disaster or catastrophic failure. The intent of the ERFO program is to pay the unusually heavy expenses for the repair and reconstruction of eligible facilities. Given the increased frequency of extreme weather and natural disasters, continued and increased investment in this program is critical.

NPS has identified an annual funding need of **$20 million** to implement projects that enhance environmental sustainability and respond to climate change. This would fund additional vulnerability and rapid resilience assessments, allow NPS to incorporate climate adaptation measures into planned/ongoing construction activities, and fund several projects that protect natural resources and enhance overall system resilience.

Category	Annual Need	5-Year Need	Expected Outcome
Sustainability and Resilience to Climate Change	$20 M	$100 M	Implement projects to reduce vulnerability to climate change at highly sensitive areas

CLIMATE CHANGE VULNERABILITY ASSESSMENT: SITKA NATIONAL HISTORICAL PARK

Sitka National Historical Park preserves the site of a battle between invading Russian traders and indigenous Tlingit Kiks.ádi. The Coastal Hazards and Sea-Level Rise Asset Vulnerability Assessment Protocol found that over one-quarter of assets (28 percent) at Sitka have high vulnerability to erosion, flooding, storm surge, sea-level rise, and historical flooding, while only 9 percent have moderate vulnerability to these risks. While the majority of assets at Sitka have either low or minimal vulnerability, all four high vulnerability transportation assets at Sitka are trails. One of these high vulnerability trails, the Totem Walk, is high priority to the park, as identified in the asset priority index from the NPS facilities database, as it provides access to the totem poles that are central to the park mission.

Figure 20: Gravel trail leading to totem pole
(Source: U.S. DOT Volpe Center)

Figure 21. Zion National Park (Source: NPS)

5. THEME 2: ENHANCE VISITOR EXPERIENCE AND CONNECT DIVERSE COMMUNITIES

To improve access for visitors and connect parks and communities, NPS is working to create a 21st century transportation system through investments in transit, trails, and technology. These multimodal transportation investments will ensure a national park system that is responsive to increased visitor demand and enables car-free trips.

Multimodal transportation increases equitable access to parks by providing ways for people without a personal vehicle to travel to and around national parks. It also helps to connect parks and gateway communities, while providing both quality of life and economic benefits to these communities. Transit and trail investments also reduce traffic and other negative impacts of congestion in communities near high visitation parks and provide transportation options appropriate to the park context.

Investments in transit and trail infrastructure help NPS meet its climate goals. Each year, NPS transit systems contribute to eliminating over 480 million passenger vehicle miles from the road, reducing CO_2 emissions by nearly 180,000 metric tons. Walking and biking facilitates car-free trips and reduces emissions while providing other excellent health benefits.

NPS serves visitors by researching and piloting the use of new transportation technologies, including automated shuttle demonstrations, partnerships for ridehailing and bike share, and real-time information on road closures, bus arrivals, and congestion. These technology investments provide visitors with more options on how they travel to and around parks and help NPS keep up with a rapidly evolving transportation industry.

5.1 TRANSIT SYSTEMS

NPS transit systems provide critical access to NPS units or sites that are otherwise inaccessible due to geographic constraints (e.g., water bodies and steep topography), resource protection considerations, or heavy congestion. Transit helps visitors access and experience parks and major visitor destinations by means other than personal automobile. Whether to avoid congestion, reduce travel costs, or get closer to natural, historic, or cultural resources, there are over 45 million boardings on NPS transit each year. The NPS National Long Range Transportation Plan identifies transit among NPS's highest priority transportation needs and suggests redirecting funding to transit from maintaining lower priority roads.

The NPS transportation system includes approximately 100 surface and water-borne transit systems – ranging from small, ranger-guided van tours to large, complex shuttle bus and ferry systems (see Figure 11). In 2019, the net CO_2 emissions savings from NPS transit was equivalent to removing 16.8 million personal vehicle trips and 483 million passenger vehicle miles from the road. Transit systems also provide relief on park roads by carrying more people per square foot of road space, reducing associated fuel-inefficient driving behaviors like extended idling and stop-and-go, influencing how visitors spend their time in the park, removing long lines of cars from viewsheds, and minimizing impacts on protected resources.

NPS uses a variety of business models to operate transit services. NPS relies on private sector contractors and public sector partners to carry approximately 99 percent of its over 45 million annual transit passenger boardings. These entities provide vehicles, hire drivers, and operate and maintain systems through sophisticated and well-established contracting mechanisms. While NPS provides standards, administration, and often the vehicles and facilities, operations are generally supported by user fees and fares charged to visitors. In 2019, NPS partnered with nine local transit agencies, which accounted for 7.9 million passenger boardings in that year.

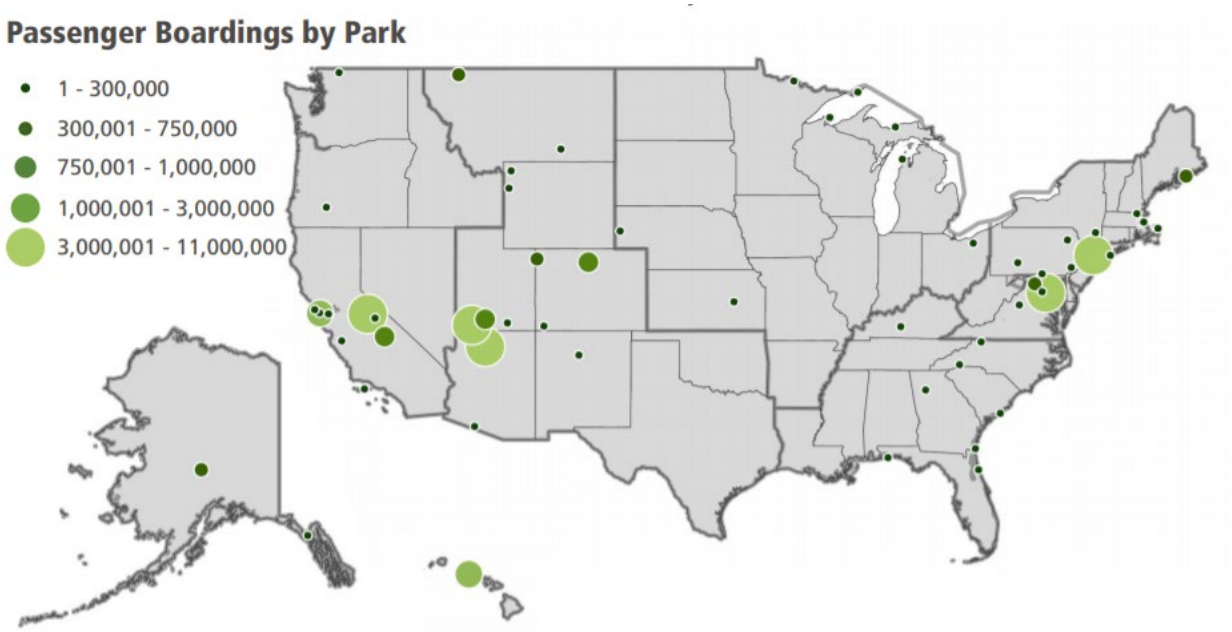
For many large NPS transit systems, including Zion National Park and Grand Canyon National Park, a contractor operates NPS-owned vehicles. Service contracts can be structured to have a great deal of flexibility, including "turn-key operation," where vehicles are owned or leased by the contractor. With some exceptions, it is more cost-effective for

NPS to own vehicles that are maintained and operated by the private sector than to rely on contractors to provide vehicles through turn-key contracts.

NPS is working to assess the condition and operational performance of its transit systems to help achieve sound asset management goals and reduce life-cycle costs. However, many needs remain, and with flat or declining funding, the condition will greatly deteriorate. As a number of large transit systems were established approximately 20 years ago, the vehicles and associated infrastructure (e.g., bus maintenance facilities) in many parks now require replacement or upgrading, which provides an opportunity to upgrade systems with alternative fuels (see Section 4.1). Substantial funding is needed to replace and upgrade critical transit systems into the future.

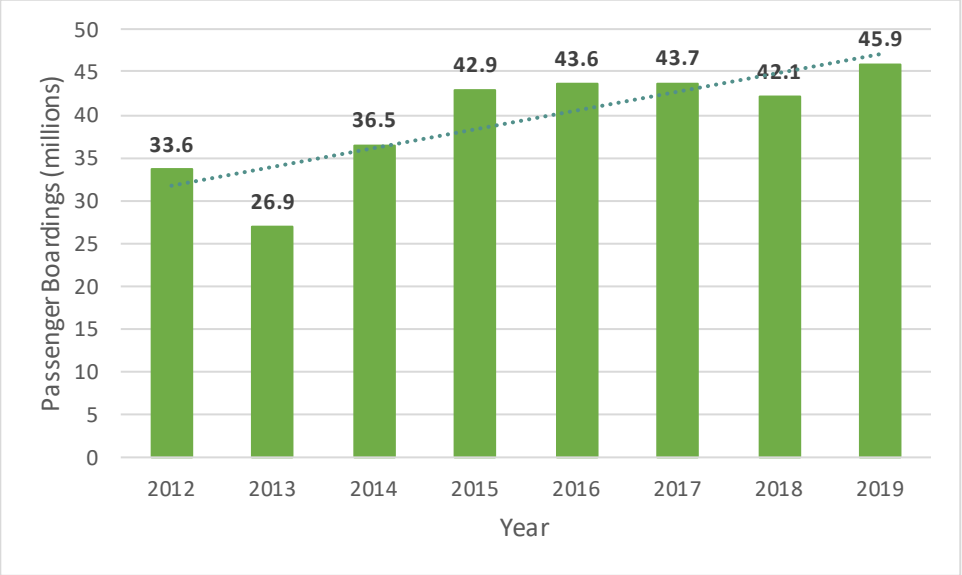
Category	Annual NPS Need	5-Year NPS Need	Expected Outcome
Transit, Ferry, and Railroad Systems	**$160 M**	**$800 M**	**Replace and upgrade transit systems to continue to support over 45 million passenger boardings/year, avoiding 16.8 million personal vehicle trips annually**
Vehicle/Vessel Recapitalization and facilities [9]	$60 M	$300 M	
Operations [10]	$100 M	$500 M	

Figure 22: NPS Transit Systems (Source: NPS National Transit Inventory and Performance Report, 2019)



[9] This estimate is distinct from the cost of alternative fuel transit fleet replacement discussed in Section 4.1.
[10] Estimated operating requirement for the 60 NPS transit systems that are not interpretive tours.

Figure 23: Annual NPS Transit System Passenger Boardings (Source: NPS National Transit Inventory and Performance Report, 2019)



5.1.1 Fleet/Vessel Recapitalization and Facilities Investments

NPS transit fleets and facilities are aging. Many of the 236 NPS-owned vehicles are either past or quickly approaching their expected service life—68 percent are at least 10 years old, putting them in the latter portion of their service lives; only 12 percent are less than 5 years old. The NPS also owns transit facilities and waterborne vessels and facilities that require maintenance and rehabilitation. In addition to these moving stock and facility needs, the NPS also needs to modernize systems to better serve visitors and meet increasing demand. The NPS has identified **$60 million** in annual needs for transit vehicle and vessel recapitalization, new transit vehicle needs, and transit facility needs. Parks with estimated transit vehicle replacement costs over $5 million during the next ten years include Acadia National Park, Grand Canyon National Park, Isle Royale National Park, and Yosemite National Park.

5.1.2 Operations

Annual operations costs account for approximately two-thirds of the overall expense of providing transit service to the visiting public.[11] The estimated operating requirement for all 60 NPS transit systems that are not interpretive tours[12] totals approximately **$100 million** annually (Appendix A: Alternative Transportation Operations and Maintenance Costs provides additional information on transit system operations and maintenance costs). Parks are limited in their ability to adjust transportation fee revenues to match rising costs from inflation for key systems. Moreover, fees alone cannot sustain the cost of operating a transit system at a reasonable consumer price point. The COVID-19 pandemic also reduced transit ridership at many parks, lessening the fee revenues collected. Furthermore, diverting fee revenue to transportation diminishes the ability to use recreation fee funds to make other critical park improvements and to lower maintenance backlog.

[11] NPS Alternative Transportation Systems Financial Pro Forma Analysis
[12] Systems that provide solely interpretive tours are excluded from the analysis because they provide a discretionary recreational service.

TRANSIT SUCCESS STORY: NATIONAL MALL AND MEMORIAL PARKS

After years of collaborative planning, National Mall and Memorial Parks reached an agreement in 2015 with Washington D.C. Department of Transportation to operate the National Mall Route for the DC Circulator. This partnership with a local transit agency provides affordable public transit for visitors and D.C. residents to access the monuments and museums on the National Mall. This service is fully integrated into the local and regional transit network. With 14 new electric buses added to the DC Circulator fleet in 2018, another benefit includes reduced emissions. The Park utilizes parking meter revenue on the National Mall to help cover partnership expenditures.

Multimodal connectivity is provided by buses with bicycle racks. The buses connect the Capital Bikeshare's 500+ stations to the regional system. Nine bikeshare stations are located on the National Mall, and five of the ten most popular stations in D.C. are located at NPS sites. Visitors and residents can also connect to shared electric scooters, which are available at NPS sites and throughout the D.C. area. Through the DC Circulator partnership, park staff can focus on managing the park while ensuring visitors are provided exemplary multimodal transit service.

Figure 24: In Washington D.C., some revenue from NPS parking meters is shared with the DC Circulator, which provides transit access to the National Mall. (Source: DC Circulator)

CONGESTION MANAGEMENT

Congestion issues in national parks are most acute at parking areas, park access roads, and visitor centers, with important implications for visitor experience, safety, and park operations. Non-recreation (commuter and commercial) traffic is also a major contributor to congestion.

The NPS Congestion Management Program aims to:

- Shift congestion investment focus from building/expanding infrastructure to managing operations
- Provide early technical support instead of waiting until congestion is systemic and difficult to manage
- Integrate with NPS visitor use management (social science) framework

Congestion at Cuyahoga Valley National Park, Ohio

Congestion at Cuyahoga Valley National Park, located between Cleveland and Akron, is rising due to shifts in visitor activities with modest increases in overall visitation. Recently, there has been a significant shift toward the use of two regional bike trails, greater numbers of riders on the Cuyahoga Valley Scenic Railway (which features a hop-on/hop-off rail service to and from Cleveland), and increased interest in river kayaking. These shifts mean that visitors are now largely concentrated toward the park's central river/trail "spine," resulting in a substantial increase in parking congestion near these facilities. Cars may be parked along roadsides more than half a mile from a popular trailhead, while large parking areas previously frequented by families are underused.

In 2017, staff from Cuyahoga Valley National Park and park partners conducted a congestion assessment. In less than 90 days, the team developed the assessment with multiple tools for the park to adapt to changing conditions. The assessment included a strong emphasis on operational flexibility to address parking, safety, and visitor information. The park is now deploying parking management strategies to manage congestion without expanding infrastruture.

Figure 25: Cuyahoga Valley Scenic Railway (Source: NPS)

5.2 Active Transportation

Each year, millions of visitors walk and bike in and around national parks. Improving pedestrian and bicycling networks can help promote car-free trips, improve safety for people walking and biking, and better connect parks and nearby communities. Active transportation improvements can promote local economies in gateway communities by attracting visitors and supporting local businesses such as bicycle shops, sports stores, and restaurants. Active transportation facilities within and around parks also improve quality of life and attractiveness for residents, who often value places to walk and bicycle safely within and near their surrounding communities.[13]

The NPS manages nearly 5,000 miles of front country trails, including approximately 1,000 trail bridges and 40 trail tunnels. The servicewide annual operating and maintenance requirement for front country trails is $46.6 million. This includes operations, along with recurring and preventive maintenance. Providing active transportation opportunities and keeping pedestrians and bicyclists safe are NPS priorities. However, despite their importance and high priority, in 2020 there was $238 million needed for servicewide investment in front country trail systems. The NPS has only $16.4 million in planned capital funding for trails in the next five years.

In 2020, the average Facility Condition Index (FCI) for all non-motorized front country trails was 0.127, placing them in the "fair" condition. If current levels of spending on trails continue, the trail condition is expected to worsen toward poor condition. If non-motorized trails are funded at a level of **$50 million** per year, the condition will improve drastically, to an FCI of 0.02 by 2026.

Facility Condition Index

The Facility Condition Index (FCI) rates the condition of a facility or asset at a particular point in time. It is calculated by dividing the projected cost of repairs by the current replacement value (CRV) of an asset.

- Good: Less than or equal to 0.1
- Fair: 0.101 - 0.15
- Poor: 0.151 - 0.5
- Serious: Greater than 0.5

NPS 2020 Average FCI

- Trails: 0.127

In addition to improving the condition of its existing trails, the NPS wants to improve its trail system to better serve visitors. A 2018 NPS assessment identified major improvement needs and missing links in its trail system.[14] This includes $270 million, or **$54 million** annually in improvements to existing trails and connections to gateway communities.

Category	Annual Need	5-Year Need	Expected Outcome
Existing Front Country Trails[15]	$50 M	$250 M	Improve systemwide average to good condition
Trail Improvements and Connections	$54 M	$270 M	Invest in major trail projects and construct links in the trail network

The NPS is working across rural, suburban, and urban communities to increase connectivity to local and regional trail systems. For example, in the urban Twin Cities region, the Mississippi National River and Recreation Area is working with partners to develop a multimodal, alternative transportation system to enable park visitors and area residents to travel throughout the park without a car. The system includes over forty Nice Ride Minnesota bike share stations, fifty ADA bus

[13] NPS Active Transportation Guidebook (2018). https://www.nps.gov/subjects/transportation/upload/UPDATED_NPS_Guidebook_July2018_Final_UpdateSept2018-High-Res_WEB-2.pdf

[14] In 2018 the NPS developed a Category III Servicewide Needs Assessment through an internal process to identify transit, trail/rail, and technology needs using existing datasets and a series of meetings with regional staff to serve as a validation process.

[15] NPS front country trails as defined in its NLRTP exclude the following: all backcountry trails, horse trails, portage trails, water trails, pack animal trails, cross-country trails, and front country class I and II trails that are native or gravel surface.

pads and sidewalk connections, new signage and marketing efforts for the evolving network, and pedestrian connections to a 72-mile segment of the Mississippi River Trail, which extends to more suburban and rural communities.

TRAILS SUCCESS STORY: BRYCE CANYON SHARED USE PATH

In 2016, a new shared use path opened in Bryce Canyon National Park, Utah. The 5-mile trail is open to bicycles and pedestrians and is wheelchair accessible. It traverses from Inspiration Point in the park to the shuttle staging area in Bryce Canyon City and connects to a paved path in Dixie National Forest that travels 17 miles through Red Canyon. Beyond excellent trail access within the park, this regional trail connection provides park visitors with many options to connect to other recreation lands in the area.

Figure 26: Shared Use Path in Bryce Canyon National Park (Source: U.S. DOT Volpe Center)

5.3 EMERGING MOBILITY

The transportation industry is evolving at a rapid pace, aided by advancements in mobile technology, new shared mobility business models, and vehicle automation. These emerging mobility trends present opportunities and challenges for the NPS and the resources entrusted to it. The NPS is exploring four key transportation trends that are currently impacting or expected to affect the NPS and visitors: micromobility, ridehailing, traveler information technologies, and automated vehicles. With input from staff across the agency and subject matter experts from U.S. DOT, the NPS is assessing the resource protection, safety, equity, and visitor experience implications of these technologies and devising policy and program solutions. Proactively addressing these issues can help parks around the country support visitors while protecting natural and cultural resources, address logistical issues, and develop a more efficient and nimble transportation system.

Based on conversations with NPS park and regional staff about emerging mobility and technology needs, the NPS has identified **$20 million** in annual funding needs to communicate to visitors, improve access, and manage congestion. This funding would allow the NPS to research and implement transportation technologies and pilots, including automated shuttle demonstrations, partnerships around bike sharing and ridehailing, and investments in technologies that provide real-time and predictive transportation information to visitors.

Category	Annual Need	5-Year Need	Expected Outcome
Emerging Mobility Research & Implementation	$20 M	$100 M	Improve access, manage congestion, and communicate to visitors

5.3.1 Micromobility

Micromobility includes shared or private electric scooters, bikeshare, or other small, lightweight, wheeled conveyances. This rapidly evolving field presents challenges as well as new opportunities. For example, Washington D.C.'s Capital Bikeshare and Minneapolis's Nice Ride feature stations within NPS boundaries, planned in partnership with the NPS. The National Mall is coping with the sudden arrival of new dockless e-scooter systems whose users sometimes leave these devices haphazardly blocking roads, sidewalks, or scenic views. Based on these challenges, and with input from subject matter experts, the NPS is currently pursuing pilot projects at appropriate park locations to test out requiring visitors to park devices in designated corrals using geofencing technology and/or developing designated micromobility routes.

Figure 27: Social media post from National Mall and Memorial Parks urging safe use of e-scooters in permitted areas. (Source: NPS)

5.3.2 Ridehailing

In many urban and suburban national parks, some visitors already access parks via ridehailing services such as Uber and Lyft, providing additional options and enhanced access, especially for those without cars. At the same time, rural parks are increasingly interested in working with ridehailing companies to reduce the need for expensive and environmentally disruptive new parking lots. The NPS is pursuing ridehailing pilot projects in parks in order to test operational, infrastructure, and visitor experience impacts of dedicated ridehailing pick-up/drop-off areas. These pilots will also involve considering how to handle entrance fees for ridehailing versus private vehicles and working with ridehailing companies to provide riders with warnings in apps if a drop-off location is at a park without cell reception (meaning they would have difficulty getting a ride back). The NPS also plans to gather data on the proportion of visitors arriving by ridehailing versus other means to gain perspective on visitor travel patterns and inform park planning and operations.

5.3.3 Traveler Information Technologies

The NPS is using traveler information technologies as a cost-effective way to reduce congestion and improve the visitor experience at parks across the country. These encompass a range of technologies that can provide travelers with information about travel conditions, congestion, parking, and trip planning—and help them make more informed travel decisions. Part of the NPS strategy includes deploying infrastructure like transit vehicle locator systems, vehicle and parking lot counters, automated entrance gates, and variable message signs. The widespread adoption of smartphones and mobile technology also provides an opportunity to share real-time information with the traveling public, from bus locations to parking space availability to road closure information. The NPS is exploring ways to enhance the newly released NPS smartphone app in order to integrate and provide visitors with trip planning and other transportation-related information.

5.3.4 Automated Vehicles

Over the past decade, significant advancements have been made in automated vehicle (AV) technologies ranging from driver-assistance features to highly automated vehicles capable of driving without human assistance. As these technologies continue to advance, they may change how people access and engage with national parks and introduce new considerations for the NPS related to the development and maintenance of transportation systems.

The NPS launched its first-ever automated vehicle shuttle pilots in 2021, one at the nation's first national park, Yellowstone, and the other at the location of the first powered airplane flight, Wright Brothers National Memorial. To date, most automated shuttle pilots have occurred in urban areas, and the remote settings at Yellowstone and developed area of Kitty Hawk, NC will provide the NPS and industry leaders with an opportunity to assess the suitability of these technologies for use in public lands. In addition to assessing opportunities for new mobility and interpretive offerings, these pilots will enable the NPS to better understand the infrastructure required for, costs associated with, and the benefits of automated shuttle technologies for NPS use cases. These pilots will demonstrate the importance of visitor experience, in relation to other transportation factors considered with AV shuttle pilots such as safety, travel time, and interactions with other modes and surrounding infrastructure.

Figure 28: The two automated shuttles being delivered to Yellowstone National Park ahead of the spring 2021 demonstration pilot (Source: NPS)

EMERGING MOBILITY SUCCESS STORY: AUTOMATED SHUTTLE PILOTS

The NPS is launching automated shuttle pilots at Wright Brothers National Memorial and Yellowstone National Park in spring 2021. These demonstrations—the **first-ever automated shuttle pilots at a recreational public lands site in the country**—will allow the NPS to test the suitability of emerging automated vehicle technologies in public lands. The two parks chosen for these pilots each represent a milestone innovation in American history that these pilots build upon. With Wright Brothers National Memorial as the location of the first successful motorized airplane flights, and Yellowstone as the world's first national park, these pilots build upon this historic legacy of innovation and advancement, allowing the NPS to test emerging technologies to chart a plan forward in the future of transportation to and within public lands destinations.

The Wright Brothers National Memorial pilot is being conducted and funded through a partnership with the North Carolina Department of Transportation. With research funding from U.S. DOT, the NPS selected vendor Beep, Inc. through a competitive process to provide automated shuttle service in the Canyon Village area for the Yellowstone pilot. Both pilots will use electric vehicles capable of operating at SAE Level 4 automation. A trained safety attendant will be on-board at all times to monitor vehicle operations and will be able to take manual control of the vehicle, if necessary, for any reason. The shuttle demonstrations will be conducted in compliance with all relevant federal, state, and local guidelines concerning health and safety measures related to the COVID-19 public health emergency.

The NPS, in partnership with the U.S. DOT Volpe Center, will evaluate both pilots following their completion to assess how the automated technologies performed in park settings and to identify potential future use cases for automated shuttles and other technologies across the NPS.

Figure 29: The automated shuttle at Wright Brothers National Memorial (Source: North Carolina Department of Transportation)

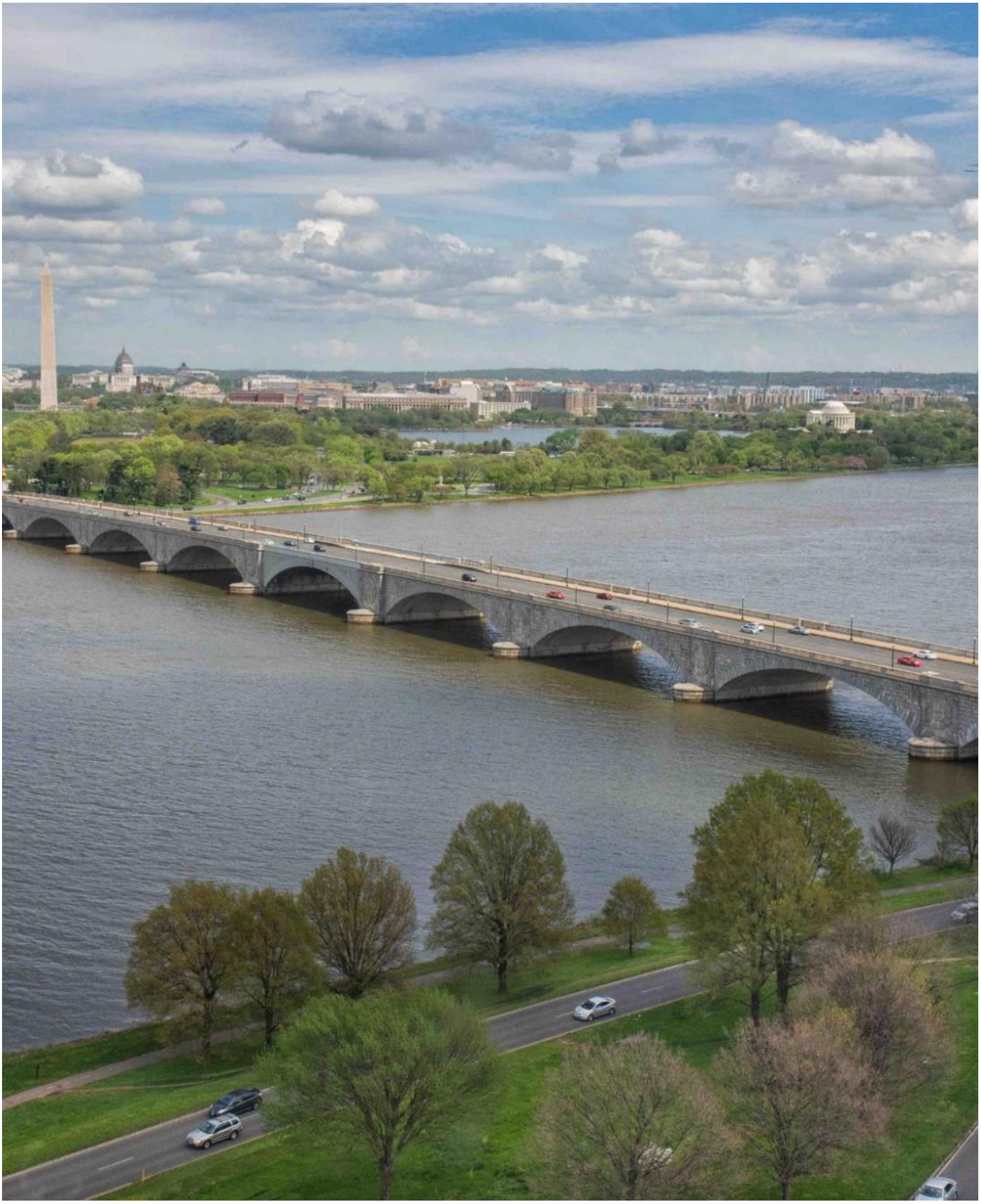


Figure 30. Arlington Memorial Bridge (Source: NPS)

6. THEME 3: REINVEST IN THE SYSTEM AND MAKE LEGACY INVESTMENTS

In addition to focusing on much-needed transit and trail improvements, the NPS needs to make critical investments to maintain and improve the condition of roads and parkways, parking areas, bridges, and tunnels. GAOA funding has allowed the NPS to invest in large roadway and bridge reconstruction projects. However, the FLTP remains the primary source of funding for key access infrastructure across all modes. If funding levels decrease or stay the same, the condition of NPS transportation assets will decline. Additional FLTP funding will enable the NPS to provide a safe and efficient transportation system for visitors while preserving access to natural, historical, and cultural resources. Addressing safety issues across the transportation system is a focus for the NPS, considering the significant number of fatalities and injuries occurring.

To leverage limited funding, the NPS pursues grants and strategic partnerships with state and local governments and pursues innovative finance strategies. Discretionary programs like NSFLTP are critical to funding priority megaprojects across the country.

6.1 ROADWAY INFRASTRUCTURE

The condition of roads and parkways, parking, bridges, and tunnels impacts the ability of the NPS to provide a safe and enjoyable visitor experience and to protect the very resources the bureau has been mandated to oversee. The NPS roads and bridges are an important part of the multimodal transportation system. Poor road infrastructure condition impedes and diminishes visitor access and experience, negatively impacts natural and cultural resource conditions, increases the long-term costs of maintaining paved roads, and contributes to vehicle crashes. Furthermore, deteriorating bridges and tunnels threaten the long-term accessibility of key NPS destinations.

The NPS partners with FHWA to regularly inspect and proactively maintain this infrastructure. Using industry-standard methods, the NPS minimizes total lifecycle ownership costs while maximizing visitor experience. With limited funding, the NPS faces challenges in maintaining its roadways in good condition. If funding for transportation assets remains flat or declines, the overall condition of the transportation system will deteriorate considerably.

Pavement Condition Rating

The Pavement Condition Rating (PCR) is an FHWA-developed, industry standard metric to describe the condition of paved roads. PCR values range from 0 to 100 with higher numbers indicating pavement in better condition.

- Good: 85-100
- Fair: 61-84
- Poor: Less than 61

NPS 2020 Average PCR

- Public paved roads: 83
- Public paved parking areas: 68

6.1.1 Paved Roads

The NPS transportation system includes 5,500 miles of paved roads open to the public and approximately 6,100 paved parking areas. In 2020, the average Pavement Condition Rating (PCR) for the paved road network was 83 and the average PCR for paved parking areas was 68, indicating a network in fair condition.

GAOA is providing critical funding to repair and rehabilitate the NPS road network. However, additional FLTP funding is needed to improve the condition of roads not addressed through GAOA and maintain the systemwide gains that GAOA funding will provide.

For the NPS to follow sound and efficient asset management practices, it needs to improve the public paved road network and maintain it at or above a PCR of 85 (the lowest PCR still in good condition at the network level). This approach would allow for efficient condition management using less expensive pavement preservation techniques and would reduce the frequency of much more costly component renewal and capital investment projects.

To address life-cycle maintenance and reinvestment for existing paved roads and paved parking areas, the NPS needs **$400 million for roads** and **$110 million for paved parking areas annually**. At this funding level, the NPS can address road life-cycle maintenance needs and implement more cost-effective preventive maintenance and light rehabilitation strategies.

Absent additional funding, the condition of the road network will deteriorate, meeting visitor needs will become more challenging, and future efforts to revitalize the road network will become more expensive, undermining sound asset management for a federal investment.

Category	Annual Need	5-Year Need	Expected Outcome
Paved Roadways	$400 M	$2,000 M	Improve systemwide average to good condition (Pavement Condition Rating ≥ 85)
Paved Parking Areas	$110 M	$550 M	Improve systemwide average to good condition (Pavement Condition Rating ≥ 85)

PAVEMENTS SUCCESS STORY: DENALI PARK ROAD REPAVING

The 90-mile singular access road into the heart of Denali National Park is paved for the first 15 miles. This initial segment was originally paved in 1968, and then repaved in 1990. Although the road structure held up for over a quarter of a century, corrective action was needed to replace surface deterioration, eliminate drainage issues, and excavate pockets of subsurface failures. This roadway project, conducted from 2017-2020, successfully improved the visitor experience while simultaneously maintaining access for hundreds of transit buses per day during the intensely active summer season.

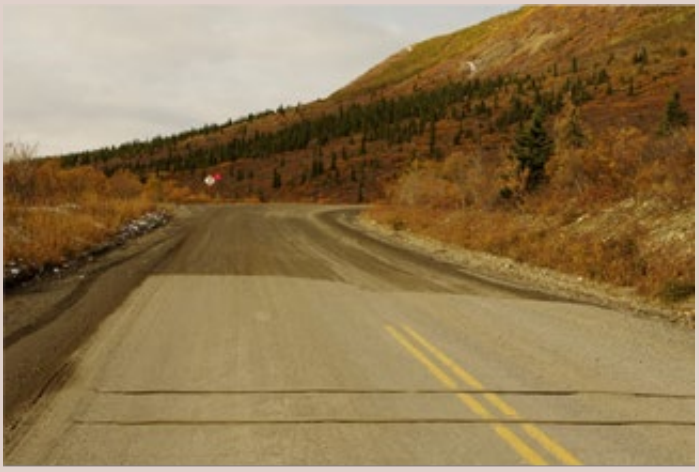


Figure 31: End of the paved section of Denali Park Road (Source: NPS)

6.1.2 Bridges and Tunnels

The NPS transportation system includes approximately 1,400 bridges and 60 tunnels. The bridge inventory overall is in good condition, with a 2020 average Bridge Health Index (BHI) of 93 percent. Maintaining the overall bridge inventory in good condition requires continuous investment. Although the average condition is good at the portfolio level, there are 42 structurally deficient bridges (approximately 3 percent of the bridge network). In addition, the aging bridge inventory includes a large number of bridges built in the 1940s, 1950s, and 1960s that are firmly in the second half of their expected service lives and do not meet current multimodal needs. These bridges require significant funding to maintain, reconstruct, or replace in the coming years.

GAOA funding is critical for helping the NPS address needs for some of its largest and most iconic bridges, large needs remain on other bridges in the system. Continued and expanded FLTP funding is needed to maintain the gains from GAOA and address deficiencies on other bridges.

Bridge Health Index

The Bridge Health Index (BHI) is an industry standard metric to describe the condition of bridges, and is based on models that consider structural condition, erosion around bridge piers and abutments and rate of deterioration. The BHI values range between 0 percent and 100 percent, with 100 percent indicating perfect condition.

- Good: 92-100 percent
- Fair: 80-91 percent
- Poor: Less than 80 percent

NPS 2020 Average BHI: 93

The NPS aims to keep its bridge inventory at an average BHI of 93 percent, which is the level expected at the end of 2020. However, due to lifecycle maintenance and reinvestment needs, maintaining the system at this condition requires significant additional funding. This includes the funding needed for major rehabilitation or replacement of bridges that are near or past the end of their service life. To maintain the bridge network at an average BHI of 93 percent, annual funding of **$90 million** is needed.

Category	Annual Need	5-Year Need	Expected Outcome
Bridges and Tunnels	$90 M	$450 M	Maintain systemwide average in good condition (Bridge Health Index of 93)

6.2 Safety

From 2008 to 2016, motor vehicle crashes were the second leading cause of reported deaths in national parks.[16] There are over 50 deaths per year or an average of one person per week who dies from a fatal crash on NPS roads.

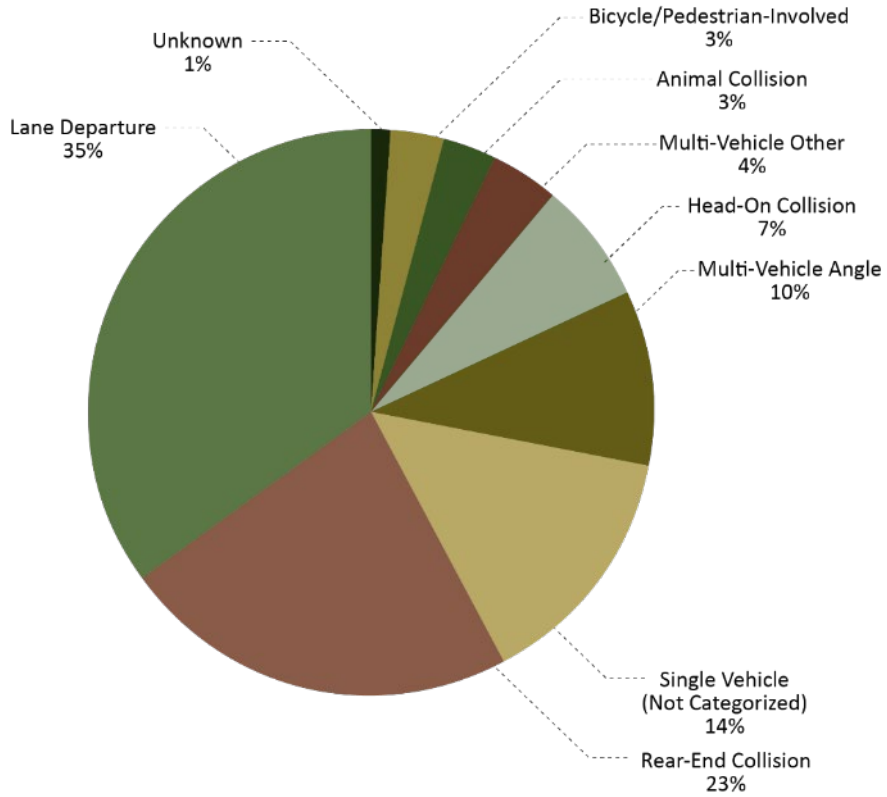
Based on crash data collected by NPS law enforcement officers from 1990-2005, an average of 6,900 crashes occurred in national parks annually.[17] Approximately 1,400 crashes, or 20 percent of total annual crashes, were severe crashes, resulting in fatality or serious injury (see Figure 32). The NPS is committed to enhancing transportation safety to reduce crashes, save lives, and protect resources.

In partnership with the U.S. DOT, the NPS has researched and evaluated industry best practices to identify programmatic gaps that are limiting success in reducing motor vehicle crashes. Current roadway safety efforts across the service (e.g., road safety audits) are park or regionally scoped and typically ad-hoc.

[16] NPS Public Risk Management Program, NPS Mortality Data Set
[17] NPS Servicewide Traffic Analysis and Reporting System, 2006

Driver error and behavioral factors that lead to crashes on NPS roadways cannot be completely addressed with only engineering mitigations but require a multidisciplinary, multi-faceted approach, including behavioral programs (enforcement, education, and emergency response strategies). The NPS does not receive dedicated funding to support targeted behavioral programs in parks, nor is it eligible for funding under highway safety programs under 23 U.S.C 402 or national priority safety programs under 23 U.S.C. 405 that typically support state, county, and city behavioral programs.

Figure 32: Type of Collision for Fatality and Serious Injury Crashes on NPS Roadways, 1990-2005



To address transportation safety holistically, the NPS has launched an initiative to create a robust Transportation Safety Program (TSP). The TSP encompasses both engineering and behavioral programs to reduce crashes in parks while conserving natural and cultural resources and enhancing visitor mobility, accessibility, and overall experience. The TSP will use data-driven, evidence-based engineering and behavioral strategies and focus funds on the greatest safety needs. Performance measures for the TSP will include the reduction in fatal and injury crashes on NPS roads.

The TSP has identified the need to incorporate NPS values into transportation safety studies and project development and implementation. The interdisciplinary TSP team will include representatives spanning across the NPS, including Natural Resources, Cultural Resources, Traffic Program, Risk Management, Law Enforcement, and Region and Park-level areas. The TSP's long-term goals include identifying safety study and project delivery best practices, developing safety countermeasure performance measures, deploying pilot studies with park units, and integrating safety into strategic planning efforts.

SAFETY SUCCESS STORY: NATCHEZ TRACE PARKWAY ROAD SAFETY AUDIT

In 2017, the NPS worked with the Volpe Center to conduct a Road Safety Audit (RSA) along the Natchez Trace Parkway in Mississippi. The RSA focused on a 13-mile rural segment of the Parkway near Kosciusko, MS that had a high number of fatal crashes. The RSA team proposed safety countermeasures for this and other rural stretches of the parkway using the "4Es of Roadway Safety": engineering, education, enforcement, and emergency response. For example, countermeasures proposed related to education included campaigns to address drowsiness, impaired driving, safe bicycling, and seatbelt usage. In 2019, the NPS received a $35 million NSFLTP grant to rehabilitate a section of the Parkway in Alabama and Mississippi. Drawing on the recommendations in the RSA, the project will incorporate raised pavement markers to improve safety throughout the project area.

Figure 33: Road Safety Audit team at Natchez Trace Parkway in Mississippi (Source: U.S. DOT Volpe Center)

6.3 MEGAPROJECTS

The NPS transportation megaprojects include nationally significant transportation facilities that have become functionally obsolete or have exceeded their design life and require large investments to bring them back to good condition. These projects include large transit fleet replacements and major bridge and road repairs, which require a much larger amount of funding than is available on an annual basis. The NPS megaprojects range from $25 million transit fleet replacements to nearly $1 billion to modernize a major park or parkway road system. These projects are generational investments that are critical to maintaining public access and protecting natural and cultural resources and are beyond the capability of the existing core programs.

Megaprojects projects require additional funding and strategic partnerships with state and local governments to successfully complete. Through discretionary grant programs such as NSFLTP and partnerships with state and local jurisdictions, the NPS has been able to leverage its limited funding and address these megaproject needs. For example, in recent years the NPS has secured funding for megaprojects at the Tamiami Trail in Everglades National Park, Yellowstone National Park, Natchez Trace Parkway, and Arlington Memorial Bridge. Even with significant funding from GAOA, there are still major funding needs for megaprojects.

PARTNERSHIPS SUCCESS STORY: FOOTHILLS PARKWAY

Congress authorized the Foothills Parkway in 1944 as a scenic parkway that would provide panoramic views of Great Smoky Mountains National Park. Constructed in sections beginning in the 1960s, the Parkway was never completed due to funding limitations and engineering challenges. The NPS partnered with the state of Tennessee to complete a $36 million funding package for a 16-mile unfinished section of the Foothills Parkway. The full depth reclamation paving project connects and opens a continuous 33-mile corridor, greatly enhancing access to the Parkway from major gateway communities. The NPS and Tennessee leveraged their funding, including a $15 million contribution from the state, to secure a $10 million U.S. Department of Transportation discretionary grant. The project was completed in 2018 and will support a significant amount of tourism and economic development in a rural, underserved part of eastern Tennessee.

Figure 34: Foothills Parkway Ribbon Cutting, November 9, 2018 (Source: NPS)

6.4 INNOVATIVE FINANCE

The NPS has limited opportunities to use innovative finance approaches. This term generally refers to techniques that increase financial leverage, involve the private sector, expand the use of user fees (such as tolls), and/or include new approaches to federal-state cost sharing. Some techniques regarded as conventional to state and local government may still be innovative in the context of a federal land management agency. For example, in recent years, the NPS had considerable success leveraging its limited funding through strategic partnerships to attract partner funding and pursue grants. State and local governments regularly fund projects through this approach.

The NPS uses all known innovative finance mechanisms that are legally authorized and relevant to its mission. For example, the NPS frequently employs a relatively narrow set of innovative finance strategies, including certain types of public private partnerships and partner agreements. These approaches are legally permissible and consistent with NPS policy.

Most innovative finance techniques afforded to state and local governments are not available to federal agencies. The NPS cannot implement approaches involving debt instruments or arrangements that require committing future Title 16 or 54 funding (including fee revenue and appropriated funds). This approach would require specific legislation, necessitate new staff capabilities and processes, and may entail additional financial risk to the agency.

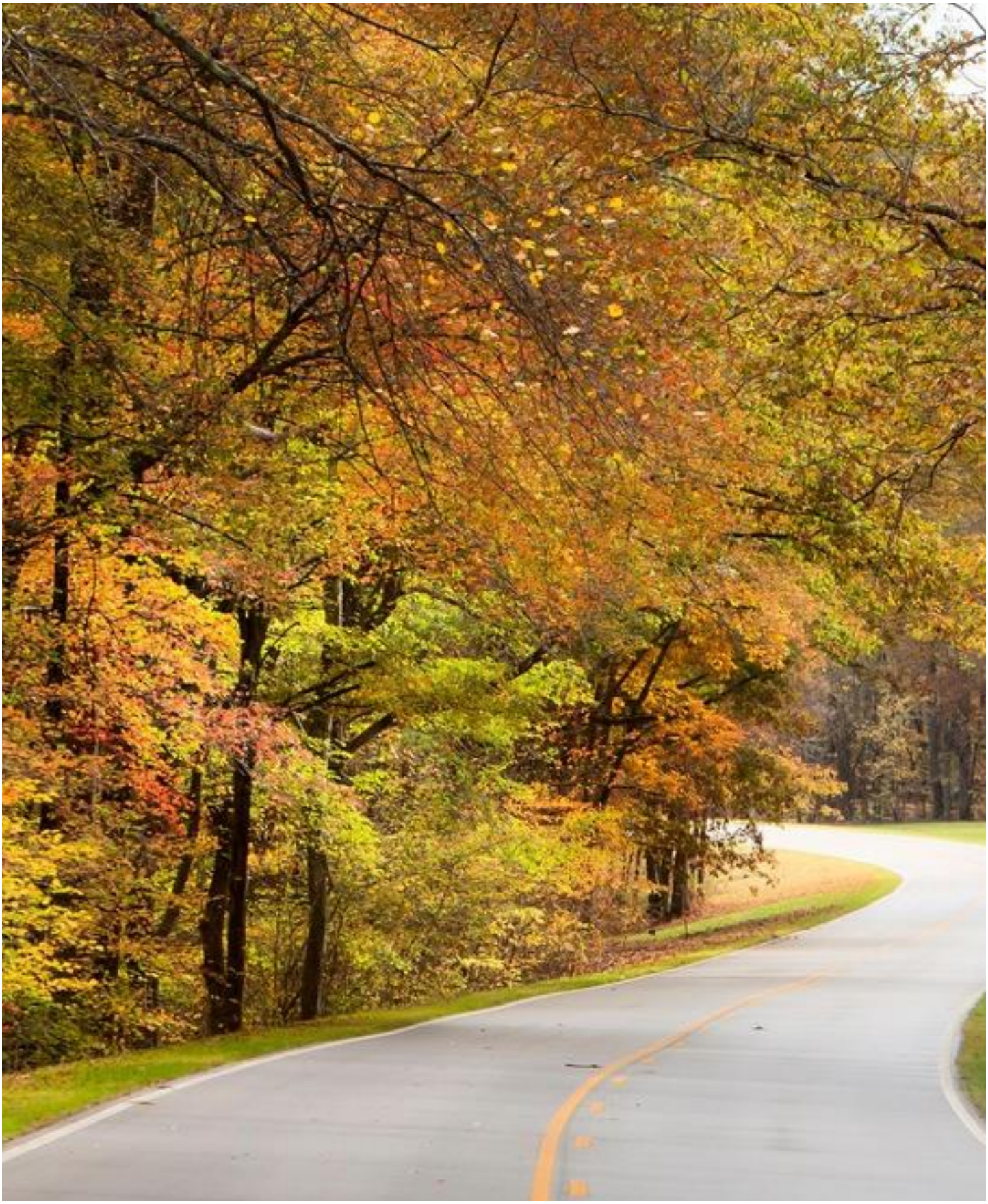


Figure 35. Natchez Trace Parkway (Source: NPS)

APPENDIX A: ALTERNATIVE TRANSPORTATION OPERATIONS AND MAINTENANCE COSTS

The National Park Service (NPS) defines alternative transportation systems (ATS) as a group of real property assets, fleet and vessels that are interrelated through business practices, and whose primary function is to provide for the motorized and non-motorized conveyance of park visitors to and from or within a park without the use of personal transportation vehicles. This definition also includes approximately 4,600 miles of paved front country trails that provide an alternative to private motor vehicle access to many park units. In addition to investments for new or improved alternative transportation systems, the cost to operate and maintain existing systems must be considered.

Figure 36: Yosemite Shuttle System (Source: NPS)

Overall Alternative Transportation Systems Operating & Maintenance Costs: The table below shows the estimated annual operating costs for transit and front country trails.

Alternative Transportation Category	Estimated Annual Costs
Transit Systems	
Transit O&M	$110,489,325
Shuttle Systems	$42,065,978
Rail Systems	$3,025,500
Ferry Systems	$65,315,550
Plane Systems	$82,297
Front Country Trails	
Trails O&M	$46,637,816
Total Annual O&M Costs	**$154,397,353**

Annual Operating Costs for Transit Systems: Operations & Maintenance (O&M) costs are represented for 63 NPS transit systems. Interpretive tours are excluded because they provide a discretionary recreational service. Costs include staff labor, fuel/oil, consumables, vehicle maintenance, operating supplies, insurance, and facilities O&M. Estimated costs are based on actual and modeled costs from concessioner Annual Financial Reports and from current ATS pro forma parks.

Front Country Trails: There are over 2,200 trail segments categorized as front country trails across 225 parks. For these trails, O&M requirements were calculated using industry standard models. These models estimate annual requirements for trails operations, recurring maintenance, and preventive maintenance.

Transit Operating & Maintenance Costs by Business Model: The table below shows the breakdown of transit O&M costs by business model.

Business Model	System Count	Vehicle Ownership: NPS	Vehicle Ownership: Non-NPS	Total
Concession Contract	27	$5,434,658	$67,998,256	**$73,432,914**
Service Contract	11	$11,012,525	$4,405,377	**$15,417,901**
Cooperative Agreement	12	$2,058,337	$17,343,172	**$19,401,509**
NPS Owned and Operated	13	$2,237,001	$0	**$2,237,001**
Total	**63**	**$20,742,522**	**$89,746,804**	**$110,489,325**

The O&M of NPS alternative transportation systems are funded through various sources. These can include fee revenue, NPS programs, Operation of the National Park System (ONPS) funds, donations, or corporate sponsorship. A 2011 study of 27 parks collecting transportation fee revenue determined that 72 percent of O&M costs were funded through fee collections. Operating costs represented the most significant overall expense to ATSs and account for two-thirds of the total cost.

Transit Systems Spotlight

Each NPS transit system serves one of the following purposes at the park: critical access (30%), mobility to or within park (19%), transportation feature (10%), and special need (3%).[18] Interpretive tours, which represent the remainder of park systems are excluded (38%). Annual Passenger boardings for all 99 transit systems have increased steadily over the past five years, from 33.6M in 2012 to 45.9M in 2019, according to the NPS National Transit Inventory and Performance Report, 2019.

Top Ten NPS Systems by Passenger Boardings in 2019

System	Park	Vehicle Type	Purpose	Operating Costs (2017)	Boardings
Statue Of Liberty Ferries	Statue of Liberty/Ellis Island	Concession Contract	Critical Access	$22,416,792	10,370,679
South Rim Shuttle Service	Grand Canyon	Service Contract	Mobility to or Within Park	$5,916,003	7,644,231
Zion Canyon Shuttle	Zion	Service Contract	Critical Access	$4,156,658	6,777,100
DC Circulator	National Mall	Cooperative Agreement	Transportation Feature	Not available	5,565,092
Yosemite Valley Shuttle	Yosemite	Concession Contract	Mobility to or Within Park	$2,976,055	3,161,758
Alcatraz Cruises Ferry	Golden Gate/Alcatraz Island	Concession Contract	Critical Access	$19,205,529	1,680,553
USS Arizona Memorial Tour	Pearl Harbor	Cooperative Agreement	Interpretive Tour	$4,441,190	1,133,784
Giant Forest Shuttle	Sequoia/Kings Canyon	Cooperative Agreement	Critical Access	$1,680,134	940,164
Bryce Canyon Shuttle and Rainbow Point Shuttle	Bryce Canyon	Service Contract	Mobility to or Within Park	$1,568,110	774,010
Bear Lake & Moraine Shuttle, Hiker Shuttle to Estes Park	Rocky Mountain	Service Contract	Critical Access	$2,200,847	774,010

[18] Critical access: connects visitors to an NPS park or site that is not readily accessible to the public due to geographic constraints, park resource management decisions, or parking lot congestion. Mobility to or within park: transit system serves as a supplement to private automobile access. Transportation feature: primary attraction of the park. Special needs: designed to meet the accessibility needs of visitors with special needs.

APPENDIX B: INNOVATIVE FINANCE AND STRATEGIC INFRASTRUCTURE PARTNERSHIPS

The National Park Service faces acute financial challenges in meeting its nationwide transportation needs. These include keeping up with road and bridge maintenance needs; modernizing and rebuilding to current standards; completing large projects beyond the core capacity of the NPS transportation program (termed 'megaprojects'); and maintaining, operating, and recapitalizing priority transit services. Over the past 15 years, the NPS has become increasingly sophisticated in leveraging state, local, and private sector partners to fund, operate, and maintain transportation infrastructure and services for the visiting public. This business strategy includes:

- Pursuing innovative finance techniques where applicable;
- Forming strategic partnerships with state and local governments for large projects; and
- Contracting and partnering with the private and public sectors to operate transit services.

While there is no clear distinction between "innovative" and conventional transportation finance, the term generally refers to techniques that increase financial leverage, involve the private sector, expand the use of user fees (such as tolls), and/or new approaches to federal-state cost sharing. Innovative finance gives agencies flexibility in pursuing projects across extended time periods, funding streams, and project partners. While the terms innovative finance, public-private partnership (PPP), and tolling are often used interchangeably, innovative finance does not always entail new revenue streams or user fees. Rather, PPPs depend on reliable revenue streams to attract private partners. This funding can be appropriated funds, fees, and/or new tolling revenue over an extended time horizon.

Successful execution of innovative finance approaches enables the NPS to pursue and implement a wider range of projects for the visiting public than would be otherwise possible under more traditional, appropriations-based funding approaches within a single fiscal year. Some techniques regarded as conventional to the broader transportation industry may still be innovative in a National Park Service context. For example, in recent years, the NPS has had considerable success leveraging its limited funding to attract partner funding and pursue discretionary federal aid transportation programs. State and local governments regularly fund projects through this approach.

This section explores innovative finance approaches and strategic partnership strategies the NPS already employs, identifies potential opportunities, and outlines key conclusions and recommendations to further these approaches in the NPS context.

Innovative Finance Strategies for NPS Transportation Projects

The NPS has extensively researched innovative transportation finance strategies and has successfully implemented all known innovative finance mechanisms that are legally authorized and relevant to its mission.[19] With few exceptions, most innovative finance techniques afforded to state and local governments are not applicable to federal agencies. These techniques and their applicability within the NPS context are described below:

- **Public-private partnerships (PPPs) and partner agreements:** PPPs are contractual agreements formed between a public agency and one or more private sector entities. The NPS routinely uses contracts and agreements that are authorized and most relevant to its mission. Most notably, this includes design-build contracts to repair and construct federal infrastructure. The NPS also routinely uses concession/service contracts and partnership agreements to operate transit service (described below). For service contracts, the NPS typically enters into 10-year agreements and renews them annually as funding is available from fee revenue collected at park entrance gates. Federal statutes and NPS policies place limitations on the types of contracts and partnerships in which the

[19] https://www.nps.gov/transportation/pdfs/NPS_Innovative_Finance.pdf

agency can engage.[20] Furthermore, PPPs that involve the lease, sale, or transfer of NPS assets to private entities would require changes to park authorizing legislation and NPS policies. Before entering into long term agreements of 30 to 50 years which are the best return periods for large infrastructure investments, the NPS needs to pilot projects in order to understand the potential successes and pitfalls of long-term agreements. Such agreements are difficult to implement, and it will take time to develop stringent performance standards and practical penalties for not meeting those standards.

- **Tolling / value pricing:** Reliable revenue streams through tolling, parking charges, and other user fees can be a key factor in enabling innovative finance approaches for transportation projects, particularly PPPs, and other debt instruments like bonds. The NPS has limited authority to levy user fees, including transportation and recreation fees charged at entrance stations under Title 54.[21] The NPS can also charge parking fees, which are known as expanded amenity fees. Tolling and other forms of value pricing that are often mentioned in the context of state and local government are not available to the NPS, as the agency has no statutory authority to levy tolls. Perhaps more significantly, tolling is only worthwhile for roads with heavy traffic, such as urban parkways in the National Capital Region. Even seemingly minor issues with billing errors and enforcement problems can generate significant negative press coverage and sway public opinion. Modest tolls can create large shifts in traffic volumes from one route to another. Upfront costs for tolling equipment can vary considerably, but recent projects suggest a minimum range of $30-$50 million for tolling infrastructure in a single tolling location. As much as 30 percent of gross toll revenue may go to collection costs, even for agencies using advanced technologies. Meanwhile, local state roadway service providers around national parks especially in the Washington D.C. area are trying to meet the same shortfall of more needs than available dollars by employing tolling. This new tolling trend has become slowly more acceptable to users. At no toll cost to the user, gateway parkways can quickly become the preferred alternative commuter route. In turn, these parkways would become more congested; expedite roadway, bridge and resource deterioration; and continue to compete over limited funds for much needed repair and reconstruction. If its legal framework were to change, the NPS would need to carefully consider mission/policy, political, cultural resource, and technical implications and constraints before proceeding. As a general rule of thumb, the cost, complexity and administrative burden may only be worth pursuing to fund projects over $100 million.
- **Infrastructure banks, debt financing, and other credit facilities:** Infrastructure banks function as a revolving fund from which the public and private sectors can borrow and pay back over time. A national infrastructure bank has been the subject of proposed legislation but does not currently exist. As mentioned earlier, the NPS does not have the specific statutory authority necessary to issue its own bonds nor the ability to service debt over a long-time horizon. Typically, state and local governments use credit facilities like the U.S. Department of Transportation's Transportation Infrastructure Finance and Innovation Act (TIFIA) program, private activity bonds (PABs), and tax-exempt leasing to lower borrowing costs and leverage private investment. As with tolling projects, these approaches are generally only applicable to a select set of large, complex transportation projects and could expose the NPS to significant financial risk.
- **Value capture / tax increment financing:** Tax increment financing involves levying a tax on specific private properties to pay for an infrastructure project. The initial project is often debt-financed through public bonds with the earmarked tax revenue used to service the debt. The NPS does not have authority to levy property

[20] NPS Director's Order 21 provides an overview of some key considerations related to donations and partnerships. https://www.nps.gov/policy/DOrders/DO_21.htm

[21] The Recreation Fee Program is authorized under 16 U.S.C. 98. The Transportation Fee Program is authorized in The National Parks Omnibus Management Act of 1998 (P.L. 105-391)

taxes, and therefore, use of this approach could only take place in conjunction with a state or local partner. Similarly, Business Improvement Districts (BIDs) could help finance improvement in cooperation with gateway communities.

In summary, the NPS frequently employs a relatively narrow set of innovative finance strategies for transportation infrastructure projects and services. These strategies primarily include borrow-payback approaches using Title 23 funds, design-build contracts, and certain types of PPPs and partner agreements that are legally permissible, paid for using fee revenue, and consistent with NPS policy. The NPS cannot implement most innovative financing techniques that are available to state and local government, particularly those involving debt instruments or arrangements that require committing future Title 54 funding (including fee revenue and appropriated funds). Each approach not already employed by the agency would require specific legislation, necessitate new staff capabilities and processes, and entail additional financial risk to the agency.

Strategic Infrastructure Partnerships with State and Local Governments

Over the last six years, the NPS secured over $500 million in state/local partner funding and outside federal aid transportation grants. **This translates to four dollars from outside public sources for every NPS dollar invested.** Through previous successful efforts, the NPS has shown how proactive servicewide leadership and significant assistance from the NPS Washington Support Office can help leverage limited NPS funding through public-to-public partnerships (see Table 1). These projects maintain the federal responsibility for NPS assets, while leveraging the shared interests and flexibility of partners.

For example, the NPS partnered with the State of Tennessee to complete the funding package for a 16-mile unfinished section of the Foothills Parkway adjacent to the Great Smoky Mountains National Park. The state contributed $15 million to the $36 million project, which will spur tourism and economic development in a rural, eastern Tennessee when completed in fall 2018. Together, the NPS and Tennessee leveraged their funding to secure a $10 million U.S. Department of Transportation discretionary grant.

Public Funding Sources for Recent NPS Megaprojects (2012-2020)

Project	Location	State/Local Partner	NPS	Other Federal Funds	Total
Anacostia Riverwalk	Washington, D.C.	$8.0 M	-	$17.0 M	$25.0 M
Arlington Memorial Bridge (Phase I)	Washington, D.C.	-	$76.0 M	$90.0 M	$166.0 M
CityArchRiver	St. Louis, MO	$90.0 M	-	$69.0 M	$159.0 M
Connect Historic Boston	Boston, MA	$7.5 M	-	$15.5 M	$23.0 M
Foothills Parkway	Eastern Tennessee	$15.0 M	$6.3 M	$14.7 M	$36.0 M
Natchez Trace Parkway	Alabama/Mississippi	-	$3.9 M	$35.7 M	$39.6 M
Tamiami Trail Bridging	Florida Everglades	$56.0 M	$21.0 M	$20.0 M	$97.0 M
Yellowstone National Park Road Reconstruction	Wyoming	-	$3.1 M	$27.8 M	$30.9 M
Zion National Park Fleet Replacement	Utah	-	$3.7 M	$33.4 M	$37.1 M
Total:	-	**$176.5 M**	**$114 M**	**$323.1 M**	**$613.6 M**

The NPS has had similar success leveraging partnerships and federal aid transportation funding for projects like the Anacostia Riverwalk, the Tamiami Trail bridging project, and the Arlington Memorial Bridge reconstruction. These and other successful infrastructure partnership projects point towards the opportunity to leverage additional funding and expertise of public sector partners, particularly where the NPS mission and partner goals overlap. The NPS has taken a proactive, servicewide approach to strategic infrastructure partnerships, leveraging in-house and partner expertise to confront some of the agency's largest challenges. In some cases, the NPS leverages the financial flexibility, program eligibility, and tools already available to partners. The NPS could further this work with new legal authorities, particularly those that would enable the agency to make financial commitments over multiple years.

Contracting and Partnering to Operate Transit Services

The NPS has had considerable success relying on private contractors and public partners to fund and operate 75 of the 95 surface and water-borne transit services operating in 60 national parks. [22] Private sector partners are responsible for the majority of the over 43 million annual transit boardings experienced across the NPS. These services rely on private contractors and public sector partners to provide vehicles, hire drivers, and operate and maintain systems. The NPS staff have a detailed procurement and oversight process to ensure these services are financially sustainable. These systems tend to be funded by visitor fees rather than the heavy subsidies that characterize most municipal and regional transit systems. This includes routine updates to each system's financial reporting documents to reflect yearly profits and losses, ensuring the system is on sound financial footing over multiple years. The examples below provide a high-level overview of the types of operational models used to deliver NPS transit services to the visiting public:

- **Concession Contracts:** A majority of the identified NPS transit systems (48) operate through concession contracts in which a private concessioner pays the NPS a franchise fee for the right to operate a profitable

[22] https://www.nps.gov/orgs/1548/upload/NPS_Transit_Inventory_2019_Final.pdf

transportation service inside a unit. For example, Statue of Liberty Ferries collects fees from visitors and logged nearly 11 million passenger boardings in 2019 using privately-owned ferries. The NPS oversees the contract and provides on-land infrastructure.

- **Service Contracts:** Transit systems contracted out to private operators are called service contracts. In 2019, 13 NPS transit systems operated using this business model. For example, the Zion Valley Shuttle had almost 7 million boardings in 2019 on NPS-owned shuttles operated by a private service provider. The NPS pays for the contract using a portion of fees generated at the park entrance and the private operator maintains the vehicles.
- **Cooperative Agreement:** A local government agency or nonprofit operated 14 of the NPS transit systems under a cooperative agreement in 2019. For example, the National Mall and Memorial Parks partnered with the DC Circulator (its own unique partnership between the District Department of Transportation, the Washington Metropolitan Area Transit Authority, and Business Improvement Districts in Washington, D.C.) to extend transit service from Union Station to the Lincoln and Jefferson Memorials. Visitors pay a fare to the local transit agency for use of the service. Parking revenue generated from meters along NPS roadways adjacent to the National Mall supplement the annual operational costs of the service. The route logged over 5.5 million passenger boardings in 2019.
- **NPS Owned and Operated:** The NPS owned and operated 20 small transit systems/tours in 2019. These systems tend to be small and provide critical access to a park or park site, consist of interpretive tours, provide service for special needs visitors, or are a park transportation feature not easily provided by a private operator. For example, the Rapidan Camp bus in Shenandoah National Park carried approximately 1,500 park visitors to President Hoover's historic camp using an NPS-owned van. The site is an important cultural resource protected by the park but is not accessible by private automobile.

Conclusions and Recommendations

- **The agency would need more funding flexibility for Title 54 as well as Title 23 funds to expand its use of innovative finance approaches**. The NPS has successfully developed strategic partnerships and implemented some innovative finance approaches. The NPS routinely uses borrow-payback approaches to fund large transportation projects using Title 23 funding. The agency has a proven track record of proactively engaging in strategic partnerships with state and local governments to access federal aid funding for major transportation projects. Furthermore, the NPS heavily leverages the private sector and public partners to deliver transit services to the visiting public. Each of these approaches could be supported and enhanced by ensuring that Title 23 and 54 funding sources share common flexibilities to make funding commitments over multiple fiscal years. This is particularly important given recent Administration proposals for a National Park Restoration Fund funded with revenues from energy and mineral development on federal lands and waters. Incremental funding authority at the FTA and DOD may be a federal model for making longer term funding commitments with private partners. Such authorities would enable the NPS to enter into longer term agreements with private partners to maintain, operate, and recapitalize transportation infrastructure and services over a sustained period of time. Given the proper authority, these commitments could be tied to appropriated funds, existing NPS fee authorities, and/or new tolling revenue.
- **PPPs are complex and expensive to implement and monitor, particularly when they rely on variable funding streams like tolling revenue. The NPS should proceed cautiously and experiment through pilot projects.** Long term agreements of 30 to 50 years need to be carefully studied in light of the NPS mission and potential financial risk to the agency. The ideal project would need to be over $100 million to justify the effort. For example, staff could consider a tolling pilot on a parkway in the National Capital Region but would need to conduct a sophisticated financial analysis before entering into an agreement with a private partner. NPS staff could also consider entering into a PPP to build a transportation megaproject in a major western park and/or a bundling of

specific asset types within a logical geography (e.g., preventative maintenance on bridges and roadways in one region). Funding for either arrangement could depend on tolls, fee revenue, and/or incremental funding authority with the right authorities. Given the national profile of the NPS, a major PPP involving tolling an NPS road or parkway could attract media scrutiny and Congressional attention. If authorized by legislation, NPS should proceed cautiously with new types of PPPs.

- **The NPS needs a multi-disciplinary team to plan, implement, and monitor PPPs. This will help the agency minimize mission, political, and financial risks associated with these types of partnerships.** Innovative finance is inherently complex and risky, particularly PPPs and approaches involving debt instruments over long time horizons. These projects require proactive planning and substantial time and expertise above and beyond conventionally financed projects. There are often financial tradeoffs among different options, and it is not uncommon for the projects to experience delays due to litigation, vendor issues, or technical problems. As projects become more complex and sophisticated, the NPS will need to stand up a core multi-disciplinary team to identify, plan, implement, and monitor projects while minimizing financial risk. Federal staff will need to ensure contracts contain performance standards and monitor the private sector partner, imposing practical penalties when standards are not met. This federal team should be composed of NPS staff with support from experts at partner agencies and third-party private contractors.
- **The NPS needs to engage the administration, Congress and the public to influence the direction the agency should take in pursuing innovative finance approaches for the care and stewardship of park infrastructure. In order to be ultimately successful, the NPS will need to gain public as well as the Administration and Congressional support.**

National Park Service
U.S. Department of the Interior

Park Planning, Facilities and Lands Directorate
Washington, D.C.

National Park Service Bipartisan Infrastructure Law Transportation Grants Strategic Plan

September 2022

Clockwise from left: An electric bus demonstrated at Zion National Park during project planning; US-41/Tamiami Trail at Everglades National Park; Road reconstruction at Yellowstone National Park. All three parks received funding for these projects through the Nationally Significant Federal Lands and Tribal Projects Program, one of the transportation grant programs in the Bipartisan Infrastructure Law. (Source: NPS)

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Table of Contents

1 Background, Purpose, Goals & Objectives

1.1 Background & Purpose

The "Infrastructure and Investment Jobs Act (IIJA), also referred to as the Bipartisan Infrastructure Law (BIL), authorizes $550 billion for surface transportation programs for Fiscal Years 2022 – 2026. BIL provides comprehensive transportation legislation by building on many of the programs from the 2015 Fixing America's Surface Transportation Act, or FAST Act, as well as the Biden Administration's focus areas in climate change/resiliency/resource protection, connecting diverse communities, and reinvesting in infrastructure to build back better. These are reflected in the NPS transportation priorities noted in the NPS State of Transportation brochure:

- Protect the Climate & Advance Resource Protection
- Enhance Visitor Experience & Connect Diverse Communities
- Reinvest in the System & Make Legacy Investments

With funding from BIL, the NPS is working to develop resilient, innovative, and equitable transportation systems, while also decreasing transportation emissions related to visitation and operations. The NPS will invest these funds to repair and upgrade transportation trails, transit systems, roads, bridges, and other critical transportation infrastructure. BIL increases NPS Federal Lands Transportation Program (FLTP) funding by over 20 percent to $1.7 billion over five years, to address NPS transportation needs across the nation.

Strong connectivity between parks and surrounding communities improves modal choice, visitor enjoyment and safety. BIL provides a monumental opportunity to work with our community partners to provide equitable, climate-friendly, and high-quality transportation options to visitors. BIL creates new discretionary (competitive) grant programs for which the NPS can directly compete. Additionally, BIL provides a number of discretionary grant programs and new formula programs for which NPS partners are eligible applicants, making it imperative for the NPS to develop and strengthen partnerships with states and other eligible agencies to mutually champion significant projects in and around NPS sites which align well with the Administration's focus areas.

The **NPS worked with partners to leverage over $400 million from similar past discretionary programs** under the FAST Act. Past successes include completion of the "missing link" of the Foothills Parkways, rehabilitation of the Arlington Memorial Bridge, electrification of Zion National Park's transit fleet, and construction of bridges along the Tamiami Trail (U.S. 41) to restore natural water flow to the Everglades.

Building upon past successes, and to take advantage of new opportunities available in BIL the NPS is directly eligible for, as well as those that require a partner to apply, the Park Planning Facilities & Lands (PPFL) Directorate provides support, resources, and technical assistance to regions and parks. Success will rely on engagement from the planning, partnerships, and transportation communities across the NPS, as well as support from leadership at all levels.

The purpose of this plan is to guide how the NPS approaches grant funding opportunities in BIL over the next five years, articulating a strategy for identifying high priority projects for discretionary grant programs, working with partners to leverage funding opportunities for NPS transportation priorities, and building internal and external capacity to advance the NPS's transportation goals. It describes how the NPS will prioritize the highest-value programs and projects using a proactive, comprehensive strategy. This strategy will focus on advancing NPS transportation priorities, along with Department of the Interior (DOI) and Department of Transportation (DOT) goals, as outlined in Appendix C: Crosswalk of NPS, DOI and DOT Priorities.

1.2 Goals & Objectives

Goals and objectives form the organizational backbone of this strategic plan. They were collaboratively developed with the BIL Transportation Grants Workgroup (see Appendix A: BIL Transportation Grants Workgroup) through a series of meetings and feedback forms. The support and resources outlined in the goals and objectives will facilitate regions and parks in effectively working with partners to leverage BIL funding opportunities for NPS transportation priorities.

1.2.1 Goal: Proactively identify and review projects to build out a 5-year flexible program of candidate projects for BIL transportation grant programs

Objective: Work with regions and Washington Support Office (WASO) programs to identify and prioritize candidate projects that are in alignment with NPS, DOI & DOT priorities for BIL transportation grant programs

Objective: Employ existing NPS processes to update the flexible program of candidate projects for BIL transportation grant programs

1.2.2 Goal: Strategically deliver targeted support for BIL transportation grant proposal and application development for success

Objective: Provide integrated transportation planning support to develop needs before pursuing BIL transportation grant opportunities

Objective: Coordinate grant application development for nationally competitive BIL transportation grant programs in collaboration with regions and parks

Objective: Support regions and parks by developing a toolbox of available resources

1.2.3 Goal: Develop communications tools to share BIL transportation grant program information, lessons learned, and track successes

Objective: Support NPS employees by providing BIL transportation grant program information and lessons learned

Objective: Promote BIL transportation grant opportunities and successes in public forums

Objective: Demonstrate need, track progress, and prepare for reauthorization

2 STRATEGY & TARGET OUTCOMES

2.1 STRATEGY OVERVIEW

The NPS is pursuing an overarching strategy designed to maximize benefits to the NPS by deploying and focusing staff time, support, and technical assistance on the highest-value, prioritized programs and projects. Successful execution of this strategy will build internal and external capacity to advance the NPS's transportation priorities and demonstrate success to NPS, DOI, Congressional leadership, and stakeholders to strengthen the business case for reauthorization and continued investment in these transportation programs. Based on projects submitted from regions (see section 3 for details), PPFL, with input from the BIL Transportation Grants Workgroup, developed a flexible BIL Transportation Grants Program of Candidate Projects (see Appendix D), matching prioritized projects to the grant programs using a comprehensive approach based on:

The strategy in this document, as well as the program of candidate projects for BIL transportation grant programs, will be **revised as the NPS learns more** about the new grant programs, NPS transportation needs evolve, and the NPS engages with partners to identify opportunities for collaboration

- NPS transportation priorities (see Appendix C: Crosswalk of NPS, DOI and DOT Priorities)
- Project competitiveness according to program statutory eligibility and merit criteria
- Project readiness
- Geographic balance
- Opportunity to defray costs to core programs, including FLTP and others

The program of candidate projects establishes an initial plan for which projects are under consideration for submission to grant programs across the five years of BIL. Both the strategy in this document as well as the program of candidate projects for BIL transportation grant programs will be revised as the NPS learns more about the new grant programs, NPS transportation needs evolve, and the NPS engages with partners to identify opportunities for collaboration.

To guide and encourage success, the NPS developed two targets. First, the NPS aims to submit at least 30 applications for nationally competitive grant programs, including those for which the NPS is directly eligible and those requiring a partner. Second, through these 30 applications, as well as others submitted by regions or parks for state-administered programs, the NPS aims to receive at least $500 million in awarded funds.

2.1.1 NPS Decision Making

- **PPFL**: For nationally competitive grant programs for which the NPS is directly eligible (see Table 1), PPFL will make final determinations as to which projects are submitted but will only put forward projects that the applicable region and park support. This is to ensure that only the highest priority and most competitive projects are submitted to these highly selective, national grant programs, and so that NPS projects do not inadvertently and unnecessarily compete against each other. PPFL, regions, and parks will work together to identify the required matching funds for each application for these PPFL-led programs. PPFL concurrence will be required for

NPS support to partner applications for nationally competitive programs that NPS is directly eligible, including NPS letters of support, matching funds, and technical assistance to develop applications. The key to obtaining support is early and consistent communication among PPFL, regions, and parks.

The NPS aims to receive at least **$500M over the life of BIL** for successful NPS and partnership grant applications

- **Regions**: NPS regions, in collaboration with parks, will be responsible for deciding which projects to submit for state-administered programs. Regions will coordinate all programs with "Regions" listed in the "NPS Coordination Lead" column in Table 1. Regions will need to communicate to PPFL about these projects so the status of each application can be tracked service wide. More information is provided on project tracking in section 5.3.2.

2.1.2 BIL Transportation Grant Opportunities

Table 1 provides an overview of the BIL transportation grant programs applicable to the NPS. The NPS will focus primarily on those listed as medium or higher under "Chance of Success." This table also indicates which NPS office is responsible for decision making and providing parks with technical assistance on grant application development. For further detail on the technical assistance process and responsibilities, see section 4.2.1.

The NPS will submit at least **30 applications** over the life of BIL for nationally competitive programs, directly and with partners

Table 1: BIL Transportation Grant Programs Applicable to the NPS

Program Types	Program	Available Annually (up to)	Chance of Success	NPS Coord. Lead	Target Project Types
NPS Direct Eligible Programs	Nationally Significant Federal Lands and Tribal Projects (NSFLTP)	$177.5M for FLMAs (only $65M FY22)	Very High	PPFL	One guaranteed project per year in park with >3M visitors; projects with compliance complete and total cost >$12.5M
	Bridge Investment Program	$2.5B	Med	PPFL	Bridge projects in poor/fair condition over $15M on National Bridge Inventory; planning, design, compliance, or construction costs eligible
	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Program (PROTECT) – *joint with state*	$280M	Med	PPFL	Resilience improvements, vulnerability assessments, transportation and emergency response strategies, protection of surface transportation assets, includes planning
	Wildlife Crossing Pilot Program	$70M	Med	PPFL	Projects that reduce the number of wildlife-vehicle collisions and improve habitat connectivity
	Pollinator Friendly Practices on Roadsides and Highway Rights-of-Way Program	$2M	High	PPFL	Projects <$150,000 that benefit pollinators on roadsides and highway rights-of-way
	Infrastructure For Rebuilding America (INFRA) - *joint with state*	$1.6B	Low	PPFL	National Highway System projects >$20M that advance climate change, environmental justice, and equity
	Transportation Alternatives (TA)	$1.44B	Med	Regions	Small-scale transportation planning, design, or construction projects with a focus on trails
Partner Eligible Programs	Federal Lands Access Program (FLAP)	$300M	High	Regions	Projects >$100,000 that improve access to federal lands
	Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	$2.275B	Med	Regions with PPFL	Road, trail, rail, port projects >$1M - $25M
	Rural Surface Transportation Grant Program	$400M	Low	Regions with PPFL	Rural projects <$25M
	Discretionary Grant Program for Charging and Fueling Infrastructure	$500M	Low	Regions	EV charging and alternative fuel infrastructure projects <$15M
	Safe Streets and Roads for All (SS4A) Program	$1B	Low	Regions	Initiatives to prevent roadway deaths and serious injuries

Program Types	Program	Available Annually (up to)	Chance of Success	NPS Coord. Lead	Target Project Types
Partner Formula Programs	National Electric Vehicle Infrastructure Formula Program (NEVI)	$1B	Med	Regions with PPFL	Work with states to inform alternative fuel corridors and coordinate on funding for installation of charging stations on federal lands
NPS Direct-Benefit Formula Program	Construction of Ferry Boats and Ferry Terminal Facilities Formula Program (FBP)	$182M	High	Regions /Parks with PPFL	Construction of ferry boats and ferry terminal facilities

2.2 Approach for NPS Direct Eligible Programs

PPFL will lead the coordination and development of applications for the priority programs for which the NPS is directly eligible to apply. For these nationally competitive grant programs, PPFL will make final determinations as to which projects are submitted in each round. This will entail close coordination between PPFL, regions, parks, and technical assistance providers. Support from partners is also critical to the success of these applications, and the NPS will engage with these partners to gather letters of support, and in some cases matching funds. Two programs, PROTECT and INFRA, require that any NPS application be jointly submitted with a state, and thus will require extensive coordination with those states before and throughout the application development process.

2.3 Approach for Partner Eligible Programs

The NPS will continue to foster partnerships with state departments of transportation, metropolitan planning organizations (MPOs), regional planning organizations (RPOs), local communities, and other eligible applicants for BIL programs listed under “Partner Eligible Programs” in Table 1. The NPS can encourage partners to apply for these programs to support mutually beneficial projects. PPFL may provide support in the form of integrated transportation planning support and/or technical assistance to develop applications, NPS letters of support, and potentially matching funds.

2.4 Approach for Partner Formula Programs

NEVI is the partner formula program of greatest interest for the NPS. While formula programs do not require applications, the NPS will need to coordinate closely with states at various stages to ensure that parks and visitors benefit from this new funding source in BIL. The NPS has developed an initial strategy for this engagement, summarized in the National Electric Vehicle Infrastructure Formula Program (NEVI) section 7.8 in Appendix B: Priority Program Strategies.

3 Goal: Proactively Identify and Review Candidate Projects to Build Out a 5-year Flexible Program of Candidate Projects for BIL Transportation Grant Programs

3.1 Objective: Work with Regions and WASO Programs to Identify and Prioritize Candidate Projects that are in Alignment with NPS, DOI & DOT Priorities for BIL Transportation Grant Programs

3.1.1 Outreach to Parks and Regions

On March 15, 2022, the Associate Director of PPFL, and the Associate Director of Partnerships and Civic Engagement sent a memo to the Regional Directors, Deputy Regional Directors, and Associate Directors to request the identification of projects that could potentially be good candidates for BIL transportation discretionary grants.

The types of projects requested in the call included projects that address climate and severe weather resiliency, those that connect to underserved gateway communities, transit fleet replacement and electric vehicle charging infrastructure, wildlife crossing projects, and traditional NPS bridge and roadway projects.

The NPS regions submitted over 360 projects for consideration.

3.1.2 Project Screening

The WASO Transportation Branch reviewed the project submissions from the regions and crossed-referenced these with other data points including the FLTP NPS Multiyear Program (FLTP Multiyear), threatened and endangered species, transit vehicle recapitalization needs in the National Transit Inventory, Road Inventory Program (RIP), Bridge Inspection Program (BIP), National Bridge Inventory, National Highway System, and PMIS statements. Review of these project lists and management systems provided additional information to refine the flexible program of candidate projects.

The projects were screened using the following criteria to identify priority projects for consideration:

- Alignment with NPS and DOT priorities (see Appendix C: Crosswalk of NPS, DOI and DOT Priorities)
- Project timing and compliance (if required)
- Budget size is appropriate for grant program

These criteria informed the flexible program of candidate projects along with additional review of projects through the lens of DOT priorities such as promoting safe, affordable, accessible, and multimodal access while reducing transportation-related disparities and tackling the climate crisis.

3.2 Objective: Employ Existing NPS Processes to Update the Flexible Program of Candidate Projects for BIL Transportation Grant Programs

The primary vehicle for updating the flexible BIL Transportation Grants Program of Candidate Projects will be through the existing Service wide Comprehensive Call (SCC) process and documentation in the Project Management Information System (PMIS). The SCC guidance, Transportation Grants, will continue to be used for BIL transportation grants. It will also be important to evolve the SCC guidance and program of candidate projects to reflect lessons learned during each grant round.

In addition to the candidate projects submitted from the regions, the following resources can also be re-reviewed for identification of potential projects:

- FLTP Multiyear
- Unfunded transportation projects
- Great American Outdoors Act (GAOA) / Line-item Construction (LIC) funded projects
- Category III unconstrained project list
- FHWA structures (bridge) recommendations

3.2.1 Engagement with Regions and Parks

Through summer 2022, PPFL engaged further with the regional transportation program coordinators to refine the BIL Transportation Grants Program of Candidate Projects. There will be ongoing engagement with the regional transportation coordinators on nationally competitive grant applications and communication about those managed at the state level. Additionally, regions and parks will have opportunities to add, update, or remove projects on the program of candidate projects through the annual SCC process and on an ad-hoc basis based on project readiness, changes in project schedule, or shifting NPS priorities.

3.2.2 Bureau Investment Review Board

The BIRB will be informed throughout the life of BIL for relevant approvals, feedback and strategic direction. The strategic plan and the preliminary project list were presented to the BIRB in July 2022 as the first of a series of regular status updates. Investment concepts for individual capital projects that are identified on the BIL Transportation Grants Program of Candidate Projects will require BIRB approval, in alignment with BIRB guidance.

3.2.3 Partner Agencies

Regions and parks will continue to foster relationships with partners at the grassroots level and look for opportunities for partner supported and submitted applications, adding them to the program of candidate projects as appropriate. Regions and parks are encouraged to participate in integrated transportation planning activities with partner agencies—such as the state, MPO, or RPO—to have comprehensive dialogue on regional transportation challenges. This multiagency coordination could lead to the development of projects to submit to BIL transportation grant programs that could improve access to NPS units.

4 Goal: Strategically Deliver Targeted Support for BIL Transportation Grant Proposal and Application Development for Success

PPFL, in partnership with the regions, is evaluating the need for staffing to implement the BIL Transportation Grants Strategic Plan. Any additional staffing could utilize hiring flexibilities brought about through the legislation as appropriate. Additional staffing capacity would support regions and parks in coordinating grant proposals by ensuring projects will meet BIL transportation grant program requirements in time for planned application timeframe, compliance, assisting with application development, tracking and reporting of progress and success, and integrated transportation planning that includes developing local partnerships to leverage BIL transportation grant funding opportunities. Investment in this internal capacity will have long-term benefit to the NPS and demonstrate to Congressional leadership the NPS's commitment to collaboration with local and state partners. PPFL will develop an initial staffing plan by the second quarter of fiscal year 2023.

4.1 Objective: Provide Integrated Transportation Planning Support to Develop Needs Before Pursuing BIL Transportation Grant Opportunities

There are a number of funding opportunities in BIL that the NPS is not directly eligible for but can support partners in developing mutually beneficial projects or projects that advance the NPS mission and transportation priorities. To assist regions and parks in working with partners, integrated transportation planning support may be needed. In collaboration with PPFL's Transportation Planning Program, projects submitted from regions will be reviewed for alignment with the NPS National Transportation Strategy (NTS) goals to develop a list of projects for integrated transportation planning support consideration. The Transportation Planning Program has quarterly meetings with the regional transportation coordinators and planning portfolio managers to understand transportation planning needs and the status of ongoing projects. During the fourth quarter FY22 meeting, the list was reviewed with regions to determine if integrated planning support is needed at the unit or regional level through the Transportation Planning Program. This support check-in will continue at each quarterly meeting to ensure regions and parks have the resources needed to move projects forward so that they can be ready for potential grant applications.

4.2 Objective: Coordinate Grant Application Development for Nationally Competitive BIL Transportation Grant Programs in Collaboration with Regions and Parks

4.2.1 Grant Application Technical Assistance Process

Technical assistance is available from PPFL to support developing and assembling grant application packages ensuring readiness for the priority grant programs. Technical assistance details for grant applications are included in Table 2. Priority will be given to projects that have been selected for submittal for nationally competitive programs for which the NPS is directly eligible. PPFL, at the discretion of the Associate Director, may also provide technical assistance for a limited number of high priority applications to state-administered programs such as FLAP or TA. Regions are responsible for

providing parks with technical assistance for developing grant application packages or the programs indicated with "Regions" under the NPS Coordination Lead column in Table 1.

Table 2: Nationally Competitive Discretionary Grant Application Process & Roles

	PPFL	Region	Park	Technical Assistance Provider
Develop application template/outline based on NOFO				■
Populate template and provide other relevant information, including images		■	■	
Finalize project budget, including match (if required)	■	■	■	
Develop Benefit Cost Analysis (BCA)				■
Develop/refine project location maps				■
Format and copy-edit narrative				■
Develop letter of support template	■			
Outreach to partners to secure letters of support		■	■	
Package all application materials, including appendices and budget forms				■
Review final application package	■	■	■	
Submit application via Grants.gov (for NPS eligible programs)	■			

4.2.2 Fund Transfer Support

After a successful application and funding is awarded, if NPS is the delivery agent, monies are transferred to the NPS. PPFL will coordinate with WASO Budget and the region to set up PMIS and accounts. WASO Budget will issue a Funding Advice when grant funding is available. PMIS statements will need to correctly follow the SCC guidance for Transportation Grants, including separate components for matching funds, if applicable.

4.3 Objective: Support Regions and Parks by Developing a Toolbox of Resources

The BIL Transportation Grants Workgroup will develop a toolbox of available resources to support regions and parks in pursuing BIL transportation grant opportunities. This toolbox could include but is not limited to:

- Tools to assist parks in identifying potential funding programs, meeting eligibility criteria, providing samples of funded applications for different funding programs
- Contact lists of key partners at state DOTs and MPOs/RPOs
- Templates for applications and letters of support
- Consistent communication tools
- Planning strategies to understand our partners' needs and priorities
- Resources to identify parks that meet key criteria such as:

- Parks located in Environmental Protection Agency nonattainment/maintenance areas that could be eligible for Congestion Mitigation and Air Quality or Congestion Relief Program
- Coastal Parks located in States that have been impacted by federally declared disasters over the past six years for programs like Coastal Storm Risk Management, Hurricane, and Storm Damage Reduction Projects
- Parks located in communities designed Historically Disadvantaged/Significant Poverty – important to many of the funding program evaluation criteria

5 Goal: Develop Communications Tools to Share BIL Transportation Grant Program Information, Lessons Learned, and Track Successes

5.1 Objective: Support NPS Employees by Providing BIL Transportation Grant Program Information and Lessons Learned

5.1.1 BIL Transportation HUB SharePoint

The PPFL BIL Transportation HUB SharePoint site serves as the primary source for information. It includes the following resources:

- Most up to date BIL Transportation Grants Strategic Plan
- Most up to date BIL Transportation Grants Program of Candidate Projects
- Current Notices of Funding Opportunity (NOFOs) for grants
- BIL Transportation Program Matrix: PPFL contacts, overview of the various new and existing programs available to the NPS. Staff can scan the programs for project eligibility, links to fact sheets and NOFOs, and past projects for which the NPS has been successful under these programs.
- BIL Transportation Overview Slides: Provides a deeper dive into the programs and explains the differences between authorized, discretionary/competitive, and formula programs.
- Relevant AD Memos
- Toolbox of BIL Transportation Resources (see section 4.3)
- Additional helpful tools, webinars, and links

5.1.2 Webinars & Presentations

PPFL leadership and staff provide presentations and webinars to deliver information on BIL transportation grant opportunities. The audience includes but is not limited to regional transportation coordinators, regional planning portfolio managers, superintendents, facility managers, park planners, and partners. Potential topics for webinars could include:

- Learn about and prepare for upcoming opportunities and access BIL transportation funding
- Partnerships, integrated planning, and BIL transportation grants that benefit the NPS, but for which a partner must apply

- Specific BIL transportation grant programs
- Peer-to-peer networking and lessons learned

PPFL and Partnerships and Civic Engagement hosted two webinars in April and May 2022 to introduce grant programs in the BIL and how integrated planning, collaboration, and partnering is key for success when it comes to access to and within national parks. Recordings of both webinars are available on the BIL Transportation HUB SharePoint.

5.2 Objective: Promote BIL Transportation Grant Opportunities and Successes in Public Forums

5.2.1 NPS External Website

The external NPS Transportation webpage was updated in June 2022 including a new subpage on the Bipartisan Infrastructure Law. This BIL transportation webpage provides a summary of BIL transportation opportunities and a location where the NPS can highlight grant successes. As the NPS and partners receive grant awards, this page will be updated. Key BIL transportation program and strategy information and summary graphics could be considered for display.

5.2.2 Coordinated Messaging

WASO Communications maintains a SharePoint site with communications guidance related to BIL. This site includes style guidance, talking points, media guidance, and more. For information related to the transportation grants aspect of BIL, refer to the BIL Transportation HUB SharePoint.

As regional and park communications teams prepare press releases to announce successful BIL transportation grant awards, it will be important to ensure coordinated messaging. These teams can refer to the new external Bipartisan Infrastructure Law page on the NPS Transportation website and use the following "tags" on external BIL transportation announcements: Bipartisan Infrastructure Law, BIL, BIL Grant, transportation grant, infrastructure bill, and infrastructure law. The BIL Transportation Grants Workgroup includes a communications professional who is working with the PPFL communications team to develop a comprehensive BIL transportation grants communications strategy.

5.3 Objective: Demonstrate Need, Track Progress, and Prepare for Reauthorization

5.3.1 Demonstrate Need

In fall 2022, PPFL will adapt the program of candidate projects for use with NPS and DOI leadership, U.S. DOT, and communications through agency and Department channels to demonstrate need. By the end of calendar year 2022, PPFL will provide NPS and DOI leadership with a refined high-level overview identifying which project applications are planned for submission in the following years of BIL, including maps, alignment with administration priorities, and key project profiles. Infographic summaries of the number of applications planned for submission, total funding requested, and funding awarded will be updated throughout the life of BIL to visualize and communicate success for a leadership audience.

The materials developed for NPS and DOI leadership will be adapted as a full, unconstrained list of potential grant projects. The full list or a summary of potential projects could be shared with Federal Highway Administration (FHWA) leadership to demonstrate NPS needs across all programs, and in

particular, to build the case for the full annual appropriation from the General Fund for NSFLTP ($300M). The list of project needs will be adapted into maps indicating project locations by congressional district, summaries of total project costs, as well as costs by state, congressional district, and potential BIL transportation grant program.

5.3.2 Track Progress

PPFL is working to develop a tracking mechanism for the BIL transportation grant applications to capture the status of all applications to the various programs. This will enable understanding of which projects have applications in development, pending, awarded, funding obligated, and construction completed. Project information will be pulled from existing NPS systems of record, such as PMIS, though PMIS is not set up to track these types of information related to grant application status. Parks and regions are responsible for providing inputs to the BIL tracking mechanism that PPFL develops, particularly for the state-administered and partner programs for which coordination will be led by regions.

Additionally, with this BIL transportation grants tracking system, PPFL will be able to summarize the total amount of funding at each of grant stage, the locations of the projects, and create graphics and visualizations. This tracking information can then be displayed for NPS staff on the BIL Transportation HUB SharePoint and distributed through other communications. The system maintained by PPFL will enable efficient responses to requests from NPS and DOI leadership regarding the BIL transportation grant applications.

5.3.3 Prepare for Reauthorization

Towards the end of the five years of BIL, PPFL will summarize BIL transportation grant successes and unmet needs in order to develop materials for the NPS to build a case for the next surface transportation reauthorization following BIL. Close tracking of which grant applications were successful and unsuccessful as well as new and evolving transportation needs will assist agency and departmental leadership to pursue BIL and GAOA reauthorization simultaneously.

6 APPENDIX A: BIL TRANSPORTATION GRANTS WORKGROUP

The BIL Transportation Grants Workgroup provides technical expertise to further develop support and communication strategies and oversee identification, prioritization, and utilization of resources for technical support for project and grant development. The workgroup lead and members will engage with national partners, including DOT, and provide regular updates to the AD, Park Planning, Facilities, and Lands (starting with a minimum of bi-weekly), and other leadership and stakeholder groups within the NPS. The workgroup will coordinate across WASO programs, as well as regions and parks to provide advice and support on BIL transportation grant programs. The workgroup will also track candidate projects and grant applications across programs.

The forming members of the workgroup consists of:

- Erica Cole, Transportation Planner, Park Facility Management Division (PFMD) Transportation Branch (Lead)
- Wayne Emington, Transportation Safety Program Manager, PFMD Transportation Branch
- Joni Gallegos, Transportation Planner, PFMD Transportation Branch
- Krista Sherwood, National Program Manager, Outdoor Recreation & Hydropower Assistance
- Amanda Jones, Alternative Transportation Manager, Northeast Region
- David Daddio, Transportation Program Manager, National Capital Region
- JoAnn Clark, Transportation Program Manager, Southeast Region
- Joe Regula, Transportation Planning Program Manager, Park Planning Special Studies
- Chris Close, Branch Manager, Denver Service Center Transportation
- Laurie Domler, Branch Manager, Denver Service Center Planning
- Stephan Nofield, National Program Manager; Rivers, Trails, and Conservation Assistance Program
- Darren Brown, Transportation Planner, Golden Gate National Recreation Area
- Chris Briggs, PPFL, Experience Services Program – Program Manager
- John Cochran, Public Affairs Specialist, National Capital Region
- Jason Newman, Superintendent at Fredrick Law Olmsted NHS
- Todd Suess, Chief, Biological Resources Division, Natural Resource Stewardship and Science Directorate

The U.S. DOT Volpe Center provides technical support with workgroup coordination and development of materials, as needed.

7 Appendix B: Priority Program Strategies

7.1 Nationally Significant Federal Lands and Tribal Projects (NSFLTP)

The Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program, provides up to $887.5 million for federal land management agencies (FLMAs) including the NPS over the life of BIL for the construction, reconstruction, and rehabilitation of nationally significant projects within, adjacent to, or accessing Federal and tribal lands. The NPS is directly eligible for this key program, which provides an opportunity to address significant challenges across the nation for transportation facilities that serve Federal and tribal lands. The NSFLTP Fact Sheet provides more information on the program.

As a top-priority discretionary BIL transportation grant funding program, a five-year program of candidate projects will be developed for NSFLTP that includes one to three project applications per year. Annually, the program of candidate projects will be adjusted based on national priority, readiness, and annual appropriation of NSFLTP. The following strategies will be considered:

- The total requested amount of all applications in each round should add up to roughly the amount of funding available to FLMAs for that round (e.g., for FY22, $62.6M is available to FLMA applicants).
- Submit a project application from a park with visitation above 3 million per year (guaranteed award). Depending on the other NPS transportation priorities for that round, this application could request up to 90% of the project budget without breaking it into project components. If the NPS decides to submit more than one application for projects at parks with over 3 million annual visitors, identify the priority project in the transmittal cover letter and include a match over the minimum match amount.
- Submit one or two additional project applications at parks with visitation below 3 million per year, as long as they are NPS transportation priorities, and the guaranteed award project does not the equal the maximum available funding.

Next Steps:

- Collect additional project information to revise current preliminary project list to ensure projects:
  - Are large and complex and beyond the capacity of FLTP
  - Have compliance completed by time of award
  - Is a single, continuous transportation project
  - Have a plan for the 10% or greater match
  - Coordinate with the FLTP Multiyear
  - Consider for funding in another program
- Meet with regions and parks annually to:
  - Discuss application process
  - Identify application team and roles and responsibilities
  - Set application schedule

7.2 Bridge Investment Program (BIP)

The Bridge Investment Program (BIP) provides $12.5 billion in funding over the life of BIL for grants, on a competitive basis, to improve bridge condition and the safety, efficiency, and reliability of the movement of people and freight over bridges. The NPS is directly eligible for this program and potential projects include bride replacement, rehabilitation or preservations along with replacement or rehabilitation of culverts to improve flood controls and improve habitat for aquatic species. Eligible projects must include a structure on that National Bridge Inventory that is in poor condition or fair condition within three years of poor condition. The BIP Fact Sheet provides more information on the program.

As a top-priority discretionary BIL transportation grant funding program, the following strategies will be considered:

- Meet with the FHWA point of contact to answer key grant criteria to shape our future submittals
- Set up a BIP advisory team: Don Gutkowski (lead), Mike Gifford (co-lead), FHWA Federal Lands Highway (FLH) Bridge representative, Regional Transportation Coordinator, DSC grant writer, Volpe grant technical review and support.
    a. Review grant objectives, collate questions before and after NOFO guidance
    b. Review current bridge inventory that would rank high in grant submittals
    c. Identify bundling, geographic diversity opportunities
    d. Identify successful grant applications and distribute to regions
    e. Manage best practices, performance, strategy adjustments, develop success stories report
- Focus FY 23 + submittals on primarily poor NBI structures currently funded or not.
    a. Maximize use of current Bridge Inspection Program, FLTP Multiyear, priority of improvement POI data and programing strategies which focus on worst first poor condition structures and bridge condition A, B, C needing 3R work within the next 3 years.
    b. Have the regions scan all of the poor NBI structures in their area. Have each region highlight their top 5 % poor structures (in a FLTP Multiyear or not) for submittal. Focus on poor structures in the outer years that could benefit from advancing earlier in a fiscal year.
    c. Regions can propose bundling of poor bridges in a park unit for the large category area. If awarded a BIP grant for a project on the FLTP Multiyear, matching funds will be needed but the remainder of the project budget could be redeployed to fair condition structures.
    d. Focusing on poor structures in the outer year of our program should give us the geographic diversity and congressional variety. Projects are already in a development delivery chute so most of the grant submittal info should be available.

7.3 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Program (PROTECT)

PROTECT is a new discretionary grant program, with up to $1.4 billion available over the life of BIL. While a NOFO is yet to be released, the NPS will seek to identify projects likely to compete well given the language in the BIL. No fact sheet is available for this program as of September 2022. In addition to the criteria outlined in legislation, ideal submissions should:

- Prioritize projects that increase the resiliency of transportation infrastructure
- Have park level support
- Have partner support, specifically state since NPS must apply jointly with state
- Have gateway community/economic generator component
- Be data driven supported by previous studies

To gather more information about potential submissions and support needed, NPS will meet with regional transportation coordinators and planning portfolio managers during the quarterly meeting the Transportation Planning Program facilitates.

7.4 Wildlife Crossing Pilot Program

This is a new discretionary grant program with up to $350 million available over the five years of BIL. The NPS will seek to identify projects likely to compete well given the language in the BIL, though U.S. DOT has yet to release a NOFO with further details. No fact sheet is available for this program as of September 2022. In addition to the primary and secondary selection criteria outlined in legislation, ideal submissions should:

- prioritize threatened and endangered species identified as park resources
- have realistic delivery timeframes
- have park level support
- have partner support
- be data driven using habitat maps, species movement patterns, established wildlife corridors, T&E species “take” information, carcass data, and crash report data

It is thought that typical overpass and underpass wildlife crossing projects may typically range in cost from $2M to $10M. However, there are many lower cost strategies that reduce the number of wildlife-vehicle collisions, while improving habitat connectivity for terrestrial and aquatic species as identified in the 2008 Wildlife-Vehicle Collision Reduction Study: Report To Congress, and NPS will seek to identify both lower and higher cost projects since it is not known which types of applications will be the most competitive.

Current Targets:

- Submit 0-2 (greater than $2M) NPS only applications annually
- Submit 0-2 ($500K-$2M) NPS only applications annually
- Support 1-5 partner submissions annually (as a joint applicant, or w/letter of support)
- $15M total in awarded grants from FY22-26 Wildlife Crossing Pilot Program.
- $15M total in awarded grants from FY22-26 on projects the NPS has supported.

In most cases, NPS submissions will be located within park boundaries where NPS owns the associated road/bridge asset. However, because threatened and endangered species identified as park resources sometimes venture outside park boundaries, it may make sense to provide letters of support for partner

applications, or in some cases, jointly submit an application with a partner. Joint projects applications, where NPS does not own the road/bridge asset, and the project location is outside the park boundaries (where NPS does not own adjacent land) should be of national significance and high profile. These should be very special cases with significant partner support.

WHO SUBMITS APPLICATION?	NPS Owned Adjacent Land	Non-NPS Owned Adjacent Land
NPS Owned Road / Bridge Asset	NPS Submission	N/A?
Non-NPS Owned Road / Bridge Asset	Joint Application	Partner Submission with NPS Letter of Support

To gather more information about potential submissions, NPS has developed a template for collecting additional project information for region transportation coordinators to share with park staff. There is also a plan to develop a letter of support template for partner submissions, a one-pager on NPS approach to the program that can be shared with external partners, and additional content for the BIL Transportation HUB website.

7.5 Transportation Alternatives (TA)

Transportation Alternatives (TA) is part of the Surface Transportation Block Grant (STBG) with up to $7.2 billion in funding available over the life of BIL. The program supports planning, design, and construction of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity. The TA Fact Sheet provides more information about the program.

Each State receives a share of the national total TA funding that they manage through a competitive process that the NPS is eligible to apply. Since this program is managed at a state level, the regions will coordinate the applications with support from the WASO Alternative Transportation Program, as needed. WASO can provide additional support by promoting the program to regions and parks and providing resources and tools for application development.

7.6 Federal Lands Access Program (FLAP)

The Federal Lands Access Program (FLAP) provides up to $1.5 billion in funding over the life of BIL for projects that provide access to, are adjacent to, or are located within Federal Lands. Priority shall be given to projects accessing high-use Federal recreation sites or Federal economic generators, as identified by the Secretaries of the appropriate Federal land management agencies. State DOTs, Tribes, and/or local governments may apply. Project applications require coordination and approval by the Federal or tribal property owner(s). Any Federal property owner who possesses Federal economic generators or high use Federal recreation sites accessible by state and/or county public roads are encouraged to work with their state and/or local government officials to coordinate the submission of applications. The FLAP Fact Sheet provides more information about the program.

Eighty percent of funds go to the states that contain at least 1.5% of the national total of public lands, and the remaining 20% to the other states. Funds are distributed based on the formula percentages below following an 80-20 split:

- 30% based on the State share of total recreational visitation in all States.
- 5% based on the State share of total Federal land area in all States.
- 55% based on the State share of total Federal public road miles in all States.
- 10% based on the State share of total number of Federal public bridges in all States.

The Programming Decision Committee is responsible for the FLAP programming decisions in each state and is comprised of representatives from FHWA, the State Department of Transportation, and an appropriate political subdivision of the State. Given that this program is managed differently in each state, regions will continue to work with parks to coordinate partner applications to this program. PPFL could provide support to regions by reviewing the FLTP Multiyear to locate projects that go to the park boundary. Then, the region could ask a park if there is a need to improve the road corridor leading to the park. If the answer is yes, the park, with assistance from the region, should coordinate with the owner of the road corridor outside the park to submit an application, and the project inside the park boundary could be used as matching funds for the project outside the boundary. A review of statewide transportation improvement plans could also be performed to identify strong FLAP candidate projects.

7.7 Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

The Rebuilding American Infrastructure with Sustainability and Equity, or RAISE Discretionary Grant program, may provide up to $2.275 billion per year ($1.5 billion in funding was made available for 2022) as outlined in BIL and subject to appropriations. This program provides an opportunity for the NPS to work with partners to invest in road, rail, transit and port projects that promise to have a significant local or regional impact. The RAISE Program Webpage provides more information.

This program was previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. RAISE projects are evaluated on statutory criteria of safety, environmental sustainability, quality of life, economic competitiveness and opportunity, state of good repair, partnership, and innovation. Under BIL, 2022 RAISE applications will also be evaluated on the criteria of mobility and community connectivity. Additionally, the program is focusing on projects located in Areas of Persistent Poverty or Historically Disadvantaged Communities. The Department of Transportation has developed a tool that will allow applicants to determine if their project location is considered as a Historically Disadvantaged Community. The tool is available here.

To gather more information about potential submissions and support needed, NPS will meet with regional transportation coordinators and planning portfolio managers during the quarterly meeting the Transportation Planning Program facilitates. These conversations will focus on projects that connect parks to Areas of Persistent Poverty or Historically Disadvantaged Communities. Further support to regions and parks will be provided through integrated transportation planning and the alternative transportation program.

7.8 National Electric Vehicle Infrastructure Formula Program (NEVI)

The National Electric Vehicle Infrastructure Formula Program ("NEVI Formula") provides $5 billion in funding over the life of BIL to States to strategically deploy electric vehicle (EV) charging infrastructure and to establish an interconnected network to facilitate data collection, access, and reliability. The NEVI Fact Sheet and the NEVI Program Guidance provides more information.

The NPS has adopted a phased approach to engaging with states on the NEVI program, summarized below.

Phase 1: Initial Outreach to State DOTs

Priority states have been identified for outreach, based on a past geospatial EVSE gap analysis as well as an ongoing EVSE gap analysis that the NPS is conducting with other Department of Interior agencies, the U.S. Forest Service, and the U.S. Army Corps of Engineers. Through this effort, the NPS identified the following states for outreach regarding NEVI: Arizona, Colorado, Maine, Montana, Nebraska, New Mexico, North Dakota, South Dakota, Tennessee, Wisconsin, and Wyoming. PPFL is coordinating this initial outreach with participation from regional office staff. The purpose of this initial outreach to states is to communicate that the NPS is interested in being a stakeholder in the NEVI process and to understand each state's approach to designating Alternative Fuel Corridors (AFC) corridors and developing NEVI EV Infrastructure Deployment Plans.

Phase 2: Targeted Outreach for Priority Parks

In this phase of outreach, a set of parks will be identified for engagement with the NEVI program based on the findings of EVSE geospatial gap analyses and the NPS 5-Year EV Work Plan. For these parks, the nature of the necessary NEVI outreach will differ based on their proximity to AFCs:

- Parks adjacent to designated AFCs: These parks are along corridors where states can currently use NEVI funds to install EVSE. In these areas, the NPS will work with states to consider whether parks or nearby locations are appropriate for inclusion in the state's Electric Vehicle Infrastructure Deployment Plan. The 2022 deadline for states to submit their Electric Vehicle Infrastructure Deployment Plans was August 1, 2022. The NEVI program guidance also suggests that there will be future rounds of state Electric Vehicle Infrastructure Deployment Plans, although it does not identify any specific deadlines. In many cases, installation of EVSE at NPS sites may not be necessary along designated corridors if the corridors already have substantial EVSE installations that meet visitors' and travelers' needs.
- Parks that are not adjacent to designated AFCs: The NEVI program requires states to fully build out EVSE along designated AFCs prior to spending NEVI formula funds elsewhere. States can designate additional AFCs on an annual basis. The most recent deadline for 2022 AFC nominations was on May 13, 2022. Looking ahead to the next round of AFC nominations in 2023, the NPS will work with states to consider future AFC designations that could provide access to priority parks that are not already adjacent to AFCs.
- Develop strategy for fulfilling the required 20 percent cost-share match for identified EVSE installation locations where NPS has a vested interest (these cost-share funds must be non-federal).

With the recently released information about the new AFCs designated in 2022, the NPS will conduct a geospatial analysis to identify priority parks based on their proximity to AFCs to inform phase 2 of the outreach approach described above.

8 APPENDIX C: CROSSWALK OF NPS, DOI AND DOT PRIORITIES

Table 3: Crosswalk of NPS, DOI, and DOT Priorities

DOI & DOT Priorities		NPS Transportation Priorities		
		Protect the Climate and Advance Resource Protection	Enhance Visitor Experience and Connect Diverse Communities	Reinvest in the System and Make Legacy Investments
DOI Priorities	Identifying steps to accelerate responsible development of renewable energy on public lands and waters.	✓		
	Strengthening the government-to-government relationship with sovereign Tribal Nations.	✓	✓	✓
	Making investments to support the Administration's goal of creating millions of family-supporting and union jobs.		✓	✓
	Working to conserve at least 30% each of our lands and waters by the year 2030.	✓		
	Centering equity and environmental justice.		✓	
DOT Strategic Goals 2022-2026	Make our transportation system safer for all people. Advance a future without transportation-related serious injuries and fatalities.		✓	✓
	Grow an inclusive and sustainable economy. Invest in our transportation system to provide American workers and businesses reliable and efficient access to resources, markets, and good-paying jobs.		✓	
	Reduce inequities across our transportation systems and the communities they affect. Support and engage people and communities to promote safe, affordable, accessible, and multimodal access to opportunities and services while reducing transportation-related disparities, adverse community impacts, and health effects.		✓	
	Tackle the climate crisis by ensuring that transportation plays a central role in the solution. Substantially reduce greenhouse gas emissions and transportation-related pollution and build more resilient and sustainable transportation systems to benefit and protect communities.	✓		
	Design for the future. Invest in purpose-driven research and innovation to meet the challenges of the present and modernize a transportation system of the future that serves everyone today and in the decades to come.	✓	✓	
	Strengthen our world-class organization. Advance the Department's mission by establishing policies, processes, and an inclusive and innovative culture to effectively serve communities and responsibly steward the public's resources.	✓	✓	✓

9 Appendix D: BIL Transportation Grants Program of Candidate Projects

The program of candidate projects establishes an initial plan for which projects are under consideration for submission to grant programs across the five years of BIL. The tables below reflect projects under consideration as of September 2022.

Table 4: Summary of BIL Transportation Grants Program of Candidate Projects by Fiscal Year

Region	Project Count	Total Project Cost*	FY22 Projects	FY23/24 Projects	FY25/26 Projects	TBD
AKR	12	$267.1M	1	6	3	2
IMR	20	$610.3M	1	7	4	8
MWR	15	$97.1M		7	2	6
NCR	7	$400.8M		4	3	
NER	12	$266M	1			11
PWR	13	$259.1M		2		11
SER	24	$2.4B		5	10	9
Total	**103**	**$4.3B**	**3**	**31**	**22**	**47**

*Not all projects have cost estimate yet

Table 5: Summary of BIL Transportation Grants Program of Candidate Projects by Priority Area

Region	Protect the Climate & Advance Resource Protection	Enhance Visitor Experience & Connect Diverse Communities	Reinvest in the System and Make Legacy Investments
AKR	2	3	7
IMR	10	6	13
MWR	5	10	5
NCR	3	2	2
NER	3	4	6
PWR	7	6	8
SER	7	5	13
Total	**37**	**36**	**54**

Some projects are applicable and counted under multiple priorities.

Table 6: AKR BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
AKR	DENA	164256	Ghiglione Bridge (ready for CN funds) Ready now; just needs CN $$s	$15,000,000	Complete	FY22	BIP
AKR	DENA	226900, 217777, 217778, 226898, 217775	Nenana River Trail (PMIS 226900, 217777, 217778, 226898, 217775)	$4,000,000	In Progress	FY25/26	TA, RAISE or INFRA with AK DOT
AKR	DENA	325170	Repair Denali Park Road Deferred Maintenance - Mile 43 to 92	$12,800,000	Not Started	FY23/24	NSFLTP
AKR	DENA	200139	Construct Two Aircraft Hangars at McKinley and Talkeetna Airstrips	$10,500,000	Not Started	FY25/26	TBD
AKR	DENA	324244	Savage River Pedestrian Bridge / Savage Area Improvements / Shuttle Service	$385,000	Not Started	FY23/24	TBD
AKR	WRST		McCarthy Road - Crushed culvert/new bridge or culvert	TBD	Not Started	FY23/24	TBD
AKR	SITK	316914	LRF project - parking lots; accessibility; lighting; ped connections	$12,300,000	Not Started	FY23/24	TBD
AKR	YUCH	186703	Coal Creek Road	$1,000,000	Not Started	FY25/26	TBD
AKR	DENA		Toklat Bridges & Causeway	$65,000,000	Not Started	TBD	NSFLTP, PROTECT, BIP
AKR	GLBA		Tour Boat Replacement	TBD	Not Started	TBD	TBD

Table 7: IMR BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	GRCA	237243; 250440; 257136	GRCA will need to replace 26 of its CNG buses starting in 2025. A 2021 fleet analysis illustrated that one of the routes could support slow-charge battery electric buses (BEBs), so the park could begin transitioning to BEBs in a couple of years. However, BEBs are more costly than CNG buses, so the park will pursue funds through the NSFLTP grant to purchase 10 BEBs and 16 CNG buses. Infrastructure improvements to the park's shuttle bus maintenance facility will be required to sustainably support and provide power to the 10 BEBs. Infrastructure improvements include upgraded electric lines and electrical equipment, a steel canopy over the shuttle bus parking area with 1200 solar panels and 10 overhead charging stations, 2 additional charging stations, a diesel generator for back-up power, and underground conduit for charging of any additional future BEBs.	$38,900,000	Complete	FY22	NSFLTP
IMR	BRCA		Install wildlife crossing on main park road to reduce take of Utah Prairie Dog, a federal threatened species. Delisting of this species is a high-priority for the State of Utah and local counties for rural economic reasons. The park provides a protected population whose viability over time is important in achieving this larger goal. Animals struck by vehicles and habitat loss are issues where the main park road bisects a large area of critical habitat just south of the visitor center. Project would raise the road bed and add suitable culvert undercrossings to keep these animals off the road bed while increasing their full use of the adjacent meadow area.	$3,000,000	Not Started	FY23/24	Wildlife

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	GRTE	188280, 264320	Overlay and widen 8.1 miles of Gros Ventre Road & Reroute 1.8 miles of Gros Ventre Road to avoid future washouts (separated pathway to Kelly). The purpose of this project is to repair and widen approximately 8.1 miles of highway to extend the life of the road and to widen the shoulder of the road to accommodate bicycle traffic and increase the safety for the traveling public. This project will provide the necessary long term repairs to the Gros Ventre Road and establish a safe and sustainable roadway with greatly reduced risk of erosion and washout. Previous emergency work has provided a two lane paved road surface and rip rap to temporarily stabilize the river bank slope. This project seeks to complete an evaluation and the NEPA compliance necessary to evaluate then implement a long term solution that moves 1.8 miles of the Gros Ventre road away from the unpredictable and braided Gros Ventre River bank.	$22,000,000	In Progress	FY25/26	NSFLTP
IMR	GRTE		Creating a series of undercrossing, over crossings, and changing the fencing on hwy 26 between milepost 48-73 near Dubois, WY outside park boundaries. This would be either a letter of support for WYDOT application or an NPS only application for $800,000 to only fund design, engineering, and compliance. The full construction cost is estimated to be $8 million https://wgfd.wyo.gov/Regional-Offices/Lander-Region/Lander-Region-News/Roadway-and-Wildlife-Mitigation-Strategy-complete	$9,000,000	Not Started	FY23/24	Wildlife
IMR	YELL	317309	Norris to Golden Gate Phase 3 - $65M net before - maybe more around $91M net. Reconstruct Norris to Golden Gate Road Phase 3 road segment including the Norris Geyser Basin parking and entry road. Phase 3 of the Norris to Golden Gate road will reconstruct 6.4 miles of the road sub base, base and asphalt from where Phase 2 ended, the Moose Exhibit area north to the Golden Gate area. The road will be widened to 30 feet wide and will include rehabilitation and improvements to pullouts and parking areas, culverts, walls, view areas and rock cliffs. The Norris Geyser Basin entry road and parking area sub base, base, asphalt, curbs and walks will be rehabilitated and expanded to meet the increasing visitation needs. Vault toilets will be replaced and the existing restroom will be rehabilitated and expanded to accommodate the larger parking area visitation. All improvements will meet ABA accessibility requirements.	$91,000,000	Complete	FY23/24	NSFLTP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	CARE	90817	Funding is required to construct two bridges to permit rerouting of the Fremont River into a portion of its original channel. A 1962 rerouting of the River through Capitol Reef National Park has adversely impacted natural resources, eliminated a listed plant species, and created a water hazard that has caused over 15 documented visitor injuries. During construction of Utah State Route 24, portions of the Fremont River were rerouted near the present eastern park boundary, and a cut was excavated to divert the river from its natural course. Rather than constructing the highway to follow the bend of an old riverbed meander, the road was routed through an area of sandstone cliff that was blasted out. Further, instead of building a bridge over the river and allowing the flow to continue along its natural course, a new channel was constructed, cutting off a long (0.90 miles in length) incised-meander of the river. Because the resultant diversion takes up the elevation loss in a shorter distance (approximately 0.16 miles compared to 0.90 miles prior to diversion), an artificial, 20-foot high waterfall has been created. At the time of road construction, the project area was outside the boundaries of Capitol Reef National Monument, but the area was later encompassed by the park through a 1969 expansion.	$30,000,000	In Progress	TBD	PROTECT
IMR	GLAC		Construct a wildlife crossing over US Highway 2 along the south boundary of Glacier National Park, Montana.	$60,000,000	Not Started	TBD	Wildlife
IMR	YELL		Wildlife crossing - look at Mammoth to Gardiner		Not Started	TBD	Wildlife
IMR	YELL	248693	Old Faithful Access Roads, Phase 1	$81,000,000	Not Started	TBD	NSFLTP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	ROMO	322246	The highest paved road in the National Park Service has several structural problems. This project will rehabilitate a series of failing retaining walls at mile 28.75 on Trail Ridge Road (TRR). Repairs and replacements of these structures will stabilize the road and slope above. Near mile 20 of TRR a 1500 foot section of roadway has settled warped, and cracked repeatedly, despite repaving and subgrade reconstruction projects. This project proposes the design and construction of a permanent structural solution. Nearly 7 miles of asphalt curb lines TRR, serving as a roadway edge barrier and facilitating drainage. Asphalt curbs lack the resilience of concrete and easily break apart under the severe alpine conditions and snow plowing operations. This project proposes that the asphalt curb be replaced with more resilient concrete curbs. Additionally, this project would install two inductive loop traffic counters to better understand and manage the visitor use of the TRR corridor.	$34,331,537	Not Started	TBD	NSFLTP
IMR	ZION	240153	Extend Pa'rus Trail to Temple of Sinawava	$9,643,767	In Progress	TBD	TA, NSFLTP
IMR	ZION	240182	Realign South Entrance and Visitor Center Access Road	$7,286,479	In Progress	FY23/24	NSFLTP, RAISE
IMR	ZION		Repair SR9 from Canyon Junction to East Entrance; All roadway, pullouts, and interconnected historic support walls and features. ZION-0010	$138,000,000	In Progress	TBD	NSFLTP
IMR	ROMO	322057	The Chaquita Creek Bridge on Old Fall River Road is a wood decked bridge upon stacked stone abutments over a small hydraulic opening. This project will rehabilitate the Chiquita Bridge to meet current hydraulic and structural design standards, including concrete abutments, paved deck, hydraulic capacity, and scour countermeasures. Old Fall River Road climbs 135 vertical feet between mile post 3.8 and 4.0 through unstable scree slopes at 10,000 above sea-level where the road is supported by towering gabion retaining walls. Gaps in this retaining wall cause erosion, extreme road narrowing, and falling rocks onto the vehicles below. This project will stabilize this slope and the road by constructing additional retaining wall segments to fill these gaps. Additionally, this project would install two inductive loop traffic counters to better understand and manage the visitor use of the Old Fall River Road corridor.	$6,142,677	In Progress	FY25/26	BIP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	GRTE		Buffalo Fork Bridge - to incorporate Wildlife Crossing (climate change, improve wetlands). Replace bridge to accommodate change in river flows at the confluence of the Buffalo Fork River with the Snake River due to changing river patterns and extend the footprint to allow for wildlife crossing under the bridge in this wildlife rich environment	$25,000,000	Not Started	TBD	PROTECT, Wildlife
IMR	YELL	305864	Gardner River High Bridge. Paint all structural steel (and containment/enclosure system used during removal existing lead based paint) Rehabilitation of the concrete deck approach spans including replacing approach span expansion joints. Repair of miscellaneous concrete and steel elements (tower pedestals, cracked steel elements, steel bridge rail post damage) Add a thin bonded epoxy overlay for the truss's deck (replaced in the 1970's) to ensure long term performance	$26,000,000	Not Started	FY23/24	BIP
IMR	BRCA	219707 (need updated/ replaced)	Extend existing shared use (bike/ped) path from Inspiration to Paria and Bryce Point. This will complete bicycle access (and use of electric bikes as a realistic alternative to motor vehicles) to all major park viewpoints. In the past, park failed to fully address design, engineering, and compliance aspects of this work and thus never finished this last 2.5 miles of the existing 18 mile multi-use path which connects the parts to gateway communities.	$5,000,000	Complete	FY23/24	TA, NSFLTP
IMR	GRSA	306582	This project will enhance visitor recreational access and opportunities, improve safety, improve natural resource conditions and protection, and reduce congestion by increasing parking capacity by nearly 200% and constructing a new entrance station and rest stop with overlook and trails. The existing Dunes Parking Lot will be doubled in size, new parking nodes developed along the Dunes Access Road, and an entirely new day-use area constructed north of the existing Dunes parking lot. A multi-use trail will connect the campground to all creek access points and parking areas and will provide a new, more accessible recreational opportunity not currently available in the park. The new entrance station will be developed with additional booths and lanes to increase capacity and reduce wait times. The existing fee booth will be retained and used during winter months with decreased visitation providing better security and safety when there is only one staff member on duty. A new rest area and overlook with restrooms, information kiosk, and interpretive trail will be constructed near the park entrance.	$18,274,431		FY25/26	NSFLTP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
IMR	SAGU	151698	Improve Rincon Mountain District Visitor Center Parking, Road, and Trail System. This project proposes relocation and reconstruction of the Park's fee collection kiosk, the entrance road, connecting paths, parking areas, and associated utilities (electrical/plumbing) which will improve deficiencies primarily related to visitor welfare, traffic circulation, and usability. Accomplishing these objectives in the proposed design option will improve visitor experience in the park. The project is located in the Rincon Mountain District (RMD), east of Tucson, adjacent to the Visitor Center (VC). Annual recreational visitation to the park is 820,000 per year (a current Visitor Use Study is in progress) and has significantly increased from when the VC (1958) and VC parking areas (1933/1953) were originally constructed. A 2017 Traffic Study and a 2017 RMD VC Area Value Analysis (attached) recommends parking area expansion requiring these associated enhancements.	$5,000,000		FY23/24	NSFLTP
IMR	YELL		Multiple Bridge Project - bundled initially for GAOA. Structures include rehabilitation and some preservation treatments. There were 13 total structures moving forward from the GAOA list, and 11 added with heavy preservation. A project of this size is not in the FLTP multiyear, but broken up, it is partially included in the future/outyear bridge preservation projects, starting in 2025	$19,000,000		FY25/26	BIP

Table 8: MWR BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
MWR	ISRO	TBD	MWR Priority project - final design and construction/fabrication funding for Ranger IV park support vessel; for PROTECT or NSF&TP, also updates to docks at Windigo, Mott, and Raspberry Island for resilient design and to accommodate any necessary changes	$50,000,000		FY25/26	NSFLTP
MWR	CUVA	TBD	MWR Priority project - Feasibility study to relocation Fitzwater Rail Maintenance Yard along the Cuyahoga Valley Scenic Railroad. This historic rail service facility is in a bad spot on federal lands, between a river that's eroding up and a hill that's sliding down. Moving this facility off NPS fee lands would also eliminate liability concerns for people working on rail engines and such within NPS property. Moving the facility supports an alternative transportation potential connecting the park to the city of Cleveland by rail.	$300,000	Not Started	FY23/24	RAISE
MWR	CUVA		MWR Priority project - CUVA local road network and trail connection enhancements. Most of the ways that visitors come into the park are not NPS-owned assets. Park partners/local municipal entities need support in applying for non-federal fund sources and grants to improve and maintain area roads and trails. The park previously had direct road assistance authority which has not been supported by contracting office, and previously had annual earmarks to support local road support for the many small townships along the boundary of the park. Historically, FLAP funding for state of Ohio is woefully inadequate to make any headway for CUVA. Significant increases in FLAP would be welcome; RAISE projects would be better fits for these road project needs.	$300,000		FY23/24	RAISE, FLAP, TA
MWR	CUVA	246020	replace retaining walls and culverts along CUVA scenic railroad line (tentative design FY28, opportunity to accelerate and consolidate projects)	$700,000		FY25/26	Bridge Investment or PROTECT
MWR	CUVA	TBD	Cuyahoga communities consortium of landowners and regional transportation agency have developed an alternative transportation master plan (Community Access Plan / visitor use mgmt & access plan) and seek to implement multiple elements on federal and other lands.	TBD		TBD	RAISE, FLAP, TA

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
MWR	INDU	245381	Construct New Crescent Dune Trail for Visitor Benefit - This project consists of preparing an EA to create design parameters and for constructing a boardwalk access trail to the beach at Crescent Dune, which will offer a route to an area of the national park that is exceptionally difficult to access due to the surrounding industrial development and the terrain. Crescent Dune is the most pristine dune in the Park and the eastern most property along the Lake Michigan shoreline and will be able to serve as the Eastern gateway into the Park for visitors who arrive in Michigan City, IN by rail. This trail will also connect to a regional high priority State of Indiana trail. The area is bounded by the Northern Indiana Public Service Company (NIPSCO) high tension power lines, active rail lines and the power generating station on the south and east and is adjacent to Mt. Baldy on the west. The trail will provide access to an area rarely visited because of lack of trails, parking and access. The City of Michigan City is planning to construct a parking facility on land owned by NIPSCO that provides direct access to the Crescent Dune area. The route is an abandoned rail access point, the only passable route through the surrounding dune topography.	$1,676,849		FY23/24	RAISE, FLAP, TA
MWR	PIRO		PIRO trail connections. Local community is building out their trail network and paved multi-use trails within the park would allow more user types to reach the lakeshore. Preliminary planning is complete; final design and construction remain.	TBD	Not Started	FY23/24	RAISE, FLAP, TA
MWR	TAPR		Expand trail network connecting to Strong City, KS. The Two-Section Trail is 3 miles long and starts near the Bottomland Nature Trail and Lantry Trail and ends on the far east side of the preserve. Off this trail are three ponds with no formal route to them, and the preserve allows fishing and hosts occasional park programs for fishing here. Improving parking and the information provided at the two trailheads would allow more visitors to have the opportunity to experience the trail. Additionally, providing an accessible fishing experience in the preserve, whether by formalizing a route to the ponds or elsewhere, would allow more visitors to be a part of the preserve's programs and recreational activities.	TBD		TBD	RAISE, FLAP, TA

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
MWR	CUVA	325608	feasibility study and design, followed by construction, for Yellow Creek historic bridge and culvert treatment and replacement. This is a joint project with the Summit Co. Engineer for rehabilitation / replacement of a 100+- year old culvert under the railroad, Towpath and roadway. Partner seeks to proceed July 1, 2022, to begin feasibility study. Draft MOU is available for review at park.	$1,200,000		FY23/24	BIP, PROTECT
MWR	OZAR	in development	study/replace low water crossing at Cedar Grove for safety/resiliency	TBD		TBD	BIP, PROTECT
MWR	AGFO	in development	study/replace bridge and undersized culverts along Niobrara River in AGFO, which is altering streambank. Streambank restoration possible, removing structures entirely possible - need planning.	TBD		TBD	BIP, PROTECT
MWR	SACN	312921	final mile' of Osceola Landing bridge relocation project on park lands. A DOT project will relocate an existing bridge, and result in the need for NPS to create a connection from the trail network to our redeveloped landing area. It will be required to go near the river, in a new location. NPS has anticipated the larger project with a redevelopment project which could also be picked up under Protect.	$1,000,000	In Progress	FY23/24	RAISE, FLAP, TA
MWR	INDU		county line 12 flyover road-building a bridge over the railroad (safety). off park land, city & county may be pursuing INFRA or RAISE grant to fund $25-$40M project	$40,000,000		FY23/24	RAISE, INFRA
MWR	CUVA	313628	repair bridge and trail surface at canal lock 29 (tentative ReReFY28, could be accelerated)	$2,000,000		TBD	RAISE, FLAP, TA
MWR	HOSP		Blacksnake Road is an approximately 2.2-miles-long asphalt concrete pavement road with varied width, narrow shoulders. It is an undivided road and it is 18 to 36 feet wide with numerous switchbacks extending throughout Sugarloaf Mountain in Hot Springs National Park. The roadway has pavement edge cracks, edge drop-off, lack of roadway drainage, lack of striping, lack of guardrail, and several deteriorated patches. There are very steep roadway sections without guardrail.	TBD		TBD	TBD

Table 9: NCR BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
NCR	GWMP	GFIP	South GWMP (Old Town Alexandria to Mount Vernon Estate) and Mount Vernon Trail South	$177,000,000	In Progress	FY25/26	NSFLTP
NCR	CHOH	194101	Capital Crescent Trail Rehabilitation	$6,000,000	In Progress	FY23/24	TA
NCR	GWMP	316962	Mount Vernon Trail South Rehabilitation	$28,000,000	In Progress	FY25/26	NSFLTP, TA
NCR	GWMP	GFIP	Cantilever Bridge Reconstruction - non NBI	$60,000,000	In Progress	FY23/24	NSFLTP, BIP
NCR	GWMP	N/A	Mid-GWMP Rehab (Old Town Alexandria to Spout Run) and Boundary Channel Bridge Reconstruction	$88,000,000	In Progress	FY25/26	INFRA, NSFLTP, BIP
NCR	NACE		Suitland Trail and ART Arboretum Bridge/Kennilworth Park South	$9,200,000		FY23/24	RAISE
NCR	CHOH	324330	Paw Paw Bends Trail Improvements	$32,600,000	Complete	FY23/24	NSFLTP

Table 10: NER BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
NER	COLO	325569	Rehabilitate CSX (C&O) Railroad Bridge over Colonial Parkway. (park high priority)	$37,000,000	In Progress	FY22	BIP
NER	SHEN	N/A	Enhance Safety at I-64 through a wildlife crossing for the Blue Ridge Mountains of SHEN and BLRI. Wildlife collision rates are high for this highway section bisecting protected areas and partners have some concepts developed for a crossing.	$11,000,000	Not Started	TBD	Wildlife
NER	BOST		Boston Harbor Gateway Connector (BHGC) - The BHGC is a multi-modal facility serving as a water ferry terminal, pedestrian and bikeway trails connecting the Freedom Trail and Boston Harborwalk, and trolley stop. The BHGC will address a multiplicity of goals defined in the Charlestown Navy Yard Master Development Strategy developed by a partnership among the National Park Service, U.S. Navy, USS Constitution Museum, and City of Boston. It will serve visitors and provide equitable access to the waterfront and public parklands from historically disadvantaged neighborhoods and protect historically significant public assets (USS Constitution and Charlestown Navy Yard National Park Unit) from the impacts of sea level rise. The BHGC supports the recommendations from the Commonwealth's Climate Adaption Plan and City's Climate Ready Boston that recognize the urgency of addressing sea level rise while improving and expanding open space and recreation along Boston Harbor. The national historic landmark, Charlestown Navy Yard, will be universally accessible by land and water trails through multi-modal means that allow for affordable experiences for all people. The BHGC will serve as an orientation hub for visitors from around the world coming to Boston to explore the Freedom Trail, Bunker Hill, USS Constitution, Boston Harbor and the Islands.	$30,000,000	In Progress	TBD	RAISE PROTECT NSFLTP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
NER	BOST BOHA	315734	Boston Harbor Blue Infrastructure - This project will modernize aging infrastructure and improve safety and resilience at Boston Harbor Island National and State Park and Boston National Historical Park sites serving over 4M visitors annually. It will address critical deferred maintenance repairs to docks and piers at (8) harbor islands and (3) Gateway sites along the Boston Harbor and will provide expanded equitable access, improve operational efficiencies, and provide for climate resilience and long-term sustainability of the park's transportation infrastructure. The project will also include the purchase of (2) clean energy ferry boats to ensure economically affordable, safe, and equitable access to the islands from main Gateway sites, enhancing transit connections between the islands and National Park sites along the Freedom Trail.	$70,400,000	In Progress	TBD	Electric or Low Emitting Ferry Pilot PROTECT NSFLTP
NER	APPA	322689	Rehabilitate Parking to Enhance Visitor Safety & Experience at McAfee Knob - rehabilitate the McAfee Knob Parking/Trailhead Area to improve critical visitor safety and experience.	$2,913,867	Not Started	TBD	TA
NER	CACO	154114	Replace Aging Coast Guard Beach Shuttle Trams and Trailers	$800,000	Unknown	TBD	TBD
NER	COLO	TBD	Rehabilitate Colonial National Historical Parkway - This project will fund the remaining Phase 2 rehabilitation of the Colonial Parkway which encompasses the following: recapitalizing aging pavement, replacing aging or missing guardrail sections, rehabilitating, or upsizing drainage structures and addressing scouring issues, and stabilizing shoulders to fix rutting issues in Parkway segments B, C, H, I, and J; rehabilitating three bridges (Mine Depot, North Pier, and Powhatan). This project has been refined to ensure that the most critical aspects of the Phase 2 work are accomplished so that the Colonial Parkway remains safe and functional for current and future generations—and that FHWA deferred maintenance is retired—with the most critical work (bridges and poor pavement) prioritized first. Design will incorporate the effects of climate change including increased rainfall and storm events. This project will provide for a long-term investment in the park's infrastructure, meeting the requirements the park facility investment strategy (critical infrastructure).	$95,500,000	Unknown	TBD	RAISE, NSFLTP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
NER	NERI	227183	Conduct Critical Repairs and Improvements to Rend Trail and Bridges.	$12,500,000	Unknown	TBD	TA
NER	APPA		Replace Vehicular Bridge and Relocate Appalachian Trail at Henderson Brook (Maine) - Eastern Brook Trout Habitat Restoration	$500,000	In Progress	TBD	TA
NER	ASIS	172049	Replace Sheephead Creek Bridge 11(4) - In a 2009 bridge inspection of Sheephead Bridge identified the concrete slab of the bridge having wide spread cracking and delaminating due to penetration of road salts and submersion during high tide.	$5,000,000		TBD	BIP
NER	ASIS		Rehabilitate Assategue Channel Bridge			TBD	BIP
NER	CACO	314845	Repair Coast Guard Cranberry Bog Bridge - This project funds deferred maintenance repairs to the Coast Guard Cranberry Bog Bridge that provides access to ocean beach facilities. (2016 Bridge Inspection Report by FHWA)	$655,000		TBD	BIP

Table 11: PWR BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
PWR	HAVO	TBD	Speed management and wildlife vehicle crash countermeasures at hot spot locations on Chain of Craters road. This project includes 6 methods to prevent and reduce wildlife vehicle collisions from the 2008 Wildlife-Vehicle Collision Reduction Study: Report to Congress, including mitigation methods that seek to influence both driver and animal behavior: Intercept Feeding, Public Information and Education, Standard Wildlife Warning Signs, Large, Non-Standard Wildlife Warning Signs, Reduce Vehicle Speed by Reducing The Posted Speed Limit, Reduce Vehicle Speed by Traffic Calming/Reducing Design Speed. Location: Hot spots on Chain of Craters road (from Mauna Ulu to just below Kealakomo, approx. 6-7 miles). The primary habitat for the nene includes a breeding area on one side of the road and foraging is on the other, and the road hinders the connectivity between the two. The NPS owns the road and adjacent land on both sides. Focus species: The Nene (Branta sandvicensis) is primarily terrestrial, formerly federally listed as endangered, and currently federally listed as threatened. It is also the State bird of Hawaii. There are times of the year during breeding season when they are completely flightless during molt and with goslings who are flightless for several months. Cars are the leading cause of adult nēnē deaths at Hawaii Volcanos National Park.	$500,000	Not Started	FY23/24	Wildlife

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
PWR	MOJA	TBD	This project changes the primary north south travel corridor through MOJA, avoiding critical desert tortoise habitat, by returning Morningstar Mine Road to a slower speed less traveled gravel roadway in conjunction with an NPS funded $30M rehabilitation of Cima Rd. The project includes three methods to prevent and reduce wildlife vehicle collisions from the 2008 Wildlife-Vehicle Collision Reduction Study: Report to Congress. (Avoidance of Key Habitat: Alternative Alignment, Reduce Traffic Volume On Road Network, Reduce Vehicle Speed By Traffic Calming/Reducing Design Speed) Location: Morningstar Mine Road (Mojave National Preserve). The roadway and adjacent land are owned by the NPS. Mojave National Preserve is located in northeastern San Bernardino County, California, and contains portions of the Ivanpah and Fenner Desert Wildlife Management Areas (DWMA), designated as critical habitat for the desert tortoise (U.S. Fish and Wildlife Service 2011). Approximately 216 km of paved, two-lane roads bisect 312,605 ha of critical habitat designated for the desert tortoise (Gopherus agassizii) in Mojave National Preserve. The Morningstar Mine Road project located in creosote bush mixed scrub habitat ranging in elevation between 950–990m is among the best desert tortoise habitat in the preserve. Focus species: The federally- and California state-listed threatened Agassiz's Desert Tortoise (Gopherus agassizii) is native primarily to the Mojave Desert, USA. Desert tortoises have large home ranges (Harless et al., 2009), can require up to 20 years to reach sexual maturity (Mueller et al., 1998), and only produce an average of 4.5 eggs per clutch (Turner et al., 1986). Their slow life histories suggest that desert tortoise populations should be sensitive to the negative impacts of roads, especially increased mortality. Studies indicate that tortoises in the Mojave Desert are negatively affected by the presence of roads and occur at lower densities near heavily traveled roads.	$10,000,000	Not Started	FY23/24	Wildlife
PWR	GOGA	186589	Construct Multi-use Trail Connection from Golden Gate Bridge Vista Point to Fort Baker	$3,000,000	Complete	TBD	TA
PWR	GOGA	186589, 244444, 244458, 312139, 312140, 186401, 306262	Complete Non-Motorized Connectivity Across the Golden Gate	$27,000,000	In Progress	TBD	TA

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
PWR	NOCA	238005	NOCA Visitor Access Road Improvement Project	$42,609,982	Not Started	TBD	PROTECT
PWR	YOSE	TBD	Electrify Valley Shuttle Buses through fleet replacement & construction of charging infrastructure	$25,000,000	Not Started	TBD	NSFLTP
PWR	JOTR	TBD	Enhance Non-Motorized Connectivity Between Primary Park Destinations by Constructing 15 miles of Separated Shared Use Path	$26,000,000	Not Started	TBD	TA
PWR	OLYM	238684	Rehabilitate Route Sol Duc Road	$22,000,000	In Progress	TBD	NSFLTP
PWR	OLYM	237709	Restore Visitor Access and Increase Resiliency by Realigning 1 mile of Elwha/Olympic Hot Springs Road	$13,000,000	In Progress	TBD	NSFLTP PROTECT
PWR	SEKI	238684	Rehabilitate 15.29 Miles of Mineral King Road	$45,000,000	In Progress	TBD	NSFLTP
PWR	YOSE	316345	Improve (expand?) Existing Multi-use Path System in Yosemite Valley		Not Started	TBD	TA
PWR	MORA	316010, 274671, 239144, 317151	Replace five failing bridges to key park destinations (Tahoma Cr, Stevens Cr, Backbone Ridge Viaduct, Fryingpan Cr, Longmire Suspension)	$40,000,000	Not Started	TBD	Bridge Investment and PROTECT (for Tahoma Cr)
PWR	CRLA	317105	Replace Wearing Surfaces on Annie and Goodbye Creek Bridges	$5,000,000	Not Started	TBD	Bridge Investment

Table 12: SER BIL Transportation Grants Program of Candidate Projects

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
SER	LRI	TBD	Conduct Assessment (Phase 1- $400k) and Replace/Repair (Phase 2- $1 mil) Historic culverts used for wildlife crossing	$1,400,000		FY23/24	Wildlife
SER	GRSM	306739	Implement Safety Improvements on Gatlinburg Spur Road	$25,000,000		FY23/24	NSFLTP, RAISE, SS4A
SER	NATR	TBD	Plan and Install Wildlife Crossing to Reduce Mortality to Amphibians and Reptiles	$500,000		FY23/24	Wildlife
SER	NATR	315976	Replace John Coffee Memorial Bridge (TN River)	$260,000,000		FY25/26	NSFLTP
SER	CAHA	TBD	Build Bridges for ecosystem restoration, SLR adaptation, and transportation to CAHA	$1,500,000,000		TBD	PROTECT
SER	GRSM	177115 177118 177123 177124 177119 177121 177122 219423 247019	Construction of 2 Miles of Foothills Parkway-8D (only unfinished Federally authorized parkway) ($21,574,973) Construct 3 Miles of Foothills Parkway-8D only unfinished Federally authorized parkway) ($32,362,460) Construct 4.9 Miles of Foothills Parkway-8B (only unfinished Federally authorized parkway) ($56,433,409) Construct 4.6 Miles of Foothills Parkway-8B (only unfinished Federally authorized parkway) ($56,433,409) Construction of 5 Miles of Foothills Parkway-8D (only unfinished Federally authorized parkway) includes tunnel costs ($153,937,433) Construct 4.9 Miles of Foothills Parkway-8B (only unfinished Federally authorized parkway) ($53,937,433) Construction of US 441 Interchange at Foothills Parkway- 8D (only unfinished Federally authorized parkway) ($53,937,433) Complete EIS for Section 8C of Foothills Parkway (only unfinished Federally authorized parkway) ($5,000,000) Complete EIS for Section 8B of Foothills Parkway (only unfinished Federally authorized parkway) ($5,000,000)	$438,616,550		TBD	NSFLTP
SER	GUIS	322329	Connection of Bicycle and pedestrian multi-use lane/trail (Phase 3) to existing park project (Phase 1 & 2- bicycle and ped multi-use trail) underway to park campground and City of Ocean Springs.	$13,000,000		FY25/26	FLAP, TA
SER	BLRI	TBD	Rehabilitate Deficiencies on 33 Bridges along the Blue Ridge Parkway	$30,000,000		TBD	BIP
SER	BLRI	TBD	Develop Comprehensive Programmatic Design and Compliance Standards for Rehabilitation and Replacement of Aging Historic Bridges on the Blue Ridge Parkway	$500,000		TBD	BIP
SER	CUGA	TBD	Replace Little Yellow Creek Culvert #1, Structure #5230- 003P with a Buried Bridge	$1,000,000		FY25/26	BIP

Region	Park	PMIS (if available)	Project Description	Estimated Budget	Compliance Status	Target NOFO FY	Potential Grant Program
SER	CUGA	TBD	Replace Little Yellow Creek Bridge #1, Structure #5230-002P with a Buried Bridge	$1,000,000		FY25/26	BIP
SER	FOPU	TBD	Provide Connectivity to Rails to Trails/Local Trail System with Bridge improvements with dedicated bike/pedestrian lanes	TBD		TBD	FLAP, TA
SER	GRSM	257387	Replace Huskey Grove Road Crossover Bridge, ND ST 5460-086P	$10,000,000		FY25/26	BIP
SER	GUIS	TBD	Convert roadside three parking areas and Construct eight dune crossover boardwalks.	$3,400,000		FY25/26	RAISE, PROTECT
SER	GUIS	309129-Value Analysis and Feasibility	Enhance resiliency and sustainability of Fort Pickens Road	TBD		TBD	PROTECT
SER	GUIS	309129-Value Analysis and Feasibility	Enhance resiliency and sustainability of J. Earle Bowden Road	TBD		TBD	PROTECT
SER	MACA	TBD	Replace 8 existing propane buses with electric busses -purchase 2 additional eclectic busses - install EV Charging Station.	$6,850,000		FY25/26	TBD
SER	NATR	226212, 226377, 311955, 226172, 226378, 311956, 311954, 226233, 226235, 226232, 311953, 226234, 311952, 211951,	Reconstruction of Ridgeland Parkway Motorroad from MP 86 to 114.6 (Currently attempting to program piecemeal in FLTP)	$90,000,000		TBD	NSFLTP
SER	BLRI	TBD	Rehabilitate Sections 2U, 2V, 2X, 2Y & 2Z on the Blue Ridge Parkway	$56,000,000		FY25/26	NSFLTP
SER	BLRI	TBD	Replace Big Pine Creek Bridge #5 and Brush Creek Bridge #2	$2,000,000		FY23/24	BIP
SER	FOPU	TBD	Study/implement wildlife crossing strategies across HWY 80 for Diamondback Terrapin in Fort Pulaski NM	TBD, more information needs to be acquired before a cost estimate can be prepared		FY23/24	Wildlife
SER	GRSM	TBD	Modify Gatlinburg Trail Corridor Connecting Gatlinburg to Headquarters (CAT 3-would take entire IR2 budget)	$9,000,000		TBD	FLAP, TA
SER	GRSM	TBD	Replace multiple deficient bridges on GRSM in NC	$4,000,000		FY25/26	BIP
SER	GRSM	TBD	Replace multiple deficient bridges on GRSM in TN	$3,000,000		FY25/26	BIP

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