Acadia National Park
Maine

National Park Service
U.S. Department of the Interior

Acadia National Park
Draft Transportation Plan / Environmental Impact Statement

May 2018

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ACADIA NATIONAL PARK

DRAFT TRANSPORTATION PLAN / ENVIRONMENTAL IMPACT STATEMENT

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EXECUTIVE SUMMARY

Acadia National Park preserves approximately 35,000 acres in Hancock and Knox Counties in the northeastern United States along the mid-section of the Maine coast. Acadia National Park was established in 1916 as Sieur de Monts National Monument and redesignated as Lafayette National Park in 1919. In 1929, Congress authorized the National Park Service (NPS) to accept a donation of land on the Schoodic Peninsula and the park's current name was adopted. The park now consists of parts of Mount Desert Island plus a part of Isle au Haut to the southwest of Mount Desert Island, the tip of the Schoodic Peninsula on the mainland to the east, and most of, or parts of, 16 smaller islands. The park also preserves almost 13,000 acres in conservation easements within its legislated boundary, which runs from the Penobscot River ship channel to just east of the Schoodic Peninsula.

Annual visitation to Acadia National Park grew by 58% between 2006 and 2016. Most visitation occurs from June through October and during the National Park Service centennial celebration in 2016 3.3 million visits were recorded. The most popular destinations include Cadillac Mountain, sites along the Ocean Drive corridor, and Jordan Pond. Resource-based recreational activities include viewing the scenery, walking, hiking, bicycling, camping, horseback and carriage riding, sea kayaking, and canoeing. The park provides opportunities for educating visitors about its resources and values through a variety of interpretive activities including guided walks, amphitheater presentations, education programs, and outreach activities.

The popularity of Acadia National Park is growing, as revealed in the regular increase in visitation from year to year. One of the many reasons to visit the park is to experience the scenic and historic transportation corridors, be they the historic motor roads, hiking paths, or carriage roads. Regardless of the ultimate destination in the park, most visitors arrive via motor vehicle and must access their desired destination via the park's historic roads. The park's transportation infrastructure was constructed in the early 20th century and consists of narrow, twisting historic roads and narrow, low historic bridges that were designed for automobile types, speeds, and volumes different than those experienced today. In addition, the number of designated parking spaces along Park Loop Road and elsewhere in the park are not sufficient to meet visitor demand. With over 3 million visits concentrated in a short season, it is impossible to meet demand for accessing park features, and especially for supplying parking spaces, without significant resource impacts, reduced safety, and adversely impacting the visitor experience. Today's increased automobile traffic volumes and speeds, combined with an increasing number of visitors choosing to travel the park roads by walking, bicycle, recreational vehicle, and commercial bus, have created safety issues, resource protection concerns, and adverse impacts to visitor enjoyment of the park.

The purpose of this transportation plan is to outline a comprehensive approach to providing safe and efficient transportation and a variety of high-quality experiences to visitors to Acadia National Park while ensuring the protection of park resources and values. This planning process examines current and potential visitor transportation and access opportunities and develops long-term strategies for providing access, connecting visitors to important experiences and places, and managing visitor use. Many of the park's planning and management documents do not reflect current visitor magnitude or needs, so this plan provides updated guidance for addressing current and future visitor transportation strategies, management techniques, and resource protection concerns.

To meet the purpose and need of the plan and address these issues (and others as described in chapter 1), the transportation plan includes an identification of the highest value resources and desired visitor experiences in the park, as well as strategies for managing those resources and experiences in light of existing and expected proliferation of transportation challenges.

Overall, this plan seeks to achieve the following goals:

1. Establish desired conditions for natural and cultural resources and visitor experience at destinations and travel corridors throughout the park.
2. Adopt strategies to address parking and roadway capacity limitations and associated impacts on resources, safety, and visitor experience.
3. Establish guidance to improve safety and reduce conflicts among oversized vehicles (e.g., buses, RVs, campers), motorcycles, bicyclists, and passenger cars operating on park roads.
4. Enact potential improvements to transportation infrastructure to increase safety and enhance resource stewardship, sustainability, and NPS operational efficiency, while protecting the integrity and historic character of the park.
5. Improve visitor orientation, increase compliance with park entrance passes, manage road-based commercial tours, and support the Island Explorer public transit service.
6. Partner with local communities and the State of Maine to address local and regional transportation-related issues, sustainable public transit service, and enhanced cultural and natural resource protection.
7. Incorporate into the park's transportation planning efforts those of neighboring communities with regard to Island Explorer service enhancements and potential projects such as reuse of the Bar Harbor ferry terminal and the proposed parking solutions in downtown Bar Harbor.

THE PLANNING PROCESS

This plan uses the visitor use management framework to develop a long-term strategy for managing visitor use in the park (see chapter 1). Planning and managing visitor use help achieve the NPS mission of conserving park resources and values for the enjoyment of present and future generations. Proactively planning for visitor use supports responsive management that increases the ability of the National Park Service to encourage access, improve visitor experience, and maximize visitor opportunities while protecting resources. The general planning process used for this plan is consistent with the guidance outlined by the Interagency Visitor Use Management Council (www.visitorusemanagement.nps.gov).

ALTERNATIVES CONSIDERED

To address the issues described above, the park has developed three alternative futures (or "alternatives") and a no-action alternative for transportation management in the park. These alternatives are designed as three distinctly different approaches that address how and when visitors would access different popular destinations in the park and how and when the capacity of the transportation corridors and parking lots would be limited to ensure the protection of

natural and cultural resources and the visitor experience. The action alternatives all include variations on a reservation system that would involve fees that are designed to support plan actions. For a full description of these alternatives, see "Chapter 2: The Alternatives."

The National Park Service has identified alternative C as the NPS-preferred alternative. This alternative would best accomplish the purpose and need of this plan while protecting cultural resources, providing visitor access to park resources, and high-quality visitor experience of the transportation system and recreation opportunities. The NPS-preferred alternative provides strategies that give the National Park Service the tools needed to more effectively manage high levels of visitation while achieving plan goals. It also includes the greatest level of flexibility and provides adaptive management of future shifting visitor transportation needs and stresses on park resources. The preferred alternative is also the most responsive to values, issues, and suggestions made by the public during engagement efforts.

Alternative A (No Action)

The no-action alternative would continue current management (as outlined in the park's general management plan) and provides a basis for comparing the other alternatives. There would be no major changes from current operations, and changes that did occur would be on a reactionary, not proactive, basis. The park's transportation system would continue to support mobility and access on foot and by bicycle, Island Explorer bus, and private and commercial motor vehicles. Management of park visitors would continue to vary seasonally as visitor demand and needs change, with many management strategies focusing on the peak season between mid-May and mid-October. Throughout the park, the physical capacity of roads and designated parking lots would be generally unchanged. Parking would remain available to all users on a first-come, first-served basis and right lane parking would continue to occur, but restrictions and prohibitions may be implemented when needed. Physical changes to roads and parking would be limited and related to safety, accessibility, resource protection, and accommodating alternative transportation—not to capacity. Temporary or permanent closures of roads and parking areas may occur if necessary to address safety and security concerns or to ensure the financial sustainability of the overall transportation system.

Additional key actions include:

- The Hulls Cove Visitor Center would continue to accommodate current uses with no expansion of parking or other site amenities. The Acadia Gateway Center would be developed and operated as described in the Acadia Gateway Center Environmental Assessment and Finding of No Significant Impact (FONSI).
- Development of the Acadia Gateway Center into a regional tourism hub with expanded parking and public transit opportunities would continue to be supported by the park and park partners.
- The park's transportation system on the Schoodic Peninsula would continue to be managed to support low-density recreational use and provide alternatives to the use of private vehicles.
- Island Explorer would continue to be provided during the peak season to the degree funding allows. Designated parking for Island Explorer would continue to be provided.

Actions Common to the Action Alternatives

A number of management actions and strategies would be implemented under all of the action alternatives (B, C, and D). Many of these strategies are practical, common sense approaches to managing transportation in Acadia National Park and therefore do not vary by alternative. The following list focuses on the key actions and strategies being proposed; for more details please see chapter 2.

- **Reservation Systems:** Each of the alternatives propose different types of reservation systems to manage parking availability. The reservation systems in all of the action alternatives would only apply to motor vehicles, not to pedestrians or bicycles. The number of reservations available would correspond with management actions needed to manage within the desired resource and experiential conditions and the identified visitor capacities. A percentage of reservations would be held aside for short-term purchase. Reservations could be made online and at automated reservation kiosks in key locations.
- **Indicators, Thresholds, and Visitor Capacities:** All of the action alternatives would establish park visitor capacities and resource and traffic indicators and thresholds. These indicators would be monitored after the reservation system is implemented to ensure that the maximum amount of visitor use that can be accommodated is not exceeded. If these indicators approach their respective thresholds, then additional management action would be taken such as expanding the reservation system.
- **Public Transit:** Under all of the action alternatives Island Explorer service inside the park would be expanded as necessary up to the park's visitor capacity and, as funding permits, to facilitate access for those unable to secure a vehicle reservation during their desired entry time. The operating season of Island Explorer service would be expanded to coincide with that of the reservation system. However, if the service results in surges of activity that degrade resources or visitor experience, or if demand exceeds either the volume of transit the park is able to financially support or area visitor capacities, the reservation system may be expanded to Island Explorer routes serving the park.
- **Visitor Information, Orientation, Enforcement, and Safety:** Increased information would be provided to visitors, both before they arrive at the park and when they arrive. Visitors would be provided with enhanced trip-planning tools, advice on vehicle/bicycle safety, and information about car-free options to access and explore the Mount Desert Island District. Information about congestion and parking availability would be monitored and disseminated. Park staff would also work with cellular communication providers and local communities to improve cellular service in the park to provide better visitor information and orientation and increase safety.
- **Management of Other Mount Desert Island Park Attractions and Trailheads:** At the Acadia Mountain trailhead, park staff would work with local governments, the Maine Department of Transportation, and other stakeholders to identify an alternative, off-highway option for trailhead parking. For all of the other attractions and trailheads not directly covered by the action alternatives, park managers would take incremental actions to address existing and anticipated parking-related traffic congestion and unsafe instances of roadside parking. A memorandum of understanding would be developed with state, local, and county departments of transportation and law enforcement to improve safety through enforcement of roadside parking restrictions near these and other trailheads along state highways and local and county roads.

- **Vehicle Size Requirements:** To improve safety and the historic character of Park Loop Road, only vehicles that fit the geometry of the road and heights of the bridge underpasses would be permitted. This requirement would apply to all passenger and commercial vehicles and would be phased in over several years. Passengers of vehicles that do not meet bridge height and/or road geometry restrictions would need to transfer to an alternate mode of transportation such as an authorized commercial tour or bus.
- **Commercial Visitor Services:** During the active reservation season, the number of oversize commercial vehicles allowed at key locations (or in the case of alternative D on Park Loop Road) at one time would be managed to ensure desired conditions are maintained and visitor capacities at the park's primary attractions are not exceeded. The total number of visitors arriving by oversize commercial vehicles would be allocated between concessions and commercial use authorizations in a manner that best achieves desired conditions for the visitor experience and resource protection. All park-approved activity-based experience (e.g., step-on guides, tour operators, nature guides, biking tours, art/photography workshops, climbing schools, summer camps, water activities) operating under a commercial use authorization would be required to use vehicles carrying 15 or fewer passengers that fit in a standard parking space. Access to standard parking spaces under the reservation system for these commercial use authorization holders would be managed in the private vehicle allocations or through a contract, operating plan, or permit.
- **Schoodic Transportation Management:** The Schoodic Peninsula would continue to be managed as outlined in the 2005 Schoodic General Management Plan Amendment. Parking would continue to be allowed in designated areas on a first-come, first-served basis. The speed limit on the Schoodic Loop Road would be reduced. Visitors would be provided with enhanced trip-planning information and tools about car-free options to access and explore the Schoodic District. Park managers would work with partners to improve bicycle connections to the park and to improve safety for those biking the circular route, including Schoodic Loop Road and State Route 186. An accessible pedestrian trail would be installed between the Schoodic Education and Research Center campus and Schoodic Point. The overall amount of designated parking in the Schoodic District would not be increased. Any changes to parking lots and parking locations would be made to improve circulation, enhance safety, provide accessible parking, or protect resources rather than to increase the number of parking spaces. Historic roadside pullouts on the Schoodic Loop Road would be maintained, but expansion of informal pullouts would not be permitted. Public transit opportunities would remain as they are today, and park managers would continue to support use of the Island Explorer service to access popular destinations.
- **Climate Change:** No new facilities or infrastructures would be proposed by the alternatives in areas threatened by erosion or storms. Key natural and cultural resources, facilities, and processes that are at risk from climate change would be identified and monitored for change. Park transportation facilities and infrastructure would be managed in a way that prepares for and adapts to the effects of climate change. If there is an unacceptable risk of continued damage, damaged infrastructure would likely not be replaced.

Alternative B

This alternative would address transportation and congestion issues by establishing a reservation system for parking at five of the primary attractions and trailheads along Park Loop Road during peak times and seasons, and eliminating right lane parking to improve transit safety and ease. Parking reservations would be required at Cadillac Mountain, Sand Beach, Thunder Hole, Jordan Pond House, and Sieur de Monts. Gates and queuing lanes would be constructed where needed to validate reservations and to control access on some first-come, first-served lots.

Additional key actions include:

- The existing parking lot at Eagle Lake initially would remain as a first-come, first-served parking lot with the addition of an automated gate to restrict access into the lot when it is full.
- Additional parking would be provided at Hulls Cove, and the visitor center would be redesigned and relocated.
- The visitor services at the Thompson Island Information Center (on the west side of State Route 3) would be relocated to the Acadia Gateway Center in Trenton, and the structures then repurposed for other uses.

Alternative C (Preferred Alternative and Proposed Action)

This alternative would address transportation and congestion issues by establishing a timed-entry reservation system for the Ocean Drive corridor, Cadillac Summit Road, and the Jordan Pond House North Lot during peak use season. During initial implementation of the plan, all other parking lots in the park would continue to be managed on a first-come, first-served basis; but the alternative includes an adaptive management strategy that directs park managers to monitor traffic and resource conditions elsewhere in the park. If monitoring indicates traffic or resource conditions worsening beyond acceptable thresholds (discussed in detail in chapter 2 and appendix A), access to Island Explorer routes entering the park, vehicle access to other parking lots, or vehicle access to the entire Park Loop Road may be added to the reservation system.

Additional key actions include:

- Right lane parking would be retained in the near term but eventually phased out as other options such as expanded Island Explorer service and parking become available.
- The existing parking lot and restroom on the north side of State Route 233 at Eagle Lake would be removed and a new larger parking lot would be constructed south of the highway at an NPS maintenance storage yard known as Liscomb Pit.
- Additional parking would be provided at Hulls Cove, and the visitor center would be redesigned and relocated.
- The visitor services at the Thompson Island Information Center (on the west side of State Route 3) would be removed and the area restored to natural conditions. These services would be relocated to the Acadia Gateway Center in Trenton.

Alternative D

This alternative would provide a systemwide approach to manage vehicle volumes on Park Loop Road during the peak use season. Automated gates and additional entrance stations would be installed at all access points to Park Loop Road. A timed-entry reservation system would be established for vehicle access to Park Loop Road during the peak use season. Once a visitor passes through an entrance station or automated gate during their reserved entry window, all parking lots on Park Loop Road would be available on a first-come, first-served basis. Under this alternative, most of Park Loop Road, including Lower Mountain Road, would be one way in a counterclockwise rotation. The counterclockwise flow would be a reversal of direction on the current one-way sections of the road.

Additional key actions include:

- Most right lane parking would be eliminated.
- Most entrances to Park Loop Road would be converted to exit-only, new entrance stations would be built at Wildwood Stables and Paradise Hill Road, and the Sand Beach entrance station would be removed.
- The existing parking lot and restroom on the north side State Route 233 at Eagle Lake would be removed and a new larger parking lot would be constructed south of the highway along an abandoned section of State Route 233.
- A new parking lot accommodating approximately 40 vehicles would be established within the footprint of an existing NPS administrative storage area known as Satterlee Pit near the south end of Schooner Head Road.
- At Hulls Cove, the existing visitor center would be removed and a small visitor contact station would be rebuilt closer to an expanded Hulls Cove parking lot.
- The Acadia Gateway Center would serve as the park's primary visitor center.
- The visitor services at the Thompson Island Information Center (on the west side of State Route 3) would be relocated to the Acadia Gateway Center in Trenton, and the structures then repurposed for other uses.

ENVIRONMENTAL ANALYSIS OF ALTERNATIVES

Each of these alternatives has positive and negative impacts for park resources and visitor experience. These trade-offs are described as "environmental consequences." The potential environmental consequences of implementing any of the alternatives are addressed for visitor use and visitor experience, cultural resources, and socioeconomics. For a full description and analysis of the environmental consequences see "Chapter 4: Environmental Consequences."

Alternative A (No Action)

Overall, this alternative would cause mostly adverse impacts on visitor access and experience resulting from unconstrained access that results in congestion and parking challenges. This alternative would result in adverse impacts on the historic motor road and cultural landscapes. The park's historic motor road system and cultural landscapes can be expected to deteriorate at an increase rate as visitation and congestion continue to increase during peak times. Existing

contributions to the local and regional economies would continue to be beneficial; however, the actions in alternative A would be inadequate to support the long-term regional efforts in enhancing tourism and increasing visitor access in the area.

Alternative B

Both beneficial and adverse impacts would occur to visitor access and visitor experience; however, these adverse impacts would be less than in alternative A. The beneficial impacts would mostly be focused on the ability of visitors with reservations to find parking at the few locations that would be managed and the opportunity for continued spontaneity in access to Park Loop Road. Alternative B, however, would also result in adverse impacts on the visitor experience quality because the alternative does not proactively address competition for parking at most of the parking lots and does not directly manage the most congested road corridors. It is likely there would still be high levels of congestion in parking lots and along roadways during most days of the summer season, which would adversely impact visitor experience. This alternative would result in beneficial effects to the historic character of Park Loop Road by eliminating right lane parking, though some adverse impacts would occur to historic character and integrity of the road and to the park's cultural landscapes by installing gates and entry stations to control parking lot access. Restricting vehicle sizes to those appropriate to the historic roads is another beneficial impact on cultural resources and would also improve the visitor experience. Continuing to allow spontaneity in pass through traffic under alternative B would result in both beneficial and adverse impacts on the socioeconomic environment: beneficial impacts would result due to the wide range of recreational opportunities and visitor access being provided under the alternative, adverse socioeconomic impacts would occur due to the persistence of some congestion issues and visitors' perceptions of limited access.

Alternative C (Preferred Alternative and Proposed Action)

Under this alternative, both beneficial and adverse impacts would occur on visitor access and visitor experience, although overall most would be beneficial. This alternative provides visitors who obtain a corridor reservation more opportunity for spontaneity than alternative B, while still allowing access to most of Park Loop Road to visitors who do not have reservations. This alternative also enhances the quality of the experience along these key corridors and at key destinations. These actions have both beneficial and adverse impacts on visitor experience and access and the local economies that are tied to those aspects of park visitation. The activities described in alternative C result in a significant adverse impact on the historic character of Park Loop Road because it creates a segmented driving experience counter to its historic design. It also involves some construction of modern infrastructure that detracts from the historic character of the road and cultural landscapes. It ultimately eliminates right lane parking (though initially formalizing it), a major beneficial impact on the road's historic character. This alternative would result in improvements in visitor experience and access, a long-term beneficial impact on the local and regional tourism industry.

Alternative D

Under this alternative, both beneficial and adverse impacts on visitor experience would be realized. Overall, this alternative provides the highest degree of flexibility and opportunity for spontaneity for visitors who have access to the Park Loop Road system. In addition, because the entire road is managed, visitors with access can expect the experience to be mostly free of

congestion, though parking at the most popular destinations may not be availiable at all times. This alternative also enhances the quality of the experience along these key corridors and at key destinations. These actions have both beneficial and adverse impacts on visitor experience and access and the local economies that are tied to those aspects of park visitation. Conversely, full management of Park Loop Road by reservation means that visitors without reservations would not be able to engage in a scenic drive via personal vehicle. Overall, this alternative provides the most beneficial impacts on cultural and scenic resources in the park. Full management of the historic Park Loop Road would eliminate congestion and restore the historic character by creating conditions for free-flowing traffic. Adverse impacts on cultural and scenic resources include formalization of some right lane parking, addition of modern infrastructure, the expansion of one-way travel counter to the historic design of the road, and driver exposure to fewer historic vistas and more negative views because of counterclockwise flow on Park Loop Road. Under alternative D, less visitors would be able to access the park via private vehicle at one time; however, issues with vehicle congestion would be significantly improved resulting in a higher quality visitor experience and an increased likelyhood of return visits to the region. Alternative D would result in both beneficial and adverse impacts on the socioeconomic environment: beneficial impacts would result due to improvements in visitor experience and access, adverse socioeconomic impacts would occur due to the persistence of some congestion issues and visitors' perceptions of limited access that may result in reduced length of stay or decrease in visitation.

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

The National Park Service (NPS) is proposing to implement a transportation plan for Acadia National Park to improve visitor experience and protect resources on the transportation network itself and at the park attractions it provides access to.

This draft transportation plan / environmental impact statement (EIS) evaluates several management options (alternatives) to meet the purpose and need of the plan. The plan will also serve as an amendment to the park's general management plan (GMP). It has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA); regulations of the Council on Environmental Quality (40 *Code of Federal Regulations* [CFR] 1500–1508) (CEQ); NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, DO-12, 2011, and the NPS *NEPA Handbook* (NPS 2015). The general planning process used for this plan is consistent with guidance developed by the Interagency Visitor Use Management Council (IVUMC, http://www.visitorusemanagement.nps.gov).

PURPOSE AND NEED FOR THE TRANSPORTATION PLAN

The purpose of the transportation plan is to outline a comprehensive approach to providing safe and efficient transportation and a variety of high-quality experiences to visitors in Acadia National Park while ensuring that park resources and values are protected. The environmental impact statement presents and analyzes several management options to improve safety on park roads; reduce conflicts among oversized vehicles (e.g., buses, RVs, campers), motorcycles, bicyclists, and passenger cars; address visitors walking along park roads; reduce crowding and congestion at key visitor destinations, access points, and travel corridors; identify transportation infrastructure improvements to increase safety and enhance resource stewardship; and provide guidance on managing commercial services. The transportation plan would apply to all NPS-managed transportation corridors on Mount Desert Island and the Schoodic Peninsula over the next 10 to 15 years. The plan does not include Isle au Haut because a visitor use management plan was previously developed to address visitor use/transportation issues for this island.

The plan is needed to protect and maintain the park's purpose and significance and to protect its fundamental resources and values. Conditions are such that these resources and the park's purpose and significance are currently under threat.

The park's historic transportation infrastructure was constructed in the early 20th century and consists of narrow, twisting historic roads and narrow, low historic bridges that were designed for automobile types, speeds, and volumes different than those experienced today. With over 3.3 million visits concentrated in a short season, it is currently impossible to meet demand for visitor access to park features, and especially for supplying parking spaces without substantial resource impacts, reduced safety, and detracting from visitor experience. Because the Park Loop Road is a nationally significant historic resource and high-quality visitor experiences are tied to more moderate vehicle volumes on that historic resource, there are limited options for altering infrastructure to manage congestion issues.

Transportation issues at the park are diverse and complex. Typical traffic includes private vehicles, concession tour buses, commercial motor coaches, limousines, taxis, vans, the Island Explorer (a regional public transit system that also serves destinations in the park), bicycles, and

pedestrians. The high volumes of visitors accessing popular visitor destinations during peak times are causing gridlock, crowding, emergency response delays, cultural and natural resource damage, safety concerns, and overwhelming levels of visitor service facilities use. Heavy traffic and congestion diminishes the quality of visitor experience during peak times and at popular destinations, creating a demand for parking and road access that exceeds the capabilities of the historic transportation-related infrastructure. Furthermore, modern vehicles too large for the narrow character and alignment of the park's historic roads leads to unsafe conditions and increased conflicts among user groups, particularly pedestrians, cyclists, and drivers of large vehicles.

The checkerboard nature of the park boundary on Mount Desert Island and the multiple access points to park roads cause safety, congestion, and management issues. A network of state highways bisects the park providing access to many popular park locations. Parking congestion along the shoulders of these highways, combined with bicyclists and pedestrians immediately adjacent to vehicles traveling at highway speeds and people unfamiliar with the potential road hazards all combine to create safety threats that, because of multiple jurisdictions and authorities, must be addressed by state, local, and NPS managers working together for solutions.

In addition to increasingly high levels of visitor use on Mount Desert Island, use is expected to increase in the Schoodic District of the park. New recreational facilities on the Schoodic Peninsula and anticipated increases in visitation may require NPS staff to more actively manage use to protect resources and protect opportunities for low density recreation, solitude, and quiet experiences.

The park's general management plan (NPS 1992) and Schoodic general management plan amendment (NPS 2005) identified management actions to reduce crowding and vehicle congestion in high-density use areas by reducing reliance on automobiles by providing nonmotorized mobility options and by establishing a public transportation system. This public transportation system (the Island Explorer) was established in 1999 to provide public transit service from feeder routes near visitor accommodations and a hub in downtown Bar Harbor to destinations throughout the park. The Island Explorer service now plays a key role in providing alternative transportation throughout much of the park, but demand for popular transit routes occasionally exceed system capacity.

All segments of the historic motor road system on Mount Desert Island and the Schoodic Peninsula are identified in the general management plan as the "Park Loop Road" and are considered a key historic property. One of the numerous resource planning directives articulated in the general management plan is to "Protect the Aesthetic and Historic Values of the Park Loop Road and Other Auto Roads." Specifically, the general management plan states that the park will "protect and enhance the original design intent of the historic Park Loop Road " and develop and implement guidelines "for the management of the road and its landscape corridor to protect the overall design." The general management plan also states that

- new construction will be minimized and will use materials harmonious with those already used
- existing additions or alterations to the system will be evaluated for compatibility and possible removal
- no new parking will be added except at Wildwood Stables

Lastly, the narrow historic park roads and low bridges were not designed for the large vehicles that currently use park roads, many under commercial use authorizations. Managing these commercial enterprises, nonprofit organizations, and groups within the context of a crowded park presents a significant challenge for park managers, which will be addressed with this transportation plan and subsequent commercial services planning.

PLAN GOALS

This transportation plan seeks to achieve the following goals:

1. Establish desired conditions for natural and cultural resources and visitor experience at destinations and travel corridors throughout the park.
2. Adopt strategies to address parking and roadway capacity limitations and associated impacts on resources, safety, and visitor experience.
3. Establish guidance to improve safety and reduce conflicts among oversized vehicles (e.g., buses, RVs, campers), motorcycles, bicyclists, and passenger cars operating on park roads.
4. Enact potential improvements to transportation infrastructure to increase safety and enhance resource stewardship, sustainability, and NPS operational efficiency, while maintaining the integrity of the historic character.
5. Clarify how the scale, design, and function of the Acadia Gateway Center and Hulls Cove Visitor Center can help mitigate crowding and congestion, improve visitor orientation, increase compliance with park entrance passes, manage road-based commercial tours, and support the Island Explorer public transit service.
6. Partner with local communities and the State of Maine to address local and regional transportation-related issues, sustainable public transit service, and enhanced cultural and natural resource protection.
7. Incorporate the park's transportation planning efforts with those of neighboring communities with regard to Island Explorer service enhancements and potential projects such as reuse of the Bar Harbor ferry terminal and the proposed parking solutions in downtown Bar Harbor.

DESCRIPTION OF THE PARK

Acadia National Park preserves approximately 35,000 acres in Hancock and Knox Counties in the northeastern United States along the mid-section of the Maine coast. Acadia National Park was established in 1916 as Sieur de Monts National Monument and redesignated as Lafayette National Park in 1919. In 1929, Congress authorized the National Park Service to accept a donation of land on the Schoodic Peninsula and the park's current name was adopted. The park now consists of parts of Mount Desert Island plus a part of Isle au Haut to the southwest of Mount Desert Island, the tip of the Schoodic Peninsula on the mainland to the east, and most of, or parts of, 16 smaller islands. The park also preserves almost 13,000 acres in conservation easements across its legislated boundary, which runs from the Penobscot River ship channel to just east of the Schoodic Peninsula.

Annual visitation to Acadia National Park grew by 58% between 2006 and 2016. Most visitation occurs from June through October and during the National Park Service centennial celebration

in 2016 3.3 million visits were recorded. The most popular destinations include Cadillac Mountain, Sand Beach, and Jordan Pond. Resource-based recreational activities include viewing the scenery, walking, hiking, bicycling, camping, horseback and carriage riding, sea kayaking, and canoeing. The park provides opportunities for educating visitors about its resources and values through a variety of interpretive activities including guided walks, amphitheater presentations, education programs, and outreach activities.

BACKGROUND

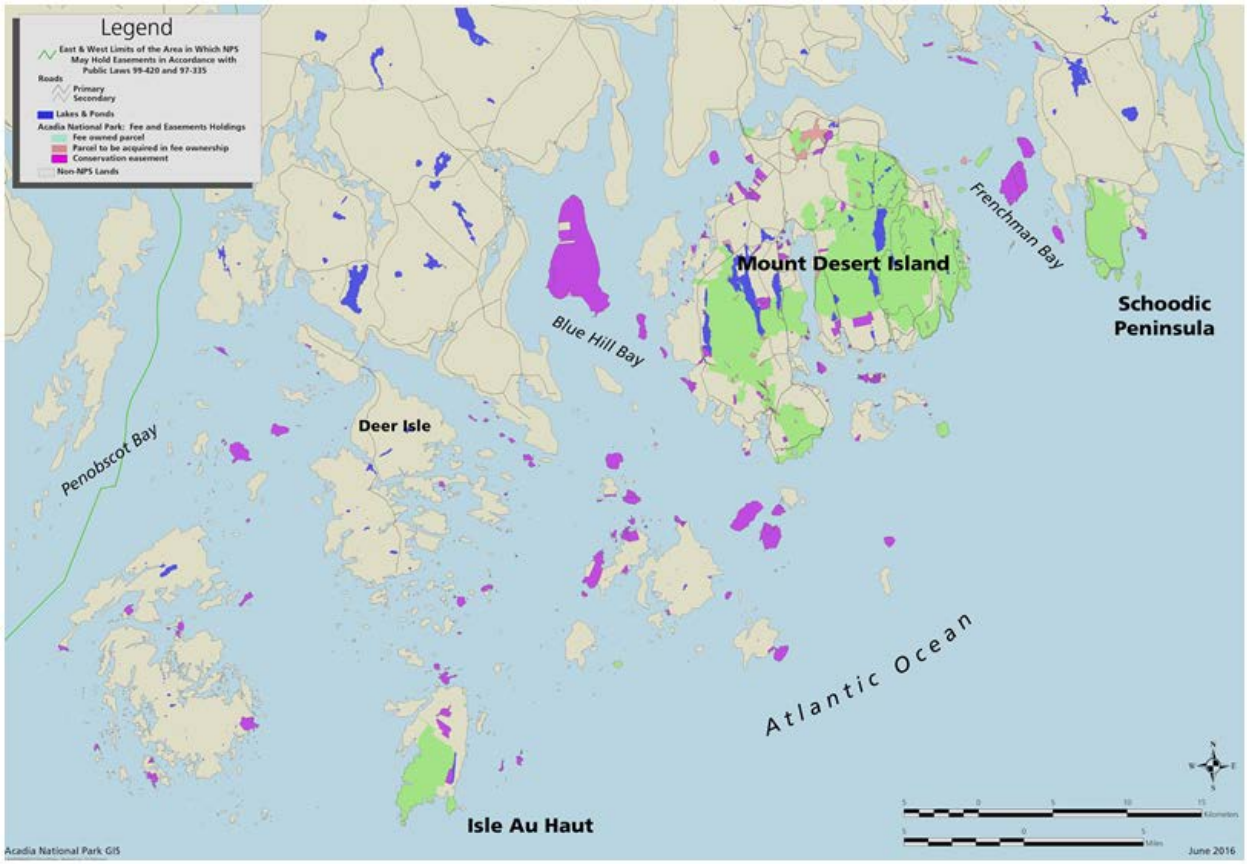
The 1992 general management plan for Acadia National Park and the 2005 Schoodic general management plan amendment recognized the growing issue with congestion associated with transportation within park districts. Both documents discuss the development of alternative transportation system approaches to minimize the use of motor vehicles in the park with the goal of "implementing a transportation system as an alternative to or replacement for private automobile access" (NPS 1992).

In 2016, park staff developed a foundation document that provides the underlying principles that guide the development of this plan. The foundation document identifies what is most important about Acadia National Park (including the park's purpose and significance), notes special mandates and administrative commitments that affect management of the park and identifies fundamental resources and values in the park. This plan was designed to be consistent with the park's purpose and significance and ensures the protection of the park's fundamental resources and values. The fundamental resources and values related to this planning effort are

- Range of Visitor Experience
- Network of Historic Roads, Historic Carriage Roads, and Trails
- Cultural Landscapes, Ethnographic Resources and Values
- Mosaic of Habitats Supporting Diverse Flora and Fauna
- Clean Air and Water
- Scenic Resources and Values

Twenty-five years ago, the 1992 general management plan recognized that congestion and overcrowding were having a negative impact on visitor experience and park resources and prescribed broad actions that would reduce these impacts. This transportation plan identifies the specific implementation level actions needed to achieve the goals of the 1992 general management plan. The 1992 plan called for managing access to specific locations to reduce resource damage and perceptions of overcrowding, including "the summits of Cadillac, Penobscot, Sargent, Champlain, and Pemetic Mountains; Little Moose Island; and Big Heath. Parking for these areas will be confined to existing lots with no overflow and no right lane

FIGURE 1. LOCATION OF ACADIA NATIONAL PARK AND PRIMARY LOCATIONS REFERENCED IN THIS PLAN



parking on Park Loop Road." The 1992 plan also identified actions to "retain opportunities for low-density recreation on the west side of Mount Desert Island and Schoodic Peninsula . . ." These actions included enforcing visitor capacity limits on the existing parking lots on Mount Desert Island and Schoodic Peninsula with the intent to "retain current use levels and the existing naturalness and solitude of these parts of the park." Furthermore, the 1992 plan identified limiting parking along Park Loop Road as a means of reducing congestion and overcrowding impacts. The plan described eliminating parking "from the right lane of the Park Loop Road wherever road geometry poses a safety hazard." The action was described as appropriate for enhancing the

> *. . .scenic driving by removing the safety concerns, traffic flow restrictions, and visual impact of right-lane parking. Parking will be permitted only in designated spaces in established lots, and vehicle size will be restricted in lots where turning space is limited. The cooperation of the state and towns will be sought to eliminate overflow parking along state highways. . . No new parking areas will be constructed along the Park Loop Road, and no existing parking areas will be expanded except at Wildwood Stables. Additional parking will be provided at Eagle Lake and at the head of Valley Cove Road (to replace existing parking at Valley Cove). Visitors will*

> *be encouraged to travel the Park Loop Road as a scenic drive-through and to use alternative access – including the alternative transportation system, trail links, carriage roads, and bicycle routes – for destination travel.*

It was recognized in that plan that establishment of the alternate transportation system would occur before the enforcement of new parking restrictions.

Even before the 1992 general management plan established management direction to deal with congestion and overcrowding , previous park planning efforts had tackled the issue. In 1988, the National Park Service published an environmental assessment (EA) and finding of no significant impact (FONSI) in association with establishing one-way traffic along Kebo Mountain Road, adding it to the already established 12-mile portion of one-way Ocean Drive. The change to one-way travel was made to address problems with safety, parking, and shared access for bicyclists, pedestrians, and motorists. It also established the limited use of right lane parking to ease pressure on overfilled lots. When considering alternatives for the plan laid out in the 1988 environmental assessment, the park used several studies on traffic volume and visitor preferences (based on the perception of safety and preference of views by direction) that helped them reach a preferred alternative to establish over half of Park Loop Road as one-directional travel in a clockwise direction.

In 1999, a three-phase transportation strategy was developed with the assistance of an interagency team of transportation, community, and Acadia National Park managers. This strategy was an effort to reduce traffic on local roads, primarily State Route (SR) 3, the primary access route to Mount Desert Island and the park. Phase 1 of the transportation strategy established the Island Explorer transit system operated by Downeast Transportation, Inc., and developed a transit hub at Village Green in Bar Harbor. Phase 2 expanded the Island Explorer fleet, extended the season and routes, and increased the frequency of service as the limited availability of drivers would allow. Since its inception in 1999, the Island Explorer transit system has carried over 7 million passengers. The Island Explorer is supported by donations from the local communities and organizations, local private businesses, and Acadia National Park.

Phase 3 of the transportation strategy included creating the Acadia Gateway Center along SR 3 in the town of Trenton, Maine, outside the park's boundary and approximately 2.0 miles north of the Hancock County Bar Harbor Airport. In addition to providing a more convenient location to fuel Island Explorer buses and establishing a bus maintenance facility, this site is strategically located to intercept traffic on SR 3 before it reaches Mount Desert Island. As the facility would be developed, visitors who stop at the Acadia Gateway Center would find information about the National Park Service and area chambers of commerce, purchase park entrance passes, learn about commercially operated tours, learn about the park through historical and informational displays, park their vehicles, and ride Island Explorer buses.

In 2007, the National Park Service adopted the *Acadia Gateway Center Environmental Assessment* prepared by the Maine Department of Transportation and Federal Transit Administration, concurring with their decision to build the Acadia Gateway Center in Trenton, Maine, off SR 3. The assessment called for build-out of the center in four phases. Phases 1 and 2 involved the construction of the now-existing Acadia Gateway Center facilities and establishment of the Downeast Transportation office and maintenance facilities. Phases 3 and 4 would involve construction of an expanded NPS welcome center and theater and establishment of a NPS staff presence at the Acadia Gateway Center. Phases 3 and 4 have not yet been completed.

The National Park Service continues to support full completion, including phases 3 and 4 (subject to implementation funding) of the Acadia Gateway Center. Under the current planning effort, the alternatives that involve reservation-only vehicle access to popular park destinations would result in increased need for parking outside the park and increased use of alternative transportation for visitor access. The fully developed Acadia Gateway Center will help serve that need.

As mandated for all units in the national park system, concession contracts or commercial use authorizations (CUAs) are required for all commercial visitor services operators including nonprofits that receive monetary gain for activities where park resources are used for recreational purposes (i.e., shore excursions, step-on guides, wholesale tour operators, nature guides, biking tours, art/photography workshops, climbing schools, summer camps, water activities). The park developed a commercial services plan in 2000 that provides guidance for the management of commercial uses in the park, including the types and levels of transportation-related commercial services that are appropriate. This transportation plan is consistent with and supports the objectives of the commercial services plan (2000).

VISITOR USE MANAGEMENT

Visitor use management is the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting and using a variety of strategies and tools to sustain desired resource conditions and visitor experience. Visitor use management is important because the National Park Service strives to maximize opportunities and benefits for visitors in a particular area while achieving and maintaining desired conditions for resources and visitor experience. Managing visitor access is inherently complex. It requires that NPS managers analyze not only the number of visitors but also where they go, what they do, their impacts on resources and visitor experience, and the underlying causes of those impacts. Managers must acknowledge the dynamic nature of visitor use, the vulnerabilities of natural and cultural resources, and the need to be responsive to changing conditions.

Proactively planning for visitor use maximizes the ability of agencies to encourage access and protect resources and values. In this plan, visitor use refers to human presence in an area for recreational purposes including education, interpretation, inspiration, and physical and mental health. Visitor use simply refers to the types of activities that people engage in at parks, but also includes the amount, timing, and distribution of visitor activities and behaviors.

The Planning Process

This plan uses the visitor use management framework to develop a long-term strategy for managing visitor use in the park. The planning process used for this plan is outlined below and is consistent with guidance outlined by the Interagency Visitor Use Management Council (www.visitorusemanagement.nps.gov). Studies conducted by multiple sources related to visitor use, the condition of natural resources related to visitor use, and visitor preferences in the park also informed development of the alternatives.

Table 1. Visitor Use Management and the Planning Process

Visitor Use Management Framework Elements	Framework Steps and Alignment with the Planning Process and Corresponding Chapter Location
Element 1: Build the Foundation *Building the foundation is the first of the four elements of the visitor use management framework. The purpose of this element is to help managers understand what needs to be done, how to organize the plan, and how to define the resources needed to complete the plan.*	1. Clarify the plan purpose and need (chapter 1). 2. Review the area's purpose and applicable legislation, agency policies, and other management direction (chapter 1). 3. Assess and summarize existing information and current conditions (e.g., current conditions of natural, cultural, and recreation resources and visitor experience opportunities in the area) (chapter 3). 4. Develop a plan strategy (chapter 1).
Element 2: Define Visitor Use Management Direction *The purpose of this element is to answer critical questions about what the planning effort is trying to achieve and the acceptable levels of impacts from visitor use.*	5. Define desired conditions for the planning area (chapter 12). 6. Define appropriate visitor activities, facilities, and services (chapter 2). 7. Select indicators and establish thresholds (chapter 2; appendix A).
Element 3: Identify Management Strategies *This element is intended to help managers identify management strategies and actions to achieve and maintain the desired conditions of the plan area. This element also identifies visitor capacity. The goal of element 3 is to define how visitor use would be managed to achieve desired conditions.*	8. Compare and document the differences between existing and desired conditions, and for visitor use-related impacts, clarify the specific links with visitor use characteristics (chapter 3). 9. Identify visitor use management strategies and actions to achieve desired conditions (chapter 2). 10. Where necessary, identify visitor capacities and strategies to manage use levels within capacities (appendix A). 11. Develop a monitoring strategy (chapter 2; appendix A).
Element 4: Implement, Monitor, Evaluate, and Adjust *This element focuses on implementing management actions, monitoring, evaluating monitoring results, and making adjustments to management strategies and actions based on monitoring results. This phase of the planning process focuses on making progress toward meeting desired conditions as well as evaluating potential unintended consequences of the actions for visitors or resources.*	12. Implement management actions. 13. Conduct and document ongoing monitoring and evaluate the effectiveness of management actions in achieving desired conditions. 14. Adjust management actions if needed to achieve desired conditions and document rationale.

DESIRED CONDITIONS FOR SELECTED FUNDAMENTAL RESOURCES AND VALUES

The desired conditions are defined as statements of aspiration that describe resource conditions (including fundamental resources and values), visitor experience and opportunities, and facilities and services that an agency strives to achieve and maintain in a particular area. Desired conditions describe what conditions, outcomes, and opportunities are to be achieved and maintained in the future, not necessarily what exists today. Desired condition descriptions describe what the particular area will look like, feel like, sound like, and functions like in the future. The desired conditions guide the development of indicators and thresholds needed for monitoring and adaptive management. They also provide basic criteria to evaluate the appropriate types and levels of management, development, and access needed to achieve those conditions.

Definition of Desired Conditions
Desired conditions are defined as "a park's natural and cultural resource conditions that the National Park Service aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources." NPS *Management Policies 2006*

The park's fundamental resources and values (FRVs) are those features, systems, processes, experiences, stories, scenes, sounds, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance. The FRVs are also an integral part of how visitors experience Acadia National Park and its network of roads, parking lots, and transportation routes, which help the visitor to experience those resources and share in the values. Desired conditions were developed for these fundamental resources and values as part of this comprehensive planning effort. Please refer to the park's foundation document for descriptions of the fundamental resources and values associated with transportation planning in the park. Each alternative was developed to be compatible with attaining these desired conditions, as well as meeting the purpose and need for the plan. Please refer to "Appendix A: Visitor Capacity Determination" for a discussion of how these desired conditions inform visitor capacity for each of the key locations within the park's transportation network.

Range of Visitor Experience.

Goal— Provide for a range of opportunities to experience the landscape that provide a high-quality, resource-related visitor experience while ensuring a safe and positive social environment.

Desired Conditions

- Visitors are provided with safe, convenient, conflict-free, and sustainable access to park resources and experiences using a variety of means including private automobile, commercial transportation, Island Explorer buses, or by foot or bicycle.
- High-quality programs, services, and facilities are provided that are accessible and usable by all people.
- Visitors are informed about the area, know what to expect, and have planned their visit before they arrive at the park.
- Visitors have a variety of options to access areas throughout the park via private automobile, commercial transportation, Island Explorer buses, or by foot or bicycle.
- High-quality experiences are provided in settings with a range of visitor densities (high to low) that are not dominated or degraded by crowding or congestion of vehicles or visitors. These settings are characterized by high-quality natural and cultural resources, natural soundscapes, and dark night skies. The number of visitors to key park attractions is managed in a way that prevents conflicts over available parking spaces, between different activity participants, and provides access for a variety of activities.
- The Western Mountain roads and the surrounding areas and trails are managed for low-density use and solitude.

- Visitors understand the historic significance of the park's cultural resources, including the motor roads, as historic resources.
- Traffic is predominantly free flowing with occasional congestion at acceptable levels that will usually abate on its own and does not compromise safety and emergency response. Visitors in private vehicles are able to find parking space at destinations most of the time but with acceptable delays. The Island Explorer buses can easily circulate throughout the park. Dead-end roads (located at Great Head, Duck Brook, Beech Mountain, Echo Lake, Bass Harbor Light, Lower Hadlock Pond, Long Pond, and other places) are managed to avoid congestion and ensure emergency access at all times.
- Visitor facilities support key visitor experiences related to fundamental resources or values.
- Visitors with disabilities have equitable opportunities to access all park facilities where possible.
- Views from Cadillac Mountain summit are dominated by a natural landscape that is interspersed with unobtrusive rural community development.
- Visitors can have a quiet, contemplative experience at Sieur de Monts. Visitors can have an easygoing environment for birding, botanizing, and enjoying the natural and cultural landscape. Vehicles in the area are consistent with the quiet, contemplative nature of this place. Large vehicles do not park in the area.
- Entrance facilities have adequate capacity to accommodate a variety of transportation modes. Equitable queuing options are available. Specific locations provide a high-quality, seamless transition among various transportation modes.
- Access to the Western Mountain roads and Long Pond Fire Road and their associated parking lots and trails is intentionally limited to maintain a low density experience. Public transit is not provided to these areas. Visitors have a relatively low-density experience with ample opportunities for solitude and limited developed recreational facilities and limited services.

Network of Historic Roads, Historic Carriage Roads, and Trails.

Goal— Protect the aesthetic and historic values of historic roads, historic carriage roads and trails in the park.

Desired Conditions

- The park's historic road and trail networks retain their overall design, character-defining features, and intended historic uses, including private automobile touring.
- The original intent and historic significance of Park Loop Road and other historic roads are conveyed to visitors.
- Transportation-related development beyond the existing footprint is minimized and designed in accordance with other rustic designs and is sustainable and adaptive to a changing climate.
- Infrastructure is resilient to the effects of climate change.
- Future transportation infrastructure design and construction is sustainable relative to sea level rise, increasing storm intensities, and other climate-related future conditions.

- To ensure visitor safety and avoid conflicts, the number and size of all vehicles accessing key areas does not exceed the road's design and parking capacity.
- Visitors experience driving the motor roads as originally intended for low speed, vehicle touring.

Cultural Landscapes, Ethnographic Resources and Values.

Goal— Protect, preserve, and rehabilitate the cultural heritage and landscapes of the park.

Desired Conditions

- The historic attributes and uses contributing to the park's cultural landscapes are preserved and protected.
- The character, integrity, and significance of the cultural landscape embodied in the historic motor road system are maintained.
- The integrity of ethnographic resources and values is safeguarded to preserve significant attributes and uses that contribute to historical significance.
- Development blends with and supports the character, integrity, and historic significance embodied in the park's cultural landscapes, including the historic motor road system.

Mosaic of Habitats Supporting Diverse Flora and Fauna.

Goal— Protect and preserve the park's natural resources, giving priority to those that are exceptionally fragile or significant.

Desired Conditions

- A climate-resilient, ecologically diverse native biotic community is present and thriving.
- Visitor-related impacts such as loss of soil and vegetation along roadsides from parked cars and along trails from high volumes of hikers are minimal.
- An associated abundance of flora and fauna, including terrestrial and aquatic ecosystems, are supported.
- The park's transportation system is designed and constructed to ensure the protection of rare and special status species and habitats. Natural processes are safeguarded to preserve natural ecosystem integrity. The natural processes that connect the hydrologic and other natural features and systems of the park are unhindered by transportation-related use, management, and infrastructure.

Clean Air and Water.

Goal— Maintain or improve air and water quality.

Desired Conditions

- Transportation activities and systems would continue to be managed in accordance with the park's classification as a class I area under the Clean Air Act of 1977.
- The physical, chemical, and hydrological properties of the park's streams, rivers, lakes, and other water bodies reflect natural water quality conditions that meet or exceed applicable water quality standards and drinking water values.

Scenic Resources and Values.

Goal— Preserve opportunities for visitors to enjoy the park's scenery.

Desired Conditions[1]

- Views of the natural environmental and cultural landscapes are protected.
- Vehicles do not dominate visitor views and experiences at key attractions.
- Visitors easily find their destination and understand their options for accessing trailheads. Visitors have the freedom to roam and explore the surrounding areas, with some areas closed for resource protection.
- Transportation information is available to visitors online and at visitor centers.

SCOPE OF THE TRANSPORTATION PLAN / ENVIRONMENTAL IMPACT STATEMENT

Issues and Impact Topics Retained For Detailed Analysis

The National Park Service conducted scoping to confirm the purpose of and need for the project, identify potential management alternatives, and identify the issues relevant to analysis of those alternatives. The National Park Service conducted scoping with federal, state, and local agencies with jurisdiction by law or special expertise, nongovernmental entities, other interested and affected parties, and the general public.

Through scoping, the National Park Service and cooperating agencies developed a list of issues associated with transportation management in the park. These issues are "problems, concerns, conflicts, obstacles, or benefits that would result if the proposed action or alternatives, including the no-action alternative, are implemented" (NPS 2015a, section 4.2). Issues identified during scoping and retained for detailed analysis are described below.

Issue: Changes to Visitor Access and Use Patterns

Visitor experiences on park roads allow for recreational opportunities such as viewing remarkable and unique scenery and driving on roads that have national significance for their character and construction. Park roads bring visitors to a variety of experiences from hiking the summits, combing the shoreline, and enjoying vistas. Acadia National Park receives approximately 3.3 million annual visits. These visitors are affected by management of the Acadia transportation system. During the park's peak season and hours, visitors have degraded experiences, both on roadways themselves and while attempting to access park resources and experiences, due to vehicle congestion on roads, parking lots, and transit systems; overcrowding on trails and other key attractions; blocked vistas; and compromised wayfinding.

Furthermore, congestion associated with high volumes of people accessing parklands during peak season causes safety concerns and a reduced level of service along those roads. In some cases, the congestion can limit the ability of first responders to reach an emergency situation

[1] Additional desired conditions for this FRV can be found in the Motor Road Vista Management Plan (2016).

promptly. Motor coach heights exceed bridge underpass heights on the Park Loop Road and on SR 233, requiring coaches to cross the center line to pass under bridges. Additionally, Cadillac Mountain is accessible via a narrow, twisting historic road constructed in 1932 that serves visitors in private vehicles, 45-foot-long commercial buses, and on bicycles. There are no shoulders or other accommodations for bicycle use along this roadway; drivers who want to pass bicyclists do not have room to do so without crossing the center line. Visitors also walk along the side of the road to the summit.

The action alternatives consider potentially significant changes and restrictions on how visitors access, move about, and experience the park. These changes could impact the timing and distribution of visitor use in many areas of the park. These changes could also impact the experience quality in parking lots, at attraction sites, and along roadways. These were primary concerns in the planning process.

Associated impact topics:

- Visitor Use and Experience
- Socioeconomics
- Visitor and User Safety

Issue: Protecting Historic Resources and Historic Character

Most of the park's motor roads are a historic resource and cultural landscape. In addition, the park includes a number of other cultural landscapes and associated historic structures, all of them accessed by the historic motor road system. The park's historic Park Loop Road, built between 1922 and 1958, encompasses a unique historic design that was established to provide an unbroken scenic automobile tour throughout all natural settings of the park. The road system became the primary means of accessing the most popular destinations in the park, themselves historic cultural landscapes with unique design characteristics that include access points to the historic road and designed vehicle circulation patterns and parking lots. The development of the historic motor roads and associated cultural landscapes followed a picturesque design style and became one of the nation's most comprehensive examples of NPS rustic design, a style that blends human-built infrastructure into the physical environment to complement the natural world. The historic character of the nationally significant Park Loop Road and associated landscapes is dependent upon both its historic fabric and design and its interaction with the surrounding landscape, including viewsheds into and out of landscapes and experiencing scenic vistas along the intended tour of the motor road. Experiencing the scenic views provided by the historic motor road system is a fundamental resource and value for Acadia National Park and a defining historic characteristic of the Park Loop Road.

Current congestion in the historic road corridor and at popular destinations in historic cultural landscapes create situations that threaten the historic fabric of the road and associated landscapes. Driving and parking beyond the road surface, as well as associated ad hoc solutions to congestion and overcrowding, threaten adverse effects on the historic character of park roads and their eligibility for listing in the National Register of Historic Places (NRHP). Proposed changes in access points to control congestion and their associated modern infrastructure improvements threaten impacts to the historic fabric and character-defining design of the road and associated cultural landscapes along the road. Proposed changes in circulation and methods of transport affect the historic character-defining experience of touring the Park Loop Road and

access to relevant viewsheds and vistas. Proposed changes to the ways in which visitors access individual cultural landscapes (both through physical modification of the landscapes and via adjustments that increase or decrease visitor density and vehicle sizes) could affect the intended use of the landscapes and their historic character. Physical and operational changes to park transportation systems could significantly impact the park's historic resources and their design characteristics, and could threaten their eligibility to the National Register of Historic Places.

Associated impact topics:

- Historic Motor Road, Character and Condition
- Cultural Landscapes, Character and Condition

Issue: Changes to Commercial and Local Use

Recreation-related tourism plays an important role in the local and regional economy. The alternatives included in this plan propose varying levels of recreational access, opportunities, and changes in commercial uses that may affect the local community's travel and tourism sectors. New transportation access management systems may affect local residents' ability to spontaneously visit certain areas of the park, may affect the size and number of buses as well as traffic in and around Acadia. Local businesses, including road-based commercial tour operators, commercial guides, and nature tours, that use park roads and parking lots to access resources outside the transportation corridor may also be affected. The proposed action alternatives may consider potentially significant changes to commercial visitor services and visitor access to the park that may affect local communities' social and economic systems and their enjoyment of natural and cultural resources.

Associated impact topics:

- Visitor Use and Experience
- Socioeconomics

Issues and Impact Topics Considered but Dismissed from Further Analysis

Through the scoping process, the following issues were initially raised during scoping but were eliminated from further consideration for the reasons below.

Archeological Resources. Acadia National Park contains significant prehistoric and historic archeological resources dating back at least 5,000 years. The entire park has been evaluated for the potential for buried archeological resources and over 220 sites are known to park managers. The proposed actions associated with this transportation plan do not take place in the vicinity of any of these known resources, and the plan is not expected to affect archeological resources known to exist in the park. However, various components of the action alternatives presented in chapter 2 do propose ground disturbing activities in areas that have not been fully surveyed to identify the presence of archeological resources. These actions include expanded parking and visitor center infrastructure at Hulls Cove, demolition and site restoration at Thompson Island, construction of a parking lot and access road at Eagle Lake, and establishment of parking facilities at Acadia Mountain and the Satterlee Pit site. In the event that they were to be undertaken, full archeological survey of project areas would be completed, along with inventory and evaluation of the historic significance of any archeological resources encountered, in

advance of any ground-disturbing activities. These investigations would be carried out in consultation with the Maine Historic Preservation Commission (MHPC) (state historic preservation officer [SHPO]) and the park's associated tribal governments. If significant archeological resources were discovered and determined to be threatened by any proposed projects, the park would employ best practices for their preservation and consult with the Maine Historic Preservation Commission, tribal governments, the Advisory Council on Historic Preservation, and other stakeholders on their ultimate treatment. Therefore, the topic of archeological resources was dismissed from further analysis.

Winter Recreational Use. The majority of park visitors are accommodated during the peak and shoulder seasons between May and October. The proposed reservation systems in this plan would only apply during the peak season in the park, currently between mid-May through mid-October. During the off-peak season, many park roads are closed and issues with congestion, conflicts between visitor use and resource protection and visitor experience are rarely experienced and are managed in the park on a case-by-case basis. The alternatives described in this plan relate to strategies for transportation management during the peak season only, and the ability of the National Park Service to manage transportation for winter use would continue as under the no-action alternative. Therefore, consideration of the transportation system in winter would not direct or inform this planning effort. However, park managers may choose to adaptively manage the time periods during which the reservation systems are in place. As the climate warms, use during spring and fall months has increased. If these trends continue to expand the peak season of use, dates during which the reservation and public transit systems operate may extend earlier and/or later into the year.

Natural Resources. Acadia National Park supports a wide diversity of ecological community types, as well as hundreds of species of plants and animals including some that are globally, federally, and locally rare. The park's ecosystems and natural wildlife communities are a fundamental resource and value of Acadia. Periodic high volumes of visitors and traffic congestion can lead to resource trampling at popular destinations and damage associated with shoulder driving and out-of-bounds parking. Each of the action alternatives in this plan proposes options to avoid or alleviate these impacts. In addition, all alternatives seek to eliminate resource damage associated with visitor use without installing significant infrastructure, which itself could variably impact natural resources, depending on the scale of construction. Under any of the alternatives considered, adverse impacts on natural resources would be minimal and would not vary among alternatives. Most areas in which construction would take place are already developed or disturbed. At Eagle Lake the preferred alternative would result in some disturbance and loss of vegetation, wildlife, and soil, primarily due to widening the access road and construction of a new connector trail. However, less than 1 acre would be altered, and impacts would be minimal with the application of best management practices. No special or unique vegetation, soil, and wildlife would be lost and the abundance and distribution of vegetation and wildlife in the area would not substantially change. Developments may also be proposed in the future in the Jordan Pond and Acadia Mountain areas under the preferred alternative, but without additional details on these developments it is not possible at this time to analyze the impacts on vegetation, soil, and wildlife in these areas—additional impact analysis and compliance will be needed for these areas when details on the proposed developments are known. Based on best available information, no known federal or state listed species are known to occur within the above construction areas with the possible exception of the federally threatened northern long-eared bat. Surveys would need to be done prior to construction to determine if rare or sensitive species are present and if impacts can be

avoided. Because northern long-eared bats may be present, the National Park Service would consult with the US Fish and Wildlife Service (USFWS) prior to any construction to ensure that adverse impacts to this species are avoided. Under all of the action alternatives, park managers would be working to improve the condition of fundamental resources and values related to natural resources. The topic would not inform or direct decision making in this planning effort and was dismissed from further analysis.

Air Quality. Emissions from vehicles in the park affect local air quality. Although the park is not in a nonattainment area (as defined under the Clean Air Act), changes in transportation management could affect local air quality and emissions. However, because all action proposals of this transportation plan seek to eliminate or reduce instances of traffic congestion and idling (and subsequent impacts on air quality from excess vehicle emissions), any action taken would similarly benefit air quality. Analysis of the benefits to air quality would not vary among the alternatives. Therefore, the topic would not inform or direct the decision making in this planning effort and was dismissed from further analysis.

Water Quality. Vehicle use and road maintenance can introduce environmental pollutants into park ecosystems and waterways. Vehicle fluid leaks, accidental fuel discharges, and solid waste contamination (litter and vehicle parts) are all associated with active roadways. In addition, road maintenance activities such as paving projects, striping, and wintertime salting, all have the potential to negatively impact water quality. These issues are typically considered and impacts minimized on a case-by-case basis. None of the alternatives considered in this plan would affect the park's ability to manage these impacts, nor would any alternative change the frequency or intensity of these impacts. No new developments or actions are being proposed in this plan that would degrade the water quality of lakes and ponds that serve as drinking water for local residents. Under alternatives C and D, parking lots are proposed within the Eagle Lake watershed; however, design of those parking lots would incorporate best practices for stormwater management, and when considered in context with existing uses and the proposed revegetation efforts, the proposals are likely to result in a net improvement to water quality. Therefore, the topic would not inform or direct the decision making in this planning effort and was dismissed from further analysis.

Environmental Justice. Although local residents include minority and low-income populations, these populations would not be particularly or disproportionately affected by activities associated with construction or implementing the alternatives. The park staff and planning team solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.

All of the action alternatives in the plan include the use of reservations to manage vehicle volumes in the park. These reservations would be accompanied by a modest (likely less than $10) fee to cover the costs to operate the reservation system, monitor traffic conditions, and support alternative transportation options such as the free Island Explorer service. These reservations, and the increased fee associated with them, are not proposed for many areas of the park. Visitors would still be able to access the park in a variety of ways that would not be subject to an additional fee. Regardless of alternative selection, implementation would not result in any identifiable adverse human health effects on any population, including minority or low-income populations. For these reasons, environmental justice as an impact topic was dismissed from further analysis.

Indian Trust Resources. No Indian trust resources are located in the park and the lands comprising the national park are not held in trust by the Secretary of the Interior for the benefit of Indians. Therefore, the issue of Indian trust resources was dismissed from further analysis.

Trails and Carriage Road Systems. The transportation plan addresses safety issues on park motor roads and crowding at popular visitor destinations in the park. No alternative proposes changes to the physical alignment, characteristics, management, or maintenance of hiking trails or carriage roads. Some alternatives propose new parking lots and associated connector trails to adjacent carriage roads and hiking trails, but no modifications to existing trails or changes in their current uses are proposed.

The alternatives do propose managing vehicle levels on roadways and parking lots that provide access to hiking trails and carriage roads. Additionally, a monitoring framework that includes indicators and thresholds for trails and carriage roads and an associated visitor capacity determination is included in appendix A. These indicators, thresholds, and visitor capacity determinations are designed to ensure that management of the park's roads, parking lots, and transit services do not cause adverse impacts on the historic trails and carriage roads and the visitor experience on them.

No changes are proposed in any of the alternatives regarding pedestrian and bicycle access on the Park Loop Road, including Cadillac Mountain, Ocean Drive, Jordan Pond House, and Sieur de Mont. No reservations would be required to bike in these areas or for bicycle access to the parking lots. Therefore, this topic was dismissed from further analysis.

Isle au Haut and Remote Islands. The transportation system would continue to support low-density visitor use of Isle au Haut, consistent with the 2014 visitor use management plan. No adjustments to management of transportation on the island are proposed in this plan. The National Park Service would continue to use a cooperative agreement to ensure ferry service to Duck Harbor; there would continue to be a passenger ferry dock at Duck Harbor. The National Park Service would continue to ensure motor vehicle access along the park road, although the extent of upkeep would continue to vary based on available funding.

The transportation plan proposes no adjustment in current strategies for management of the park's other remote islands, which would continue to be managed as they currently are under existing plans and policies. No landing facilities would be constructed on the islands. Commercial use of remote islands would continue to be prohibited. Therefore, this topic was dismissed from further analysis.

Boating. This draft plan / environmental impact statement addresses land-based transportation and visitor use. While the alternatives do propose changes to parking and vehicle access, including vehicles trailering and launching boats, none of the alternatives propose any changes to managing boat use on the water. Therefore, boating was dismissed from further analysis.

NEXT STEPS IN THE PLANNING PROCESS

The release of this draft environmental impact statement (DEIS) will be followed by a 60-day public comment period. Public comments will then be analyzed and used to shape a final environmental impact statement (FEIS). After release of the final environmental impact statement for a 30-day no-action period, a record of decision approving the plan may be prepared for signature by the NPS regional director. The record of decision documents the NPS

selection of an alternative for implementation. The plan can then be implemented, depending on funding and staffing.

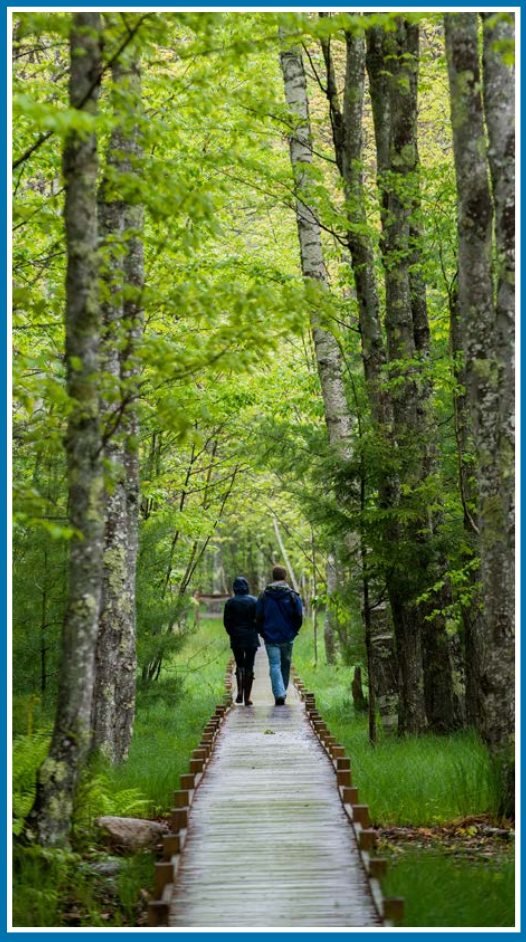
Implementation

A record of decision does not guarantee funds and staff for implementing the approved plan. The National Park Service recognizes that this is a long-term plan and, in the framework of the plan, park managers would take incremental steps to reach park management goals and objectives. The park would actively seek alternative sources of funding, but there is no guarantee that all the components of the plan would be implemented.

The implementation of the approved plan could also be affected by other factors such as changes in visitor use patterns, additional data or regulatory compliance requirements, competing national park system priorities, and unforeseen environmental changes. Additionally, a financial feasibility analysis would be completed to determine the best way to meet the goals for management of commercial vehicles in the park. This analysis may be followed by the development of a concession prospectus or new restrictions on commercial use-authorized activities.

Chapter 2

Alternatives



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CHAPTER 2: ALTERNATIVES

INTRODUCTION

This chapter describes alternatives for transportation and visitor use management in Acadia National Park. The alternatives were developed by soliciting input from park staff, stakeholders, other government agencies, and the public on key issues and potential management strategies.

In the following sections, the no-action alternative (alternative A), actions common to all action alternatives, and three action alternatives (alternatives B, C, and D) are described. Next, best management practices are described and mitigation measures discussed. Chapter 2 concludes by identifying alternatives and actions that were considered by the planning team but dismissed from further consideration.

Under the no-action alternative, current management continues, and the alternative provides a basis for comparing the other alternatives. The actions common to all action alternatives include common sense approaches to managing transportation in Acadia National Park that do not vary by alternative. The action alternatives present various approaches to managing park resources and values, including a spectrum of visitor opportunities and amenities.

For each alternative, a concept statement is presented followed by management actions and strategies that would guide Acadia National Park's management of the park's transportation networks. These strategies (for action alternatives B, C, and D) are organized under the following topics:

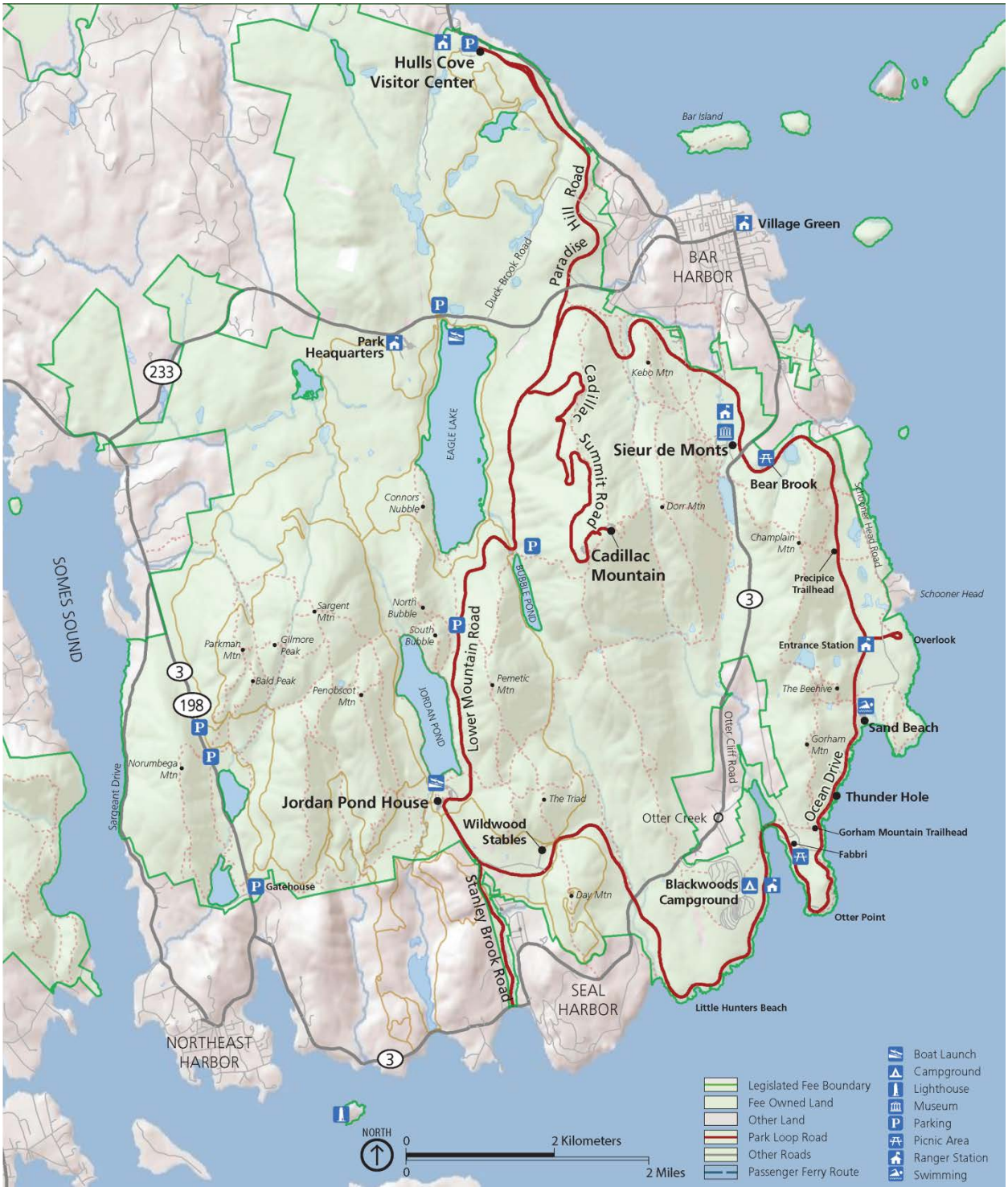
- Management of the Park Loop Road
- Management of other Mount Desert Island attractions and trailheads
- Hulls Cove and Acadia Gateway Center
- Schoodic Peninsula
- Public transit
- Commercial services

Note that, unless otherwise stated, management of commercial vehicles is addressed separately from management of private vehicles. For a summary of all alternatives, see appendix B.

A Road with Many Names

Park Loop Road is known locally by a number of different names along different segments of the road. Management strategies included in this plan use those local names to refer to specific areas or segments of Park Loop Road. To clarify which management strategies apply in which locations, those local names are shown on the map below.

FIGURE 2. ACADIA NATIONAL PARK MAP



ALTERNATIVE A: NO ACTION

Concept

Under the no-action alternative, current transportation management policies, procedures, and programs for the Acadia National Park transportation system would continue. There would be no major changes from current operations, and changes that did occur would be on a reactionary, not proactive, basis. The park's transportation system would continue to support mobility and access on foot and by bicycle, Island Explorer, and private and commercial motor vehicles.

Management of park visitors would continue to vary seasonally as visitor demand and needs change, with many management strategies focusing on the peak season between mid-May and mid-October. The National Park Service would update facilities on an as-needed basis to be resilient and adapt to the effects of climate change.

Throughout the park, the physical capacity of roads and designated parking lots would be generally unchanged. Parking would remain available to all users on a first-come, first-served basis, but restrictions and prohibitions may be implemented when needed. For example, Cadillac Mountain may be temporarily closed to vehicle access if traffic and congestion prevents emergency vehicle access. Physical changes to roads and parking would be limited and related to safety, accessibility, resource protection, and accommodating alternative transportation, not to capacity. Temporary or permanent closures of roads and parking areas may occur if necessary to address safety and security concerns or to ensure the financial sustainability of the overall transportation system.

Management of the Park Loop Road

The scenic motor tour experience along Park Loop Road would remain a priority visitor experience. The historic road is a cultural resource, and the original design of the road would continue to be protected and preserved through adherence to design and maintenance treatment plans. Park Loop Road would continue to serve as a critical component of the transportation network serving many high-density use areas. Right-lane parking would remain available in areas where it is currently permitted, subject to adjustments for safety purposes. These areas include the one-way sections of the Park Loop Road from Bear Brook picnic area to the Stanley Brook Road junction (start of the two-way). To minimize congestion, protect resources, and enhance visitor experiences, the amount of parking along Park Loop Road would not be increased, and park staff would continue to encourage visitors to use means other than private vehicles, such as Island Explorer buses, for travel to their destination.

Existing motor vehicle entrances to Park Loop Road would remain. The National Park Service would continue to direct visitors to the Hulls Cove, Cadillac Mountain, Sieur de Monts, and Stanley Brook entrances as the primary access points to Park Loop Road.

Motor touring to the summit of Cadillac Mountain by private vehicle and authorized commercial services would continue. Parking capacity at the summit would not be increased—parking would continue be available on a first-come, first-served basis. Park staff would continue to manage congestion, direct traffic, and temporarily close the road if necessary to ensure access to the summit by emergency vehicles.

Access to Sieur de Monts from both Park Loop Road and SR 3 would remain as it is now. The parking lot would continue to be used by hikers and visitors to the Wild Gardens of Acadia, Nature Center, and Abbe Museum. Parking would continue to be on a first-come, first-served basis.

Management of Other Mount Desert Island Attractions and Trailheads

Park staff would continue to manage roadside parking on an as-needed basis. On NPS-managed roadways, the focus would continue to be on measures such as managing illegal parking and enhancing parking lot and travel efficiency to improve safety, resource conditions, and visitor experience. On those roadways bordering park lands but owned by others, park managers would continue to work with partners to improve safety and resource protection.

Hulls Cove and Acadia Gateway Center. The Hulls Cove Visitor Center would continue to accommodate current uses with no expansion of parking or other site amenities. The Acadia Gateway Center would be developed and operated as described in the Acadia Gateway Center Environmental Assessment (MDOT and FTA 2006).

Schoodic Peninsula. The park's transportation system on the Schoodic Peninsula would continue to be managed for low-density recreational use and provide alternatives to the use of private vehicles. The National Park Service would continue to provide information about bicycle use, including use of the Schoodic Woods parking lot for day use visitors. Large vehicles (RVs and commercial vehicles larger than 15-passenger vans) would continue to be prohibited south of the campground, except for Island Explorer buses and vehicles accessing the Schoodic Education and Research Center. Schoodic Loop Road would remain a two-lane, one-way road, except for the two-way road to Schoodic Point. No new parking lots would be established. Existing parking would continue to be managed to protect resources. Informal parking in the right lane along Schoodic Loop Road would not be permitted.

Public Transit

Island Explorer service would continue to be provided during the peak season to the degree that funding allows. Island Explorer buses do not serve the Cadillac Mountain summit. Designated parking for Island Explorer would continue to be provided at locations throughout the park.

Commercial Visitor Services

Under the no-action alternative, the park would maintain current restrictions that apply to all motor vehicles including commercial vehicles such as prohibitions on carriage roads, seasonal closures of gravel roads, and size restrictions for dead-end roads and some parking lots. The park currently has concession contracts with two tour operators (trolley and bus) and would continue to allow concession bus tour opportunities for the life of existing contracts. Renewed or new contracts would also be considered. Concession operations would continue to be

subject to the same roadway, access, and height/length restrictions as commercial use authorizations. Oversize vehicles would continue to be prohibited from parking lots and roadways that do not have adequate room for maneuvering or turning around, such as the southern end of Schooner Head Road (Great Head Road), Bubble Pond parking lot, and Bass Harbor Head Road.

All NPS-owned roads would remain closed to commercial vehicles except for buses on Park Loop Road and Cadillac Summit Road, buses traveling to and from the Schoodic Education and Research Center, and vehicles making deliveries to the park, concessioners, and CUA holders conducting authorized business.

Designated parking for authorized oversize commercial vehicles (vehicles that do not fit within a standard parking space such as a motor coach) would continue to be provided at locations throughout the park. Oversize commercial vehicles would continue to be managed by existing policies that limit the number and locations of parking spaces for oversize commercial vehicles in the park.

As specified in the operating plan of the concession contract for the Jordan Pond House, a concessioner would continue to manage the Jordan Pond House South Parking Lot.

ACTIONS COMMON TO ALL ACTION ALTERNATIVES

The following management actions are common to all action alternatives. Additionally, best management practices and mitigation measures that apply to all the action alternatives are described later in this chapter. Many of these strategies are practical, common sense approaches to managing transportation in Acadia National Park and therefore do not vary by alternative. They include enhancing Island Explorer service in the park; actions associated with managing transportation systems on Mount Desert Island and the Schoodic Peninsula; monitoring the effectiveness of transportation management; and strategies to adapt to climate-related changes. Unless otherwise noted, all of the following actions apply only to NPS lands on Mount Desert Island.

Reservation Systems

All of the action alternatives propose a different configuration of reservation systems to manage the volume and timing of vehicle entry at various locations throughout the park. These reservations only apply to motor vehicles and not pedestrians or bicycles. The purpose of the reservation system is to manage use in these locations within the desired resource and experiential conditions of the sites. For each of these areas, desired conditions and visitor capacities have been identified (see chapter 1 and appendix A, respectively). These conditions and analyses were used to identify the maximum amount and type of use that could be accommodated at each location (see appendix A for site-by-site analysis). Regardless of the type of reservation system described in the alternative:

- The numbers of reservations available would correspond with management actions needed to manage the identified visitor capacities.
- A percentage of reservations would be held aside for short-term purchase (i.e., day of, day before, week of). Leftover advance reservations and no-shows would be added to the short-term reservation pool.
- Reservations could be made online and at automated reservation kiosks in key locations, including park visitor contact stations at the Village Green, Hulls Cove Visitor Center, and Acadia Gateway Center.

- Timed-entry reservations (alternatives C and D) would not restrict length of stay, only time of entry. Parking reservations (alternative B) would only be valid for a specified time period and would therefore manage length of stay.
- Reservations would be valid only when accompanied by an entrance pass. Entrance passes could be purchased in tandem with reservations, separately online, or at many locations including visitor information centers on Mount Desert Island and the Schoodic Peninsula.
- Operation of the reservation system would be funded through a new service charge and/or a transportation fee associated with the reservation. The fee or service charge would be tied to the cost of operating the reservation system and supporting visitor access through expanded transit service.
- After initial implementation of the reservation system, the number of reservations, or the length of time a parking reservation is valid, would be adjusted up or down to ensure the highest possible utilization of the existing parking supply while avoiding parking-related congestion and to allow park staff to manage to desired conditions and within related thresholds and identified visitor capacities.
- As is described in the "Public Transit" section below, if demand for Island Explorer service exceeds either the volume of transit the park is able to financially support, or the visitor capacities for specific areas of the park, the reservation system may be expanded to Island Explorer routes serving the park in order to manage visitor demand for transit access

Indicators, Thresholds, and Visitor Capacities

This transportation plan identifies visitor capacity and establishes indicators and thresholds using the framework created by the Interagency Visitor Use Management Council (the council). Indicators measure conditions that are related to visitor use, and monitoring is conducted to track those conditions over time. The results of monitoring are used to inform and select strategies to be used by park managers to not exceed the maximum amount of visitor use that can be accommodated for a site (visitor capacity). This iterative practice of monitoring, implementing potential management strategies, and then continuing to monitor to gauge the effectiveness of those actions allows park managers to maximize benefits for visitors while achieving and maintaining desired conditions for resources and visitor experiences in a dynamic setting. The indicators to be monitored at Acadia National Park related to the transportation plan are

- vehicles at one time at key destinations
- roadway level of service
- number of Island Explorer trips with "leave behinds"
- people per viewscape at key visitor use sites
- encounters on medium-use and low-use trails
- extent of informal trails

Traffic and resource conditions would continue to be monitored throughout the park after the reservation system is implemented using these indicators, which are described in greater detail

in appendix A. These indicators will help to show when conditions such as closures and traffic slowdowns, potential increases in user conflicts, crowding at key sites, and natural and cultural resource degradation (e.g., formation of social trails) are occurring and could be indicative of a condition that is not consistent with the desired conditions of the transportation system, fundamental resources and values, or other desired conditions of the park. If these indicators approach their respective triggers or thresholds, the reservation system may be expanded to include access to Island Explorer routes accessing the park, vehicle access to other NPS-managed parking lots and corridors both on and off Park Loop Road, or vehicle access to the entire Park Loop Road. Implementing the reservation system for the entire Park Loop Road would require reconfiguring some existing park entrances to be exits only, constructing new or relocating existing entrance stations, and potentially making the entire Park Loop Road one way. For detail on the indicators, thresholds, related corrective actions, and identified visitor capacities see appendix A.

Public Transit

Park managers would continue to promote the availability and expansion of Island Explorer service in the park under all of the action alternatives. Island Explorer service inside the park would be expanded, as necessary, up to the determined visitor capacities for specific sites and, as funding permits, to facilitate an alternative means of access for those unable to secure a vehicle reservation during their desired entry time. The operating season of Island Explorer service in the park would be expanded to coincide with that of the reservation system. However, should monitoring of indicators at key locations in the park find that Island Explorer service is contributing to surges of activity at popular destinations that cause congestion, degrade visitor experience, and/or damage cultural and natural resources, Island Explorer service would be modified to correct this condition. Additionally, if demand for Island Explorer service exceeds either the volume of transit the park is able to financially support or the visitor capacities for specific areas of the park, the reservation system may be expanded to Island Explorer routes serving the park in order to manage visitor demand for transit access. The specific indicators and thresholds associated with these actions are described in appendix A.

Visitor Information, Orientation, Enforcement, and Safety

Increased information would be provided to visitors, both before they arrive at the park and when they arrive. An education strategy would be developed that includes mobile and online information and signage explaining reservation requirements, information on trip planning and orientation, and reservation availability. Enforcement of existing parking restrictions would continue in addition to those necessary to implement the strategies proposed in the alternatives.

Visitors would be provided with enhanced trip-planning tools, advice on vehicle/bicycle safety, and information about car-free options to access and explore the Mount Desert Island District. Information about congestion and parking availability would be monitored and disseminated as practicable for the available technology and infrastructure. Examples range from manual monitoring of parking areas and notice via variable message signage about parking availability to integration of global positioning system (GPS) technology on a commercial traffic and navigation app that would automatically notify drivers heading to Mount Desert Island of park and ride options at Acadia Gateway Center, Hulls Cove Visitor Center, and from most hotel and lodging accommodations.

Additionally, the park would work with cellular communication providers and local communities to improve cellular service throughout the park. Improved cellular service would enable the park to provide better visitor information and orientation and increase safety. It is also critical for many of the strategies proposed in the alternatives including the use of app-based, on-demand ride services in the park. Installation of this infrastructure would require additional site-specific planning and applicable compliance at the time that site planning is undertaken.

Management of Other Mount Desert Island Park Attractions and Trailheads

Each of the action alternatives propose alternative solutions to address roadside parking at the Eagle Lake carriage road entrance to manage particularly unsafe conditions created by limited sight distances, vehicle congestion, and high-speed traffic adjacent to visitors who park and walk along the shoulders of SR 233. These same unsafe conditions exist at the Acadia Mountain trailhead along SR 102. At that site, the park would work with local governments, the Maine Department of Transportation, and other stakeholders to identify an alternative, off-highway option for trailhead parking. Once the alternative parking area is constructed, park managers would work with the State of Maine to put in place and enforce no-parking restrictions along the shoulder as well as to revegetate areas denuded of vegetation. Because it is not known at this time where the new parking area would be located, or what the actual design of the site would be, the National Park Service would conduct additional site-specific planning and applicable compliance at the time that site planning is undertaken.

Additionally, the National Park Service would work to develop a memorandum of understanding with state, local, and county departments of transportation and law enforcement to improve safety through enforcement of roadside parking restrictions near these and other trailheads along state highways, and local roads.

At park attractions and trailheads elsewhere on Mount Desert Island park managers would take more incremental management actions, using a series of management options to address existing and anticipated parking-related traffic congestion and unsafe instances of roadside parking. These areas include Ikes Point, Ship Harbor, Wonderland, Bass Harbor Head Light, Echo Lake Beach, Valley Cove, Beach Mountain, Great Head and Schooner Head, Duck Brook Road, Parkman Mountain, Norumbega Mountain, Brown Mountain, the Tarn parking area, the Long Pond Boat Launch, and the Western Mountain roads and Long Pond Fire Road. Some of these areas currently experience periodic congestion pressures, but these pressures are likely to change and shift as park managers implement the reservation system and other site improvements described in the alternatives. Several options for management of existing and anticipated parking and congestion have been identified for each of the parking areas. These include both formalizing and prohibiting shoulder parking; removing, expanding, relocating, or developing new parking lots; improving public transit service; adding parking lots to the reservation system; constructing automated gates and adding queuing lanes to manage traffic flow into lots once they are full; and striping informal parking spaces. As implementation of the reservation system begins, park managers would monitor changes to visitor use and traffic patterns and adjust management of these areas as needed, using one or more of the described management options. Prior to implementation of these options, site-specific planning and applicable compliance would be completed.

Vehicle Size Requirements

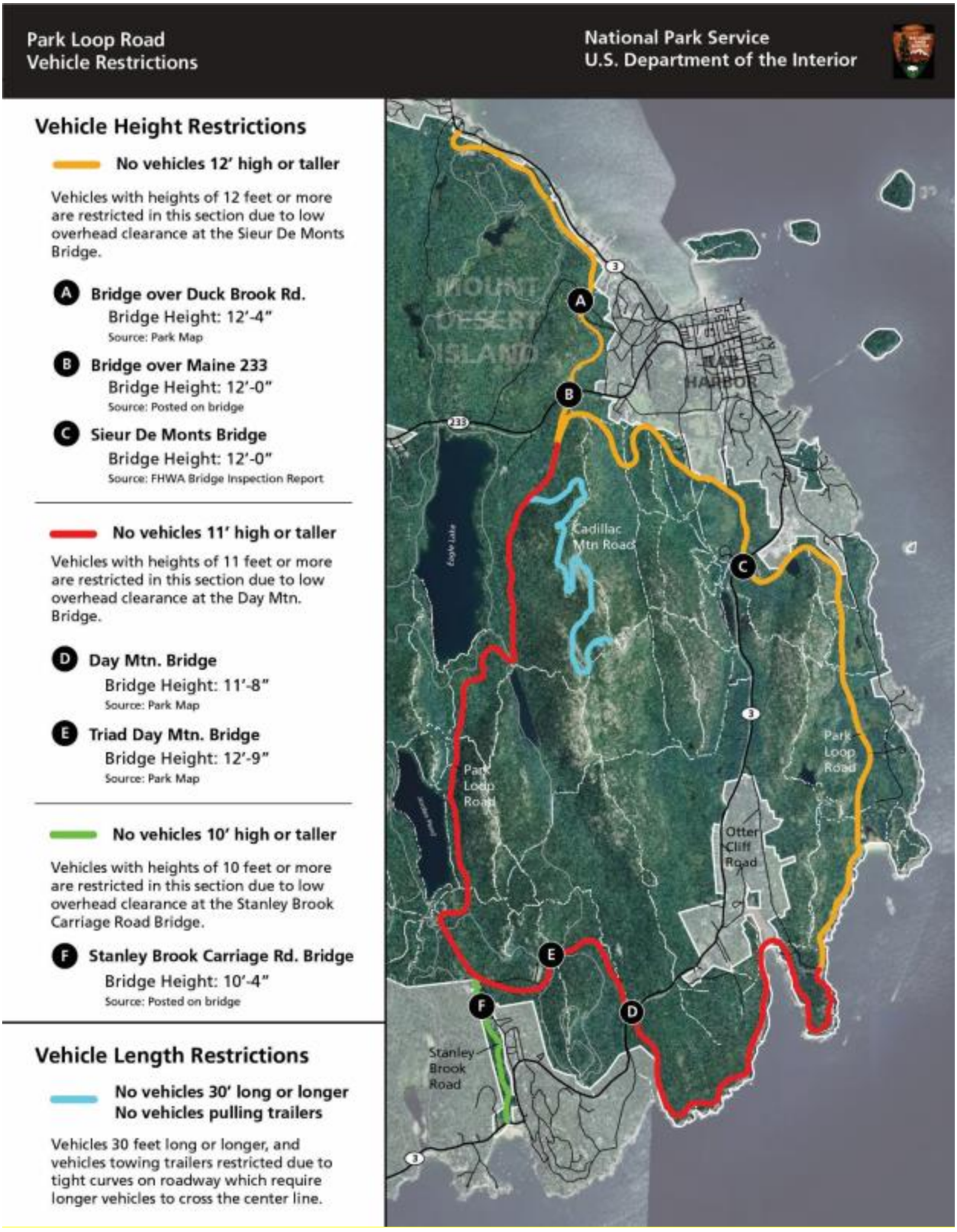
To improve safety and the historic character of Park Loop Road, only vehicles that fit the geometry of the road and heights of the bridge underpasses would be permitted. These requirements would be phased in over several years. The requirements would vary based on the road geometry and bridge height restrictions of each segment of Park Loop Road and Cadillac Summit Road. Figure 3 below depicts these requirements for each section of Park Loop Road. Height and length restrictions already in place for other areas of the park would remain unchanged. All requirements would be clearly posted at entrances to the park, along Park Loop Road, and on the park's website. Until these requirements are established, oversize vehicles would be required to adhere to site control measures. Passengers of vehicles that do not meet bridge height and/or road geometry restrictions would need to transfer to an alternate mode of transportation such as an authorized commercial tour or bus that uses smaller vehicles to fit road geometries. These transfers could occur at the Acadia Gateway Center, Hulls Cove Visitor Center, or other locations

Commercial Visitor Services

Commercial visitor services would continue to be authorized through concession contracts and/or commercial use authorizations under all of the action alternatives. Consistent with the National Park Service Concessions Management Improvement Act of 1998, which limits concession operations to those "consistent to the highest practicable degree with the preservation and conservation of resources and values of the park unit" and authorizes only commercial use authorizations that have "minimal impact on resources and values of the unit," all commercial vehicles would be required to fit within the existing historic road and bridge geometries as is described above.

During the active reservation season, the number of oversize commercial vehicles allowed at key locations (or in the case of alternative D, on Park Loop Road) at one time would be managed to ensure desired conditions are maintained and visitor capacities at the park's primary attractions are not exceeded. This would occur through requirements established in their operating conditions specified in their contract(s) or commercial use authorizations. The total number of visitors arriving via a commercial operator that are permitted at one time at these key destinations is identified in appendix A. Depending on necessary and/or appropriate criteria and financial viability, the National Park Service would allocate road-based commercial tours between concessions and commercial use authorizations in a manner that provides opportunities for visitor use and enjoyment and best achieves desired conditions for the visitor experience and resource protection.

FIGURE 3. PARK LOOP ROAD GEOMETRY REQUIREMENTS



Any park-approved activity-based experience (e.g., step-on guides, wholesale tour operators, nature guides, biking tours, art/photography workshops, climbing schools, summer camps, water activities) operating under commercial use authorizations would be permitted throughout the park but would be required to use vehicles carrying 15 or fewer passengers that fit in a standard parking space. Access to standard parking spaces under the reservation system for these CUA holders would be managed within the private vehicle allocations identified in appendix A and regulated through the operating requirements specified in their commercial use authorization.]

App-based, on-demand ride services use an online network or app to pair passengers with drivers who provide such passengers with transportation in the driver's vehicle. These services are well established in many metropolitan areas and are an emerging form of transportation on Mount Desert Island. While implementing this plan, park managers would work with drivers and/or transportation network companies (developers of the app) to facilitate access to the park and to set in place an appropriate fee structure for this commercial use.

Schoodic Transportation Management

The Schoodic Peninsula would continue to be managed as outlined in the 2005 Schoodic general management plan amendment. This plan calls for the National Park Service to manage for a low-density visitor experience, retaining the opportunities for solitude and quiet. Parking would continue to be allowed in designated areas on a first-come, first-served basis. The speed limit on the road would be reduced.

Visitors would be provided with enhanced trip-planning information and tools about car-free options to access and explore the Schoodic District. On-site information would primarily be signage along the entrance road. The parking lots at Schoodic Point, Frazer Point, and the day use parking lot at Schoodic Woods Campground would be monitored at the campground office to provide congestion information. This information would be provided to visitors by variable message signage along the entrance road and by social media. The information would highlight the availability (or relative nonavailability) of parking in the day use lot.

Several steps would be implemented to increase visitor safety in the Schoodic District. The current one-way section of Schoodic Loop Road would remain as two lanes traveling in the same direction with a speed limit of 25 miles per hour (mph). Park managers would work with partners and local communities to improve bicycle connections to the park, including a safe connection between the ferry terminal and park entrance. Park staff would also work with partners to improve safety for those biking the circular route, including Schoodic Loop Road and SR 186. An accessible pedestrian trail would be installed between the Schoodic Education and Research Center campus and Schoodic Point. This would enhance safety for those individuals and organized groups that currently walk along the roadway between the center and Schoodic Point.

The overall amount of designated parking in the Schoodic District would not be increased. Any changes to parking lots and parking locations would be made to improve circulation, enhance safety, provide accessible parking, or protect resources rather than to increase the number of parking spaces. There are a limited number of designated, historic roadside pullouts on the Schoodic Loop Road. These pullouts would be maintained, but expansion of informal pullouts

would not be permitted to limit impacts on cultural and natural resource values of the historic road.

Public transit opportunities on the Schoodic Peninsula would remain as they are today, and park managers would continue to support use of the Island Explorer service to access popular destinations. All future access management actions and strategies would maintain adequate access to the Schoodic Education and Research Center. Should monitoring indicators at key locations on the Schoodic Peninsula find that Island Explorer service is contributing to surges of activity at popular destinations that cause congestion, degrade visitor experience, and/or damage cultural and natural resources, Island Explorer service would be modified to correct this condition. For example, the transit service might not serve a specific trailhead during peak periods if the number of people on the trail at one time is so high that it exceeds visitor experience or resource thresholds.

Park managers would work with partners and local communities to provide an opportunity for bike rentals and other necessary and appropriate commercially provided visitor services that help achieve the desired conditions for visitor experience and resource protection in the Schoodic District.

Potential and corrective management strategies also would be adopted for the management of private vehicle use, bicycle use, and Island Explorer service. For example, park managers may choose to

- Deploy additional electronic signage to provide visitors with information on status of parking lots (e.g., "Frazer Point is Full – Park Elsewhere").
- Work toward increasing the frequency of Island Explorer service in the park and the extent of Island Explorer service in communities near the park.
- Increase enforcement of endorsed parking only.
- Require park and ride/bike from the day use lot when Schoodic Loop Road reaches specified capacity.
- Establish a reservation system to manage vehicle access.

For additional information on corrective actions and related indicators and thresholds, see the "Indicators, Thresholds, and Visitor Capacity" section in appendix A.

ALTERNATIVE B: SITE MANAGEMENT

Concept

Under alternative B, parking reservations would be required for visitors to park at five of the primary attractions and trailheads along Park Loop Road during peak times and seasons. Parking reservations would be valid for a specified time period and would therefore manage length of stay. These five parking lots and roads include Jordan Pond North Lot, Sand Beach, Thunder Hole, and Sieur de Monts in addition to Cadillac Mountain Road. Right lane parking would no longer be permitted anywhere on Park Loop Road. Commercial operators seeking

vehicle access to any of the five parking lots under the reservation system would operate through requirements established in their operating conditions, which could include a separate reservation system if necessary. The number of spaces for vehicles at the five reservation-only areas would be defined for different types of uses and vehicle types. Gates or other control mechanisms would be installed at some of the parking lots to manage the number of vehicles allowed at one time. All other parking lots would continue to be on a first-come, first-served basis. Island Explorer service frequency (but not extent) in the park would be managed to enhance visitor experience and resource stewardship.

Primary Differences Between Alternative A and Alternative B

- A parking reservation system would be established for five parking lots on Park Loop Road.
- Right lane parking along Park Loop Road would be eliminated.
- Eagle Lake initially would remain a first-come, first-served parking lot with the addition of an automated gate to restrict access to the lot when it is full.
- Additional parking would be provided at Hulls Cove, and the visitor center would be redesigned and relocated.
- The visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the structures repurposed.

Management of Park Loop Road

Overview. Under alternative B, parking related congestion would be managed by establishing a parking reservation system for vehicles at five of the primary attractions and trailheads along Park Loop Road—Cadillac Mountain, Jordan Pond, Thunder Hole, Sand Beach, and Sieur de Monts. Under this alternative, private vehicles would continue to be able to drive Park Loop Road as they do under the no-action alternative, but reservations for private vehicles would be needed to park at these lots and to access Cadillac Summit Road. Elsewhere along Park Loop Road, in areas not serviced by the reservation system, parking lots would be managed on a first-come, first-served basis. Gates would be installed at some of the first-come, first-served lots to manage lot capacity. If first-come, first-served parking lots regularly become overcrowded, they may be considered for inclusion in the reservation system.

Parking reservations for these five areas would be valid for a specified time period and are designed to maintain conditions within identified visitor capacities. This time period could range from 1 hour to as long as 4 hours, depending on the lot. The time period would be established initially based on existing use profile of the lot, but the number of reservations in each time period bin (1h, 2h, or 4h) could be proportioned to optimize parking availability. Vehicles would be required to exit the parking lot prior to the expiration of their permitted time period. This would therefore manage length of stay for visitors arriving by personal vehicle.

All parking in the right-hand lane of Park Loop Road would be eliminated to improve traffic flow and allow passing of bicycles and slow-moving vehicles. Parking at roadside pullout spaces and scenic overlooks would be enforced as short term (e.g. 15 minute) parking.

Hours and Seasonality of the Reservation System. The parking reservation system for Cadillac Mountain, Jordan Pond, Thunder Hole, Sand Beach, and Sieur de Monts would generally be in place during the peak visitor season (approximately mid-May to mid-October). This time period could be lengthened or shortened to correspond with the operating season of the Island Explorer service or changes to the seasonality of high-use visitation patterns.

- **Cadillac Mountain.** During peak season, all vehicle access to Cadillac Mountain would be by reservation only. Initially, the time period where entry reservations would be required would be set from 4:00 a.m. to 9:00 p.m. during the reservation season. These hours would be lengthened or shortened as necessary, corresponding with shifting visitation patterns to protect a high-quality visitor experience. No motor vehicle access to the summit road would be allowed without a parking reservation during the designated reservation hours in peak season.
- **Sand Beach, Thunder Hole, Jordan Pond House, and Sieur de Monts.** Parking reservations would be required at the Jordan Pond House and Sieur de Monts lots from 7:00 a.m. to 4:00 p.m. and 4:00 a.m. to 9:00 p.m. on the Ocean Drive lots during the reservation season. These hours would be lengthened or shortened as necessary, corresponding with shifting visitation patterns to protect a high-quality visitor experience.

Number of Reservations Available. The numbers of reservations available would correspond with actions needed to manage these locations within the desired resource and experiential conditions of the sites. For each of these areas, desired conditions and visitor capacities have been identified (see chapter 1 and appendix A, respectively). These desired conditions and management actions were used to identify the maximum amount and type of use that could be accommodated at each location (see appendix A for a site-by-site description). Using these capacities, along with the existing availability of parking and the designed duration of stay specific to Cadillac Mountain, Jordan Pond House, Thunder Hole, Sand Beach, and Sieur de Monts, estimates on the daily number of private vehicles that could be accommodated at each site were projected (table 2). After initial implementation of the reservation system, the number of reservations, or the length of time a parking reservation is valid, would be adjusted up or down to ensure the highest possible utilization of the existing parking availability while avoiding parking-related congestion and to allow park staff to manage to desired conditions within related thresholds and identified visitor capacities.

TABLE 2. ESTIMATED NUMBER OF DAILY PARKING RESERVATIONS

Location	Visitor Capacity (people at one time)	Estimated Private Vehicle Reservations (vehicles per day)
Cadillac Summit (including Blue Hill Overlook)	600 people	1,510 vehicles
Jordan Pond House (north lot)	935 people	1,130 vehicles
Sand Beach	550 people	1,520 vehicles
Thunder Hole	N/A	830 vehicles
Sieur de Monts	190 people	450 vehicles

Infrastructure Changes Required to Implement the Reservation System. For all the parking lots under the reservation system, gates and signage would be installed to validate reservations and provide visitor information and orientation. All installations would follow guidance from the 2007 cultural landscape report for the historic motor road and incorporate appropriate design to protect the historic character of Park Loop Road:

- **Cadillac Mountain.** A queuing lane and gate would be installed near the base of Cadillac Summit Road where parking reservations would be validated.
- **Sand Beach, Thunder Hole, Jordan Pond House, and Sieur de Monts.** Reservations for these lots would be validated by installing either an automated or staffed gate near the entrance to the lot or through self-serve reservation validation kiosks allowing visitors to park and then retrieve proof of reservation from the automated kiosk (a receipt or hang tag for the vehicle's dash).
- **Bubble Pond and Bubble Rock**. Although not initially on the reservation system, automated gates would be installed at both of these parking lots to control traffic ingress and egress once the parking lots are full. This gate may be modified or replaced to validate reservations if these lots are added to the reservation system.

Management of Other Mount Desert Island Park Attractions and Trailheads

Eagle Lake. Under alternative B, the existing parking lot at Eagle Lake would remain a first-come, first-served parking lot with the addition of an automated gate to restrict access when the lot is full. This gate may be modified or replaced to validate reservations if these lots are added to the reservation system. Only vehicles with boat trailers would be permitted to park at the Eagle Lake Boat Launch on the south side of SR 233. Park managers would work with the State of Maine to initiate and enforce no-parking restrictions along the road shoulder as well as to revegetate areas where needed.

Hulls Cove, Acadia Gateway Center, and Thompson Island

Hulls Cove. Changes to the Hulls Cove area would be the same as described under alternative C.

Acadia Gateway Center. Under alternative B, no changes would be made to the plans for the Acadia Gateway Center as described in the Acadia Gateway Center environmental assessment (MDOT and FTA 2006) (see also chapter 1).

Thompson Island. The visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the structures repurposed. Visitor information services would be relocated to the Acadia Gateway Center. The picnic area and restrooms on the east side of the highway would be maintained for visitor use.

Schoodic Peninsula

See the section in this chapter, "Actions Common to All Action Alternatives."

Public Transit

The use of Island Explorer would be encouraged as described in the section, "Actions Common to All Action Alternatives" in this chapter.

Commercial Visitor Services

Commercial visitor services would be managed as described in the section, "Actions Common to All Action Alternatives," in this chapter.

ALTERNATIVE C: CORRIDOR MANAGEMENT (PREFERRED ALTERNATIVE AND PROPOSED ACTION)

Concept

To manage parking-related congestion and crowding along Park Loop Road, a timed-entry reservation system would initially be implemented for the Ocean Drive corridor, Cadillac Summit Road, and the Jordan Pond House North Lot during peak use season (from mid-May to mid-October). During initial implementation of the plan, all other Acadia parking lots would continue to be managed on a first-come, first-served basis. As described in "Actions Common to All Action Alternatives." (see section titled "Indicators, Thresholds, and Visitor Capacities") park managers would continue to monitor traffic and resource conditions elsewhere in the park. If monitoring indicates traffic or resource conditions worsening beyond acceptable thresholds, access to Island Explorer routes entering the park, vehicle access to other parking lots, or vehicle access to the entire Park Loop Road may be added to the reservation system.

Primary Differences Between Alternative A and Alternative C

- A timed reservation system would be established initially for parking at Jordan Pond, vehicle access to Cadillac Summit Road, and the Ocean Drive corridor. This system could eventually be expanded to include other parking lots or the entire Park Loop Road.
- Right lane parking along Park Loop Road would be retained in the near term but eventually phased out as other options and parking become available.
- The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be removed and a new, larger parking lot would be constructed south of the highway at an NPS maintenance storage yard known as Liscomb Pit.
- Additional parking would be provided at Hulls Cove, and the visitor center would be redesigned and relocated.
- Visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the area restored to natural conditions.

Management of the Park Loop Road

Overview. Parking-related traffic congestion on Park Loop Road would be managed through establishing a timed-entry vehicle reservation system for the Ocean Drive corridor (between the Sand Beach Entrance Station and the Fabbri picnic area/Monument), Cadillac Summit Road, and the Jordan Pond House North Lot. The Jordan Pond House South Lot would continue to be managed by the concessioner under the existing concession agreement.

Under this alternative, private vehicles would continue to be able to travel the entire Park Loop Road, not including the Ocean Drive corridor, as they do under the no-action alternative. Reservations for private vehicles would be needed to park at Jordan Pond House, for vehicle access to Cadillac Summit Road, or to proceed past the Sand Beach Entrance Station to the Ocean Drive corridor. Elsewhere along Park Loop Road, in areas not serviced by the reservation system, parking lots would be managed on a first-come, first-served basis. Travel direction and one-way sections of Park Loop Road would continue as under the no-action alternative. Visitors traveling southbound on Park Loop Road toward the Sand Beach Entrance Station without a vehicle access reservation would be encouraged (through signage) to exit at Sieur de Monts. Alternatively, visitors could exit at Schooner Head Road.

The timed-entry system would provide reservation holders with a specific time window during which their vehicle would be permitted to enter the corridor or parking lot. Once inside the corridor or parking lot, there would be no restrictions on length of stay. The length of the initial entry window may be lengthened or shortened as park managers work to optimize the reservation system; however, it is estimated that initial timed-entry windows would be in 15-minute to 2-hour time blocks.

As stated in the 1992 general management plan, the long-term goal of the National Park Service is to remove right lane parking from the Ocean Drive corridor to restore a driving experience that more closely resembles the road's original design intent and to improve safety by providing an additional travel lane for bicyclists and slow-moving vehicles. During initial implementation of the plan, the right lane of the Park Loop Road would continue to serve as overflow parking for up to 400 vehicles on busy days. Over a period of several years the number of right lane parking spaces would be reduced to approximately 128 spaces in the Ocean Drive corridor and approximately 30 spaces near the Precipice trailhead. While most of these remaining spaces would eventually be phased out as alternatives of right lane parking are developed, they would be painted to physically demarcate driving lane shifts and parallel parking spaces. The phasing out of most right lane parking would occur as alternatives to right lane parking are developed and would also correspond with an in-kind reduction of available vehicle reservations for the Ocean Drive corridor. These alternatives of right lane parking would include additional Island Explorer service, coupled with expanded park-and-ride parking at the Hulls Cove Visitor Center and the Acadia Gateway Center. Other alternatives to right lane parking include on-demand transportation service and road-based commercial tours and shuttle buses. For additional details on these services, see the "Commercial Visitor Services" section in the "Actions Common to all Action Alternatives" section above.

Hours and Seasonality of the Reservation System. The reservation system for the Jordan Pond House North Lot, Cadillac Mountain, and the Ocean Drive corridor would generally be in place during the peak visitor season (approximately mid-May to mid-October). This time period

could be lengthened or shortened to correspond with the operating season of Island Explorer or changes to the seasonality of high-use visitation patterns.

Reservations would be required starting as early as 4:00 a.m. on Cadillac Mountain and Ocean Drive Corridor and 7:00 a.m. at the Jordan Pond House North Lot. Reservations for all three areas would be required for entry as late as 9:00 p.m. These hours would be lengthened or shortened as necessary corresponding with shifting visitation patterns to protect a high-quality visitor experience.

Number of Reservations Available. Initially, the number of reservations available would correspond with management actions needed to manage these locations within the desired resource and experiential conditions of the sites. For each of these areas, desired conditions and visitor capacities have been identified (see chapter 1 and appendix A, respectively). These conditions and analyses were used to identify the maximum amount and type of use that could be accommodated at each location (see appendix A for site-by-site description). Using these capacities, along with the existing availability of parking and the anticipated turnover rates specific to the Jordan Pond House North Lot, Cadillac Mountain, and the Ocean Drive corridor, projections on the daily number of private vehicles that could be accommodated at each site were made (table 3). At least two daily reservations for vehicles with boat trailers would be provided at the Jordan Pond House North Lot. After initial implementation of the reservation system, the number of reservations would be adjusted up or down to ensure the highest possible use of the existing parking supply, while avoiding parking-related congestion and to allow park staff to manage desired conditions within related thresholds and identified visitor capacities.

TABLE 3. ESTIMATED NUMBER OF RESERVATIONS FOR DAILY PRIVATE VEHICLES ON PARK LOOP ROAD

Location	Visitor Capacity (people at one time)	Daily Private Vehicle Reservations (vehicles per day)
Cadillac Summit (including Blue Hill Overlook)	610 people	1,450 Vehicles
Jordan Pond House (north lot)	935 people	1,230 Vehicles
Ocean Drive corridor	N/A	3,880 Vehicles

Infrastructure Changes Required to Implement the Reservation System. During initial implementation of the reservation system, the Sand Beach Entrance Station would be used to validate reservations on the Ocean Drive corridor. To prevent crowding and congestion at the causeway, Fabbri Picnic Area/Memorial, and at Otter Point, Otter Cliffs Road would be converted to exit only by installing a gate on the road near the park boundary. Permitted commercial uses and transit vehicles would still be allowed to enter Park Loop Road through the gate.

At the Jordan Pond House North Parking Lot and on Cadillac Summit Road, a staff person and, if needed, a temporary or mobile reservation validation gate (booth or kiosk) would be used during the initial implementation phase to validate reservations. This step would allow park managers to test the effectiveness and optimal placement of this minimal infrastructure solution. Initially, using staff or temporary reservation validation infrastructure rather than permanent installations also provides an opportunity for the National Park Service to test the effectiveness

of the reservation system at these sites and determine whether a more permanent infrastructure is needed or if a reservation system for the entirety of Park Loop Road would be more effective at managing congestion and resource conditions.

If through monitoring of the indicators and standards (see appendix A), the National Park Service determines that managing parking congestion at these sites is effective, a more permanent reservation validation infrastructure would be developed. At Cadillac Summit Road, this more permanent infrastructure may include development of a queuing lane and reservation validation gate near the base of the road. At Jordan Pond House, this more permanent infrastructure may include installation of a similar reservation validation gate or a self-serve reservation validation kiosk allowing visitors to park and then retrieve proof of reservation from the automated kiosk (a receipt or hang tag for the vehicle's dash). All temporary or permanent installations follow guidance from the 2007 cultural landscape report for the historic motor road and incorporate an appropriate design to protect the historic character of Park Loop Road.

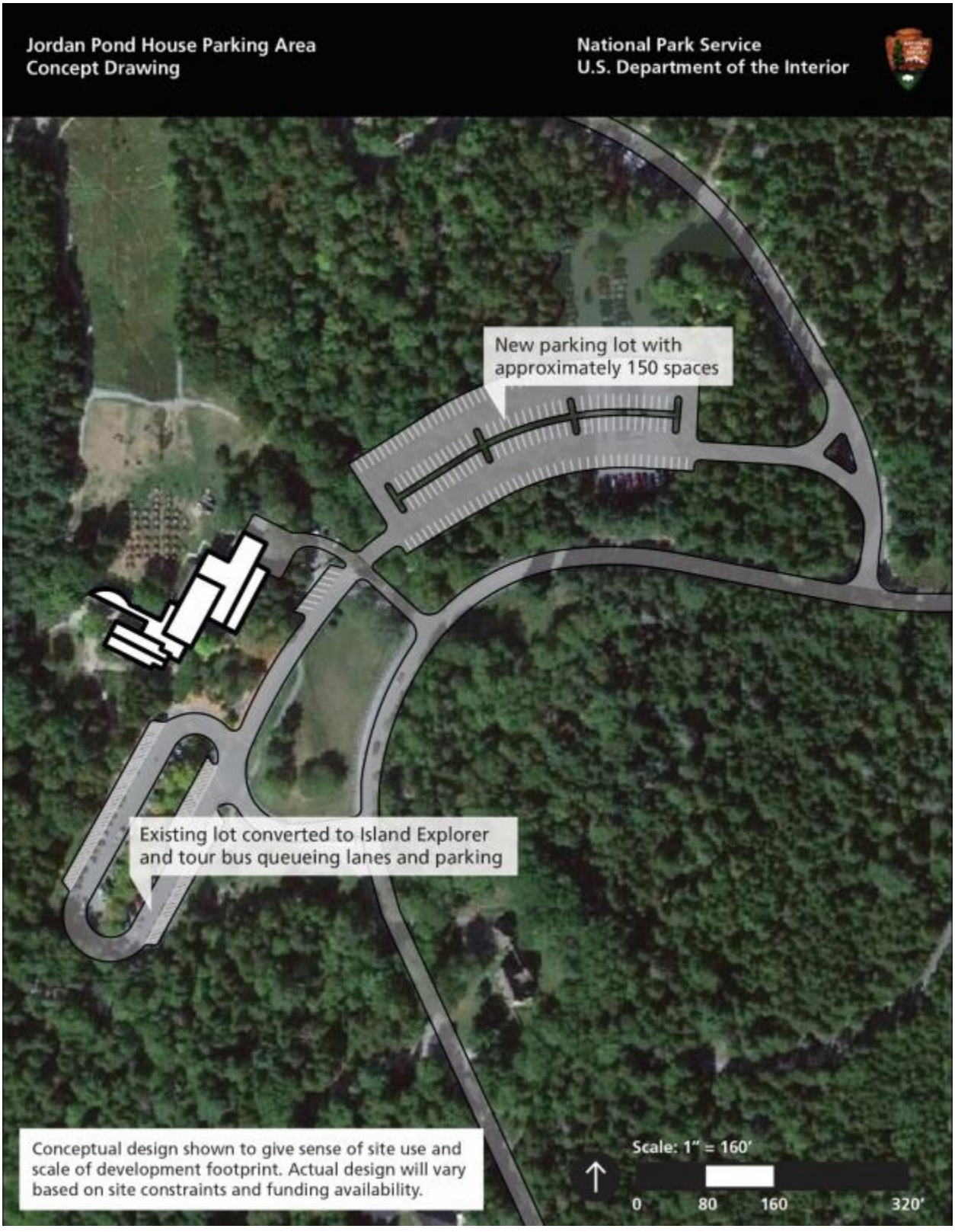
In addition to the infrastructure described above, providing permanent use of reservations at the Jordan Pond House Lots may also eventually require a comprehensive redesign of both parking lots to provide a single point of entry and a queuing lane. Figure 4 depicts this conceptual redesign. Construction of the parking lots as depicted in figure 4 would result in clearing trees and vegetation within an approximately 1-acre area. However, because it is not known at this time whether this redesign is necessary (based on monitoring the effectiveness of the reservation system as described above) or what the actual design of the site would be, the National Park Service would conduct additional site-specific planning and applicable compliance prior to moving forward with implementation.

Signage on Park Loop Road would be required to notify visitors when they are approaching a reservation-only area. Signs placed just prior to the Sieur de Monts exit would encourage visitors without an Ocean Drive corridor reservation to exit. Placing the sign at this location would decrease the volume of exiting traffic on Schooner Head Road. All signs would be designed to maintain consistency with the historic character of Park Loop Road to the extent possible.

Management of Other Mount Desert Island Park Attractions and Trailheads

Eagle Lake. The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be removed. These facilities would be relocated to the south (off the highway) at Liscomb Pit, an approximately 2-acre area currently used as a maintenance storage yard. Although the parking lot itself would be constructed on top of the previously disturbed maintenance yard, a new connector trail to the Eagle Lake Carriage Road would be constructed from the new parking area at Liscomb Pit. The gravel-surfaced carriage road connector would be approximately 600 feet long and 16 feet wide and, similar to the carriage roads, managed for nonmotorized travel. Construction of the connector trail would require heavy grading equipment and the removal of approximately 0.25 acre of soil and vegetation.

FIGURE 4. JORDAN POND HOUSE ROAD PARKING AREA CONCEPT



The new parking lot at Liscomb Pit would have a capacity of approximately 125 parking spaces to accommodate the number of vehicles typically parked in the existing lot and along the highway during an average day during peak visitor use. Additionally, the access road (Liscomb Pit Road) from Eagle Lake Road (SR 233) would be widened by approximately 10 feet and improved—directional and warning signs would be installed to ensure safety. This road widening would require the use of heavy equipment to remove some large trees and vegetation and add fill material adjacent to the existing shoulder, affecting approximately 0.4 acre of soil and vegetation. The maintenance stockpiles and vehicle storage at Liscomb Pit would be relocated to an abandoned section of Eagle Lake Road adjacent to park headquarters, as well as an existing storage area known as Satterlee Pit near the south end of Schooner Head Road. Prior to using Satterlee pit for this maintenance storage function the park would conduct additional site-specific planning and applicable compliance as appropriate. Figure 5 depicts conceptual site plans outlining the proposed construction footprint for all infrastructure development at Liscomb Pit.

The previous parking lot and restroom area on the north side of SR 233 at Eagle Lake Road would be revegetated. "No Parking" signs would be installed along SR 233, the impacted shoulders would be revegetated, and management stones and/or curbing would be installed to prevent roadside parking.

Parking at the boat launch on the south side of SR 233 would remain but be reserved for vehicles with boat trailers. Additionally, the park may pursue a redesign of that parking area and boat launch to better accommodate that use. However, because it is not known at this time what the actual design of the site would be, the National Park Service would conduct additional site-specific planning and applicable compliance prior to moving forward with implementation.

Hulls Cove, Acadia Gateway Center, and Thompson Island

Overview. Establishing a reservation system for high-use areas in the park would expand the need for highly visible and accessible visitor orientation and initial contact facilities. Orientation and additional parking (outside the reservation system) would be provided at two locations: the future Acadia Gateway Center and the expanded and enhanced Hulls Cove Visitor Center. The rebuilt and enlarged Hulls Cove Visitor Center would serve as the park's primary visitor contact and orientation facility. The existing parking lot at Hulls Cove would be expanded to provide parking options for visitors using enhanced public and commercial visitor services into reservation-only areas of the park.

Hulls Cove. The Hulls Cove Visitor Center would continue to serve as the primary contact and orientation point for visitors to Acadia National Park. A new plan for development of the site would be proposed that includes a substantial expansion of parking capacity and a new and enlarged visitor center. The plan would include approximately 200–250 additional parking spaces (in addition to the current capacity of 270). This new parking would be distributed among an expanded primary parking lot, an overflow parking lot, and a new lot associated with a rerouted access to the adjacent carriage road system. The new parking lot would be designed to separate bus circulation from passenger vehicle traffic. It would include parking for buses and recreational vehicles and queuing space for bus staging. The new parking capacity at Hulls Cove would be intended to provide visitors without reservations a place to park and transfer to alternate transportation systems in the park.

FIGURE 5. LISCOMB PIT PARKING AREA CONCEPT

In addition to expanded parking, a new visitor center, approximately triple the size of the existing one, would be built at grade with the parking lot for improved universal access. The existing visitor center building would either be repurposed or removed and the area revegetated. The new visitor center would serve as the primary visitor contact and orientation point for the park, as well as a transportation hub. Visitors to the new facility would expect to receive orientation information about the park and its resources, would have opportunities to purchase and access commercially operated tours and shuttles, make vehicle access reservations, and would have access to a theater to view NPS media, restrooms, a bookstore, and the Island Explorer service. The new visitor center would also include office space for NPS employees and partners. Figure 6 depicts conceptual site plans outlining the proposed construction footprint for all infrastructure development at Hulls Cove.

Acadia Gateway Center. Under alternative C, no changes would occur to the Acadia Gateway Center as described in the Acadia Gateway Center environmental assessment (MDOT and FTA 2006) (see also chapter 1, "Background").

Thompson Island. Under alternative C, visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the area restored to natural conditions. Visitor information services would be relocated to the Acadia Gateway Center. The picnic area and restrooms on the east side of the highway would be maintained for visitor use.

Schoodic Peninsula. See the section, "Common to All Action Alternatives," in this chapter.

Public Transit

The use of Island Explorer would be encouraged as described in the section, "Common to All Action Alternatives," in this chapter.

Commercial Visitor Services

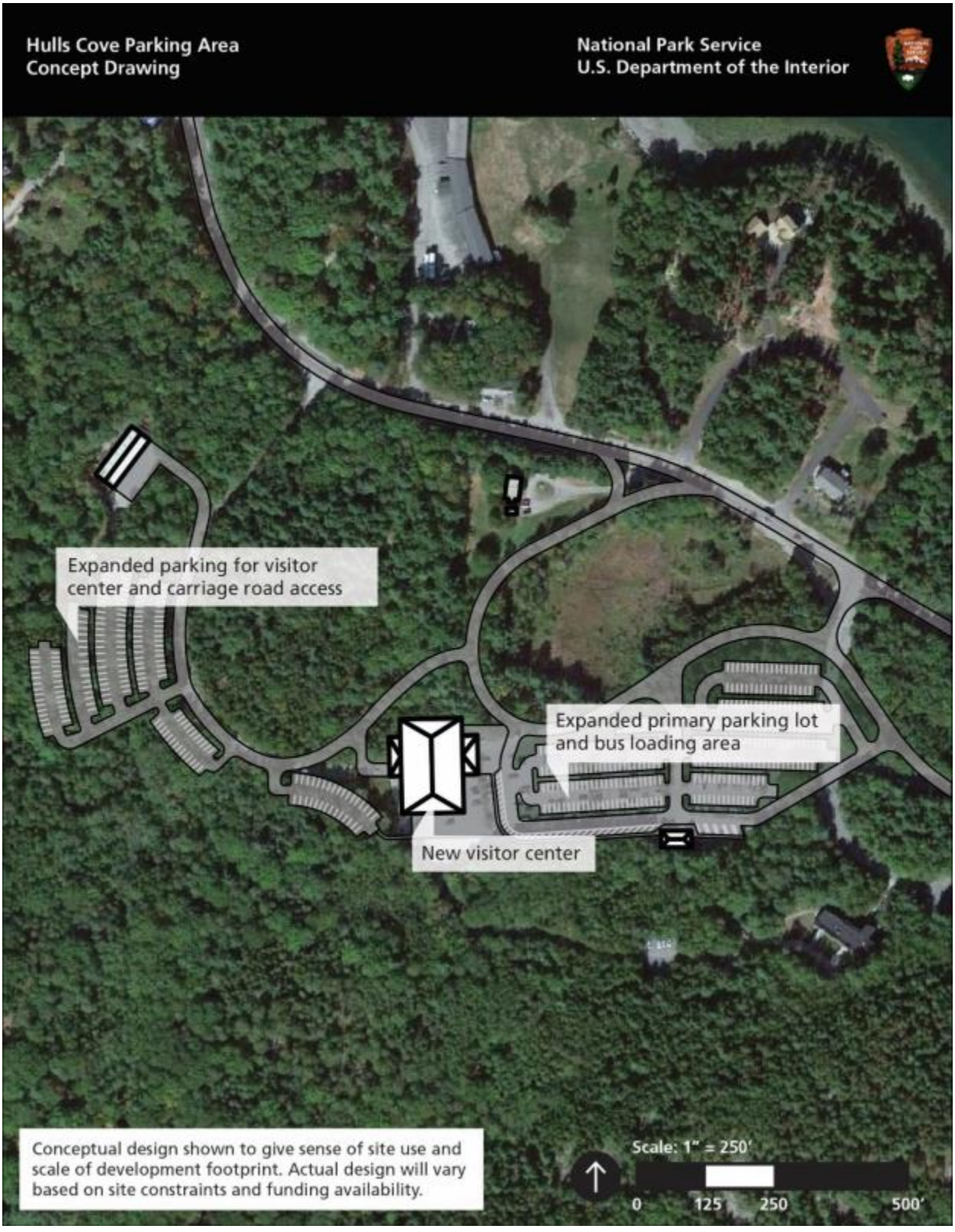
Commercial visitor services would be managed as described in the section, "Actions Common to All Action Alternatives," in this chapter.

ALTERNATIVE D: PARK LOOP ROAD MANAGEMENT

Concept

This alternative provides a systemwide approach to manage the volume of vehicles on Park Loop Road during the peak use season. Under alternative D, park staff would manage vehicle congestion by installing automated gates and additional entrance stations at all access points to Park Loop Road and by implementing a timed-entry reservation system for vehicle access to Park Loop Road during the peak use season. Once a visitor passes through an entrance station or automated gate during their reserved entry window, all parking lots on Park Loop Road would be available on a first-come, first-served basis.

FIGURE 6. HULLS COVE PARKING AREA CONCEPT



Under this alternative, most of Park Loop Road, including Lower Mountain Road, would be one-way, in a counterclockwise rotation. The counterclockwise flow would be a reversal of direction on the current one-way sections of the road.

Primary differences between Alternative A and Alternative D

- A timed-entry reservation system would be established during the peak use season for Park Loop Road.
- Most of Park Loop Road would be made one-way, in a counterclockwise circulation.
- Most right lane parking on Park Loop Road would be eliminated.
- Most entrances to Park Loop Road would be converted to exit-only and new entrance stations would be built at Wildwood Stables and Paradise Hill Road.
- The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be removed and a new larger parking lot would be constructed south of the highway along an abandoned section of SR 233.
- A new parking lot accommodating approximately 40 vehicles would be established in the footprint of an existing NPS administrative storage area known as Satterlee Pit near the south end of Schooner Head Road.
- At Hulls Cove, the existing visitor center would be removed and a small visitor contact station would be rebuilt nearer an expanded Hulls Cove parking lot.
- The Acadia Gateway Center would serve as the park's primary visitor center.
- The visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the structures repurposed.

Management of the Park Loop Road

Overview. Under alternative D, the overall volume and timing of vehicles on Park Loop Road would be managed through consolidating entrance points and implementing a timed-entry reservation system. Most of Park Loop Road would be converted to one-way traffic in a counterclockwise rotation. This is opposite the direction of existing one-way sections. The road from the Hulls Cove Visitor Center to the SR 233 / Eagle Lake Road entrancewould be one way in a southbound direction. Two-way sections of road would run from Stanley Brook Road to Jordan Pond and from the base of Cadillac Summit Road to the SR 233 / Eagle Lake Road entrance.

Most right lane parking would be eliminated along Park Loop Road. The only remaining right lane parking would be physically demarcated parallel parking spaces in the right lane (when traveling northbound) near Sand Beach. A path leading from roadside parallel parking to the beach would be constructed to safely separate pedestrians from road traffic as they make their way to the beach.

Hours and Seasonality of the Reservation System. Advance reservations would be required for all private vehicles entering Park Loop Road from mid-May to mid-October. Reservations would be required from one hour before sunrise until sunset during the peak season. These hours would be lengthened or shortened as necessary corresponding with shifting visitation patterns to protect a high-quality visitor experience. Use of the reservation system

would correspond to Island Explorer operations (i.e., if the transit systems are operating, the reservation system would be active).

Once visitors entered the park during their assigned timed entry window, they would be able to travel freely anywhere on Park Loop Road. There would be no limits on length of stay, but re-entry outside of their designated timed entry window would be prohibited. For users seeking to re-enter the park multiple times per day, a certain percentage of reservations would be available for full-day access. The length of the initial entry window may be lengthened or shortened as park managers work to optimize the reservation system; however, it is estimated that initial timed entry windows would be in in one-hour time blocks.

Number of Reservations Available. The number of reservations available would correspond with actions needed to manage these locations within the desired resource and experiential conditions of the sites. For each of these areas, desired conditions and visitor capacities have been identified (see chapter 1 and appendix A, respectively). These conditions and analyses were used to identify the maximum amount and type of use that could be accommodated at each location (see appendix A for site-by-site analysis). Using these capacities, along with existing availability of parking and the anticipated turnover rates for all of the parking lots along Park Loop Road and acceptable levels of traffic on the road. Initial implementation would include about 4,000 reservations per day (issued in hourly time blocks for entry into the system). After initial implementation of the reservation system, the number of reservations would be adjusted up or down to ensure the highest possible use of the existing parking supply while avoiding parking-related congestion and to allow park staff to manage desired conditions and within related thresholds and identified visitor capacities.

Infrastructure Changes Required to Implement the Reservation System. Under alternative D, there would be few changes to the existing infrastructure associated with Park Loop Road parking lots. All parking lots along Park Loop Road would remain on a first-come, first-served basis but would only be available to visitors who have entered Park Loop Road with a timed reservation.

- **Cadillac Mountain.** No new infrastructure or entry controls to the area would be established. The segment of Park Loop Road connecting Cadillac Summit Road with SR 233 would continue to be managed in a two-way traffic pattern so that visitors interested in visiting only Cadillac Mountain would not need to circle Park Loop Road in its entirety.
- **Ocean Drive.** The existing Sand Beach Entrance Station near Schooner Head Road would be removed. Access into the park via Schooner Head Road would be replaced with an automated entry (QR code reader or other remote system) for verifying reservations. Right lane parking along Park Loop Road would be eliminated except for a short northbound section of the road near Sand Beach where a portion of the right lane would be demarcated as parallel parking spaces. A path paralleling the right lane parking (but physically separated from motor vehicle traffic) would be constructed to facilitate safe access to the beach from the parallel parking area. The Schooner Head parking lot would serve as additional parking for Sand Beach. Additionally, a new parking lot accommodating approximately 40 vehicles would be established within the footprint of an existing NPS administrative storage area known as Satterlee Pit near the south end of Schooner Head Road. This additional parking would provide additional vehicle access to the Sand Beach area.

- **Jordan Pond.** Access to the Jordan Pond area would occur by traveling south on Park Loop Road from Paradise Hill or by a short length of two-way traffic on Park Loop Road coming north from Stanley Brook Road. Because vehicles traveling to Jordan Pond from the south would not drive through a formal entrance station, timed-entry reservations would be validated at the entrance to the north parking lot. A means for controlling access to the lot (either a staffed or automated gate or a validation kiosk) would be installed at the entrance to the lot.

Other Infrastructure Changes. Physical entrance stations with entrance lanes and a booth would be constructed at Wildwood Stables and at Paradise Hill Road. The Paradise Hill entrance would be located north of the west street extension on Paradise Hill Road. The entrance station at Wildwood Stables would be located near the current paved entrance to the stables off Park Loop Road. An adjacent service road would be used for a turnaround lane. The intersection of Stanley Brooke Road and Park Loop Road would be modified (widened) to accommodate horse trailer access into Wildwood Stables. Automated, unmanned entrances (QR code readers or another form of remote access) would be provided at SR 233, Otter Cliff Road, Sieur de Monts, and Schooner Head Road. All installations follow guidance from the 2007 cultural landscape report for the historic motor road and incorporate appropriate design to protect the historic character of Park Loop Road. To better accommodate bus parking and access at Thunder Hole, designated bus parking spaces would be moved to the ocean side of the road north of the existing lot (so as not to block views), and an additional accessible drop off location would be established to allow two simultaneous arrivals and departures.

Management of Other Mount Desert Island Attractions and Trailheads

Eagle Lake. The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be eliminated to remove impermeable surfaces and restore natural wetland adjacent to the lake. These facilities would be relocated to the south (off the highway) along an abandoned section of SR 233 (old route 233). While some of this area is previously disturbed, approximately 0.75 acre of vegetation would be cleared using machinery and heavy grading equipment to accommodate the new parking lot and the access road. Additionally, a new connector trail to the Eagle Lake Carriage Road would be constructed from the new parking area. The gravel-surfaced carriage road connector would be approximately 620 feet long and 16 feet wide and, similar to the carriage roads, managed for nonmotorized travel. Construction of the connector trail would require heavy grading equipment and the removal of approximately 0.25 acre of trees, soil, and vegetation.

The new parking lot would have a capacity of approximately 125 parking spaces to accommodate the number of vehicles parked in the existing lot and along the highway during a typical day during peak visitor use. Figure 7 depicts conceptual site plans outlining the proposed construction footprint for all infrastructure development at the old route 233 site.

The previous parking lot and restroom area on the north side of SR 233 at Eagle Lake would be revegetated. Parking at the boat launch on the south side of SR 233 would remain but be reserved for vehicles with boat trailers. “No Parking” signs would be installed along SR 233, the impacted shoulders would be revegetated, and management stones and/or curbing would be installed to prevent roadside parking.

FIGURE 7. OLD ROUTE 233 PARKING AREA

Hulls Cove and Acadia Gateway Center and Thompson Island

Hulls Cove. Under alternative D, the existing visitor center at Hulls Cove would be demolished and the area restored to natural conditions. A small visitor contact station would be rebuilt closer to an expanded Hulls Cove parking lot. The footprint of the expanded parking lot would be similar to what is described in alternative C. The visitor contact station would have a smaller footprint than the visitor center described in alternative C, but also located within previously disturbed areas. The new visitor contact facility at Hulls Cove would be minimally designed for visitor contact and orientation, purchase of park passes, and to obtain reservations. Visitor education and interpretive services that currently are provided at the Hulls Cove Visitor Center would be moved to the Acadia Gateway Center.

Acadia Gateway Center. Under alternative D, no substantial changes would be made to the planned physical development footprint of the Acadia Gateway Center facility as described in the Acadia Gateway Center environmental assessment (MDOT and FTA 2006) (see also chapter 1, "Background"). However, with the transfer of visitor services now provided at the Hulls Cove Visitor Center, the Acadia Gateway Center would serve as the park's primary visitor center and provide orientation to Acadia's natural and cultural history and resources. Visitors would also be able to receive orientation to the reservation system at the center and park vehicles and transfer to a concession tour or Island Explorer service into Mount Desert Island and the park.

Thompson Island. The visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the structures repurposed. Visitor information services would be relocated to the Acadia Gateway Center. The picnic area and restrooms on the east side of the highway would be maintained for visitor use.

Schoodic Peninsula

See "Common to All Action Alternatives" section.

Public Transit

The use of Island Explorer would be encouraged as described in the "Common to All Action Alternatives" section in this chapter.

Commercial Visitor Services

Commercial visitor services would be managed as described in the section, "Actions Common to All Action Alternatives," in this chapter.

BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To ensure protection of the park's fundamental resources and values, best management practices would be implemented under all action alternatives. Best management practices are grounded in NPS *Management Policies 2006*, and they are intended to provide a practical approach to everyday management of Acadia National Park's transportation system. Best management practices for this plan can be found in appendix D.

Under all of the alternatives evaluated in this draft plan/EIS, the mitigation measures would be applied to avoid and minimize potential adverse impacts on Acadia National Park's fundamental resources and values. These mitigation measures are described in appendix D.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED

While developing each alternative, it became evident that certain alternative concepts or actions were not feasible and were dismissed from further analysis in the environmental impact statement. These alternative concepts or actions, and the reason for their dismissal, are described in table 4.

TABLE 4. ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

Description of Action	Rationale for Dismissal
Limit Park Loop Road access to transit/tour access only (no private vehicles)	This action conflicts with the historic character of the park's network of historic roads. Eliminating opportunities for scenic motor touring would adversely impact a fundamental value of the park. The experience of private vehicle auto touring is something the National Park Service desires to preserve at the park, although some car-free days and times of days may still take place intermittently. In addition, the logistics of providing for 2- to 3-minute bus headways (which would be needed to accommodate current visitation without private vehicle access) makes this proposed action infeasible to implement.
Establish two-way traffic patterns for the entirety of Park Loop Road	Establishing two-way traffic on the entirety of Park Loop Road as it is currently designed would not allow space for bicyclists to safely operate, curtailing the range of visitor experience and access to an entire user group. Changing the dimensions of Park Loop Road to accommodate two-way traffic and bicyclists at the same time (adding bicycle lanes) would unacceptably impact the historic character and integrity of the park's network of historic roads. In addition, this action would not resolve issues with congestion or overcrowding in that most of these issues are associated with parking and overcrowding in popular destinations, which this action would not address.
Expand total parking capacity along Park Loop Road	To manage the Park Loop Road area in a manner consistent with the park's general management plan, the transportation plan does not consider expansion of the total parking capacity along Park Loop Road. The 1992 general management plan acknowledges the direct relationship between crowding at popular destinations and the availability of parking at those sites and therefore established that existing parking capacity would be enforced and alternate means of access would be explored. Additionally, expanding parking in areas with rare or sensitive natural resources, such as on the summit of Cadillac Mountain would cause unacceptable impacts to these resources. Although the expansion of select lots adjacent to Park Loop Road is proposed under the action alternatives in the transportation plan, they would be balanced with other lot reductions or the elimination of roadside parking.
Widen park roads and manipulate historic infrastructure (i.e., change physical dimensions of roads and parking areas to accommodate more and larger vehicles)	Widening park roads (specifically along Cadillac Summit Road where the current road width is incompatible with large vehicles) or changes to overpasses with relatively low clearances were not considered feasible alternative elements. Because of the historic nature of this infrastructure, such changes would alter and diminish the historic character and integrity of the park's network of historic roads.
Funicular to Cadillac Mountain summit	A funicular (a type of incline railway) on Cadillac Mountain would cause unacceptably high levels of impacts on natural and cultural resources and would be highly visible from other areas of the park and thus impact scenic viewsheds and visitor experience.

Description of Action	Rationale for Dismissal
Signal-controlled one-way traffic on Cadillac Summit Road	Adding traffic signals around the tight curves of Cadillac Summit Road to avoid conflicts caused by large vehicle use would fundamentally alter the historic character of the road. In addition, given the existing congestion in this area of the park and the pulses in visitation caused by large motor coaches, the addition of the traffic signal (although it could help larger vehicles navigate the turn) would likely lead to more congestion issues.
Pedestrian path parallel with Schoodic Loop Road (from Schoodic Education and Research Center to the point) (note: this suggestion also applies to other areas of Park Loop Road)	Natural and cultural resource impacts associated with construction of a pedestrian path would be too great and incompatible with protection of fundamental resources of the park, including the integrity and setting of the park's network of historic roads and mosaic of habitats supporting diverse flora and fauna.
Remove or relocate parking at Sieur de Monts	Removing or relocating the parking at Sieur de Monts would fundamentally alter the historic character of the area. Additionally, the loss of parking at a popular visitor attraction would likely lead to higher visitation and parking shortages at other trails and trailheads in the park.

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Chapter 3

Affected Environment

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CHAPTER 3: AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the environment of Acadia National Park that is being analyzed in this environmental impact statement. It focuses on the cultural resources, visitor use and experience (including traffic and transportation), and the socioeconomic environment that may be affected by actions proposed in the alternatives. Please refer to the impact topics section in chapter 1 for a list of the impact topics that have been retained and thus are addressed in this chapter.

HISTORIC MOTOR ROAD

The Historic Motor Road System. Summarized from Cultural Landscape Report for the Historic Motor Road System, Acadia National Park (NPS 2007).

Development History

In 1913, the State of Maine lifted a ban on automobiles on Mount Desert Island, opening the door to a new means of experiencing the natural beauty of the island and the area soon to be designated Lafayette National Park in 1919 and eventually Acadia National Park in 1929. The 1913 entrance of automobiles to Mount Desert Island marked the end of a contentious battle that had strained the relationship between the year-round and the summer residents for the previous 15 years. The automobile question was essentially a referendum on road building on the island. The year-round residents saw the roads as a pipeline for economic opportunity while the summer colony viewed the roads as a threat to the reasons they came to Acadia in the first place—the island's isolated natural beauty. Before the entrance of the automobile, more than 200 miles of rustically designed trails and carriage roads already existed on the island, but by 1920, the major trail-building era had ended and an interest in building motor roads intensified. In 1929, the Seal Harbor Village Improvement Society recorded that "…an inevitable first effect of the oncoming of the automobile was the banishment of the horse and the desertion of foot paths and trails."

John D. Rockefeller Jr. initially held a negative view of the automobile's presence on Mount Desert Island. Rockefeller was an ardent supporter of the national parks and played a major role in the physical development of Acadia. Already in the process of building a network of carriage roads on Mount Desert Island in the 1920s, Rockefeller offered to donate land and financial support for a motor road system that would allow visitors to see the park's diverse scenery from their automobiles and to keep them separated from his network of carriage roads intended for horses and carriages only.

The first section of motor road built in the park was the Jordan Pond to Eagle Lake Road, built between 1922 and 1927. Superintendent Dorr and Rockefeller, along with landscape architect Frederick Law Olmsted Jr., worked together to design a motor road that could be as scenic as the carriage roads, but also separate from them. Ultimately, the road that was built during this period established a benchmark for quality and beauty in the National Park Service. There was considerable controversy and worry over the impact on the wilderness that the road would cause, but the partnership between public and private financing and effort and the thoughtfulness of Dorr, Rockefeller, Olmsted, and their engineers produced a new means of

enjoying the natural beauty of the park, continuing along the same aesthetic of the scenic hiking trails and carriage roads that merged the natural beauty with an architectural one.

Further work on the motor road system proceeded with the construction of a demonstration segment of Ocean Drive at Thunder Hole in 1929 and Cadillac Summit Road between 1928 and 1932. By the end of the 1920s, planning, design, and construction of park facilities throughout the National Park Service became increasingly standardized. Projects were characterized by an emerging rustic design style derived from the picturesque style in landscape design, the "wilderness" qualities of the early parks, and the prairie style emphasis on native plants. In the summer of 1929, with the Ocean Drive demonstration section complete, construction of Cadillac Summit Road underway, and the Jordan Pond / Eagle Lake Road almost two years old, Rockefeller became a vocal proponent of the automobile in the park. His earlier idea of a limited number of motor roads separate from his carriage roads expanded into a much larger motor road system of scenic roadways taking motorists from the mountaintops to the coasts. Rockefeller now envisioned the concept of the Park Loop Road as a complete circuit and committed $4 million of his own money for improvements and the purchase of land on behalf of the park. By 1933, all agreements were in place to proceed with construction. That year also corresponded with the passage of Franklin Roosevelt's "New Deal" make-work programs designed to address the Great Depression crisis. The New Deal provided money and labor to the National Park Service, mostly through the Public Works Administration (PWA) and the Emergency Conservation Works Act. In Acadia, the Civilian Conservation Corps (CCC), which performed "Emergency Conservation Work," had a key role in the development of the motor road system, and the labor that laid down the roads.

In 1933 and 1934, the road segments on Ocean Drive between Thunder Hole and Sand Beach and between Thunder Hole and Otter Cliffs were completed. During this same time period, the National Park Service constructed what would eventually be known as Schoodic Point Road (now Arey Cove Road) and Schoodic Loop Road. The Schoodic landscape was developed in the same rustic, picturesque style that was developed for the Mount Desert Island roads.

The National Park Service built the Stanley Brook and Otter Cliffs Roads between 1934 and 1936. At Stanley Brook, Olmstead paid special attention to the protection of the scenic resources of the narrow valley. His design reduced grading depths to minimize landscape damage, eliminated shoulders to maintain as narrow a disturbance corridor as possible, and developed low bridges with wooden guardrails supported by granite posts that blended perfectly in design and scale with the surrounding landscape. Otter Cliffs and Stanley Brook Roads were completed in 1936 and Rockefeller deeded the land over to the National Park Service. In 1935, he had received notice that the federal government had allocated money for road construction in Acadia. From this point on, his role would be in land acquisition and consultation on design and the National Park Service would fund construction.

The first motor road segment constructed following the 1935 appropriation became known as Kebo Mountain Road, built between 1936 and 1938. A second appropriation for road construction was made in 1936, and Rockefeller deeded the land necessary to build the Otter Cove Causeway and Blackwoods Road in 1938 and 1939. During the road work, plans were drawn up that connected Blackwoods Campground to Park Loop Road, but they were not built because Rockefeller did not want to enable access to any of the park's motor roads by large trucks or trailers.

Work on the vision of the complete park circuit, unbroken by state highways, continued. The Kebo Mountain Road extension and Champlain Mountain Road were built between 1939 and 1940. Shortly thereafter, Day Mountain Road and its five associated bridge structures was built connecting Blackwoods Road with the Jordan Pond / Eagle Lake Road. Concurrent with Day Mountain Road construction was the establishment of Paradise Hill Road connecting Hulls Cove at SR 3 to the northern end of Jordan Pond / Eagle Lake Road. Rockefeller pressed urgency during Paradise Hill Road's construction, but the project ran out of money before its three necessary bridges could be built. The entry of the United States into World War II diverted resources from the project and the road would not be completed for 11 years.

World War II essentially halted road construction in the park. There was no money for the work and the engineers had all been diverted to civil defense projects. During the war, Rockefeller continued to promote the completion of the loop circuit and spurred the National Park Service to prepare for the day when the war ended and resources would again be available by completing planning for the remaining bridges and road segments. In 1951, Rockefeller funded the construction of the Day Mountain Road extension, which eliminated the use of public roads to complete the connection between Day Mountain Road and Jordan Pond / Eagle Lake Road. In 1950, the first federal money for road work since the war had begun was released and the bridges on Paradise Hill Road were completed by 1952.

In 1955, Mrs. Potter Palmer deeded her Schooner Head property to the federal government. This gift allowed the park to connect the Kebo Mountain Road extension and Champlain Mountain Road on park property and represented the last segment of the motor road system. It allowed the completion of the Park Loop Road circuit on park property. The final segment was built between 1956 and 1958 as a Mission 66 project (Mission 66 was a 10-year NPS program to fund expansion of visitor services and improve deteriorated infrastructure in parks by the 50th birthday of the National Park Service in 1966) but stayed true to the pre-war rustic design of the National Park Service. Rockefeller lived to see the completion of his vision for the park motor road system and passed away in May 1960.

Significance

Acadia National Park's 33.25-mile historic motor road system is a nationally significant property constructed between 1922 and 1958. The road system evokes a rustic character that is in harmony with the existing network of carriage roads and hiking trails and is distinctly different from an ordinary state or county highway. Elements common to all roads—bridges, shoulders, guardwalls, coping stones, retaining walls, culverts, and waterways—were purposely designed in the rustic design style to blend with the surrounding landscape. It is considered exemplary in the fields of landscape architecture and engineering and is also nationally significant for its association with John D. Rockefeller Jr. and his contributions to the early development of the national park system. The historic motor road system continues to serve Rockefeller's vision of an unbroken scenic loop moving visitors through the ecosystems of Acadia and exposing them to the natural environment via an architecture that blends into nature and complements its form. The Park Loop Road remains the primary means by which most visitors experience the park's resources. As such, the condition and functionality of the motor roads and the adjacent landscape are inextricably linked to visitors' impressions of the park.

The accomplishments of the road designs and the natural beauty of the landscapes through which they pass have resulted in their recognition as two of the 150 distinct and diverse roads

designated as "American Byways" by the secretary of transportation. American Byways include the National Scenic Byways and All-American Roads. The program is a grassroots collaborative effort established to help recognize, preserve, and enhance selected roads throughout the United States. All-American Roads or National Scenic Byways are recognized based on one or more exceptional archeological, cultural, historic, natural, recreational, and scenic qualities. Acadia National Park manages portions of two designated byways: the Acadia All-American Road (which includes the entirety of Park Loop Road on Mount Desert Island) and the Schoodic National Scenic Byway (which includes the Park Loop Road on the Schoodic Peninsula). These two roads are Maine's only designated scenic byways and bring visitors interested in scenic driving to the park and surrounding communities from all over the world.

The design and construction of the historic motor road included unique, character-defining features that have been identified and described in the Park Loop Road's National Register of Historic Places nomination and its in-depth cultural landscape report. Acadia strives to protect these character-defining features in the course of maintenance of the road and to replace and repair them in kind when appropriate. The overall treatment strategy for the historic road is one of rehabilitation. Rehabilitation best allows sound stewardship of the historic motor road system through repairs, alterations, and additions, while preserving those existing historic features that convey the historical, cultural, and architectural values. The rehabilitation treatment acknowledges the reality that periodic work is needed to maintain the integrity of the road surfaces, shoulders, and associated engineering structures and to ensure that the historic motor roads contribute to a positive and memorable visitor experience. When conducting these projects, the park strives to protect the road's historic character (including viewsheds and design intent) as well as its historic character-defining physical features that include:

- horizontal and vertical alignment
- cross-section
- bridges (except Frazer Creek)
- causeways
- road surface wearing course
- vegetated shoulders
- paved pullouts
- paved parking lots
- vegetated ditches
- mortared rubble waterways
- culverts, inlet structures, and outlet structures
- stone guardwalls (angular and rectilinear)
- earthen guardwalls
- vegetated and stone embankments
- stone retaining walls (dry-laid and mortared)
- gates (Civilian Conservation Corps)
- vegetated and mortared rubble medians
- asphalt walkways
- gravel trails
- stone steps
- granite curbs (except sawn-top)
- concrete curbs
- boulder monuments
- views and vistas (selected)
- vegetation in and along road corridors

Purpose

The primary purpose of the historic motor road system as completed was to provide visitors in automobiles with recreational access to the park's diverse landscapes and to highlight the many scenic views. In addition to connecting to the roadside parking areas at the park's major destinations and developed areas, such as Sand Beach, Thunder Hole, Cadillac Mountain, and the Jordan Pond House, numerous paved pullouts were built. Many of these stops correspond to spectacular views and vistas (Foulds and Killion 2015). Views while in motion were also considered, as well as landscape visibility as it relates to the direction of travel and geometry and placement of the road segments. The intended vistas along the Park Loop Road were first documented in 1958, immediately after the completion of the final segment of the complete loop and 11 years after the "Great Fire," which had taken many of the trees in the park. In 1958, young growth was beginning to reclaim vistas. A total of 70 maintained vistas offering views of the mountains, lakes, shorelines, forest vegetation, and unique geological features were documented in the effort, and another was added when the map was revised in 1961, bringing the total number of vistas to 71, all but 4 of which were located on the historic motor road system. Access to these views are a significant feature of the historic character and a part of the design intent of Park Loop Road. Out of concern for loss of roadside vistas due to maturing vegetation, the park's 1992 general management plan called for the protection and management of vistas of the historic motor road system. In 2015, a vista study and management plan was completed that determined 19 out of the 67 vistas along Park Loop Road were in good condition and still provided intended views from the road, 45 were impaired by vegetation growth but repairable with maintenance and treatment (which the plan prescribed), and 3 were proposed for abandonment (one due to extensive growth and poor historic documentation and two because the current one-way direction of travel reduces visibility).

Rockefeller and the road designers were also concerned with the character of the driving experience as impacted by traffic and parking. Particularly, that vehicles on and adjacent to the road not impact the views and the experience of those traveling along it. In 1938, he objected to providing a connection between Blackwoods Campground and the park road to avoid creating a connection that would allow large trailers to enter Park Loop Road and impact scenery. Even more specific were his views on controlling roadside parking such that stationary vehicles would not obstruct views and impair the driving experience.

During the construction of the Park Loop Road segment between Thunder Hole and Otter Cliffs in 1934, Rockefeller commented on the appropriateness of roadside parking to the scenic plan envisioned for the Ocean Drive segment in a letter to Walters Hill, director of the Civilian Conservation Corps labor force building the road segment:

> *Mr. Olmsted tells me that any questions in connection with the southern section of the Ocean Drive which you brought up were settled satisfactorily during his recent visit. I find on talking with him that he had forgotten our agreement not to have any more parking places provided along the edge of the road south of the Thunder Hole, but rather to provide such spaces off the road under the trees at various convenient and available intervals. Even if parking along the road does not block the road, it so seriously detracts from the beauty of the ocean view that it seems to me greatly to be deplored. I thought it was clear in your mind that no more roadside parking provision was contemplated.*

It is questionable if Rockefeller could have imagined the automobiles and mass transit options of the 21st century, or the number of vehicles that would ultimately be traveling the picturesque motor road system he was working to create. However, there is no doubt that the rustic design intent and the focus on viewscapes, vistas, and visitor experience of the natural beauty of the park is a character-defining feature of the motor road system and the historic infrastructure of the park. Of concern to this planning effort is balancing the demands of today's visitors with the preservation of the historic character and the intended experience of traveling the historic motor roads of the park.

Current Condition

In the years following the completion of the motor road, management of the park, increasing visitation, and changing needs have caused changes to the landscape and historic design of the road. One major change (which actually was original to some of the final segments) was the shift from native pink granite in the final surface coat, which gave the road the same color as the surrounding stone outcrops, to a surface treatment of modern plant-mixed, hot-asphalt bituminous concrete. Today, none of the original treatment is visible. Other modifications came from later Mission 66 construction of visitor facilities at Cadillac Mountain summit and Sieur de Monts, restrooms at Bear Brook and Fabbri, and a picnic area at Frazer Point. Post-Mission 66 developments include:

- construction of the Fabbri picnic area in the 1980s
- construction of a new Jordan Pond House in 1982 (the original structure burned in 1979)
- redesign of the parking lot, trails, and concourse
- construction of restrooms at Thunder Hole in the late 1980s and in 1997
- construction of the entrance fee station at Sand Beach in 2000 and an accessible walkway at the historic Thunder Hole ranger station, which is now a concessions-operated store and information center

The National Park Service undertook major realignments and modifications of portions of the historic roads as well, including:

- widening of the original, earliest segment of Jordan Pond / Eagle Lake Road
- modifying the intersection of Cadillac Summit Road and Paradise Hill Road
- realignment of the road between Jordan Pond House and Bubble Pond that abandoned the motor road segment passing under the Bubble Pond Bridge
- adding parking and pullouts at Jordan Pond House and Bubble Pond
- creating a grade separation on Paradise Hill Road to address congestion

The road's associated landscape features have changed since the end of its historic construction period, including:

- replacing vegetated shoulders and some drainage ditches with asphalt or loose rubble
- use of nonhistoric granite curbing and concrete walkways

- rustic design features originally present in the gates and signage replaced with steel access gates and modern metal directional, wayside, and entrance signs
- applying painted lane striping for safety and for control in parking areas

In an attempt to control unauthorized parking along the vegetated shoulders of the road, the park began installing parking management stones along many sections of the road. Parking management stones, intended to be distinct from the finely cut, historic coping stones, are a visual intrusion along many roadsides today.

Arguably, the decision to convert the Kebo Mountain to Day Mountain Road segment to one-way traffic and allow right lane parking is the most significant change to the historic Park Loop Road. In 1969 the two-way traffic pattern on the historic loop was changed to a one-way flow from north to south along a 12-mile stretch of the road from Sieur de Monts Springs to the intersection of Day Mountain Road. This one-way pattern opened the right lane for parking for the first time. In 1989, the one-way traffic pattern was extended to Kebo Mountain Road, further altering the historic character of the road by changing the designed traffic pattern and expanding the character-diminishing right lane parking. The 1989 decision was made for safety reasons associated with increased visitation and conflicts between bicycles and motorists, and was reached after several studies and with consideration of the impacts on the historic character of the road. It was determined that travel in a clockwise direction preserved the most important vistas along Ocean Drive and also reduced already compromised views of park-adjacent modern installations (Jackson Laboratory). More than any other modern modification to the historic road, the presence of vehicles parked along the roadway is the largest affront to the designed scenic experience of traveling Acadia's unbroken motor tour.

In recent years the park has made efforts to successfully reintroduce some of the rustic details of the historic motor road system, such as signs and gates, which have been lost over time. The historic directional and informational signposts have been lost and replaced with the steel UniCor system of signs, but the park has replaced typical modern metal signposts with 4-inch by 4-inch wooden signposts evoking a more rustic appearance. The rustic motor road access gates were historically one of the most visible fixtures along the historic motor road system and were intended to identify the entrances. Over the years, they have been replaced with more durable and easier to maintain galvanized steel pipe gates. The park has committed to the future use of a more appropriate substitute and a simplified rustic wood gate has been installed at the Schooner Head Overlook Access Road, which has been considered a successful substitute for the historic gates.

Notwithstanding changes to Park Loop Road since 1958, and including those reversible modifications associated with the existence of right lane parking and the one-way traffic patterns; overall, the historic motor road system at Acadia National Park possesses integrity of location, design, setting, materials, workmanship, feeling, and association. Threats to the integrity of the road system include vehicle damage associated with unauthorized parking and off-road operation, proliferation of unpaved pullouts, parking management stones, bituminous asphalt waterways, lane and parking striping, unmaintained vistas, paved shoulders, signage and gates that are inconsistent with the rustic design style, and right lane parking. All of these threats are linked to increased visitation and increased traffic, both as a direct result of congestion and as a result of NPS management in response to it.

CULTURAL LANDSCAPES

Sieur de Monts Spring

(Summarized from the NPS Cultural Landscape Inventory, Sieur de Monts Spring, 2009). Situated on the east side of the island and nestled in a picturesque gorge formed by Dorr Mountain and Huguenot Head, the 41-acre Sieur de Monts Spring site is defined by a broad wetland area to the north and east (the Great Meadow), a dammed wetland to the south (the Tarn), and the steep wooded slopes of Dorr Mountain to the west. Sieur de Monts Spring was initially developed by George Dorr in 1904 and contains a complex overlay of associations including work by Dorr, the Village Improvement Associations & Societies, and the National Park Service. The landscape is a blend of elements from both the picturesque and NPS rustic design styles. Dorr had an Italian Renaissance Revival-style canopy structure built over a natural spring that flows into a nearby stone-lined, open pool. Next to the spring pool is the spring building (now the nature center) built in 1949 in the NPS rustic design style to replace an earlier CCC building destroyed in the Great Fire of 1947. Other facilities contributing to the historic significance of the landscape include a 1939 CCC-built parking lot and loop road and a restroom built by the National Park Service in 1948 and 1949.

The period of significance for Sieur de Monts Spring is 1909–1949. The period begins in 1909 when Dorr acquired the property and built the original spring canopy and spring pool. In the following years, Dorr and the Bar Harbor Village Improvement Association developed the area with picnic grounds, paths, trails, roads, and in time, a spring building and other support structures. The period continues through the 1930s and early 1940s when the National Park Service, in consultation with the Olmsted Firm, began improving visitor facilities, simplifying circulation features, and updating infrastructure. The Civilian Conservation Corps contributed to many of these projects, including building a new spring building, improving the loop road and parking lot, and installing and managing new and existing vegetation. The period ends in 1949 when the last buildings destroyed in the park's devastating fire of 1947 were replaced.

Today, the Sieur de Monts Spring cultural landscape is composed of a collection of natural topography and vegetation; historic trails, parking, and motor routes (including access to the site via a connection to the historic Park Loop Road); historic structures including the Spring Canopy, Spring Building, restroom, and the Abbe Museum; smaller-scale landscape constructions including historic culverts on trails and the Park Loop Road, rock monuments and memorial plaques; and specific views and vistas designed both during the original development of the Sieur de Monts Spring site and during construction of the connecting historic motor road. The contributing features of the landscape are in good condition, but viewsheds are occasionally compromised by vehicle congestion and, like the other road surfaces and shoulders in the park, the parking lot is threatened by unauthorized parking. .

Cadillac Mountain

Cadillac Mountain (summarized from the NPS Cultural Landscape Inventory, Cadillac Mountain Summit, 2007) summit is a developed landscape at the top of Cadillac Mountain, the highest point in Acadia National Park. It is the primary summit destination, with a long history of both pre- and post-NPS development. The rocky summit features three high points or "peaks" dominated by broad granite ledges and outcrops interspersed with shrubs and grasses and lesser amounts of mixed conifer woodland and forest. Access to the summit is primarily

from Cadillac Summit Road, a historic segment of the park's historic motor road system that climbs the mountain's north and west slopes and terminates as a broad, teardrop-shaped loop nestled between the eastern and middle peaks. Visitor facilities at the summit are limited to a small concession and restroom building on a wooded slope below the middle peak.

Since the 1850s, getting to the top of Cadillac Mountain and experiencing the views has been a sought after experience. In the early 1920s, the carriage road had badly deteriorated, prompting the park's first superintendent to include a summit motor road in the park's motor road proposal. Road construction began in 1928, but the formidable granite and mountainous terrain kept the Department of Agriculture's Bureau of Public Roads (now the Federal Highway Administration) busy until October 1931. When opened, the road was widely praised as an excellent example of outstanding road construction and for the use of the NPS rustic design style.

Parking at the summit initially consisted of a small parking lot prior to the motor road's terminal loop. Realizing more parking was needed and that visitors would likely wish to stop and enjoy the views, NPS designers implemented plans for a much larger parking area in the terminal loop and new walkways and trails. A ranger station, restrooms, and a small refreshment stand called the Cadillac Tavern were constructed between 1932 and 1934 and were inconspicuously sited on a wooded slope between the middle peak and parking area so as not to impact the viewsheds. Like the motor road, the new facilities and circulation features also demonstrated the rustic design style and visually blended with the surrounding landscape.

The year 1942 and the departure of the Civilian Conservation Corps marks the end of the period of significance for the cultural landscape that began with the onset of construction of the summit road in 1928. The landscape features and historic character of the site, which include the design and layout of the parking lot and vehicle circulation, as well as unobstructed views and a minimum of noncontributing modern infrastructure, are significant because of their association with the early development of Acadia National Park and the rustic design styles.

Subsequent construction at the site after the period of significance does not contribute to its historic significance, but only minimally detracts from it. In 1966, a new parking and overlook area was developed below the western peak, now called the Blue Hill Overlook. By 1983, the ranger station was removed and replaced by a new concession building constructed in the same location and design style as the historic ranger station. Today, the Cadillac Mountain summit remains one of the most popular developed areas in the park, its panoramic views drawing visitors from sunrise to sunset, this visitor experience, along with the historic design of the summit road, its connection to the Park Loop Road, and summit area trails are all important features contributing to the historic significance of the site and are in good condition. However, the historic road and parking lot shoulders are regularly damaged by out of bounds parking and congestion on the entry road, in the lots, and as a result of individual visitors crowding the site. This congestion negatively impacts historic vistas.

Jordan Pond House

(Summarized from the NPS Cultural Landscape Inventory, Jordan Pond House, 2009). The 42-acre Jordan Pond House site is situated at the southern end of Jordan Pond, bound by Penobscot Mountain, Pemetic Mountain, and two rounded mountains called North Bubble and South Bubble. The historic views of the pond and the surrounding peaks are the focal point of the site's main building—the Jordan Pond House—a restaurant and gift shop operated by a

concessioner. The current building dates from 1982, a replacement for the original structure that was lost in a fire in 1979.

Segments of the park's historic hiking trail, carriage road, and motor road systems provide access to the Jordan Pond House and other features at the site that include a gatehouse complex, pump houses, dam and spillway, dormitory, parking lots, old building foundations, and several remnant stone-lined trails and roads. The landscape and associated historic features at the Jordan Pond House are significant because of their association with the early community development and the picturesque design style.

The Jordan Pond House landscape also reflects the origins of Acadia National Park and early efforts to conserve and maintain a scenic area for recreation. Beginning in the early 1870s, the natural beauty of the site attracted local residents and summer visitors. The period of significance begins in 1895, when Thomas McIntire and his wife Nellie Coburn McIntire became managers of the property when it was a well-known scenic, recreational, and dining destination. By the 1900s, the McIntires had made substantial improvements to the area by enlarging the Jordan Pond House; clearing the tea lawn to obtain views of Jordan Pond and the Bubbles; constructing additional support structures; and developing paths, hiking trails, and roads. John D. Rockefeller Jr. also understood the aesthetic value of the Jordan Pond House area, later directing the design and construction of the Jordan Pond gatekeeper's house, carriage house, and carriage road entrance gates. In addition, Rockefeller directed the construction of the first segment of the historic motor road system in the Jordan Pond House area, the Jordan Pond / Eagle Lake Road. The period of significance extends to 1959, reflecting the continued use of the site for recreation and entertainment.

There have been a number of major changes to the Jordan Pond landscape since the end of the period of significance. In 1963, the Jordan Pond / Eagle Lake Motor Road was realigned, significantly altering the landscape of the Jordan Pond House site. As a result of the realignment, all of the historic outbuildings on the east side of the road were removed (ice house, woodshed, stable, and water tower). A new entrance road and automobile parking area was established in front of the house and another parking area was designed for overflow parking and boaters where the old motor road originally curved away from the pond. On June 21, 1979, the Jordan Pond House was destroyed by fire. It was rebuilt in 1982, larger than the original and slightly resited to take advantage of the spectacular views. The immediate surrounding landscape was also replanted, but with consideration of original garden types and locations. A significant landscape modification in 1982 included a parking lot set back into the woods in the location of the McIntires septic field and an additional overflow parking lot in the previous location of their large vegetable garden. A new dormitory was constructed in 1982, south of the old McIntire house, which was torn down that same year. In 2009, circulation improvements to accommodate buses were made in the Jordan Pond House area, which included removing the small circular drive and replacing it with an expanded entrance drive, and adding a new pedestrian plaza and three bus drop-off areas (figure 8). Notwithstanding modifications to circulation systems and the loss of some buildings since the historic period, the developed area at Jordan Pond House continues to convey the historic design intent, use, and rustic design vocabulary.

FIGURE 8. CURRENT CONDITIONS AT THE JORDAN POND HOUSE CULTURAL LANDSCAPE

Today, significant historic features would be those involving the Park Loop Road's connections to the historic carriage roads, the layout of the historic features of the overall site and associated greenspaces, and continued consideration and maintenance of the remaining historic landscape design. The historic character of the visitor experience at the site, associated with unobstructed and uncrowded views of the Jordan Pond House and the Jordan Pond gatekeepers house as well as preservation of the unobstructed vista of the Jordan Pond and the Bubbles beyond it is also a significant character defining feature of the cultural landscape.

Thunder Hole

(Summarized from the NPS Cultural Landscape Inventory, Thunder Hole, 2012). Thunder Hole is an inlet along the rocky eastern shoreline of Mount Desert Island. When a storm or the turning tide forces waves into this narrow channel, the air escapes with a thunderous reverberation that is both deafening and thrilling. Since the early 1930s, the National Park Service has provided formalized walkways, railings, and other visitor facilities to experience the natural phenomena at Thunder Hole.

The developed area of Thunder Hole encompasses approximately 2.25 acres and is accessible from the Ocean Drive historic motor road segment and from the historic hiking trail known as Ocean Path. Both the road and trail trace the shoreline and offer panoramic ocean views that are among the best in the park. On the ocean side of the road and trail is a landscape of uneven and massive granite ledges. A series of curved walks, ramps, and steps make their way between the rocks and down to a broad ledge overlooking the Thunder Hole. Above the road, the landscape

holds considerably more trees and shrubs that screen the historic ranger station, parking lot, and restroom.

Thunder Hole has long been a destination on Mount Desert Island's eastern shore, and its popularity can be traced to the mid-1800s. The overall period of significance for Thunder Hole begins in 1890 when recreational access was improved by the Town of Bar Harbor's construction of the original Ocean Drive along the shoreline from Sand Beach to Otter Point. The period ends in 1937 when maintenance responsibility for their paths within park boundaries was transferred to the National Park Service.

The Thunder Hole Demonstration Section along Ocean Drive was completed in 1929, which served as a guide for the reconstruction of the entire Ocean Drive in 1933–1934 and ultimately made possible the development of park facilities at Thunder Hole. Landscape features and structures at Thunder Hole that contribute to the significance of the historic site include those developed during the period of significance and retaining their historic characteristics of design and use. They include geological forces that shaped the inlet and its natural characteristics; the ranger station and parking lot above the road and trail that are representative of NPS picturesque and rustic design styles sited to avoid marring the scenic vista; some of the walkways, stone steps, and granite curbs originally installed by the Civilian Conservation Corps that remain and contribute to the site's rustic character; and Ocean Drive and Ocean Path themselves. The site's historic significance is associated with the design of the intra-site vehicle circulation, including its connections to the Park Loop Road, and the unobstructed views from within the designed landscape. Congestion and large tour buses regularly cause negative impacts on the historic vistas by blocking intended views. Overcrowding also precipitates out of bounds parking which causes damage to the historic parking lots and road shoulders.

Schoodic Peninsula

(Summarized from the NPS Cultural Landscape Inventory, Schoodic Peninsula, 2004). Schoodic Peninsula is a rocky, wooded headland that juts into the Atlantic Ocean at Winter Harbor, Maine. Five miles to the west, across Frenchman Bay, is Mount Desert Island and the main part of Acadia National Park. Although geographically separate, Schoodic Peninsula shares with the rest of Acadia not only a common history, but also the same tradition of rustic design in its constructed features.

The earliest major NPS construction project at Schoodic is the Park Loop Road. The roads at Schoodic are illustrative of the NPS mission to provide public access while seeking to conserve the natural beauty of the park. From a design standpoint, the Park Loop Road at Schoodic also shares many of the design elements used on the carriage and motor road systems implemented by Rockefeller on Mount Desert Island. This portion of the park was both acquired and developed by the National Park Service in a relatively short time span, resulting in greater architectural uniformity than is found elsewhere at Acadia. The hiking trails and motor road systems exhibit a careful selection and placement of routes to provide dramatic vistas with minimal impact on the landscape. Related structures and engineering features including walls, steps, coping stones, and drainage features were constructed of local or natural materials to enhance the overall harmonious effect. A number of the visitor amenities constructed at Schoodic are also examples of the major contributions made by New Deal programs in shaping the park's landscape.

The Schoodic Peninsula Historic District has remained essentially unchanged since the early 1940s. It includes historic landscape features, structures, scenic vistas, and enduring character-defining visitor experiences dating between 1929 and 1941 that are significant in the areas of NPS rustic design and the influence of John D. Rockefeller Jr. on the development of the national park system.

VISITOR USE AND EXPERIENCE

Introduction

This section describes elements of visitor use and experience in Acadia National Park that may be affected by the management alternatives of this transportation plan. The description of these elements is based on the best professional judgment of NPS staff, public scoping for this plan, and both past and recent research efforts.

The following visitor use and experience elements will be discussed:

- Visitor Experience Quality (including visitor perceptions of safety)
- Visitor Access and Recreational Opportunity (including traffic and transportation)

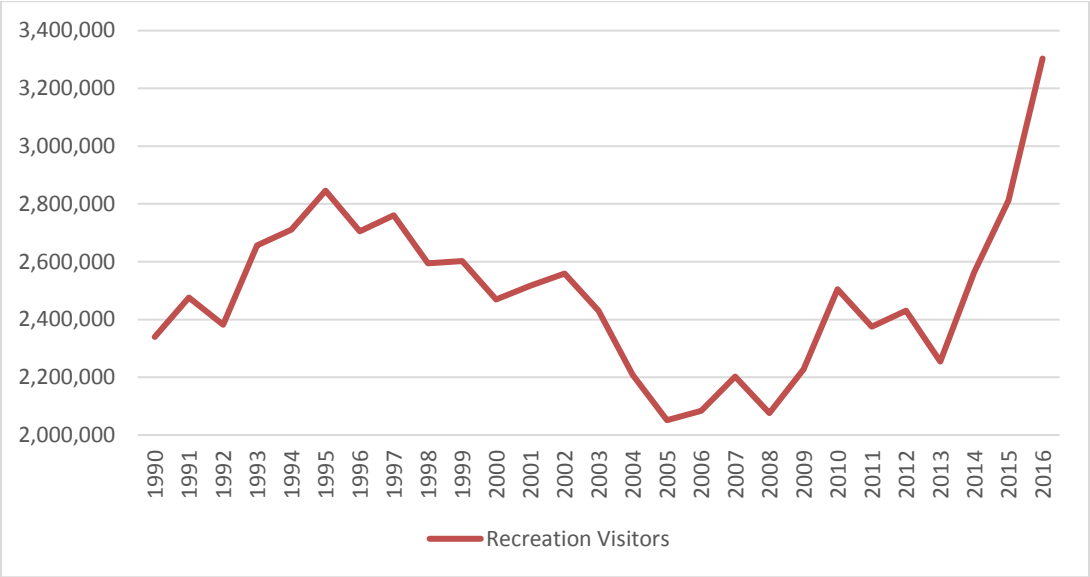
Overview of Visitor Use and Experience

The visitor experience at the park is nationally significant and unique. The park has a long history of providing respite to urban dwellers from the crowds and pace of nearby cities. The park contains the tallest mountains on the eastern seaboard of the United States with Cadillac Mountain at its apex. From these summits, visitors experience panoramic views of the Acadia archipelago and the surrounding mountains, forests, meadows, lakes, and shorelines. The glacially sculpted landscape of exposed granite domes, boulders, U-shaped valley, and cobble beaches make the park exceptionally scenic. The varied range of habitats from the intertidal zone to subalpine rocky summits and the park's mountains, lakes, streams, wetlands, forests, meadows, and coastlines contribute to the diversity of plants and animals making the visitor experience rich with natural resource-based diversity.

Visitation Trends. Since the establishment of the park in 1916 (known as Sieur de Monts National Monument at the time), the park has expanded in both size and visitation. Visitation records stretch back to 1919 with 64,000 annual visitors when the park was approximately 6,000 acres. Today, the park protects more than 47,000 acres and received over 3 million visitors in 2016. At this ratio, 3 million visitors and 47,000 acres, Acadia National Park is arguably the most densely visited national park (Pettengill et al. 2012). Visitation trends over the last 25 years are shown in figure 9 and show a noticeable uptick in visitations beginning in 2014.

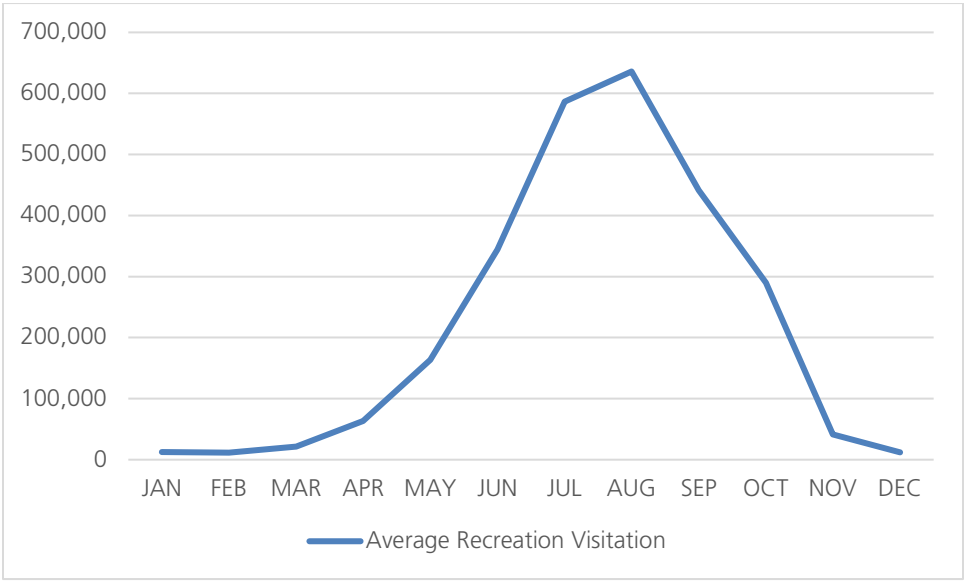
Monthly visitation (figure 10) numbers show a clear seasonal trend in visitation. The vast majority of park visitors are accommodated during the peak and shoulder seasons between May and October. The proposed reservation systems in the proposed alternatives would only apply during the peak season in the park, currently between Memorial Day and mid-October. The alternatives described in this plan relate to strategies for transportation management during the peak season only.

FIGURE 9. RECREATION VISITORS PER YEAR FROM 1990–2016



Visitor Characteristics. A visitor use study conducted in August 2009 (Manni et al. 2010) found numerous visitor use characteristics that are pertinent to this plan. The following paragraphs list visitor characteristics about where visitors travel from, how often they visit, where they visit in the park, and how they plan.

FIGURE 10. RECREATION VISITATION PER MONTH AVERAGED OVER THE PAST FIVE YEARS (2011–2016)



- Visitation to the park is composed of both international (6%) and national (94%) vacationers. Visitors from Maine and Massachusetts comprised 29% of the visitation, with the remaining percentage of national visitors coming from 39 other states, Washington, DC, and Puerto Rico. International visitors were from 15 countries and comprised 6% of total visitation, with 55% from Canada, 13% from the Netherlands, 10% from the United Kingdom, and smaller proportions from 12 other countries.
- Fifty percent were first-time visitors, while 31% visited four or more times, and 7% of visitor groups included members with a physical condition (77% of these groups reported mobility problems).
- The most common sites visited were Cadillac Mountain (75%), Jordan Pond House and area (67%), Sand Beach (63%), and Thunder Hole (62%). The Schoodic Peninsula was reported to be visited by 11% of the surveyed visitors.[2] The most common visitor activities reported were sightseeing/driving for pleasure (83%) and hiking on trails (79%), followed by walking on carriage roads and dining at Jordan Pond House (37%).
- Only 2% of visitors reported being part of a commercial guided tour group; 1% reported being part of a school/education group.
- The amount of visitors that engage in preplanning their visit to the park is also important because any changes to transportation systems and access to the park would need to be clearly communicated. Ninety-five percent of visitor groups obtain information about the park prior to their visit, mostly using common sources including previous visits (58%), friends/relatives/word of mouth (51%), maps/brochures (43%), and park website (43%).
- Seventy-two percent of visitors stayed overnight on Mount Desert Island with 18% of these visitors staying at a park campground. Similarly, 63% stayed longer than 24 hours, while 37% of visitor groups visited for less than 24 hours.
- Visitor groups on Mount Desert Island chose a variety of lodging options, but the three most popular options were a motel or hotel (30%), private campground (18%), and a campground in the park (18%). Additionally, 42% of visitor groups spent two to three days on the island with the average length of stay for all visitor groups being 70 hours, or 2.9 days.

VISITOR ACCESS AND RECREATIONAL OPPORTUNITY

The action alternatives considered could potentially have significant changes to how visitors access and experience the park. Scenic driving as a visitor experience is a fundamental resource and value for the park, and as mentioned above, sightseeing/driving for pleasure is an activity that approximately 83% of visitors engage in. Changes to the management of driving and access to park roads could impact visitor use and experience—a primary concern in the planning process because there are potential impacts on visitor experience associated with the issue.

[2] The number is likely low because the visitor sampling was only conducted on Mount Desert Island. Therefore, any respondents would have had to travel to *both* Mount Desert Island and the Schoodic Peninsula to be surveyed.

The visitor use study conducted in August 2009 (Manni et al. 2010) revealed that numerous forms of transportation are used to visit the park including car/pickup truck/SUV/van (91%), bicycle (27%), Island Explorer bus (19%), vehicle with trailer camper (7%), ferry (3%), private boat (3%), tour bus (2%), motorhome/RV (2%), RV with towed car/boat (1%), and motorcycle (1%). Per group, 12% of visitors had two motor vehicles and 5% had three or more. The heavy use of private vehicles at the park has contributed to traffic congestion, parking issues, and has generally restricted visitor flow (Hallo and Manning 2009; Pettengill et al. 2012).

The most common access-related visitor services and facilities were direction signs (outside park) (82%), restrooms (81%), Park Loop Road (80%), parking lots (79%), directional signs (inside park) (74%), and hiking trails (72%) (Manni et al. 2010).

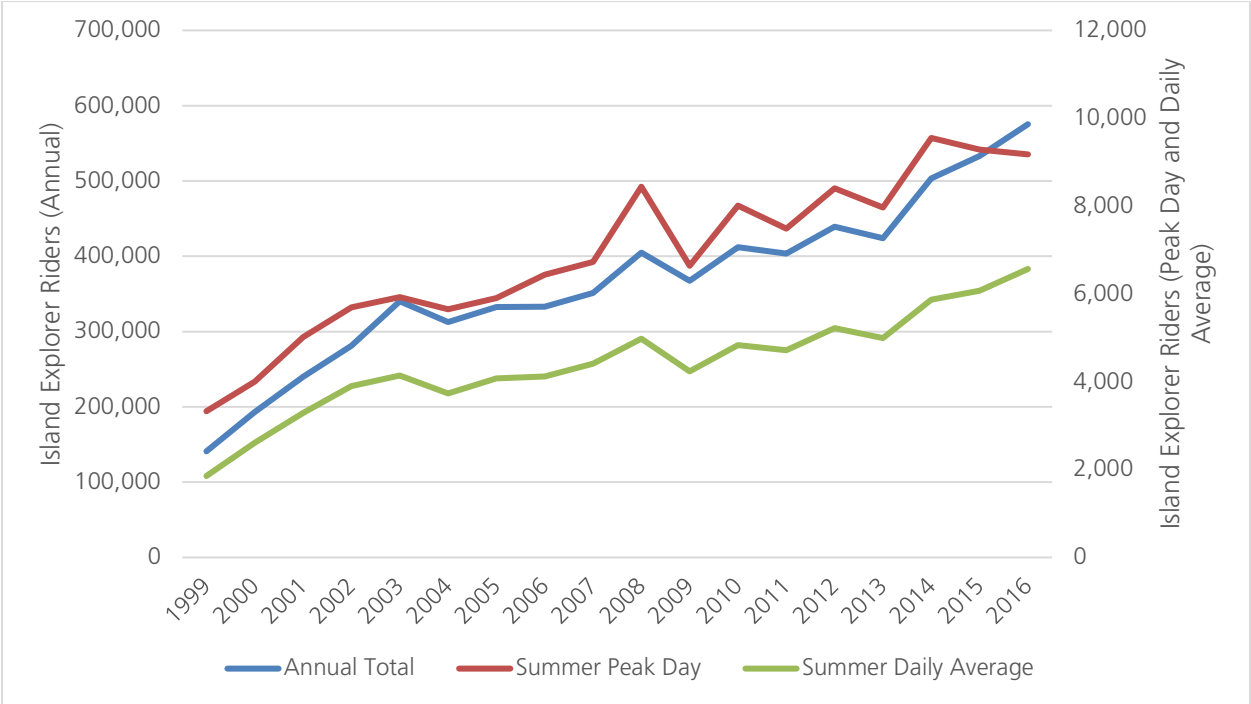
In 1999, the National Park Service established the fare-free Island Explorer service. Figure 11 displays the most current Island Explorer routes. In 2016, ridership averaged 6,580 riders per day during the summer months and 2,700 riders per day in the fall months. Ridership statistics for the Island Explorer service are summarized in Figure 12. Island Explorer service operates seasonally from late June through late August, and at a reduced schedule through mid-October. The length of service dates are largely dictated by the limited number of available drivers (many of these drivers drive school buses during the school season). Expanding the number of drivers could be challenging because, like many other seasonal work forces in and around Acadia National Park, the lack of affordability of seasonal housing is a limiting factor.

A study conducted in 2008 examined the incentives and disincentives of using public transportation at Acadia (Holly 2009). These results suggest that the most important factors of using a public transportation system at the park is the frequency of buses (incentive) and the associated wait times (disincentive). Fare-free or low cost was also listed, but the Island Explorer is already fare-free. The interviews suggested a maximum interval between buses as 15 to 20 minutes. For a full-service schedule for Island Explorer please see: http://www.exploreacadia.com/routefinder.htm.

Visitor characteristics were also examined to predict public transportation use at the park (Holly 2009). First-time visitors were more likely to use the Island Explorer than repeat visitors. Maine residents were also less likely to use the Island Explorer than out-of-state visitors. As visitors planned longer visits to Mount Desert Island, the more likely they were to use public transportation. Overall, the study suggested that day users (characterized by not staying on Mount Desert Island, repeat users, living closer to the park) are the least likely to use public transportation because of the total time they have to visit the park and the perceived lack of freedom to get around the park quickly. Visitors also cited routing as a possible disincentive to using public transportation. While first-time visitors want transportation to major attractions, repeat visitors often wanted to visit less popular sites that may or may not be serviced by public transportation. Holly (2009) also posed one question to day users about a visitor's likelihood of using the proposed Acadia Gateway Center. Visitors' responses included 30% very likely and 35% somewhat likely. A follow-up question asked if visitors would be willing to leave their personal vehicle at the center and ride the Island Explorer; 13% responded very likely and 24% responded somewhat likely.

FIGURE 11. ISLAND EXPLORER ROUTE MAP (HTTP://WWW.EXPLOREACADIA.COM/ROUTEFINDER.HTM)

FIGURE 12. ISLAND EXPLORER RIDERSHIP 1999–2016



Mount Desert Island

Mount Desert Island is the center island in the park, has the largest land acreage of the islands in and around the park, and has the most park lands. Mount Desert Island is composed of both

park lands and private lands. Cities/towns on the island include Bar Harbor, Southwest Harbor, Tremont, and Mount Desert Island.

The top 15 most visited attractions in the park are on Mount Desert Island (Manni et al. 2010).[3] The island also hosts all three visitor/information centers and is the location of most of the carriage roads and Park Loop Road.

Visitor access and mobility on the island is likely the same percentages as visitors reported in the 2009 survey: car/pickup truck/SUV/van (91%), bicycle (27%), Island Explorer bus (19%), vehicle with trailer camper (7%), ferry (3%), private boat (3%), tour bus (2%), motorhome/RV (2%), RV with towed car/boat (1%), and motorcycle (1%).

The Island Explorer public transportation system was established on Mount Desert Island to help relieve some of the traffic and parking problems at the park. The system provides robust options for traveling to every segment of the park on Mount Desert Island. Eight of the nine routes offered by Island Explorer are on Mount Desert Island. A more detailed map of these eight routes is provided and also provides information on the timing of the routes.

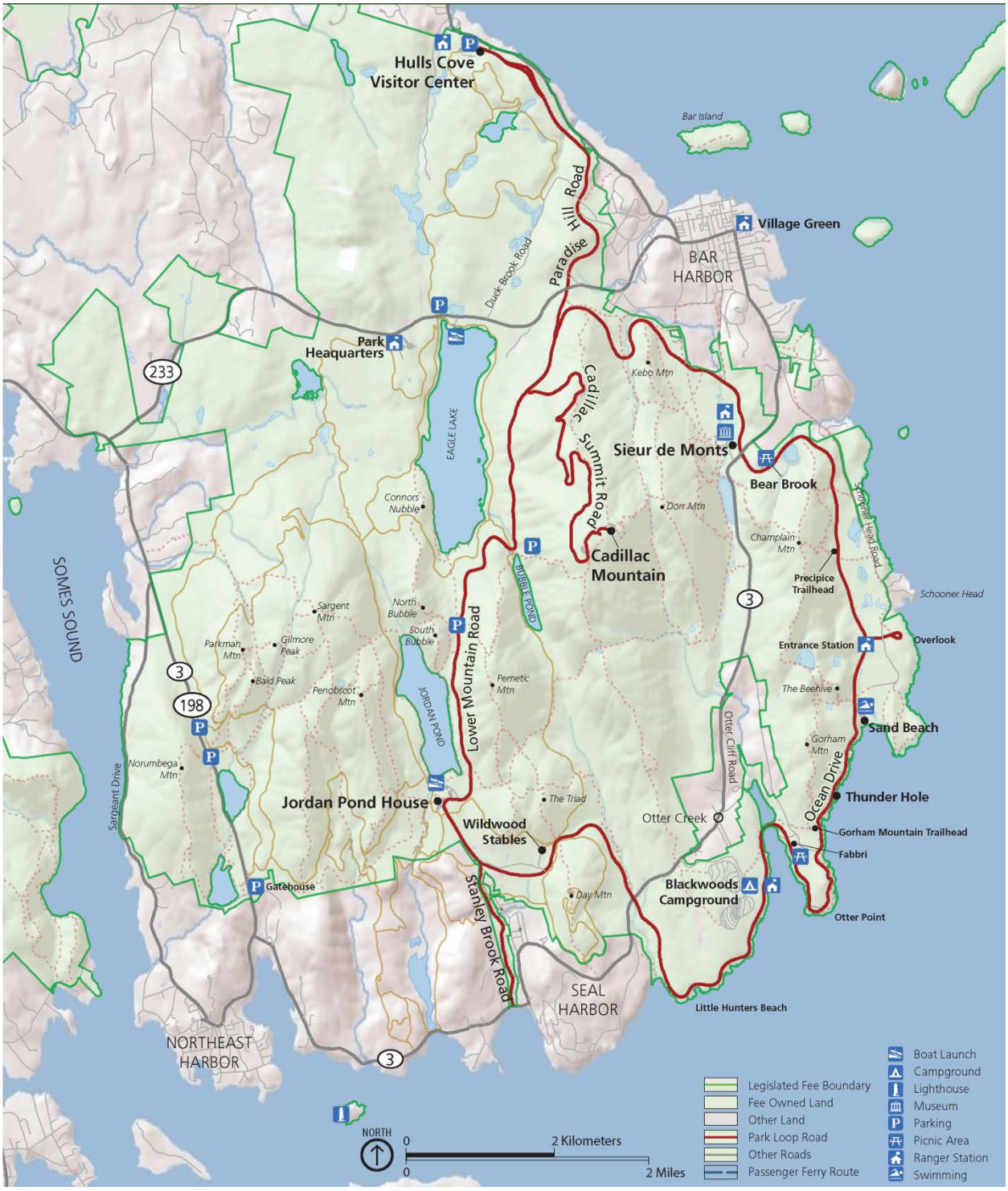
Park Loop Road

The 27-mile (43 km) Park Loop Road system (figure 13) offers outstanding views of the park's ocean shoreline, coastal forests, and mountain silhouettes. Visitors access Park Loop Road from SR 3 East, which begins at Hulls Cove Visitor Center and makes a loop around the eastern portion of Mount Desert Island. The road runs one-way (clockwise) from just past SR 233 to its connection with Jordan Pond Road (approximately 13 miles). This is the road that creates the foundational value of driving for pleasure in the park. This historic road system is open from April 15 through November, 24 hours a day, weather permitting. Additionally, the road offers access to Sand Beach, Thunder Hole, Jordan Pond, and Cadillac Mountain. As mentioned above, these are the four most popular sights in the park that between 62% and 75% of visitors visit. The entirety of Park Loop Road is serviced by the Island Explorer.

Stopping along the road and parking in the right-hand lane is allowed in certain sections of the park. However, the park's general management plan (1992) stated that right lane parking would be phased out as soon as an alternative transportation system could be established. The plan stated that this action would "enhance scenic driving by removing the safety concerns, traffic flow restrictions, and visual impact of right lane parking. Parking would be permitted only in designated spaces in established lots, and vehicle size would be restricted in lots where turning space is limited."

[3] It should be noted that while this survey asked "During this trip, which of these places in Acadia National Park did you and your group visit?" the sample was derived from visitors on Mount Desert Island (i.e., not visitors on Isle au Haut and the Schoodic Peninsula were sampled).

FIGURE 13. PARK LOOP ROAD MAP



Because the road itself is a destination and leads to major attractions in the park, the road has been susceptible to crowding, congestion, and parking issues. Specifically, the section of Park Loop Road called Ocean Drive, which extends from the Sand Beach Entrance Station to just past Gorham Mountain trailhead, is particularly crowed (see the "Visitor Use Levels and Characteristics" section).

Cadillac Summit Road

At 1,530 feet (466 m), Cadillac Mountain is not only the tallest mountain in the park, but also the tallest mountain along the eastern seaboard of the United States. Cadillac Mountain is the most popular attraction at the park (Manni et al. 2010). Visitors to Cadillac Mountain primarily hike the trails around the summit area and take in the scenic views. Cadillac Mountain is accessible via a winding, narrow 3.5-mile road leading from Park Loop Road to the near-summit. Both private vehicles and commercial tour buses use this road to provide access to the summit. (The Island Explorer does not provide a route to Cadillac Mountain summit.) Parking at the top of the road is limited (approximately 120 parking spaces). Blue Hill Overlook is just short of the summit (0.3 mile) and offers stunning views and 38 parking spaces. A network of trails leads from the summit parking area to the actual summit of Cadillac Mountain and the Summit Path allows accessibility to view and informational waysides in the summit area. The road is closed from December through April 14, and whenever weather conditions (e.g., dense fog or ice) require. Access to Cadillac Mountain is also provided by numerous trails, including North Ridge Trail, South Ridge Trail, and Gorge Path. Blue Hill Overlook is also accessible by Cadillac Summit Road.

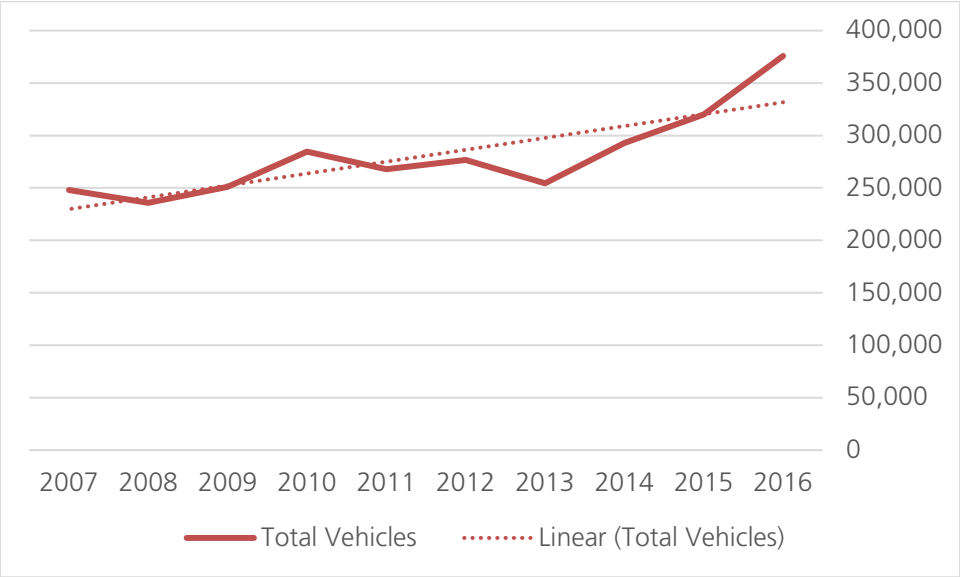
The VSP Visitor Study shows Cadillac Mountain summit to be the most commonly visited site (75%) by visitor groups (N=834).

Visitor demand for the experiences and views from the top of Cadillac Mountain is very high, which causes a high level of congestion along this road corridor. During the 2017 summer season, the park began pilot testing strategies to resolve traffic and parking management issues on the summit as a part of the planning process. During these pilot tests, Cadillac Summit Road had to be closed 49 times due to large numbers of vehicles parked along the roadway and congestion resulting from greater at one time demand for parking than is available. These closures lasted anywhere from 15 minutes to over 2 hours, with an average closure lasting 63 minutes. Had these same strategies been employed in previous years, it's likely that similar levels of closures would have been needed in 2014, 2015, and 2016.

Ocean Drive

Visitor demand for the experiences and views at the key destinations along the Ocean Drive corridor, including the scenic driving experience of the corridor itself, causes a high level of congestion along this stretch of road. Over the last 10 years, the number of vehicles accessing Ocean Drive has increased substantially (figure 14). Over this same time period, the number of parking spaces for these vehicles has remained static, creating increased pressure on parking lots and an increased rate of vehicles parking in the right-hand lane or visitors creating parking in unendorsed areas (often to the detriment of park resources).

FIGURE 14. TOTAL VEHICLES ENTERING OCEAN DRIVE BY YEAR



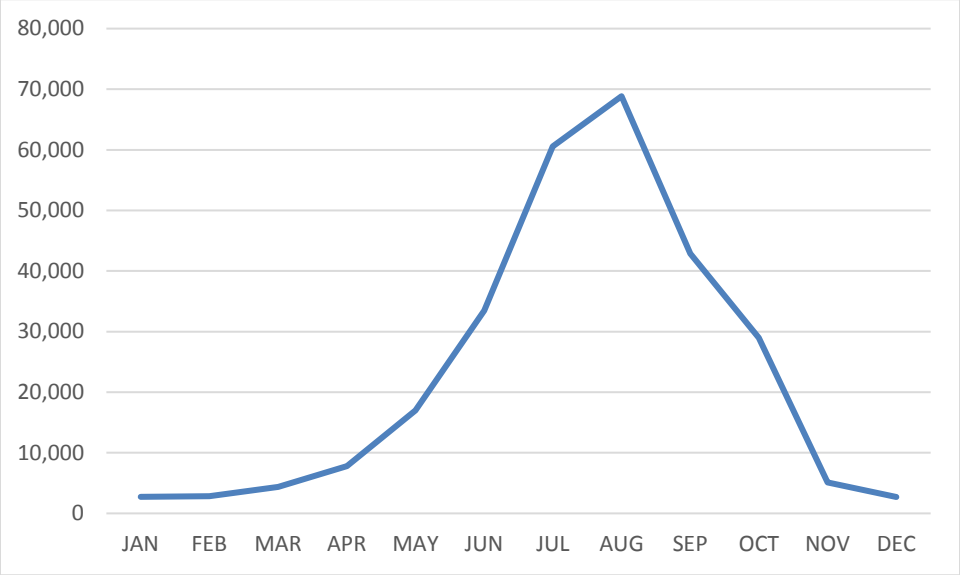
Traffic counts data near Sand Beach also show the amount of vehicle usage in that area of the park (figure 15).

Simulation Model of Traffic on Ocean Drive (Park Loop Road). A simulation modeling study of Acadia's Ocean Drive portion of Park Loop Road (from the Sand Beach Entrance Station for 1.5 miles just past the Gorham Mountain trailhead) was conducted in 2007 (Manning et al. 2008). Popular visitor attractions along this section of road include Thunder Hole, Sand Beach, Beehive trailhead, and Gorham Mountain trailhead. This segment was chosen for the study because it produced zones that corresponded with the visitor attractions and related infrastructure on Ocean Drive, and it provided the greatest detail in the analysis of social visitor capacity.

At the time of this study, visitation was around 2 million visitors compared to more recent levels of over 3 million visitors. This represents an approximate 50% increase in visitation. Transportation management of this section of road was similar then to now: visitors are allowed to park in the right-hand lane, several parking lots are located along Ocean Drive, parking lots and much of the right-hand lane become filled with vehicles during the peak use season (July–August), and parking lots and road areas around Sand Beach and Thunder Hole are typically the first to reach their physical visitor capacity.

The travel times for the entire section of road were collected from the GPS route data. The average time taken to travel Ocean Drive was 23.8 minutes (s = 33.3). The longest time that anyone in the sample took to travel the length of Ocean Drive was 280.9 minutes. The GPS route that this was associated with showed that the vehicle was stopped on the road near the Gorham Mountain Trail in zone E for several hours. The shortest time that was taken to travel Ocean Drive was 3.0 minutes, meaning that the vehicle moved at an average speed of 31.5 mph.

FIGURE 15. MEAN MONTHLY TRAFFIC COUNTS AT SAND BEACH (1990–2014)



GPS data also indicated what parking lots were used along Ocean Drive and for what length of time. Five parking lots were used by vehicle drivers in the GPS sample (table 5 and figure 11). Zone C and zone D lots are small and not near any major visitor attractions.

TABLE 5. VEHICLE PARKING TIME PER PARKING LOT (MANNING ET AL. 2008)

Parking Lot	Percent of Vehicles Using the Parking Area	Average Parking Time (minutes)	Standard Deviation of Parking Times (minutes)
Sand Beach	64.4	51.8	71.7
Small lot in Zone C	6.9	12.7	15.3
Key Hole	2.0	31.4	45.2
Thunder Hole	46.0	24.3	24.6
Gorham Mountain Trailhead	5.0	98.2	106.5

Schoodic Peninsula

The Schoodic Peninsula is east of Mount Desert Island and is accessible via SR 186. The Schoodic Peninsula is well removed from the rest of park and is a 45-minute drive from the Acadia Gateway Center or a 50-minute passenger ferry ride from Bar Harbor.

In 2015, the Schoodic Woods Campground and associated day use parking area opened. The campground consists of 94 sites, a ranger station, 100-seat amphitheater, and 100-space day use parking area. The addition of these facilities on the Schoodic Peninsula has increased visitation to this area and park staff have seen a notable increase in bicycle traffic since this campground and associated facilities opened. The campground is full in July and August and dominated by

RVs. Park staff have observed that the day use parking area is rarely more than 25% full and bike use of the Schoodic Loop Road has increased substantially.

A 6-mile (10 km), one-way loop road offers views of lighthouses, seabirds, and forested islands. Vehicle turnouts provide opportunities to stop and enjoy the scenery. Stopping on the road and parking outside designated pulloffs are prohibited. Bicyclists must obey the one-way traffic flow on the road and are encouraged to use free Island Explorer buses and bike paths. RVs are permitted only on the section of Schoodic Loop Road that accesses Schoodic Woods Campground. Unless otherwise posted, the speed limit is 35 mph (56 km/hr). Arey Cove Road leads (off the Schoodic Loop Road) to Schoodic Point, a windswept, rocky point providing spectacular views of Mount Desert Island. Visitors can also access the Schoodic Education and Research Center from Arey Cove Road. Arey Cove Road is two-way. Steep and winding bike paths provide spectacular views.

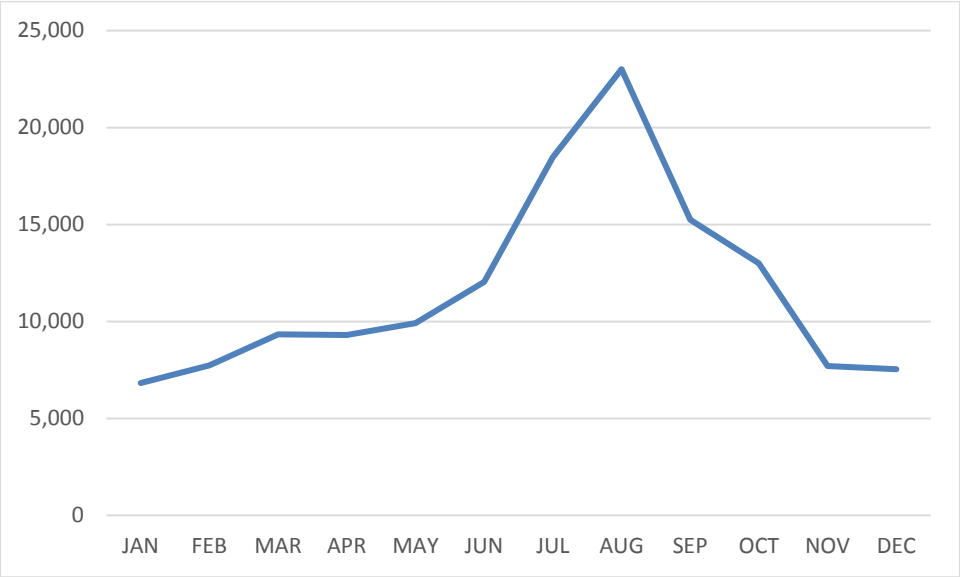
During the summer season (late June–Columbus Day) Island Explorer buses provide free transportation in and around the peninsula (figure 16). The bus drivers stop when waved down by visitors and buses are equipped with bicycle racks.

FIGURE 16. ISLAND EXPLORER ROUTE OF SCHOODIC PENINSULA

Traffic count data displayed in figure 17 reveals the drastic difference between use on the Schoodic Peninsula and Mount Desert Island. Further, the figure also reveals the differences in use per season.

Another study of vehicle congestion at the Schoodic Peninsula portion of Acadia National Park found that 40 cars per mile was considered the maximum acceptable density by survey respondents (Manning et al. 2002). Visitors also reported that an average of 67 cars per mile would cause them to no longer visit the Schoodic Peninsula section of Acadia National Park.

FIGURE 17. TRAFFIC COUNTS AT SCHOODIC PENINSULA 1990–2014



Recreation visits aren't the only types of visits that occur at the park. For example, nonrecreation vehicles are estimated at 30 vehicles per day November through April and 75 per day from May to October.

Traffic counts for the Schoodic Peninsula indicate that 2016 visitation increased compared to records from 2006. Particularly, the months of June, July, August, September, and October saw large visitor increases compared to 2015 (figure 18).

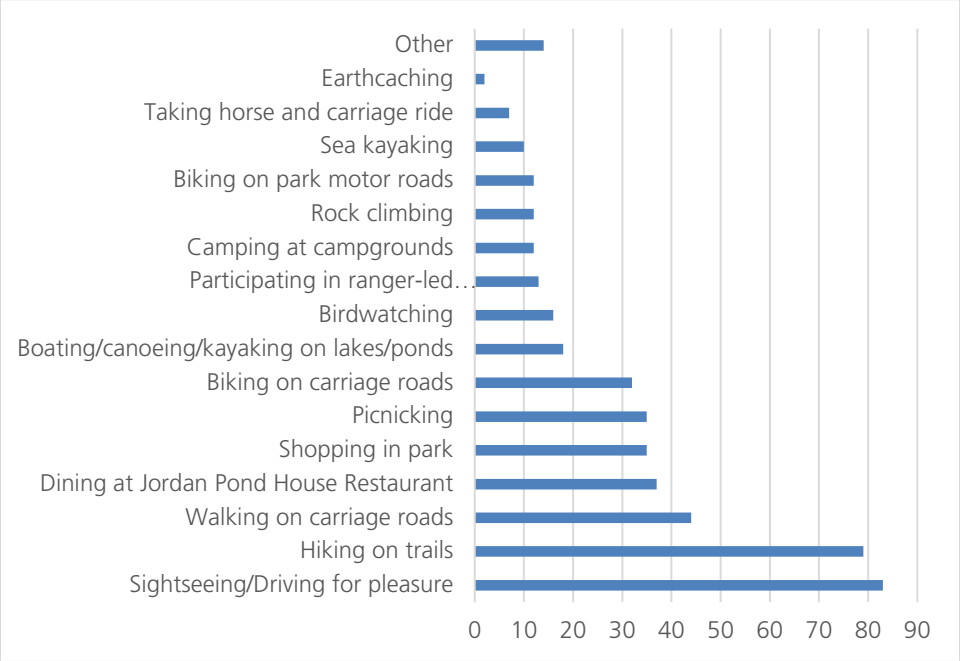
DIVERSITY AND QUALITY OF VISITOR EXPERIENCE

The park offers numerous recreation opportunities for visitors. The most popular activities include sightseeing/driving for pleasure, hiking on trails, and walking on carriage roads.

The park has 125 miles (201 km) of easy to strenuous trails for hiking and 45 miles (72 km) of winding carriage roads for walking or biking.

A number of guided tours and ranger-lead programs are available at the park. Three concessioners offer different bus and horse drawn carriage tours, including a 2.5-hour narrated bus tour with three 15-minute stops (including Cadillac Mountain), trolley tours, and horse drawn carriage rides. Ranger-narrated boat cruises are also available including a Baker Island Cruise, Frenchman Bay Cruise, and Islesford Historical Museum Cruise. Cruises vary from 2.0 hours to 4.5 hours. Ranger-led programs are also offered throughout the day beginning as early as 7:00 a.m. (bird-watching) and as late as 9:00 p.m. (star gazing). Programs are offered across Mount Desert Island and on the Schoodic Peninsula. Programs focus on historical/cultural resources (e.g., Carroll Homestead Tours) and natural resources (e.g., iNaturalist Walk). There are also children-specific programs including Junior Ranger programs and family programs.

FIGURE 18. PERCENT OF VISITOR GROUPS ENGAGING IN SPECIFIC RECREATIONAL ACTIVITIES



Mount Desert Island

Since Mount Desert Island is the focal point of the park, has the most popular attractions, the largest acreage, and the most infrastructure, Mount Desert Island offers the full range of opportunities that exist at the park. The recreation opportunities and use on Mount Desert Island are likely very similar to those described above. The most popular activities are sightseeing/driving for pleasure (83%), hiking on trails (79%), walking on carriage roads (44%), and dining at Jordan Pond House (37%) (Manni et al. 2010).

Mount Desert Island has 45 miles of carriage roads that are ideal for walking, bicycling, and equestrian activities. Carriage roads are closed to motor vehicles, and in some sections, horses (https://www.nps.gov/acad/planyourvisit/upload/CRUMmap.pdf).

Park Loop Road

During the summer months, Park Loop Road is used for two primary reasons: (1) scenic driving, and (2) accessing other areas of the park (Hallo and Manning 2009). As mentioned above, scenic driving is the most popular activity at the park and some of the most popular attractions and recreation opportunities in the park are accessed through Park Loop Road.

A study conducted in 2005 at the park used a mix-method approach to focus on visitors' perceptions of transportation at Ocean Drive, a portion of Park Loop Road (Hallo and Manning 2009). A total of 39 semi-structured interviews and 128 surveys were used. The qualitative findings suggest that about half the visitors used Ocean Drive to "get to specific sites," while the other half used Ocean Drive as part of their experience in the park. Additionally, when asked what role Ocean Drive played in their overall experience, again, visitors were about half and half with respect to Ocean Drive playing or not playing a role in their experience. Considering that Ocean Drive was designed to provide a scenic driving-for-pleasure experience, these results

suggest the road fulfills its intended purpose. When asked what they liked least about Ocean Drive, visitors overwhelmingly stated traffic and crowds. The survey responses for this study indicated similar answers. When asked to identify the most important features of a national park scenic road 81% responded "Scenery," 72% responded "Access to important park sites and attractions," and 67% stated "traffic volume." The authors noted how a comparison of these features suggest that ''transportation-only" uses indicates the importance of more traditional transportation concepts. For example, traffic volume, pavement quality, and visibility of traffic signs/signals were all rated as important by a majority of Ocean Drive users.

Cadillac Summit Road

Cadillac Mountain is the most popular attraction in the park. It provides sweeping views of Acadia and the surrounding islands. Most visitors access Cadillac Mountain by car or guided tour for sightseeing. On an average summer day in 2016, Cadillac Summit Road is visited by 1,630 vehicles. On an average busy day (85th percentile) this increases to 2,150 vehicles per day and a maximum observed of 2,650 vehicles per day.

Ocean Drive

The 2007 Ocean Drive Study (Manning et al. 2008) used photo elicitation to derive visitor norms for what was "acceptable" for crowding/congestion of traffic on Ocean Drive. All respondents were asked to rate each photo by indicating how acceptable it was based on the number of vehicles shown. Respondents reported that on average they would prefer to see no more than 4.9 vehicles in the study photo ("preference"); 11.3 vehicles in the study photo was the maximum acceptable number ("acceptability"); 12.5 vehicles in the study photo should prompt management action restrictions on Ocean Drive ("management action"); and at a use level of 16.0 vehicles in the study photo, respondents reported that they would no longer use Ocean Drive ("displacement").

Simulation Model. The results of the simulation model suggested that segments of road near Sand Beach, Thunder Hole, and the Gorham Mountain trailhead suffer from the most congestion resulting from traffic and right lane parking. The simulation also modeled increases in visitation. Current conditions (3 million visitors) is approximately 150% of 2007 levels (2 million visitors). Therefore, the simulation model suggests that preferred conditions of visitors would not be met for a significant percentage of time during summer use for every zone except to segment between Sand Beach and Thunder Hole. Further, minimal acceptability for visitors would also be exceeded for the segment directly proximal to Sand Beach.

Schoodic Peninsula

The Schoodic Peninsula offers a plethora of recreational opportunities and a chance to explore Maine's rugged coast without the congestion of Mount Desert Island. Popular activities at

Schoodic consist of bicycling, camping, and hiking. Popular hiking trails are Alder Trail (easy), Anvil Trail (moderate), Buck Cove Mountain Trail (moderate), East Trail (moderate), Lower Harbor Trail (easy), Schoodic Head Trail (moderate), and Sundew Trail (easy). Additionally, visitors can choose from different camping styles, including tent camping, hike-in camping, or RV site (with hookups) camping. Bicyclists can ride the one-way Schoodic Loop Road or the 8.3 miles of bike paths on the peninsula.

A 6-mile, one-way loop road offers views of lighthouses, seabirds, and forested islands. Vehicle turnouts along Schoodic Loop Road provide opportunities to stop and enjoy the scenery. RVs are only permitted on the section of Schoodic Loop Road that accesses Schoodic Woods Campground. Arey Cove Road leads to Schoodic point, a windswept, rocky point providing spectacular views of Mount Desert Island.

Ranger-led and other education programs are also offered on the Schoodic Peninsula, often based out of the Schoodic Education and Research Center. These programs are generally located at Schoodic Woods Campground or the Schoodic Institute. The program runs from as early as 9:00 a.m. to as late as 9:00 p.m.

VISITOR AND USER SAFETY

It is NPS policy to provide enjoyable and safe experiences at NPS sites. The saving of human life will take precedence over all other management actions as the National Park Service strives to protect human life and provide for injury-free visits. The National Park Service would do this within the constraints of the 1916 Organic Act and uses discretion to not impair park resources or values. While recognizing that there are limitations on its capability to totally eliminate all hazards, the National Park Service and its concessioners, contractors, and cooperators would seek to provide a safe and healthful environment for visitors. However, the National Park Service cannot and does not seek to control all risk inherent in recreational activities and; therefore, park visitors must assume a substantial degree of risk and responsibility for their own safety when visiting areas that are managed and maintained as natural, cultural, or recreational environments (NPS *Management Policies 2006* 8.2.5.1). The National Park Service, as a matter of policy, may decide not to eliminate certain risks to protect park resources and visitor experience and to achieve its policy objectives. For example, it is a policy objective and part of the park's mission to preserve the historic roadway system as a park resource, despite the fact that it may not fully meet modern highway safety standards for new road construction.

Some of the specific factors influencing transportation safety in Acadia National Park include increasing visitation, congestion that inhibits emergency response times, shared use of the roadway for vehicles and bicycles, and nontraditional and disorganized parking habits. Other factors that affect visitor safety in the corridor include traffic speeds, signs and markers that help orient visitors, and visitor behavior. Visitor behavior varies across individuals and can be dependent on an individual's skills, abilities, and experience. These interrelated factors are discussed together in this section and in the analysis of visitor safety of the alternatives in chapter 4.

During public scoping for this plan, there were several comments specific to visitor safety. Many commenters were concerned that injuries and fatalities are imminent on park roads due to issues such as increased congestion in summer, distracted drivers/pedestrians, speeding cyclists and drivers, lack of adequate space for all roadway users, and the presence of over-sized vehicles. Commenters had particular safety concerns on Park Loop Road, the Ocean Drive

corridor, and Cadillac Summit Road. Commenters mentioned that pedestrians cross the roads unpredictably and load/unload in right lane parking areas, creating unsafe conditions for themselves and drivers. In 2016, rangers documented 476 incidents of parking violations, which is indicative of the extent of overparking and overcrowding that occurs in the park.

Many commenters were concerned that large motor coaches and tour buses create unsafe conditions for their passengers, other motorists, and visitors pursuing human-powered recreation (transport) on narrow Cadillac Summit Road during the crowded summer season.

The park staff makes considerable efforts to provide safety information in easily accessible locations and formats. Safety information is available through interaction with park staff at visitor centers, at entrance gates, and along the road with patrols. Safety information is also available on the park website, in park brochures, at some trailheads, and waysides. However, there are multiple points of entry into the corridor, and visitors are sometimes unaware and unprepared for certain risks.

The speed limit for the majority of the road is 25 mph, although there are 35 mph sections. The road is narrow, ranging between approximately 16 to 22 feet in width. Some sections of the road are one-way, while others accommodate two-way traffic. Multiple types of traffic other than motor vehicles, including motor coaches, bicycles, and pedestrians use the road. In 2016, there were 155 speeding citations issued and 57 motor vehicle accidents in Acadia National Park. The one fatal crash in the park in 2016 was on Cadillac Summit Road and rangers documented that speed was a contributing factor.

Conflicts among visitors can pose both real and perceived safety problems such as those between vehicles and pedestrians, or between bicyclists and vehicles. Perceived safety refers to an individual's subjective level of comfort and perception of risk without investigation of standards or safety history. Real safety refers to actual levels of risk based on safety history and standards.

The roadways have become a somewhat popular route for bicyclists to connect to multiuse pathways outside the park. However, some members of the public commented during public engagement efforts that they do not feel safe to pursue nonmotorized activities on Park Loop Road, the Ocean Drive corridor, and Cadillac Summit Road due to high levels of congestion during the summer. Specific issues mentioned include, but are not limited to, large numbers of moving and parked vehicles on paved roads, areas without crosswalks, drop-offs along road edges, lack of cycling lanes, and safe space for cyclists/walkers, distracted drivers, speeding vehicles and cyclists, vehicles passing too closely to cyclists, overflow/congestion near parking areas, and the presence of large motor coaches and tour buses on Cadillac Summit Road. In 2016, the park documented 14 bicycle crashes and speed as a contributing factor in 10 of the 14 crashes.

SOCIOECONOMICS

Acadia National Park is prominent in the economy and identity of the coastal region of central Maine and the state as a whole. An economic contributions study in 2016 estimated that spending by local and nonlocal park visitors in 2015, across 2.8 million recreation visits, supported $305 million in economic output, 3,878 jobs, and $102 million in labor income across 11 Maine counties (Cullinane Thomas and Koontz 2016). Figures in the corresponding report for spending in 2016 (the National Park Service centennial year, which saw 3.3 million visits)

were $333 million in economic output, 4,195 jobs, and $111 million in labor income (Cullinane Thomas and Koontz 2017). Total estimated visitor spending in 2016 was $274 million (Cullinane Thomas and Koontz 2017). Transportation access to the park plays a key role in the visitor experience, and thereby affects visitor expenditures in the local and regional economies. Park visitation and transportation management also affect local residents and people who work on Mount Desert Island.

Socioeconomic Area of Consideration

Multiple geographic areas and scales of analysis are relevant to the socioeconomic environment for the transportation plan. Most of the information in this section focuses on eight communities overlapping or adjacent to the park, all in Hancock County. Referred to below as the "core towns," these communities are most directly affected by transportation decisions for the park. This includes the towns on Mount Desert Island: Bar Harbor, Mount Desert, Southwest Harbor, and Tremont. Many of the actions under the management actions specifically affect transportation patterns on the island and could affect socioeconomic conditions in the Mount Desert Island communities. A second group of four towns, referred to below as the "mainland communities" either have land in Acadia National Park that is affected by the transportation plan (Winter Harbor and Gouldsboro) or are situated immediately north of Mount Desert Island (Trenton and Ellsworth) along Maine SR 3, the primary access route to Mount Desert Island and the park.

Previous NPS evaluations of the economic effects of Acadia National Park have used different study area definitions. For the economic contributions studies mentioned above, the National Park Service used an 11-county study area based on a generic, nationwide approach to study area definition (Cullinane Thomas and Koontz 2016). This area encompasses most of Maine's 16 counties. In 2015, the National Park Service also implemented a more Acadia-specific study area when it conducted a socioeconomic monitoring pilot study (Resource Systems Group 2015). For that study, local park staff and NPS economics staff jointly defined a five-county study area (Koontz 2016), consisting of the following central Maine counties: Hancock, Knox, Penobscot, Waldo, and Washington. The material below variously refers to data for the core towns, the 5 counties listed above, the 11-county economic contributions area, or the entire state of Maine. Most data reflect the resident populations of the communities and conditions during the period from 2011 to 2015 based on data from the US Census Bureau's Five-Year American Community Survey (Headwaters Economics 2017; US Census Bureau, 2016), except as noted.

Selected Social and Economic Characteristics

Education. Among the core towns, the percentage of persons with a bachelor's degree or higher is very high (50.5%) for both Bar Harbor and Mount Desert, considerably higher for Southwest Harbor (38.9%) than the state rate (29.0%), similar to the state rate for Tremont and Ellsworth and considerably lower (21.4% to 25.9%) for Winter Harbor, Gouldsboro and Trenton. The overall pattern consists of high levels of education on Mount Desert Island and lower levels of education in the core towns on the mainland.

Unemployment. The unemployment rate in Maine during the Great Recession peaked at 8.1% in 2009 and remained at that rate in 2010. It decreased to 4.4% in 2015. Unemployment in the core towns varied considerably in 2010, from 6.8% in Mount Desert (the only town with a

lower rate than the state) to 15.6% in Gouldsboro, a spread of 8.8 percentage points. By 2015, unemployment rates had declined considerably in all the core towns although all had rates that exceeded the state rate of 4.4%. The spread in rates also shrank considerably; 2015 showed a spread of only 2.5 percentage points, from 5.1% in Mount Desert to 7.5% in Gouldsboro. The overall story told by these figures is that the Great Recession hit the job market hard in many of the core towns. All the towns had recovered reasonably well by 2015 but still faced unemployment rates above the state average. (Maine Center for Workforce Research and Information 2016).

Household Income. Among the core towns, median household income (MHI) in Mount Desert ($67,543) greatly exceeds the state MHI ($49,331). MHI is similar to the state figure in Trenton; slightly lower in Bar Harbor and Southwest Harbor; notably lower in Ellsworth, Gouldsboro, and Tremont; and considerably lower in Winter Harbor ($38,542). The overall pattern—with Trenton and Tremont as modest exceptions—is one of greater income on Mount Desert Island than in the mainland core towns.

Poverty. The poverty rate in the mainland core towns of Ellsworth, Gouldsboro, Trenton, and Winter Harbor is considerably higher than the state rate of 13.9%. Winter Harbor has the highest poverty rate, at 19.5%. The poverty rate in all four Mount Desert Island towns is below the state's rate. The lowest rate is in Mount Desert, at 7.3%.

Households Receiving Food Assistance. Receipt of food assistance (officially known as the Supplemental Nutrition Assistance Program) is another indicator of economic distress. A considerably larger portion of Maine's households receive food assistance than do households across the nation (17.1% versus 13.2%). As with the poverty rate, the rate of receipt of food assistance is higher for the mainland core towns than for the Mount Desert Island towns, although the rate exceeds the state rate only in Ellsworth (22.2%). The rate is very low in Bar Harbor (5.4%) and Mount Desert (3.8%).

Median Housing Value. This indicator for owner-occupied units varies dramatically across the core towns. Median housing value is lowest in Winter Harbor at $169,600, which is only slightly below the state median value of $173,800. The median values are somewhat higher in the other core towns on the mainland, ranging up to $197,500 in Trenton. On Mount Desert Island, median values are much higher. The lowest Mount Desert Island median value is in Tremont at $251,700. The highest is in Mount Desert at $391,800.

The high MHI figures for the Mount Desert Island towns attest to the desirability of those communities as places to live and the reflection of that desirability in the real estate market. It is also notable that the MHI of the non-Mount Desert Island towns is similar to, and in several cases above, the statewide figure even though those towns mostly perform below the state on other social and economic indicators such as unemployment, poverty, and receipt of food stamps. It is likely that location on the coast and proximity to employment opportunities on Mount Desert Island elevate housing values in those communities compared to many others in the state. Some residents of those communities are able to afford those housing prices, while others are in greater economic distress.

Seasonal Housing. For the state, 16.8% of housing units are intended for seasonal or occasional occupancy. Among the core towns, the seasonal housing rate is lowest in Ellsworth (11.9%), which has only a small area abutting the ocean and is more of a commercial center than

a seasonal destination. The seasonal housing rate is very high in Mount Desert (47.1%), matching its reputation as a community with a high summertime population due to second homes. The rate is also very high (47.4%) in Winter Harbor. The seasonal housing rate is quite high among most of the other core towns (up to 39.9% in Gouldsboro). After Ellsworth, it is lowest in Bar Harbor (22.6%), probably reflecting Bar Harbor's relative strength as an employment center among the Mount Desert Island communities, which would lead to greater use of residences to house employees versus nonworking visitors.

Seasonality of Unemployment. Monthly unemployment rates provide information on the employment market in local economies, particularly in regions where seasonal tourism is a key economic driver. Data from the Maine Department of Labor (2017) shows that the unemployment rates for the counties and towns of the five-county study area improved steadily from 2013 through 2016, indicating recovery from the Great Recession. The data also shows that some counties and towns have highly seasonal unemployment rates and others do not. Among the eight core towns of the study area, Bar Harbor has a high degree of seasonality in unemployment. For instance, in 2015 the unemployment rate in Bar Harbor began at 13% in January, declined to well under 4% in August, and rose again to 8% in December (and subsequently, 10% in January 2016). Hancock County has a modest degree of seasonality in unemployment, and Penobscot County has very little seasonality in unemployment. The pattern for the other three counties of the study area fall in between the patterns for Penobscot and Hancock Counties. Southwest Harbor and Tremont have strong seasonality, with Mount Desert somewhat less so but more than for Hancock County. The unemployment pattern for Ellsworth is very similar to the pattern for Hancock County. The patterns for the other mainland towns of Trenton, Gouldsboro. and Winter Harbor are roughly similar to that of Hancock County and Ellsworth.

Seasonality of unemployment has multiple socioeconomic implications. Clearly, when the unemployment rate is lower, more residents have income, which benefits them personally and benefits the local economy. Also, as the unemployment rate for community residents declines, and particularly when it reaches low levels (certainly when below 5%), it is likely that businesses are hiring significant numbers of nonresidents. This results in commuting, which can affect traffic and other quality of life considerations.

Commuting. Multiple factors affect commuting in the region and specifically commuting on and off Mount Desert Island. These include traffic created by park visitation; the availability of jobs on and off the island; and how wages, the availability of housing and the cost of living affect the ability of workers to live on Mount Desert Island or nearby. Commuting patterns are directly relevant to transportation planning for Acadia National Park because traffic generated by visitation directly affects many commuters, as discussed below.

Data from the US Census Bureau shows that in 2014, 2,103 workers lived and worked on Mount Desert Island, 3,133 workers commuted to Mount Desert Island I for a job and 1,411 workers lived on Mount Desert Island but commuted off-island for a job. The sum of the first two categories, 5,236, was the total number of jobs on Mount Desert Island in the first and second quarters of calendar year 2014. More than twice as many workers commuted to Mount Desert Island as commuted off, and roughly 1,000 more workers commuted to Mount Desert Island than the sum of those who lived and worked on Mount Desert Island or lived there but commuted off-island (US Census Bureau 2017).

The data also shows that some off-island workers travelled great distances to jobs on Mount Desert Island. Nearly 12% of workers (600 people) on Mount Desert Island commuted over 50 miles to work, and nearly 25% (1,332 people) commuted over 25 miles.

The data reported above is consistent with information gained during interviews with community and business leaders as part of the research for this socioeconomics section. Park managers selected 12 individuals in leadership positions in business, local government, and nonprofit organizations on Mount Desert Island or the Schoodic Peninsula or with strong interests in Acadia National Park transportation-related matters. Interviews took place by phone during September 2016.[4] Executives of two major employers on Mount Desert Island (Jackson Laboratory and Mount Desert Island Hospital), each stated that about 55% of their employees live off-island and commute to Mount Desert Island to work (Interviews 2016). A major Mount Desert Island hotel employer reported that approximately 30% of his employees live on-island and the remaining portion commutes and that most seasonal workers commute from off-island (Interview 2016). The town manager of an Mount Desert Island community stated that a majority of the town's 42 full-time year-round employees live off-island (Interview 2016). However, most of the employees of a local retail and rental shop live on Mount Desert Island. Many of these employees are high school students who live on-island or are students at the College of the Atlantic (Interview 2016).

Retail Sector Taxable Sales. Taxable sales data shows the relative importance of certain retail sectors, seasonality across economic sectors, and growth in sectors over time. This analysis reviewed monthly taxable sales data from 2004 through 2016 from the Maine Office of Policy and Management (2017) and Maine Revenue Services (2017) for two Economic Summary Areas (ESAs). The Bar Harbor ESA consists of Mount Desert Island (all four core towns) and some surrounding islands. The Ellsworth ESA consists of most of the towns and villages of Hancock County, excepting those located within the Bar Harbor ESA and those in the southwest portion of the county around Penobscot Bay (e.g., Penobscot, Castine, Isle Au Haut). The Ellsworth ESA includes all four of the mainland core towns.

The data shows that taxable retail sales for the Bar Harbor ESA are greatest in the lodging and restaurant sectors. Further, these sectors show extreme seasonality; their sales rise sharply beginning in May, peak in July and August and decline but remain higher than sales in other sectors in September and October. In November through April, sales in these two sectors are exceeded by sales in several other sectors such as food stores and building supply. The other retail sector has the third-highest summertime peak for taxable sales. This sector includes jewelry stores, gift shops, book stores, antique shops, and many other types of stores frequented by tourists. The data shows another notable pattern: peak month taxable sales for both the lodging and restaurant sectors in the Bar Harbor ESA have increased steadily from 2004 through 2016. Peak month sales for most other sectors have seen little change over this period. (Maine Office of Policy and Management 2017; Maine Revenue Services 2017).

The patterns of taxable retail sales in the Ellsworth ESA are very different. In stark contrast to the Bar Harbor ESA, sales for the lodging sector are among the lowest across the retail sectors.

[4] The National Park Service has filed the details of the interviews in the administrative record for development of the transportation plan.

Sales for the restaurant and other retail sectors are somewhat higher, but generally less than sales for food stores, building supply, and the top two sectors—general merchandise and auto transportation. Almost all sectors exhibit significant seasonality, though less than in the Bar Harbor ESA. with lower sales in winter months and higher sales in summer months. In this ESA, some of this seasonality is probably attributable to purchases by tourists and seasonal residents (e.g., particularly for lodging and restaurants), while some is probably attributable to general seasonal purchasing patterns of residents (e.g., especially for automobiles and building supplies). It is also notable that for the Ellsworth ESA, most sectors do not show a clear trend from year-to-year, with the exception of a slight upward trend for general merchandise and for auto transportation (Maine Office of Policy and Management 2017; Maine Revenue Services 2017).

Park Visitation and Its Economic Effects

Acadia National Park figures prominently in tourism in Maine. According to 2015 visitor tracking research for the Maine Office of Tourism, the park is the most frequently visited site in the Downeast and Acadia tourism region, which consists of Hancock and Washington Counties (DPA 2016).

Park Visitation. In particular, the expenditures made by park visitors—drives the economic effects of Acadia National Park on the economies of Mount Desert Island, the surrounding communities, the region and the state. The more visitors or the more they spend per visit, the greater the economic effects. The numbers of visitors also affect local communities in many other ways, ranging from traffic congestion and its impacts on commuting patterns and the ability of local residents to move around Mount Desert Island, to the peak season and off-season sense of place experienced by local residents, to long-term impacts on the local economy and social systems as more and more visitors come to the region and some seek seasonal residences or permanent homes.

Visitation Trends and Patterns. The "Visitor Use and Experience" section of the "Affected Environment" chapter discusses park visitation in detail. Figure 8 in that section shows that visitation trended downward from 1995 to 2005, began increasing after 2005, and has gone up dramatically since 2013. Figure 9 in that section shows a six-year average of visitation in each month of the period from 2011–2016. Peak visitation occurs in July and August. June, September, and October are also busy months. Visitation drops to low levels in November and remains low through the winter. It begins to increase in April and more so in May. According to park staff and multiple community leaders interviewed for this report, the levels of visitation in September and October are a relatively recent phenomenon. Some of the increase in September and October is due to higher numbers of cruise ships visiting Bar Harbor, a topic discussed below.

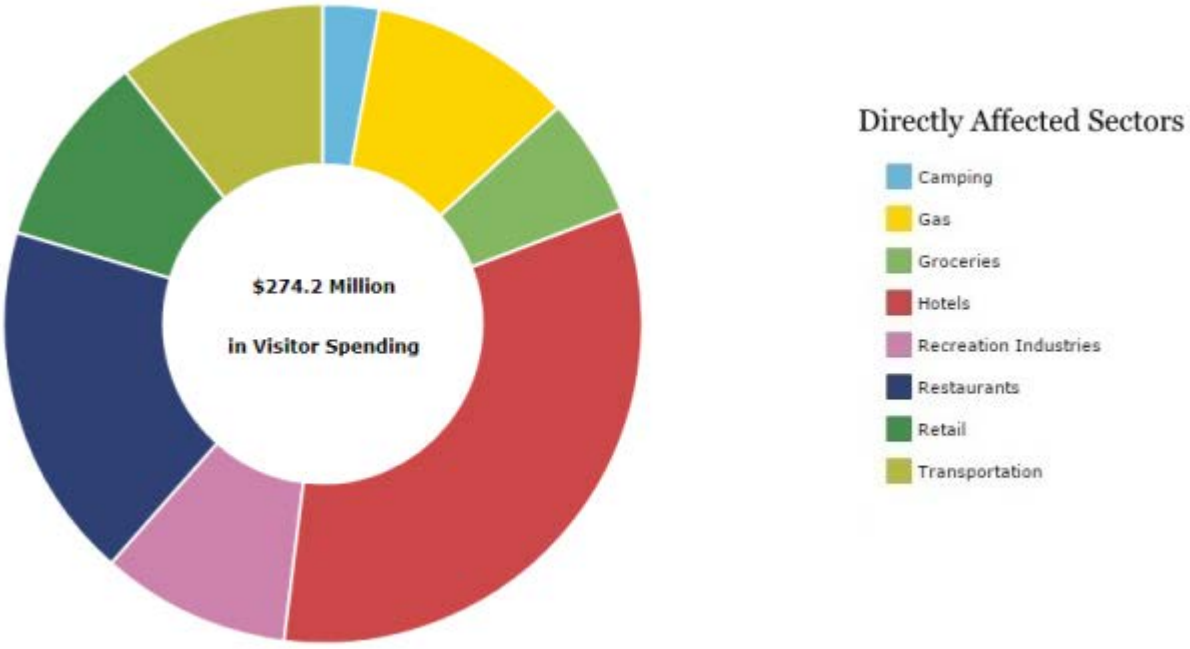
Economic Effects of Acadia National Park Visitation. An NPS annual report series estimates the economic effects of visitation to Acadia National Park. The most recent report addresses the economic effects for 2016 (Cullinane Thomas and Koontz 2017). Figure 19 shows the relative shares of visitor spending across the directly affected sectors of the local economy (NPS 2017).

The total economic effects of the park include the secondary effects that occur as the direct visitor spending shown above flows through the local (11-county) economy (NPS 2017). Secondary effects comprise a substantial portion of the total economic effects—numerically

between 21.8% for jobs and 33.1% for economic output (NPS 2017). The total economic effects from Acadia National Park visitation include (NPS 2017):

- 4,195 jobs
- $111.1 million in labor income
- $188.3 million in value added
- $332.8 million in economic output

FIGURE 19. RELATIVE SHARES OF PARK VISITOR SPENDING IN THE LOCAL ECONOMY, 2016



Direct spending and resulting economic effects for the transportation sector are particularly relevant to the transportation planning effort. In 2016, $29.1 million in direct spending occurred in the transportation sector supporting 175 direct jobs and $5.5 million in direct labor income (NPS 2017).

Park visitation also generates state government revenues through sales and lodging taxes (Maine does not have local sales or lodging taxes). Visitation also supports property values and property tax revenues by bolstering the local economy and exposing potential real estate buyers to the local area. Local governments collect property taxes. Many additional factors affect property values in the core towns and transportation plan decisions are unlikely to affect those values.

Cruise Ship Visitation and Its Economic Effects. Visitation by cruise ship passengers receives considerable attention in the local communities, in part due to its positive economic effects (particularly in the fall), and also because it has created some negative effects on the communities. Cruise ship visits and passenger counts for Bar Harbor have grown substantially

over the last two decades. The annual count of passengers arriving in Bar Harbor was less than 40,000 in 2000. The peak passenger count occurred in 2011, at nearly 180,000 passengers.

Cruise ship visitation is a relatively small portion of total visitation to the park. A 2016 study estimated that 138,285 cruise ship passengers "set foot" in Bar Harbor in 2016. It also determined, via survey responses, that 60% of these disembarking passengers visited the park (Gabe et al. 2017). Thus, an estimated 82,971 cruise ship passengers visited the park, representing 2.5% of the total 3,303,393 visits to the park. Virtually all cruise ship passenger visits to the park occur on commercial transportation. Thus, cruise ship passengers and the commercial operators who cater to them may be affected by the transportation plan.

Cruise ships and visitors come mainly in the fall months (September and October), as shown in figure 20, which compares the number of cruise ship visits by month in 2002 and 2015. Most of the growth in visits from 2002 to 2015 has been in September and October. In prior years, park visitation and the tourism economy of Mount Desert Island declined considerably in these months compared to the busy June to August season. These months are still less busy, but they now see substantial visitation. Cruise ship passengers represent a higher percentage of total park visitors in September and October (up to 8.4% in 2016).[5] The extension of the tourism season, in part due to cruise ship landings, has provided a boost to many local businesses.

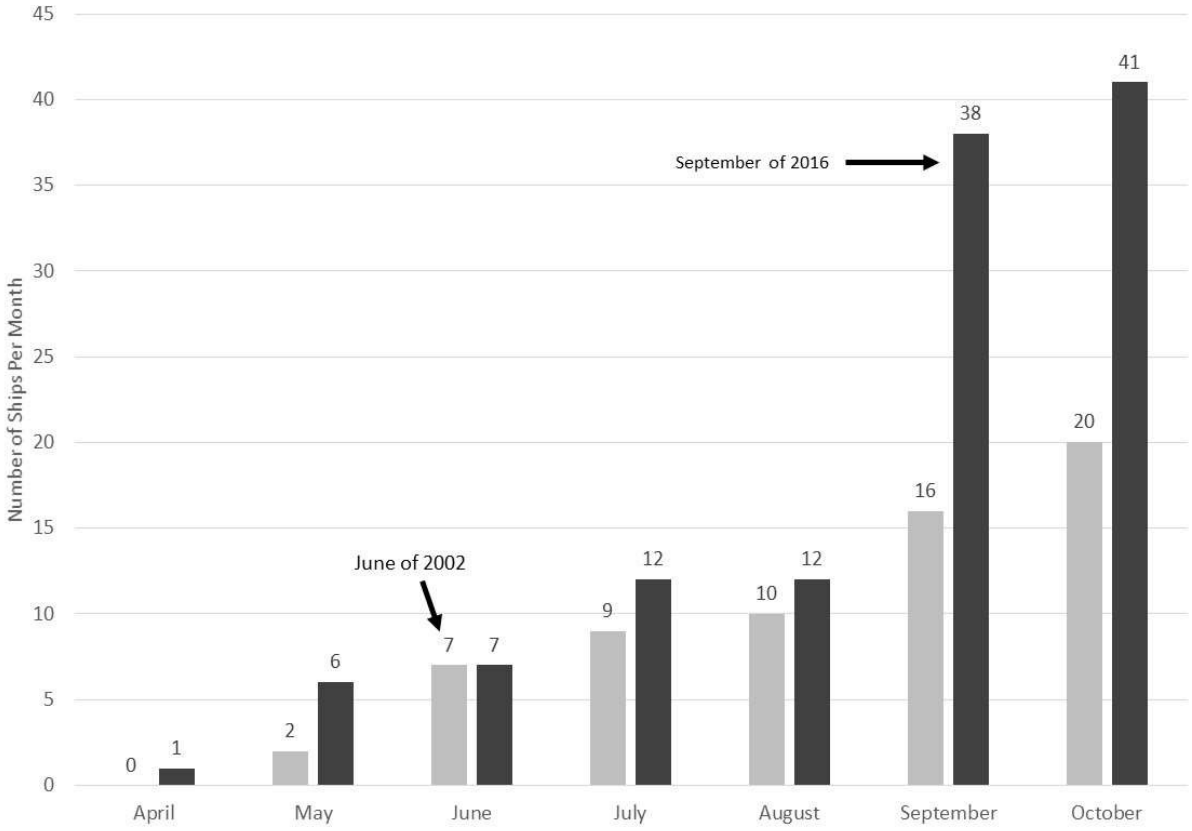
Cruise ship visitors have disproportionate impacts on certain days. Cruise ships do not arrive every day, even in September and October, and passenger numbers vary considerably each day due to the number and size of ships. Busy days result in elevated economic contributions and increased challenges for park managers, other visitors, and local residents.

Many cruise ship passengers spend money in the local economy. Based on a survey of cruise ship passengers, Gabe et al. (2017) estimated that cruise ship passengers in 2016 generated $20.2 million of spending in the local economy, which supported 379 jobs and $5.4 million in labor income received by employees and business proprietors. This amounts to a small but nontrivial portion (about 5%) of the economic effects of all park visitation. Spending by cruise ship passengers primarily benefits Bar Harbor, not other Mount Desert Island communities because most passengers mainly have opportunities to spend money while walking around Bar Harbor. In addition, cruise ship visitation benefits some Bar Harbor businesses, such as gift shops and lunch restaurants, but does not benefit other sectors of the Bar Harbor economy very much.

One economic sector that has clearly benefited from increases in cruise ship passenger visits is the commercial transportation industry. Bus, van, limousines, hail driving services, and taxi operators transport passengers to various points in the park, including Cadillac Mountain and other popular sites such as the Jordan Pond House and Thunder Hole. This extends the season for these companies and, for some, it supplements other charter tour business. It provides employment during the fall season to commercial drivers, tour guides, and others associated with the commercial transportation sector.

[5] 89,971 visits to the park by cruise ship passengers in 2016 divided by 982,850 total visits in September and October of 2016 equals 8.4%. This percentage is a modest overestimate because some cruise ship passengers visit in other months.

FIGURE 20. SCHEDULED CRUISE SHIP VISITS TO BAR HARBOR, 2002 (LIGHT SHADE) VS. 2016 (DARK SHADE)



Source: Copied from Gabe et al. 2017, Figure 1.

Fare-Free Transit Operation (Island Explorer). The Island Explorer is a fare-free bus services that offers multiple routes through the Mount Desert Island portion of the park, some routes on Mount Desert Island that do not enter the park, and one route in the Schoodic Peninsula portion of the park. The system operates from June through October. A 2016 survey of cruise ship passengers showed that, of the passengers who visited Bar Harbor on days that the Island Explorer was running, 8% used the service. In addition, according to the survey authors, many survey respondents wrote in the margins of the survey form that they were unaware of the fare-free bus service (Gabe et al. 2017). The "Visitor Use and Experience" section of the "Affected Environment" chapter describes other park visitors' use of the Island Explorer service.

Commercial Transportation—Visitor Use and Business Models. Commercial transportation services available at Acadia National Park include transportation companies that are operating under a commercial use authorization (CUA). These companies bring people to the park for tours and/or activity based experiences such as hiking, biking, nature tours, summer camps, art/photography workshops, water activities, and rock climbing. The two current concession contracts provide tour services. Data for 2013 to 2016 show that all CUA holders for bus and van services combined carry only a small fraction of the total visits to the park, even in September and October, the busiest months for these services. For instance, in October 2016, bus passengers (39,453) amounted to 11.5% of total visits to the park on Mount Desert Island

(344,490). In 2015, the percentage in October was the same. October consistently produces the highest percentage of visits occurring via CUA holders for buses and vans. The number for September is typically around 8%–9%, and in other months it is typically under 4%.

While visits occurring via buses, limousines, taxis, hail driving services, and vans constitute a small percentage of total visits, it is important to further consider trends in their use and the nature of these businesses. These businesses could be impacted directly by some actions under the transportation plan alternatives.

Concessions. A concession contract is a binding written agreement that authorizes the concessioner to provide certain visitor services within a park area under specified terms and conditions, granted after a competitive solicitation process. The National Park Service has concessions contracts with two tour operators (trolley and bus): Oli's Trolley and Acadia National Park Tours. Both operate scheduled tours during the main tourism season of May to October. The tours include narration by a qualified guide, typically include a visit to the top of Cadillac Mountain and may include stops at additional key attractions, depending on the length of the tour. Tours range from 1 to 4 hours in length and cost up to $55 per adult. These companies are listed on Acadia National Park's website as tour providers.

Both concession companies offer additional services. These include private charters in the park for corporate events and for weddings and other private events, rental of buses for transportation to other locations and step-on guides (providing qualified guides to accompany groups on vehicles owned by others). These services augment the income of these companies, but the publicly offered scheduled tours are the core of the business models of both concessioners.

Commercial Use Authorizations. A commercial use authorization is the legal instrument for park-approved business entities including nonprofit organizations to operate in the park. The NPS issues authorizations for commercial operations in the park not covered by a concessions contract. Each year, multiple bus, vans, limousines, hail driving services, and taxi companies apply for and receive commercial use authorizations. There were 25 bus, vans, limousines, hail driving services, and taxi commercial use authorizations in 2003. This number first exceeded 100 (specifically, 106) in 2012. There were 132 bus, vans, limousines, hail driving services, and taxi CUAs in 2015 and 162 in 2016. These represented over 2,000 trips into the park by authorized bus, vans, limousines, and taxis between July and October of 2016.

Some of the CUA holders are based locally (in the eight core towns). Most are based in other parts of Maine or in other states because a major use of commercial use authorizations is by motor coach companies that offer tours originating outside the local area and feature Acadia National Park as one of the tour's attractions. However, the motor coach companies that use the park the most are based in Maine.

Motor coaches are large buses, typically 40 to 45 feet in length and capable of carrying 50 or more passengers. They typically include onboard restrooms and are designed for passenger comfort over long distances. These large buses are also used by some companies for short tours in the park, particularly for carrying cruise ship passengers on shore excursions to the park, usually including the top of Cadillac Mountain as a destination. Cruise ship companies and shore excursion companies often hire motor coach companies to carry passengers on the excursions. In addition to several large companies that provide this service, many smaller companies provide transportation for excursions and other tours, as shown by CUA numbers.

Passenger costs for road-based commercial tours vary considerably, depending on the length and type of use. For instance, according to a 2016 survey, the average cost of an excursion (most of which would involve some form of commercial transportation) was $75 per person (Gabe et al. 2017). Shore excursion passenger revenues may be split between multiple parties, including the cruise line, the motor coach company, an excursion broker in some cases, a tour guide, and any food or other vendors if applicable. At the other end of the motor coach cost spectrum, multiday tours that include Acadia National Park can cost many hundreds to thousands of dollars per passenger. As of August 2017, six-day fall foliage tours from Boston up the Maine coast to Bar Harbor were available online for a base price of $565 per person, double occupancy (Tours4Fun 2017), and a more deluxe eight-night fall foliage circle tour of New England from Boston was advertised online starting at $2,169 (Signature Travel 2017). These revenues are also distributed across multiple parties, including the motor coach company, hotels, featured attractions, sometimes a broker, and potentially others. For all the examples noted above, only a portion of the revenue (the percentage varies considerably) accrues to businesses in the eight core towns, the five-county study area, or the State of Maine.

Information from an interview with the president of one of the larger motor coach companies provides an example of how a large CUA operator benefits from and uses Acadia National Park. The company provides charter tours that originate outside of, but include, the park, as well as chartered shore excursions for cruise ship passengers. Cruise ship shore excursions are its largest segment, and therefore, the fall season when most of the cruise ships arrive is its busiest time. During most other months, the company has other business, although December and January are very slow. The company has approximately 50 bus drivers, about 20 of whom are full-time or full-time equivalent (part-time drivers who work full-time hours during busy parts of the year). The company maintains two garages in Maine, both off of Mount Desert Island. In addition, some drivers keep buses at home, mainly when working for a few days in a row—they bring the bus back to a garage after their last shift of that week. Drivers make "good money" doing cruise charters. The company has many additional employees: mechanics, dispatchers, driver trainers, bus cleaners, and administrative staff. None of its drivers or other employees are based on Mount Desert Island, but the company subcontracts a few tour guides who are based there. It uses those guides for chartered, noncruise tours; the cruise companies provide or contract their own guides for excursions (Interview 2016).

According to the interviewed CUA operator, motor coach companies face a challenge under current transportation policies because of several "choke points" in the park due to traffic and limited parking spaces for motor coaches; these include: Thunder Hole, Jordan Pond House, and Cadillac Mountain. Both short-haul (e.g., shore excursion) charter buses and long-distance tour buses must share a few designated motor coach parking spots, which are separate from the spaces reserved for the two concessioners (trolley and bus). If no spaces are available, for instance at Thunder Hole, a driver may have to drive by and not let customers off, which is unfavorable for business because guests' experiences are diminished. Many of the charter companies coordinate with each other and with park staff to try to deconflict schedules, but this problem does occur at times. The interviewee stated that the companies doing shore excursions are generally good about staying on time because cruise ships are on tight schedules; problems tend to occur because the arrival of long-distance tour buses is somewhat less predictable. The interviewee stated that motor coach operators feel that motor coaches are shunned by some members of the public who believe they are big and noisy, but because they carry large numbers of passengers, they help reduce the number of vehicles on the road (Interview 2016).

In addition to or instead of motor coach services, some CUA operators offer entry to the park using small buses (typically 25 to 30 feet in length and holding up to 24 passengers) or vans (typically holding up to 14 passengers). These services may also include tour guides.

The National Park Service tracks numbers of commercial motor coaches, small buses, and vans that enter the Mount Desert Island portion of the park. The two concessioners (Oli's Trolley and National Park Tours) must report their exact number of passengers. For buses and vans with CUAs, the National Park Service estimates the number of passengers by multiplying the number of vehicles by 45 for commercial motor coaches, by 18 for small buses, and by 10 for vans. The data for 2013–2016 shows the following trends in the number of passengers and vehicles by type that entered the park:

- Vehicle and passenger counts for CUA holders of small buses were low across all four years and showed little seasonality.
- Peak vehicle and passenger counts for CUA holders of motor coaches decreased from 2013–2015, but increased in 2016 to roughly 2013 levels.
- Passenger counts for the concession operators, Oli's Trolley and National Park Tours, were similar in monthly distribution for the three years from 2014–2016.
- The passenger and vehicle counts for CUA holders of motor coaches and for CUA holders of vans were highly skewed toward September and October, showing the importance of autumn visitation to those operators.
- The passenger and vehicle counts for Oli's Trolley and National Park Tours show that they obtained a more even proportion of their business across a longer period—June through October.
- The numbers of CUA holders for vans increased from 2013–2015 in most months compared to the same month in the previous year, especially in September and October. Beginning in 2014, the number of CUA vans per month became skewed toward September and October.
- The number of CUA holders for van passengers has increased across the four years from 2013–2016.

While the numbers of vehicles and passengers are clearly largest for motor coaches, those numbers have not grown since 2013, while vehicle counts and passengers for vans have grown. Some CUA holders see business opportunities in increasing the use of small buses and vans. For instance, one company based in Bar Harbor has purchased two small buses and six vans since 2014. The vehicles purchased are configured for comfort—they have four comfortable seats per row, two on each side of an aisle of stand-up height, large viewing windows, and a quality speaker system. In the case of the vans, the driver is not required to have a commercial driver's license because the capacity is limited to 14 passengers. Thus, the driver can also be the guide, speaking to the clients via a headset and speaker system (Interview 2017).

Park Visitation, Transportation, and Local Quality of Life

Interviews conducted for the socioeconomics section revealed three general areas of quality of life concerns related to the numbers of park visitors and how visitors are managed in the park and in the surrounding communities. These concerns involve people, cars, and buses. The views expressed in the interviews were generally, but not entirely, consistent. Diverse views are noted

below where applicable. These issues are not solely due to park visitation—not all visitors to the local area come to visit the park, and many split their visits between the park and other attractions.

People. For some locals, the sheer number of people on Mount Desert Island is sometimes a concern, apart from concerns about vehicles. Restaurants can be crowded, requiring locals to make reservations (which at one time were rarely needed) or to allow more time to get a table. The number of people on the sidewalks and in the park in Bar Harbor is seen as undesirable at times. Some locals say that cruise ship passengers are the source of crowding issues. Others note that more people are in Bar Harbor on an average noncruise day in July or August than ever arrive by ship. They say the problem is one of perception: all the cruise ship visitors enter at the same place and the same time, amplifying the perception of impact, while other visitors may be as or more numerous but enter at different times and places. Moreover, they point out that more visitors come to Mount Desert Island by car than any other way (Interviews 2016).

Cars. A related problem, given the arrival of visitors by car, is parking. Locals say that Bar Harbor lacks adequate parking (Interviews 2016). The Town of Bar Harbor has studied parking adequacy and considered development of a parking garage (Bermello Ajamil & Partners, Inc. and Desman Associates 2014). According to the interviews, locals and visitors alike often have to circle around many times to find parking in town, and people also park illegally and in nontraditional parking areas. In Bar Harbor, Mount Desert Island Hospital purchased two motels, mainly for office space but also to access and create parking for its operations. Parking has become an issue elsewhere as well, including Winter Harbor on the Schoodic Peninsula (Interviews 2016).

Parking is also a concern outside the villages. Roadside parking in the park is common and is a safety concern: "People are driving 60 mph with people parking for a mile and half stretch, both sides, unloading bicycles and taking photos. Not just on the loop road, but on the public road traversing the park, the Eagle Lake Road." This is dangerous for visitors who are parking or driving and for locals who use these roads. Locals say that more and more people are coming by car and this is causing traffic jams and stresses on parking. (Interviews 2016).

According to the interviews, traffic problems also create difficulties in commuting on and off Mount Desert Island. Several thousand people commute to Mount Desert Island for year-round jobs, and many more seasonal workers commute to the island as well. Managers of major businesses and institutions such as Mount Desert Island Hospital, Jackson Laboratory, local hotels, and town governments are particularly concerned about commute times because the majority of their employees live off-island. This impacts their employees and sometimes their businesses. As one manager said, "Fifteen minutes of extra commute time times twice a day, five days a week, adds up. It is an economic cost—it is time they aren't with their families, late for work, etc. It is not inconsequential" (Interviews 2016).

Locals report that the Trenton bridge is a particular choke point for commuter traffic, because it is the only road on and off the island. Park visitors arriving on Mount Desert Island by car add to the congestion issues faced by commuters at the bridge and on other main routes on the island. According to one local leader, "From 3:00 p.m. to 5:00 p.m., no local tries to leave the island. Locals pick and choose their times." For some businesses, Trenton bridge congestion is also a business operations concern. For instance, congestion sometimes delays Jackson Laboratory in making shipments of biomedical research mice, a major product of the lab. Traffic problems also extend beyond the Trenton bridge, impacting Ellsworth at times. All visitors and

commuters going to or from Mount Desert Island via the two major roads in the region (SR 1 and 1A) go through Ellsworth (Interviews 2016).

The net result of pedestrian and vehicle congestion for Mount Desert Island residents includes both a level of acceptance and some changes in behaviors. Interviewees for this report had these and other observations (Interviews 2016).

- "The people who run the businesses in town . . . they tend to be our neighbors, friends, and rely on tourism. So most of us look at the traffic and see a good thing because it comes with some positive impacts to the community."
- "Some locals leave for summer. Some don't go out at all when there are a lot of visitors and some have difficulty using and traversing the park."
- "There are times when the locals avoid downtown because the cruise ships are there and this has resulted in some divisiveness in the community."
- "It is very different in the summer than it is in the winter. July, August, and half of September is primary visitation season. Everything is crowded and congested and then everything goes away and settles in for winter. For example, a lot of people from my community, including myself, don't go to Bar Harbor, like to the supermarket there, during the summer months, we wait until the winter. It impacts your consumption and travel patterns in the summer."
- "Most locals stay out of the park during tourist season. If you are a local, you would only hike or bike to Cadillac Mountain, not drive."

Buses. Community views regarding the use of buses to move park visitors are mixed. According to the interviewees, some community members believe that buses help reduce the number of cars. But there are concerns that buses serving cruise ships add to congestion in downtown Bar Harbor as they pick up and drop off passengers. In addition, some locals are concerned about safety issues around buses in the park. Said one, "The big tour buses are a real struggle because the roads are so narrow and not designed for those types of vehicles, and they are blazing through to keep up with their schedules and hit the bullets—Thunder Hole, Jordan Pond House. It gets intense at times." This is a concern for locals who drive through the park and for some businesses, such as bicycle shops, whose customers may be affected (Interviews 2016).

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Chapter 4

Environmental Consequences

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CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the potential environmental consequences of implementing the alternatives being analyzed in this environmental impact statement. It is organized by resource topic and provides a comparison among alternatives based on issues and topics discussed in chapter 1 (i.e., visitor use and experience, visitor and user safety, historic motor roads, cultural landscapes, and socioeconomics) and further described in chapter 3. In accordance with CEQ regulations, direct, indirect, and cumulative impacts are described and the impacts are assessed in terms of context, intensity, and duration (40 CFR 1502.16). This analysis is based on the assumption that the mitigation measures—actions taken to lessen the severity and probability of a potential impact—would be implemented for all of the alternatives.

Unless otherwise noted, the geographic analysis area for all of the impact topics is the park boundary. When the impact analysis refers to duration, unless otherwise specified, a short-term impact corresponds to the period associated with the completion of construction, anticipated to last two to three construction seasons. A long-term impact would be an effect that extends beyond the construction period—more than several years.

SUSTAINABILITY AND LONG TERM MANAGEMENT

For each alternative evaluated in an environmental impact statement, the National Park Service must consider the following: (a) any adverse environmental effects that cannot be avoided should the proposal be implemented; (b) the relationship between short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and (c) any irreversible or irretrievable commitments of resources that would be involved in the proposal should it be implemented.

This first consideration (a) is discussed where applicable in each of the impact analyses contained in this chapter.

The second consideration (b) explores long-term effects of an alternative and whether the productivity of park resources is being traded for the immediate use of land. All of the action alternatives are designed to provide enjoyment of park resources in a manner that leaves them unimpaired for future generations. Therefore, the actions in this plan do not compromise the productivity of park resources in the long term.

The third consideration requires that the National Park Service consider whether the effects of the alternatives are irreversible or represent irretrievable commitments of resources. Irreversible impacts are those effects that cannot be changed over the long term or are permanent. Irretrievable commitments are those resources that, once gone, cannot be replaced. All of the action alternatives propose some level of change to the park's natural and cultural resources; however, none of these changes are irreversible and therefore neither are the effects.

In addition to the consideration above, the National Park Service is also required to consider (a) possible conflicts between the proposed action and the objectives of federal, regional, state, and local (and in the case of a reservation, tribal) land use plans, policies, and controls for the area concerned (1506.2(d)); (b) energy requirements and conservation potential of various

alternatives and mitigation measures; and (c) natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.

In regard to (a), no known federal, regional, state, and local (and in the case of a reservation, tribal) land use plans, or policies are in conflict with the actions proposed in the alternatives.

In regard to (b), the alternatives would largely reduce traffic and congestion in addition to improving the operation and energy requirements of park facilities.

In regard to (c), petroleum is an example of a depletable resource that would be required for the alternatives. Under all the action alternatives, the construction of new facilities including structures and parking areas would require heavy equipment. Petroleum products (e.g., gasoline, oil) would be needed to operate this equipment. Implementation of these alternatives would therefore consume depletable resources.

ANALYZING CUMULATIVE IMPACTS

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

To determine potential cumulative impacts, past, present, and foreseeable future actions were identified in the park. Cumulative impacts are considered for all alternatives, including the no-action alternative, by combining the impacts of the alternative being considered with other ongoing, present, and reasonably foreseeable future actions and are presented at the end of each impact topic discussion. Table 6 illustrates the projects considered in the cumulative impact analysis for each resource.

HISTORIC MOTOR ROAD

Methods and Assumptions for Analyzing Impacts

The impacts on the historic Park Loop Road are described in terms of the potential to diminish or protect the integrity and/or character-defining qualities that contribute to their NRHP eligibility. The impact analysis was primarily qualitative in nature based on the knowledge and best professional judgment of planners, resource specialists, data from park records, and studies of similar actions and impacts as applicable.

TABLE 6. PAST, CURRENT, AND FUTURE ACTIONS USED IN ANALYSIS OF CUMULATIVE IMPACTS

Project	Project Description	Impact Topics
The Jackson Laboratory 10-Year Management Plan (Campus Zoning Plan)	The Campus Zoning Plan aims to develop a true campus setting for Bar Harbor Campus by moving JAX Mice, Clinical & Research Services to Ellsworth, Maine. The zoning plan is projected to be completed over a 10-year period, with the intention of having 50% growth in research space, 100% growth in research animal facility space, and migration from outdated RAF rooms to modern and flexible/readily convertible facilities. Wood-frame buildings and trailers would be eliminated. The campus setting is meant to improve pedestrian safety, maintain and improve landscape and scenic views along SR 3 and Schooner Head Road streetscapes and provide a visitor entrance that is welcoming and informative of JAX history, discoveries, and current initiatives. Part of the actions associated with this plan are to replace some of the current functions with a conference center and to expand parking to accommodate this use.	Visitor Use and Experience, Historic Motor Road
Maine Office of Tourism Strategic Plan	The purpose of the five-year strategic plan is to strengthen tourism and recreation in Maine by expanding resources, capitalizing on changing consumer needs and buying trends, and educating residents and state business leaders about the economic benefits of tourism. The main objective of the plan is to increase direct tourism expenditures to $6 billion in 2019. Other goals include increasing business-related visitation by 2 million visitors, increase first-time visitors by 500,000, and grow off-season visitation by 1% each year. By meeting these goals, the state's economy would be strengthened through incremental revenue, increased taxes, new jobs, etc. The strategic plan would be flexible and dynamic in order to meet any unforeseen changes within the five-year period.	Socioeconomics Visitor Use Experience, and the Historic Motor Road and Cultural Landscapes
Bold Coast Bike Tour Route	The Bold Coast Scenic Bikeway is a 300-mile bicycle route that winds through 30 communities from the Schoodic Peninsula to Eastport and connects to Calais and the Canadian Maritimes via the East Coast Greenway and US Bicycle Route 1. Once completed in summer 2018, the Scenic Bikeway will be permanently signed with interactive online maps, downloadable trip digests, and a comprehensive website connecting bicyclists with all the services they need to complete this route.	Visitor Use and Experience

The cultural resources impact analysis primarily includes discussion of the following:

- To what extent would the historic character of the Park Loop Road be affected by the proposed project alternatives? How would the proposed alternatives affect the qualities for which the road was determined eligible for the National Register of Historic Places?
- To what extent would significant historic resources be affected by modern infrastructure additions or modifications necessary to implement the alternatives?

Historic resources are irreplaceable and nonrenewable. Therefore, most direct impacts that affect the physical attributes and character-defining features of the road may be considered permanent impacts due to their nonrenewable aspects. Impacts on nonhistoric features of the

road that could be considered reversible may be considered temporary in nature if the intent is to ultimately reverse the impact.

Alternative A (No Action). Under alternative A, with no major changes in management of the park, the historic fabric and unique character-defining features of the Park Loop Road would continue to be protected via regular maintenance following the guidance provided in the park's general management plan and Acadia's mission statement for the historic road system. When repairs are necessary, the park would aspire to replace historic features in kind and while retaining and protecting the extant historic resources would discourage the addition of new features or techniques. The park would continue to follow the existing preservation guidelines laid out in the cultural landscape report for the historic Park Loop Road in reference to road surfacing and striping, maintenance of pullouts and parking lots, parking management stones, access gates, and signage. Under existing management, the road would maintain its fundamental purpose for sightseeing and recreational driving.. Current efforts to rehabilitate and maintain the scenic roadside vistas would continue as described in the park's vista management plan. The park would continue to communicate needs and work with neighbors and partners to protect views and reduce negative scenic impacts along approaches from gateway communities, adjacent and internal designated scenic byways, and at neighboring properties.

Under the no-action alternative, the physical condition of the Park Loop Road can be expected to deteriorate at an increased pace as visitation and congestion issues continue to increase. Road shoulders are particularly vulnerable because of continued use of right lane parking (as wheels almost always leave the pavement to park), and because large vehicles unable to navigate historic road geometry would continue to drive on shoulders at curves, particularly on Cadillac Summit Road. The potential for collisions between historic bridge fabric and large vehicles that do not fit safely under them would increase. With increased congestion, more instances of shoulder parking and the associated damage to the historic fabric of the road would continue and increase. Increased traffic on the roads would continue to impact the historic character of the road by obscuring viewscapes, as would continued parking in the right lane.

Over time, because of overcrowding, historic pullouts along the road intended for brief stops for vista viewing have been converted to long-term parking. This historic character-diminishing impact would continue and possibly increase. Minor modifications and expansions to parking lots, as well as right lane parking and shoulder parking, could be expected to proliferate as responses to ever-increasing visitation. These adjustments to parking options change places where visitors congregate, which leads to changes in the routes and locations of trailheads on historic trails (both via social trailing to access the trails and purposeful park management to adjust trailheads to new parking realities), which damages their historic character and landscape design.

Under the no-action alternative, oversize commercial vehicles and vehicles with trailers would continue to use all of the historic roads. These oversized vehicles represent a threat to the physical historic characteristics of the Park Loop Road due to their size, as they damage historic shoulders on tight turns and have been involved with collisions with historic bridges. Oversized vehicles also damage the historic character of the roads by blocking viewsheds when parked alongside the road and at designed vistas. They also block viewsheds while in motion and can cause historic character diminishing congestion when they must utilize two lanes of traffic to navigate sharp turns.

Ongoing incremental park management decisions taken to mitigate traffic problems and safety concerns associated with congestion, which would continue to occur under the no-action alternative, cause a permanent long-term adverse impacts on the physical integrity and character of the historic roads. These actions include the placement of parking management stones that are not part of the historic landscape design and obscure views of designed and intended landscape vistas; the establishment of additional modern signage for controlling traffic and modified lane striping, both of which introduce modern features that dilute and degrade the historic scene; and the expansion and management of right lane parking, a parking situation that was not a part of the historic design of the road and obscures historic vistas, and damages the historic circulation design of the road.

Common to All Action Alternatives— Some actions to improve the quality of the transportation system and experience within Acadia are the same for the action alternatives B, C, and D. To avoid repeating them in the description of each alternative, the impacts of these "common" actions are discussed here. When evaluating the individual alternatives in the Final Acadia National Park Transportation Plan / Environmental Impact Statement, readers should include the material in this section because it describes impacts associated with the entire plan and is an integral part of each action alternative.

All of the action alternatives include provisions that establish size restrictions on vehicles that travel on portions of the Park Loop Road that were designed with road geometries incompatible with some modern large vehicles. Limiting the size of vehicles using the road would be a beneficial impact on the historic Park Loop Road. Incompatibly sized vehicles threaten and cause damage to the historic fabric of the roads when they cannot navigate turns within the available lane space and off track, causing damage to historic shoulders. Oversized vehicles also threaten, and occasionally cause, damage to historic bridges when they collide with low structures. In addition, requiring all motor vehicles, including commercial vehicles, to fit the road geometries would result in smaller tour buses on some segments of Park Loop Road. The Park Loop Road was not designed for modern oversize vehicles, which block historic vistas, diminish the character of the Loop Road, and can cause damage to historic shoulders and bridges. Smaller buses would improve vista viewing and result in fewer visitors flooding historic scenes at one time, also an improvement to the historic scene. Under all of the action alternatives, park management would encourage the expansion of the Island Explorer public transit system, with the goal of reducing the number of vehicles on the road, a long-term positive improvement to Park Loop Road's historic character.

Alternative B. Under alternative B, a parking reservation system would be established for the five largest lots associated with the historic Park Loop Road during the peak visitor season. The lots under a parking reservation would include those at the summit of Cadillac Mountain, Jordan Pond House, Thunder Hole, Sand Beach, and Sieur de Monts. Modern infrastructure in the form of staffed or automated gates would be installed at the entrances to each of these lots, as well as at Bubble Pond and the Bubbles lots to control traffic ingress and egress once these first-come, first-served lots are full. Gate appearance (whether automated or staffed) would be designed to the extent practical to match historic NPS rustic design characteristics; mostly mitigating their installation. Nevertheless, as they were not a part of the historic design of the road they would represent an adverse impact that would diminish the historic character and historic integrity of the road system because they introduce modern infrastructure to the historic landscape.

Under alternative B, all right lane parking along Park Loop Road would be eliminated and established pulloff parking for vista viewing would be made time-limited. These actions would result in a significant beneficial impact that restores the historic character of the road by removing parked vehicles from the viewshed and a historically designed travel lane and protects and restores the historic intent of the pulloff parking lots. Removal of endorsed right lane parking would result in a substantial beneficial impact to the Loop Road's historic character. It's continued utilization in the face of overcrowded conditions in the park's parking lots degrades the historic character of the road more than any other current condition or management. Further positive impacts would be realized as road shoulders currently impacted by continued roadside parking are repaired and restored to a more historically accurate condition.

Under this alternative, reservations are only required to park at popular destinations and there are no restrictions on the number of vehicles that may enter the historic transportation corridor at one time. Existing adverse impacts on the historic character of the roads associated with congestion may continue or increase in intensity as vehicles are presented with fewer parking options. Congestion represents temporary negative impacts to the historic character of the road associated with blocked vistas and a compromised driving experience outside the historic intent of the loop.

Alternative C (Preferred Alternative and Proposed Action). Under alternative C, a timed-entry reservation would be established for the most popular corridors along the historic Park Loop Road: Ocean Drive, Cadillac Mountain, and the parking lots at Jordan Pond House. In order to manage the reserved entry points, temporary automated or staffed entry infrastructure would be needed at the intersection of Cadillac Summit Road and Park Loop Road, and at the entrance to the Jordan Pond House parking lots. Reservations for the Ocean Drive corridor would be validated at the existing Sand Beach Entrance Station. Initially, the infrastructure at Cadillac Mountain and Jordan Pond House would be mobile or temporary, as the effectiveness of the reservation system at reducing congestion and overcrowding in the park as a whole is evaluated. These installations would represent negative impacts that diminish the historic character of Park Loop Road because they introduce modern infrastructure to the historic scene of the road and cause breaks in the free-flowing design intent of the road. Where entry infrastructure is established permanently, these would become permanent intrusions in the historic scene. These intrusions would be minor impacts to the road's physical integrity because they would be in places (at the entrance to Jordan Pond House and Cadillac Summit Road) that have already been modified after the road's period of significance and could be designed to mirror the rustic design of other historic gates. However, more significant negative impacts to the historic character of the road, and its intended unbroken loop, could be realized if gates cause queuing of vehicles on the traffic lanes of the Park Loop Road, interrupting the free flowing traffic expected as part of the historic design. In addition to the reservation checkpoints, a new gate would be installed near the intersection of Otter Cliffs Road to convert that intersection to exit only from Park Loop Road, another modern intrusion into the historic landscape that diminishes the historic integrity and character of the road. Additional signage would be needed to inform visitors of the reservation-only entrances, particularly near Sieur de Monts, which are also modern intrusions into the historic landscape that detract from the historic character of the road. Guidelines for the construction of signs and gates described in the 2007 cultural landscape report for the historic Park Loop Road would be followed for all new infrastructure additions, which would minimize, but not eliminate, the impacts on the physical character of the road. In addition, signage and gates could be expected to proliferate if new reservation areas were brought online if and when the adaptive management strategy of this

alternative calls for adding more lots or corridors to the reservation system. New signs and gates would exacerbate the adverse impacts associated with introducing modern equipment to Park Loop Road's historic scene, though those impacts could be mitigated by adhering to NPS Rustic design standards in their production and installation. In addition, the ultimate evolution of the adaptive management strategy of this alternative would be a complete system-wide management of the Park Loop Road. Under this situation many of the individual gates and signs within the system could be removed, lessening their impact of the historic scenery.

In addition to adverse impacts on the physical characteristics of the historic roads associated with infrastructure additions, other adverse impacts on the roads' character are associated with this alternative. Lane-shift and parallel parking striping in the right lane of the Ocean Drive corridor intended to temporarily formalize right lane parking changes the historic appearance of the road by adding striping that was not part of the historic design and formalizing the historic character-diminishing use of right lane parking, which blocks designed views and the intended use of the road. Because the alternative calls for the phase out of right lane parking, this adverse impact would eventually be eliminated as the striping as right lane parking is phased out and the striping is removed. The ultimate elimination of right lane parking is a major beneficial impact on the historic character of Park Loop Road. It will remove parked vehicles from the designed vistas and work (along with the reservation system) to restore free-flowing traffic conditions more reminiscent of the historic scene along Park Loop Road.

This alternative would create a segmentation of the driving experience on the contiguous historic Park Loop Road. As Rockefeller and other founders of Acadia National Park designed Park Loop Road in segments over several decades, they maintained a consistency in design and in vision of an uninterrupted motor tour complementing the varying natural ecosystems of the park. Accomplishing this vision and consistency of rustic design while simultaneously acquiring the individual property parcels, navigating federal and private funding, and weathering hurdles presented by the Great Depression and World War II is part of the historic significance of the road and it's uninterrupted route is one of its defining historic characteristics. Creating segmented corridors that interrupt the designed flow of the motor tour would detract from its historic design and intent and would be a significant adverse impact because of the degree to which it would diminish the historic character of the road.

Alternative D. Under alternative D, the entirety of Park Loop Road would be placed under the management of a timed-entry reservation system. Visitors would need a reservation to enter the system, but once inside could travel and park anywhere along the loop road. Under this alternative, the majority of Park Loop Road would be converted to one-way traffic in a counterclockwise direction. Counterclockwise circulation is a reverse of the current one-way flow on Ocean Drive. Right lane parking would be discontinued except in a single (physically demarcated with striping) area between the existing entrance station and Sand Beach. Several gates would be installed (designed to match the NPS rustic design used elsewhere in the park) to control access to the reservation-only loop as well as automated kiosks and new staffed entrances at Wildwood Stables and on Paradise Hill Road.

Reversing the direction to a counterclockwise circulation would be an adverse impact on the historic character of the current two-way circulation as it would involve an alteration of the historic design of Park Loop Road , which intended two way traffic and envisioned vistas and scenery that would be viewed from both directions. It would also represent an adverse impact on the already one-way portions of the loop road as the viewshed of the driving experience

would be compromised by more readily apparent scenes of modern buildings outside the park (The Jackson Laboratory), and, according to research conducted in 1988 that helped to inform the selection of the current one-way traffic direction, would result in access to fewer of the preferred vistas, including iconic views of Otter Cliffs and Bubble Rock. Though the establishment of one-way travel is different from the historic design intent of the road, and circulation in a counterclockwise direction exposes vehicles to modern disruptions of the view, it would improve views of Gorham Mountain and the northern section of Frenchman's Bay and also provides the ability to travel in the direction and lane intended for the ocean front portions of the loop, a beneficial impact on the historic character over the no-action alternative. Establishing a one-way direction of travel on the currently two-way portions of the road would reduce the visibility of 16 identified and managed scenic vistas between Cadillac Summit Road and Jordan Pond House, some of which may be lost.

Under alternative D, there would be new infrastructure requirements along the historic Park Loop Road that would negatively impact its historic character. These new installations would be required to manage entry into the reservation-only system and to control the new one-way circulation pattern. New automated entry gate stations built at SR 233, and Sieur de Monts; manned entry stations with expanded entrance lanes and booths at Wildwood Stables and at Paradise Hill Road; and a manned or automated entrance gate to Jordan Pond House would represent permanent adverse impacts on the historic character of the road. Although these gates and stations would be designed to the extent possible to match NPS rustic design, they would nevertheless be modern additions to the historic designed landscape of the road that would impact the historic fabric of the road in places where lane widening was necessary and diminish the historic character of the road by adding modern infrastructure to the historic setting.

Management of the entire loop road under a single reservation would reduce character-diminishing congestion on the entirety of Park Loop Road and would allow removal of the existing modern entry station at Sand Beach, which would be an improvement to the historic scene as well as improvement of the free-flowing design of the historic loop that is currently compromised by a required stop at the entrance station. System-wide management of the loop would allow the park to remove modern traffic management stones from the landscape, helping to restore historic character to the shoulder design of the roads and lots where the stones currently exist. In addition, less modern signage would be required to manage a road that was converted to one way and some of the current signs could be removed, further restoring rustic historic conditions. Discontinuing most right lane parking is a beneficial impact to the historic character of the road as it removes vehicles that block designed and intended vistas, restores free-flowing traffic to lanes historically intended for travel, and eliminates shoulder damage associated with parked vehicles. However, permanent demarcation of right lane parking in the limited area near Sand Beach would adversely impact the character of the road because although cars now typically park in the right lane in this area, the physical demarcation of lanes and parking spots on the road surface would mar the historic setting and be visible at all times, even when visitation was not high.

The primary beneficial impacts on the historic integrity provided by alternative D is that systemwide management of the full Park Loop Road ensures that once they have entered, visitors can experience the entirety of the loop uninterrupted by additional segmentations in the complete circuit imagined and designed by Rockefeller and Olmstead during the early development of the park; that their passage would be free flowing, and their views would be mostly unobstructed by right lane parking and large vehicles.

Cumulative Impacts on Park Loop Road— Throughout the lifetime of the road, and into the present, the major challenge to maintaining its historic integrity has always been the pressure of increased visitation and traffic. Previous impacts to the historic integrity and character of the road have always been in response to increased visitation, for example route and surface modifications, shifts to one-way travel, and the establishment of right lane parking. Continued pressure that could have a detectable impact on the historic roads of the park include tourism, marketing, and outreach initiatives articulated in the Maine Office of Tourism's strategic plan. This initiative, combined with efforts of the National Park Service that encourage visitors to get out and into their national parks, add annually to the numbers of people coming to Acadia and neighboring communities. Road and parking congestion associated with over-visitation during peak times could be expected to proliferate under the no-action alternative, in conjunction with Maine's tourism efforts (as well as the initiatives of others), adverse cumulative impacts on the character of the historic roads sourced in congestion and damage to historic road fabric.

An additional threat to the historic character of the historic Park Loop Road and the designed driving experience associated with it includes Jackson Laboratory's campus zoning plan and the efforts to expand the footprint of the laboratory campus on property neighboring the park. The laboratory lies within the historic viewshed of Park Loop Road and its expansion would damage the road's historic landscape.

Under all action alternatives, visitation levels are ceilinged by the capacity of the reservation system, however that system is employed. Only under alternative D are visitation numbers along the entire scenic driving experience controlled, so adverse impacts, specifically an increase in congestion that blocks character-defining viewsheds and causes damage to historic road fabric from unendorsed parking and shoulder driving, could be expected under alternatives B and C in association with Maine's tourism marketing efforts, although all of the action alternatives reduce the cumulative negative impacts of these marketing efforts. The proposed expansion of the Jackson Laboratory campus, to include housing developments, parking lots, and new administrative spaces, could represent an adverse impact on the historic character of the road that would be worsened by changing the direction of one-way traffic as proposed in alternative D, and lessened by maintaining current traffic direction as presented in the no-action alternative or action alternatives B and C.

Conclusion. The no-action alternative continues and allows proliferation of adverse impacts on the historic character and character-defining features of Acadia's historic motor road system. These impacts are primarily precipitated by overcrowding and vehicle congestion on park roads and in popular destinations. Alternative B attempts to reduce these impacts via creation of a timed-entry system to park at key destinations, controlling vehicle sizes at some locations, and eliminating right lane parking. It involves impacts that diminish the historic character and physical integrity of the roads via the installation of modern infrastructure to control parking lot access. These impacts would be permanent but minor because the new infrastructure could be designed to minimize the visual intrusion on the historic scene. Alternative C proposes a reservation system to enter the Ocean Drive corridor, Cadillac Summit Road, and Jordan Pond House, as well as an adaptive strategy that could extend reservation requirements elsewhere as necessary. It includes similar adverse impacts to the historic character and integrity associated with installation of modern infrastructure throughout the loop road system, as well as temporary formalization of right lane parking. A significant adverse impact inherent in alternative C is the segmentation of the historic driving experience, which diminishes the historic design and character of Park Loop Road by forcing some visitors off the designed loop

and others to stop for reservation validation. Alternative D presents a systemwide management strategy for the historic Park Loop Road and eliminates most right lane parking. Negative impacts of alternative D on the historic character of the motor road system include the expansion of one-way travel (contrary to the design intent of the road), formalization of a short segment of right lane parking, and a new entry station and gate construction.

All of the action alternatives involve positive and negative impacts on the historic character of the motor road system. All of the alternatives improve preservation of the historic character of the park's roads over the no-action alternative. Alternative D involves the least amount of negative impacts, balanced with positive impacts on the historic road system, primarily because alternatives B and C do not manage traffic on the entire historic Park Loop Road and allow continued congestion and compromised historic character outside the reservation corridors or lots. In addition, alternative D allows an uninterrupted tour of Park Loop Road, a character-defining feature that was part of the design strategy of the system over several decades of construction. Alternative B provides more beneficial impacts on the historic roads than alternative C because of the full elimination of right lane parking and allowance of an uninterrupted tour of the entirety of the loop road (though one that may be compromised by congestion).

All of the action alternatives include some adverse impacts to the physical integrity of Park Loop Road associated with the introduction of modern signs, gates, and entrance stations; these are minor impacts that can be mitigated by utilizing thoughtful adherence to rustic design. Alternatives B, C, and D all eliminate much or all of the currently endorsed right lane parking, a significant beneficial impact that works to restore historic character by eliminating what is currently the worst affront to the road's historic character and largest threat to its physical integrity (due to regular shoulder damage). However, the preferred alternative also includes a significant adverse impact to the design intent and historic character of Park Loop Road by introducing a segmented driving experience that forces some visitors off the loop and others to stop for reservation validation.

CULTURAL LANDSCAPES

Methods and Assumptions for Analyzing Impacts

The impacts on the park's cultural landscapes are described in terms of the potential to diminish or protect the integrity and/or character-defining qualities that contribute to their NRHP eligibility. The impact analysis was primarily qualitative in nature based on the knowledge and best professional judgment of planners, resource specialists, data from park records, and studies of similar actions and impacts as applicable.

The impact analysis primarily includes discussion of to what extent would significant historic resources be affected by modern infrastructure additions or modifications necessary to implement the alternatives, and to what extent would the historic character exhibited in the park's significant cultural landscapes be affected by implementing the alternatives.

Historic resources are irreplaceable and nonrenewable. Therefore, most direct impacts that affect the physical attributes and character-defining features of the park's cultural landscapes may be considered permanent impacts due to their nonrenewable aspects.

Alternative A (No Action). Under alternative A, with no major changes in management of the park, resource protection activities at Sieur de Monts, Jordan Pond House, Cadillac Mountain, Thunder Hole, the Schoodic Peninsula, and other known cultural and historic landscapes would continue to be on an as-needed basis as issues are identified and funds are available. Park staff would continue to protect cultural landscape resources by reacting to major visitor use and transportation issues when and where they occur. The contributing historic resources and unique character-defining features of Acadia's cultural landscapes would continue to be protected via regular maintenance of structures, roads, trails, plants, and other landscape features following the guidance presented in the park's general management plan and the treatment recommendations of the park's cultural resource management program. When repairs are necessary, the park staff would aspire to replacing historic features in kind, while retaining and protecting the extant historic resources, which would discourage the introduction of new features or techniques.

Under the no-action alternative, visitation and congestion issues are expected to continue to increase. Physical conditions at the major park destinations can be expected to deteriorate at an increased pace, and the frequency of repairs and intervention on the landscapes can be expected to increase, particularly at sites like Thunder Hole, Cadillac Mountain, and Jordan Pond House.

Ongoing incremental park management actions taken to mitigate safety concerns and visitor satisfaction associated with overcrowding (which would continue to occur under the no-action alternative) may cause increasing adverse impacts on cultural landscapes. Some of these actions include the placement of parking management stones that are not part of the historic landscape, the establishment of additional signage for controlling traffic, modifications of parking patterns, and parking lot expansions. Incremental impacts of managing overuse of historic landscapes designed for fewer visitors would likely result in larger widespread adverse impacts on the park's cultural landscapes under the no-action alternative.

Common to All Action Alternatives— Some actions to improve the quality of the transportation system and experience in Acadia National Park are the same for the action alternatives B, C, and D. To avoid repeating these actions in the description of each alternative, the impacts of these "common" actions are described here. When evaluating the individual alternatives in the Draft Acadia National Park Transportation Plan / Environmental Impact Statement, readers should include the material in this section because it describes impacts associated with the entire plan and is an integral part of each action alternative.

In all of the action alternatives, a reservation system of some kind would be established for access to the most popular destinations off Park Loop Road. Specifically, these sites include the cultural landscapes at Cadillac Mountain, Jordan Pond House, and Thunder Hole. Establishing access to these landscapes by reservation would result in more control over the numbers of people and vehicles that are in the sites at any one time. Eliminating congestion of the landscapes, particularly in the parking lots, would reduce incidents of unauthorized parking and social trail development—both of which cause damage to the historic landscapes and fabric. In addition, once the congestion is controlled, park efforts to restore previously damaged landscape features and restore social trails will be more effective and result in an improvement to the condition of the cultural landscapes. Limiting access to Cadillac Summit Road to reservation holders and subsequently controlling the number of vehicles at a time on the road, is also common to all action alternatives, as is limiting vehicle size on the road to those that can safely navigate the turns in their lanes. These actions would serve to prevent congestion on the

summit road that diminishes its historic character as well as control driving on the shoulders, which damages the historic fabric and hastens deterioration of the road.

All of the action alternatives establish vehicle size limitations. Limiting vehicles to sizes that meet the historic geometries of the roads and parking lots in the designated cultural landscapes at Jordan Pond House and Cadillac Mountain would reduce the instances of damage to historic landscapes and historic fabric from vehicles oversized for parking lot and road conditions (particularly in the Cadillac Mountain cultural landscape and along its summit road). In addition, limiting the size of vehicles that can access Cadillac Mountain and Jordan Pond House would also reduce the number of passengers per bus, which would decrease pulses of high visitation from tour buses, resulting in less people at one time within the landscape., which would improve the historic viewshed by reducing the degree of visual intrusion.

All of the action alternatives are identical in their treatment of the Schoodic Peninsula. Schoodic would be managed for a lower density visitor experience providing a diversity of means of access and visitor experience. The park would continue to encourage bicycle access to the Schoodic historic road, including increasing outside connections through local communities. There would be no increase in parking or changes to the historic landscape design or number of pullouts. Parking enforcement would be used to discourage informal parking pullouts. In the event that vehicle traffic along the Schoodic National Scenic Byway through the park reached levels that regularly compromised scenic views or threatened the historic fabric of the road and landscape features, the park would implement adaptive management strategies that could include mandatory park and ride/bicycle use or establishment of a reservation system for entrance to the corridor. These actions would all serve to protect the historic character of the loop road on the Schoodic Peninsula.

Alternative B. Under alternative B, gates would be installed at the parking lot entrances that are either manned or automated at Jordan Pond House, Sand Beach, Cadillac Mountain, Sieur de Monts, and Thunder Hole in order to control access to these reservation-only parking lots. These gates or stations would be modern visual intrusions on the cultural landscapes, diminishing their historic character. On busy days, traffic would likely queue onto the historic Park Loop Road behind the parking lot entrances, which would cause an undesirable impact on views from the cultural landscapes at Jordan Pond House, Sieur de Monts, and Thunder Hole. The gates themselves would be designed, to the extent possible, using NPS rustic design guidelines, which would minimize the adverse impact on the historic scene.

Under alternative B, the removal of all right lane parking from the historic Park Loop Road would reduce the potential of social trail development into adjacent cultural landscapes from dispersed parking areas. In addition, limiting the number of vehicles that can enter the parking lots at the designated cultural landscapes and on Cadillac Summit Road would reduce crowding and congestion in the lots, reducing instances of unauthorized parking that damages the historic fabric and landscape appearance and resulting in a beneficial improvement to current conditions.

Alternative C (Preferred Alternative and Proposed Action). Impacts on documented cultural landscapes associated with alternative C include similar negative impacts to alternative B associated with the installation of modern traffic control gates at entrances to historic landscapes. Initially, the stations/gates would be temporary to test the effectiveness, meaning the adverse impacts would be fully reversed where it is determined that a station or gate is not needed. In areas where the station/gate is formalized, the gate would be a permanent intrusion

that would diminish the integrity of the landscape. Careful placement and design would help to minimize the adverse impacts. The alteration of the existing parking lots at Jordan Pond House and the creation of a new lot and landscaped area is an adverse impact on the historic character of the site. The existing parking lots and associated connectors to the Park Loop Road are not contributing historic features because they were built after the period of significance during the road realignment in 1963. Nevertheless, the additional proposed parking lots reduce and alter the greenspaces at Jordan Pond House, which negatively impacts its character and integrity. Proper use of vegetation screening and construction of the lots following best practices established for work on the motor road system, would help mitigate these impacts. The addition of modern signage at the Sieur de Monts cultural landscape is an adverse impact on the character of the site, but one which could be mitigated by using sympathetic design.

Alternative C also has potential for increased adverse impacts to cultural landscapes as the adaptive strategies for managing the reservation system are implemented. Because the alternative includes options for expanding the reservation system and adding additional by-reservation-only corridors and lots into the system as needed, there is the potential that the adverse impacts associated with the installation of gates and entry booths (along with their associated infrastructure), signage, and other parking controls could extend to other cultural landscapes, cumulatively posing a threat to the historic integrity of the collection of historic properties in Acadia National Park, though much of this impact could be mitigated by adherence to NPS rustic design standards. In addition, the ultimate expansion of the reservation system could include the entirety of the Park Loop Road, which could allow for the removal of gates and signs at individual landscapes then managed as a part of the entire system.

Alternative D. Impacts to cultural landscapes under alternative D would be primarily beneficial. Because visitor access to the individual cultural landscapes under alternative D are controlled by an overall reservation to the entire Park Loop Road, the installation of modern traffic control infrastructure within the landscapes would be minimal. There would also be no expected negative impacts to viewsheds associated with queuing at landscape entrances. One exception would be the Jordan Pond House where a rustic gate would be installed within a noncontributing portion of the historic landscape previously modified in 1963. Beneficial impacts associated with reducing vehicles parked in unendorsed spaces that damage historic fabric and reducing pulses of peak visitation and the associated impact of crowded viewsheds within the landscapes described in alternatives B and C are similar under alternative D.

Cumulative Impacts. Other past, present, and reasonably foreseeable future actions have altered, or have the potential to affect, the historic character and physical integrity of the park's designated cultural landscapes with proximity and connections to the Park Loop Road. Throughout the modern history of the park, the major challenge to maintaining the historic integrity of cultural landscapes has always been the pressure of increased visitation and traffic. Previous impacts to the historic integrity and character of the road have always been in response to increased visitation, for example, the modifications to vehicle circulation at the Jordan Pond House and at the entrance to Cadillac Summit Road. Continued pressure that could have a detectable impact on cultural landscapes of the park include tourism, marketing, and outreach initiatives articulated in the Maine Office of Tourism's strategic plan. This initiative, combined with efforts of the National Park Service encouraging visitors to get out and into their national parks, add annually to the numbers of people coming to Acadia and the neighboring communities.

Over-visitation at popular destinations/historic cultural landscapes during peak times could be expected to proliferate under the no-action alternative, in conjunction with Maine's tourism efforts (as well as initiatives of other participants), an adverse impact on the character of historic landscapes originating from congestion that impacts scenic vistas and unauthorized parking that damages landscape fabric and leads to social trailing (people making their own trails to shortcut designated trails). Outside efforts that tend to increase visitation levels would have no impact on the historic character of cultural landscapes in the park under alternative B, which completely controls visitation levels within individual landscapes. Under the other action alternatives, there could be negative impacts on historic character associated with overcrowding and vehicle congestion because there is still some opportunity for visitors to move between sites with spontaneity, but overall, the cumulative negative impacts associated with alternatives C or D would be less than the no-action alternative.

Conclusion. The no-action alternative continues and allows proliferation of adverse impacts on the historic character and character-defining features of cultural landscapes in the park. These impacts are primarily associated with character-damaging overcrowding and associated physical damage to historic landscape fabric at popular destinations. Alternative B attempts to reduce these impacts via creation of a timed-entry system at key destinations in the park. It involves adverse impacts on the historic character at Cadillac Mountain, the Jordan Pond House, Sieur de Monts, and Thunder Hole cultural landscapes associated with the installation of visible gates or entry stations. Alternative C has similar, but fewer impacts on landscapes associated with entry gates or stations at Cadillac Summit Road and Jordan Pond House, as well as the introduction of modern signage near the Sieur de Monts cultural landscape and extensive alterations of parking infrastructure in the Jordan Pond House landscape. All action alternatives remove the adverse impacts on the historic character of the landscape and damage to the historic fabric at Cadillac Mountain by limiting access to vehicles that fit the geometry of the summit road.

All of the action alternatives involve positive and negative impacts on the historic character of the park's cultural landscapes. All of the alternatives improve preservation of the historic character of the park's landscapes over the no-action alternative. Historic character at cultural landscapes would be improved by limiting overcrowding and out-of-bounds parking under all of the alternatives, although alternative B provides the most control over crowds in specific landscapes. Alternative B involves the most modern infrastructure in the form of gates and entry stations installed at cultural landscapes. Alternative C also involves the construction of modern gates and entry stations at cultural landscape sites, but fewer are needed than in alternative B (though the adaptive strategies in alternative C could eventually mean more are installed). Alternative D involves no modern additions to significant portions of road adjacent historic landscapes, but offers the least amount of direct control over crowd size in specific locations and could result in occasional over-crowding at peak times and the associated threats that accompany it.

VISITOR USE AND EXPERIENCE

Methods and Assumptions for Analyzing Impacts

The effects of the alternatives on visitor use and experience in the project area were analyzed based on impacts resulting from (1) changed opportunities for *access* to recreation opportunities and key visitor experience, and (2) impacts on current visitor *experience quality* resulting from changes to visitor use patterns, visitor demand, and visitor expectations at popular destinations. These are important distinctions to recognize given the actions in the alternatives. Where one action may limit the number of people that can access a site (adverse impact) it will at the same time improve the quality of the experience for the visitors once they arrive at the site (beneficial impact). Understanding and exploring this distinction through this analysis is important to understanding the relative benefits and trade-offs to each alternative. For this reason, these two issues (access and experience quality) are analyzed separately.

Site-specific analysis was done by park area/destination where impacts on the area/destination would be distinctive from parkwide impacts. The impact analysis was based on the knowledge and best professional judgment of planners, comparisons of conditions in previous visitor surveys, data from park records, and studies of similar actions and impacts when applicable.

Impact Analysis Questions

The issues related to visitor use and experience addressed in this plan have the potential to negatively impact the fundamental resources and values of the park. Primarily, the FRV being impacted is "Range of Visitor Experience." The actions in this plan are designed to address these issues and may change or impact how visitors access the park, which sites they visit, when they can visit those sites, and what the experiential conditions of the site would be when they arrive. Therefore, this analysis is driven by two key questions

1. How would visitor access and recreational opportunity change as a result of the alternatives?
2. How would the quality of visitor experience and opportunity change as a result of the alternatives? How would the levels of crowding be affected as a result of the alternatives? How would visitor perceptions of safety be affected by the alternatives?

Visitor Access and Recreational Opportunity

Alternative A: No Action. The continuation of the current management of the transportation systems at Acadia National Park would result in some beneficial, but mostly adverse, impacts on visitor access and recreational opportunities. Access to all roadways, parking, and visitor use would continue to be unconstrained. This would result in beneficial impacts on visitor access because visitors would still be allowed to arrive at sites and choose opportunities spontaneously. However, current volumes of use would continue to result in conditions where ease of travel to and finding parking in preferred locations would be challenging at peak times of day and peak days of the year. So while the ability to freely access sites may appear to be highly beneficial, the current conditions make it very challenging.

High volumes of use in accessing the park during the summer season and expanding shoulder season can cause congestion on roads and regularly exceed parking capacities in popular

locations. This growing and unmanaged use results in congestion on roadways and a reduced level of service that also limits visitors' ability to access park resources and opportunities. Additionally, groups arriving in oversize vehicles may continue to be displaced by crowded conditions in parking lots and at visitor use sites.

Maintaining Island Explorer service in its current configuration (timing, frequency, and extent) of service would result in no notable impacts as visitors would continue to benefit from continued access to visitor use sites for those who cannot or choose not to access those sites via personal vehicle. However, as demand for Island Explorer service grows and would continue to grow (as competition for parking increases and visitors seek other access options), there could be adverse impacts on visitors resulting in constrained access (related to long wait times) to both enter the park and to leave visitor use sites in the park during an increasing number of hours of the day and days of the year.

Common to All Action Alternatives— Visitors who arrived at the park in a vehicle that does not meet the size requirements would have to use Island Explorer service or authorized commercial services to access the Park Loop Road, which could change their mechanism of access but not necessarily constraining the freedom of movement for these visitors. Additionally, actions to prevent use of unendorsed parking would result in fewer private vehicles being able to access some sites on the busiest days of the year. However, prohibiting entry to vehicles that do not meet road and bridge geometry restrictions may provide more access opportunities in certain areas to medium-sized vehicle parking where the current lack of parking prohibits their entry.

In all action alternatives, an increased number of visitors would be encouraged to use transit service to access key areas of the park. This would eventually lead to crowding at bus stops and on buses during peak times of day and days of the year if visitation continues to increase. If demand for the Island Explorer service were to increase to a point where crowding and congestion at stops and on buses is not consistent with desired conditions for this service, a reservation system could be implemented, further restricting growth in visitation and expanded access opportunities. Also, bicycle and pedestrian access would continue to be encouraged resulting in beneficial impacts on those user types.

Those visitors who choose to or need to access the park with a commercial service provider (tour, excursion, or other service) may find that the service limits at some locations (depending on the alternative) constrain their ability to visit some locations in the park during peak times of day. Some of these visitors have very limited windows in which they can explore the park (based on current tour packages and arrival times), so the ability to find another time or day to visit isn't reasonable or feasible.

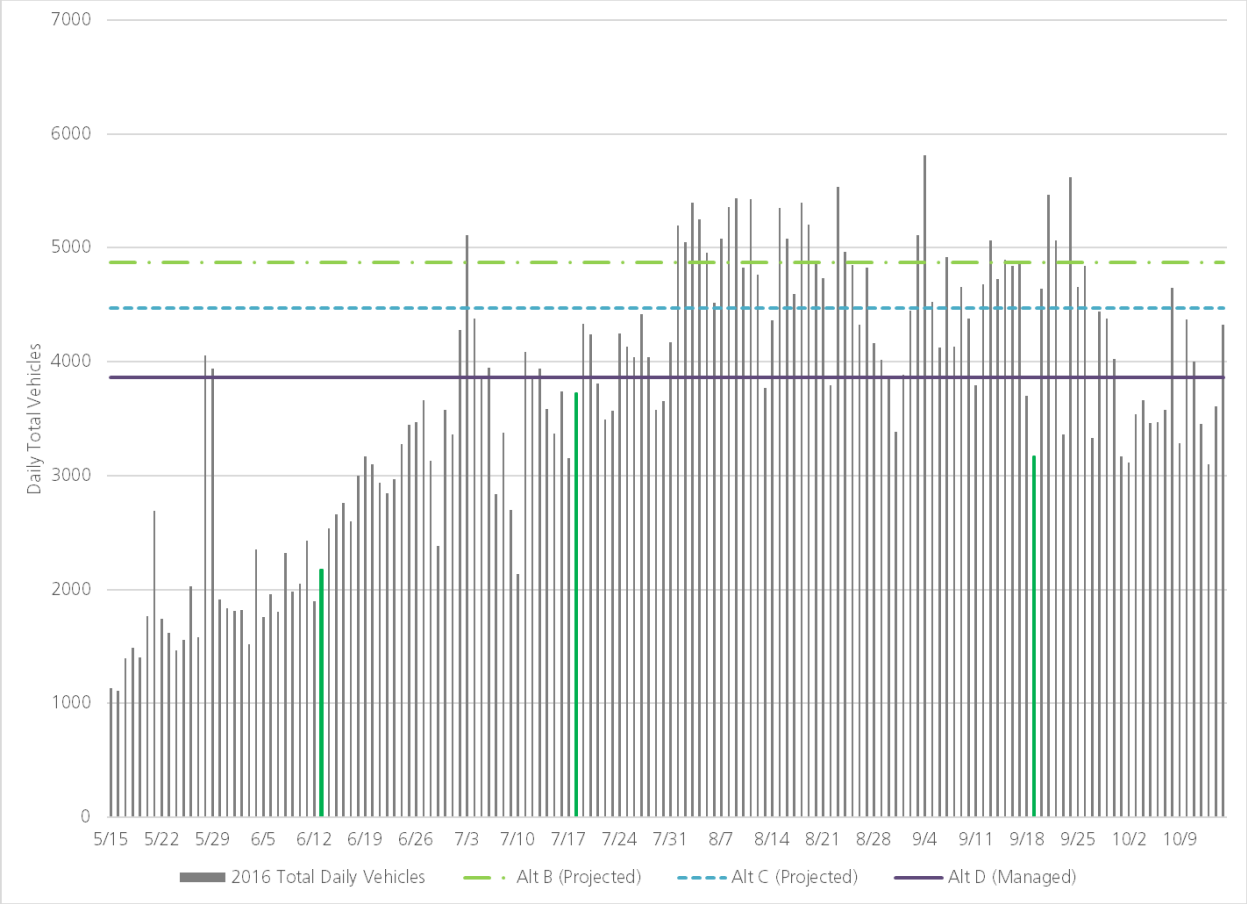
Additionally, direction management actions at sites, corridors, or the whole loop road would likely lead visitors to abandon these areas of the park and select other park locations to visit where access is not actively managed (and consequently constrained). This could lead to crowding and congestion at other park sites (e.g., Acadia Mountain, Schoodic Peninsula, Echo Lake). This could also lead to limits on the locations where educational programs can occur during high use times of the year, and these programs may have to relocate to other areas of the park. Finally, opportunities for accessing parking to participate in canoeing or kayaking on the lakes and ponds could adversely be affected as parking in these lots becomes more competitive as a result of more visitors competing for available parking spaces for a spontaneous arrival (i.e., Bubble Pond).

Schoodic Peninsula— Actions at Schoodic Peninsula would result in no notable impacts on visitor access and recreation opportunity. No major changes to the way visitors currently access this area of the park are proposed in these alternatives. Maintaining current access patterns and levels to this area of the park would result in no change to visitors by providing freedom and spontaneity of access and full and free access to all recreation opportunities. Actions to actively manage the transportation systems on Mount Desert Island (see above) could result in additional visitors choosing to visit the Schoodic Peninsula instead of sites on Mount Desert Island because these locations are not on the reservation system. This could lead to increased competition for parking (parking will not be expanded under any alternative) if more visitors switch from Mount Desert Island to Schoodic Peninsula.

Impacts Related to Reservation Systems— Implementing reservation systems would result in beneficial impacts since visitors would be able to more effectively plan their trip without worrying about available parking or competing for parking availability. For others, such systems would result in adverse impacts because they would not be able to access a destination with their private vehicle if they did not plan their trip enough in advance, prefer spontaneous travel, or had some other barrier to obtaining a reservation. These visitors would have to find another destination or use Island Explorer service to access these locations. For those visitors who prefer spontaneous arrival, Island Explorer would still facilitate this type of access.

Developing permit or reservation systems (details vary depending on the selected alternative) for parking areas or corridors would effectively redistribute use more evenly across the day and season. This would eliminate periods of time where lots and visitor sites are over used and redistribute that use to low use periods. Estimates of the number of daily vehicles that would be accommodated on Park Loop Road by alternative is represented in figure 21. The amount of available parking is relatively fixed across all alternatives, therefore, the variations in the number of vehicles that can be accommodated per day among the alternatives mostly varies by the relative efficiency that can be expected of these areas, the anticipated (or managed) turnover rates, and the travel pattern of these vehicles. (There are additional differences in the *level of quality* that can be found in those locations, which is discussed in the "visitor experience quality" analysis that follows.) When comparing the alternatives to vehicle demand during 2016, there would be between 26 and 72 days (alternatives B and D, respectively) of the 155 days of the reservation season when the demand for access could exceed supply. However, that means that there are more days of the year when the availability of private vehicle access is not fully maximized. If the reservation systems are fully sold (all managed hours, all days, May–October), this could result in increases in total annual private vehicles accommodated for the full summer season (by 5%–33%). Practically speaking, the implementation of reservation systems would likely result in a retention of current use levels. Retention is likely if those visitors who could not obtain reservations still decide to come at the same time and can be accommodated by other transportation modes (road-based commercial tours or transit). However, some visitors who still prefer private vehicle access may be displaced from high use days (due to lack of permit availability) and may not be flexible enough to change their travel plans to lower use days of the year.

FIGURE 21. ESTIMATED DAILY VEHICLES ON PARK LOOP ROAD BY ALTERNATIVE (MAY–OCTOBER)[6]



Commercial Tour Access to Cadillac Mountain Summit— If reservations are fully utilized for road-based commercial tours (across all hours of the day), it should result an increase (+46%) in the number of visitors being able to access Cadillac Mountain summit per day via this service (when compared to an average busy day under current conditions).

Alternative B. The actions in alternative B (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to both beneficial and adverse impacts on visitor access and recreational opportunities. As a result of this alternative, roughly 53% of the parking that provides access to sites along the Park Loop Road would be on a reservation system. Overall, those visitors who still wish to spontaneously engage in scenic driving to all segments of the park roads (including all segments of Park Loop Road) would still be able to do so, resulting in beneficial impacts. However, those visitors without parking reservations would not be able to gain access to the parking areas that directly access major attraction sites. This would make accessing these areas by personal vehicle more challenging for those visitors who

[6] This chart does not include vehicles accessing Cadillac Summit as under each alternative Cadillac is managed separately from the loop road system.

do not have an advance reservation because competition for parking spaces in lots not on the reservation system would be high, resulting in adverse impacts on those visitors.

Visitors who are able to plan their trip, would receive beneficial impacts in that they would have the certainty and ability to access sites that are of interest to them by securing a parking permit for direct access to the most popular park sites. Those visitors who still wish to spontaneously engage in scenic driving of all segments of the park roads (including all segments of Park Loop Road) would still be able to do so. The completion of the Acadia Gateway Center would provide critical wayfinding and transportation information to visitors before they enter the park reservation system. This would help visitors by managing expectations appropriately and providing information about the range of park experiences and where visitors can access those opportunities and experiences. Parking lots not on the reservation system would still be open to spontaneous access, which would allow visitors the freedom to choose where and when they visit these locations, provided parking spaces are available at the time they arrive.

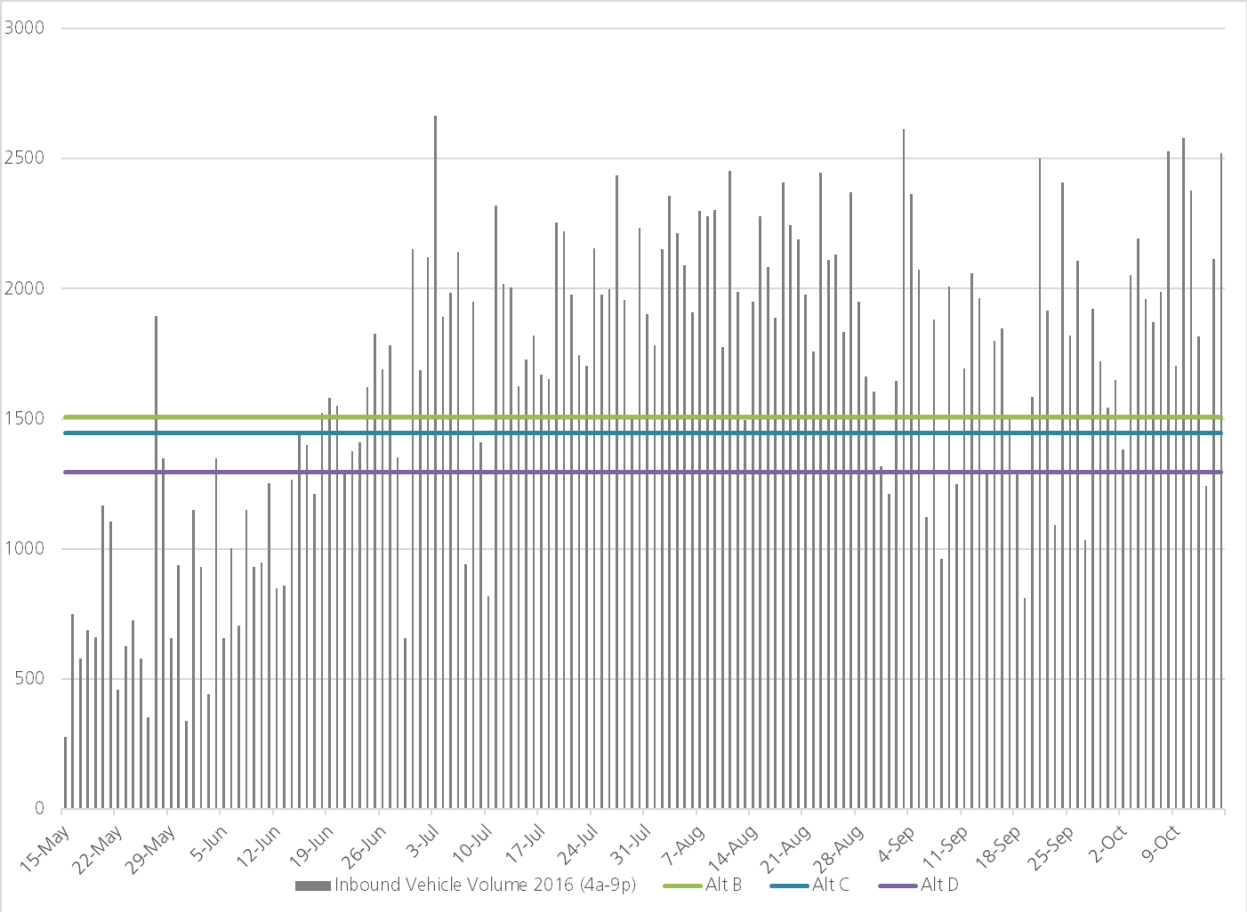
Most importantly, those visitors without parking reservations would not be able to gain direct access to major attraction sites (via their private vehicles). These visitors without reservations would be dependent on alternative transportation to recreate in these key areas of the park without an advanced reservation. Those parking lots that are not on the reservation system are likely to still reach capacity early in the day, displacing visitors who do not or cannot arrive early. Competition for these lots would remain high, which would also lead to limited access in these areas as well as congestion in these lots (for more information about the impacts of congestion on visitors see impacts related to "Visitor Experience Quality").

Additionally, parking reservations at the lot level would mean that visitors are committed to specific locations at specific times for specific durations of time. This has three adverse impacts. First, if there is an incident that closes access to that lot, visitors would have a limited number of places where they could relocate and would need to compete for parking at those alternative locations. Second, this type of reservation system restricts the ability of visitors in private vehicles to easily relocate to other locations if conditions are unfavorable in that location. For example, if a visitor has a reservation for Sand Beach, but it is raining, that visitor wouldn't have the opportunity to self-relocate to another more favorable area (such as Jordan Pond House). Third, the fixed length of stay could put constraints on those visitors in private vehicles who would like to stay in a location longer than their reservation allows. However, the intention to sell a range of duration options in the parking permits would make this impact fairly negligible. Finally, while visitors learn about the reservation system and its associated requirements, they may be displaced from some locations where they did not make a reservation.

For those visitors who choose to access the park with a commercial service provider (tour, excursion, or other service), they may find that the service limits at some locations in this alternative constrain their ability to visit some locations in the park.

Cadillac Mountain Summit— Based on 2016 data, there were 89 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars that attempted to access Cadillac Mountain summit over the course of the day exceeded what would be supplied under the allocations described in this alternative. However, if reservations are fully utilized (across all hours and days of the season), it should result in a slight increase in the number of visitors being able to access Cadillac Mountain summit throughout the season, via private vehicle (+0.2%). See figure 22 for a summary of the 2016 daily total vehicles to Cadillac summit compared to the action alternatives.

FIGURE 22. DAILY VEHICLES ON CADILLAC SUMMIT COMPARED TO ACTION ALTERNATIVES (MAY-OCTOBER)



Ocean Drive— Based on 2016 data, there were 42 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars that accessed the Ocean Drive corridor exceeded what would be allowed under the allocations described in this alternative. If reservations are fully utilized, it would likely result in more visitors being able to access this corridor, via private vehicle (+22%). If reservations are fully utilized for road-based commercial tours (across all hours of the day), it should result an increase (+14%) in the number of visitors being able to access Ocean Drive per day via this service (when compared to an average busy day under current conditions), and an increase in the number of visitors across the season (+105%).

Alternative C (Preferred Alternative and Proposed Action). The actions in alternative C (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to mostly beneficial and some adverse impacts on visitor access and recreational opportunities. As a result of this alternative, roughly 58% of the parking that provides access to sites along the Park Loop Road would be on a reservation system. Overall, those visitors who still wish to spontaneously engage in scenic driving of most segments of the park roads (including most segments of Park Loop Road) would still be able to do so, resulting in beneficial impacts. However, those visitors without reservations would not be able to gain direct access by private vehicle to some park areas that provide access to major attraction sites. This would make

accessing these areas more challenging for those visitors who do not have an advanced reservation, resulting in adverse impacts.

Those visitors who are willing and able to obtain reservations would have the certainty that they would be able to access those locations they have reserved. Hulls Cove Visitor Center would provide critical wayfinding and transportation information to visitors before they enter the transportation system. This would help manage expectations related to access and provide information about a range of experiences available to visitors. Expanded parking in this location would also make it easier for more visitors to transfer to Island Explorer buses and access a variety of park sites. Additionally, the Acadia Gateway Center would provide orientation to both the transportation system and the eco-region, allowing visitors the benefit of learning about the park and its resources.

Because this alternative directly manages the two most popular areas of the park for scenic driving, visitors would be restricted in their ability to spontaneously engage in a scenic drive of these road corridors (Cadillac Summit Road and Ocean Drive) if they were not able to obtain a reservation. As parking is not managed for individual lots in the Ocean Drive corridor, finding parking in the most popular lots (i.e., Sand Beach, Thunder Hole) in the park would still be challenging, although the number of people "competing" for these highly desirable spaces would be far fewer than other alternatives (A and D). Similar to alternative B, parking reservations at the corridor level would mean that visitors are committed to specific locations at specific times. This has two adverse impacts. First, if there is an incident that closes access to that corridor, visitors in private vehicles would have a limited number of places where they could relocate and would need to compete for parking at those alternative locations. Second, this type of reservation system restricts the ability of visitors in private vehicles to easily relocate to other locations if conditions are unfavorable in that location. As the whole of Park Loop Road is not managed, there could still be congestion along the roadways and parking lots not on the reservation system, limiting easy access to some park areas during peak times of the day and days of the year (for more information about the impacts of congestion see impacts related to "Visitor Experience Quality").

For those visitors who choose to access the park with a commercial service provider (tour, excursion, or other service), they may find that the service limits, both the number of reservations available and places where tours can go at Cadillac Mountain summit and along Ocean Drive, which may constrain these visitors' ability to visit these park locations.

Cadillac Summit— Based on 2016 data, there were 96 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars that accessed Cadillac Mountain summit exceeded the "at one time limits" that would be in place under alternative C (see appendix A). Even if reservations are fully utilized (across all hours of the day, all days of the season), it will likely result in slightly fewer (-4%) private vehicles being able to access Cadillac Mountain summit throughout the season.

Ocean Drive— Another benefit of this alternative is that visitors would have a high degree of flexibility and spontaneity once they arrive in the Ocean Drive corridor. Once in the corridor, visitors are likely to obtain a parking space at or near where they would like to recreate. Based on 2016 data, there were 0 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars that accessed the Ocean Drive corridor exceeded what would be allowed under the allocations described in this alternative. If reservations are fully utilized (all hours of the day and days of the season), it would result in an

increased opportunity (+87%) for more visitors to access this area of the park by personal vehicle. If reservations are fully utilized for road-based commercial tours (across all hours of the day), it should result an decrease (-21%) in the number of visitors being able to access Ocean Drive per day via this service (when compared to an average busy day under current conditions), but increase the number of visitors arriving via this service across the season (+42%).

Alternative D. The actions in alternative D (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to mostly beneficial and some adverse impacts on visitor access and recreational opportunities. As a result of this alternative, roughly 77% of the parking that provides access to sites along the Park Loop Road would be on a reservation system. This alternative has the highest degree of flexibility and opportunity for spontaneity for visitors who have access to Park Loop Road. However, as this alternative manages the whole park loop road system, visitors would not be able to spontaneously enjoy a scenic drive in the park if a reservation is not available.

Those visitors in private vehicles willing and able to obtain reservations would have a high degree of flexibility and spontaneity once they enter the Park Loop Road. Once on Park Loop Road, visitors are likely to be able to obtain a parking space at or near the site where they would like to recreate. The Acadia Gateway Center would provide critical wayfinding and transportation information to visitors before they enter the transportation system. This would help manage expectations related to access and provide information about a range of experiences available to visitors. Reversal of the road could result in new and expanded interpretation opportunities for visitors; however, this could also cause the reduction of some of the existing interpretive opportunities.

Alternative D significantly changes the way visitors in private vehicles access the park and the recreational resources along Park Loop Road. This major change would result in short-term adverse impacts while visitors learn the new system. As parking is not managed for individual lots, finding parking in the most popular lots (i.e., Sand Beach, Thunder Hole, and Cadillac Mountain summit) would still be challenging, though the number of people "competing" for these highly desirable spaces would be far fewer than under current conditions. As the lots are not managed directly in this alternative it could result in increased competition for these most popular lots because this alternative is less prescriptive on where visitors go once they are on Park Loop Road. Additionally, reducing the number of entry points to the loop road system would change the use pattern of the road, which could cause delays at the entrances. The change in roadway direction may reduce the relative visitor demand on places like Sieur de Monts, Great Meadow, and Kebo Street because these areas are now on the exit as opposed to entry areas of Park Loop Road.

Those visitors who choose to access the park with a commercial service provider (tour, excursion, or other service), may find that the service limits both number of reservations available and places where the tours can go at Cadillac Mountain summit and along Ocean Drive, which may constrain these visitors' ability to visit these park locations.

Cadillac Mountain Summit— Based on 2016 data, there were 102 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars accessing Cadillac Mountain summit exceeded allowances under the allocations described in alternative D. Even if reservations are fully utilized (across the whole season), it would result in fewer visitors able to access Cadillac Mountain summit throughout the season via personal vehicle (-14%).

Ocean Drive— Based on 2016 data, there were 9 days (of the 155 where the reservation system would be in place under this alternative) where the number of cars accessing the Ocean Drive corridor exceeded what would be allowed under the allocations described in this alternative. If reservations are fully utilized, there is an opportunity to increase the number of private vehicles who access this corridor throughout the season, (+40%) If reservations are fully utilized for road-based commercial tours (across all hours of the day), it should result an decrease (-21%) in the number of visitors being able to access Ocean Drive per day via this service (when compared to an average busy day under current conditions), but an increase in the number of visitors that could be accommodated across the season (+42%).

Cumulative Impacts. The projects analyzed in the cumulative impacts analysis would ultimately result in additional vehicles being attracted to and accommodated on Mount Desert Island and in proximity to the park. These actions would likely increase the demand for access to the park via Island Explorer (in all alternatives) and could increase the demand for access to park resources and experiences. This could make competition for the limited capacity of Island Explorer even more competitive when compounded with the reservation systems outlined in the action alternatives, which would adversely contribute to visitor access for this access type.

Additionally, all the action alternatives assume that some peak season park visitors would choose to visit in the shoulder seasons of the year when competition for parking and access is not as intense. State tourism initiatives that propose growth in the shoulder seasons could compound the rate at which the availability of access in these seasons is fully utilized. Stated goals of increasing tourism overall could increase the competition for access to park resources and experiences during the peak season. These cumulative impacts would be persistent so long as visitation to the regional area increases and would become increasingly acute, island explorer and visitor capacities are approached on increasingly more days of the year, each year, and the supply of parking would not keep pace with the relative increase in demand for parking, displacing visitors (leading to adverse impacts for visitors) who prefer to access the park in this way.

Conclusion. The actions in alternative A would lead to mostly adverse impacts on visitor access and recreational opportunities. Access to all roadways, parking, and visitor use would continue to be unconstrained. While visitors would continue to benefit from access remaining spontaneous, current volumes of use would continue to result in conditions where ease of travel to and finding parking in preferred locations would be challenging at peak times of day and peak days of the year. So while the ability to freely access sites may appear to be highly beneficial, the current conditions make it very challenging. High volumes of use in accessing the park during the summer season and expanding shoulder season can cause congestion on roads and regularly exceed parking capacities in popular locations. This growing and unmanaged use results in congestion on roadways and a reduced level of service that also limits visitors' ability to access park resources and opportunities.

The actions in alternative B would lead to both beneficial and adverse impacts on visitor access and recreational opportunities. Implementation of this alternative would result in permanent changes to how visitors access and travel around the park resulting in both beneficial and adverse impacts. The beneficial impacts would be experienced at the specific sites where access is directly managed and would be significant as they represent a surety of access that cannot be found under current conditions. The most notable benefit of this alternative is the increased ability of visitors to plan their trip and ensure parking at a limited number of popular lots in the

park. Additionally, this alternative has the highest potential for personal vehicle access to Cadillac Summit as it directly manages the turnover rate in the associated lots to maximize visitation in this location. Adverse impacts resulting from this alternative could be significant because increased visitation could lead to an increase in parking demand and there would be fewer spaces available for spontaneous arrivals. Also, as the roadways are not actively managed, congestion on some road segments would likely persist in restricting the freedom of visitor movement around the park. The increased trip planning and parking assurances make this alternative more beneficial than alternative A (no action). However, these benefits are limited to a few locations making this alternative less beneficial than alternatives C and D.

The actions in alternative C would lead to mostly beneficial and some adverse impacts on visitor access and recreational opportunities. Implementation of this alternative would result in permanent changes to how visitors access and move around the park resulting in both significant beneficial and adverse impacts. The beneficial impacts would mostly be experienced in the major corridors where access is managed and provides surety of access for those visitors who are able to obtain reservations. Additionally, those visitors who prefer to spontaneously engage in scenic driving or spontaneous arrival at sites would still have that opportunity in the locations not directly managed by the reservation system. However, those visitors without reservations would not be able to gain direct access to some park areas that provide access to major attraction sites. This would make accessing these areas more challenging for those visitors who do not have an advanced reservation, resulting in adverse impacts. The increased trip planning and parking assurances make this alternative more beneficial than alternative A (no action). Also, as this alternative provides a mix of reservation and spontaneous arrival options and directly manages the most congested parking lots/corridors, it is more beneficial for visitor access than any of the other action alternatives. This alternative also provides the highest potential level of access for the Ocean Drive corridor (an iconic destination within Acadia National Park).

The actions in alternative D would lead to mostly beneficial and some adverse impacts on visitor access and recreational opportunities. Implementation of this alternative would result in permanent changes to how visitors access and move around the park, resulting in both significant beneficial and adverse impacts. Those visitors who are willing and able to obtain reservations would have a high degree of flexibility and spontaneity once they enter Park Loop Road. Once in the loop road system, visitors are likely to be able to obtain a parking space at or near where they would like to recreate. However, this alternative is the most constraining on the number of people that could be accommodated on a daily basis on the loop road system. Additionally, as the lots are not actively managed (to provide freedom of movement within the system) it would likely lead to minor or moderate competition for (and congestion of) the most popular parking lots along the loop road (i.e., Cadillac Mountain summit, Sand Beach, Thunder Hole). The increased trip planning and parking assurances make this alternative more beneficial than alternative A (no action). Because this alternative provides high surety of access and spontaneity in the corridor and reduces congestion to the extent practicable while retaining these values, this alternative provides more visitor access benefits than alternative B, but not as many as alternative C.

Visitor Experience Quality

Alternative A: No Action. The continuation of current management of the transportation systems at Acadia National Park would result in some beneficial, but mostly adverse impacts on

visitor experience quality. Current traffic patterns would still allow traffic jams along major roadway segments, leading to adverse impacts on both the quality of the driving experience and the ease of access to popular locations. Additionally, parking that is not actively and directly managed often leads to sites that are overcrowded, diminishing the quality of the experience. Finally, some perceptibly unsafe and uncomfortable conditions for visitors related to traffic patterns would continue to occur with frequency (e.g., parking along Eagle Lake Road where visitors have to exit vehicles directly into an active traffic lane).

Maintaining Island Explorer service in its current configuration (timing, frequency, and extent) of service would result in mostly beneficial impacts because it would continue to provide access to visitor use sites for those who prefer this mode of travel. However, as demand for the service has grown and continues to grow (as competition for parking increases and visitors seek other access options), there could be adverse impacts on visitors resulting in long wait times (both on entry and egress) and crowded conditions on buses during an increasing number of hours of the day and days of the year.

Common to All Action Alternatives— Instituting a visitor management framework, including monitoring indicators (see appendix A) and taking adaptive management actions if thresholds are exceeded would have a beneficial effect in the long term, reducing the extent and frequency of overcrowding in current and future popular areas of the park and ensuring opportunity for visitors to experience quiet, low use areas of the park.

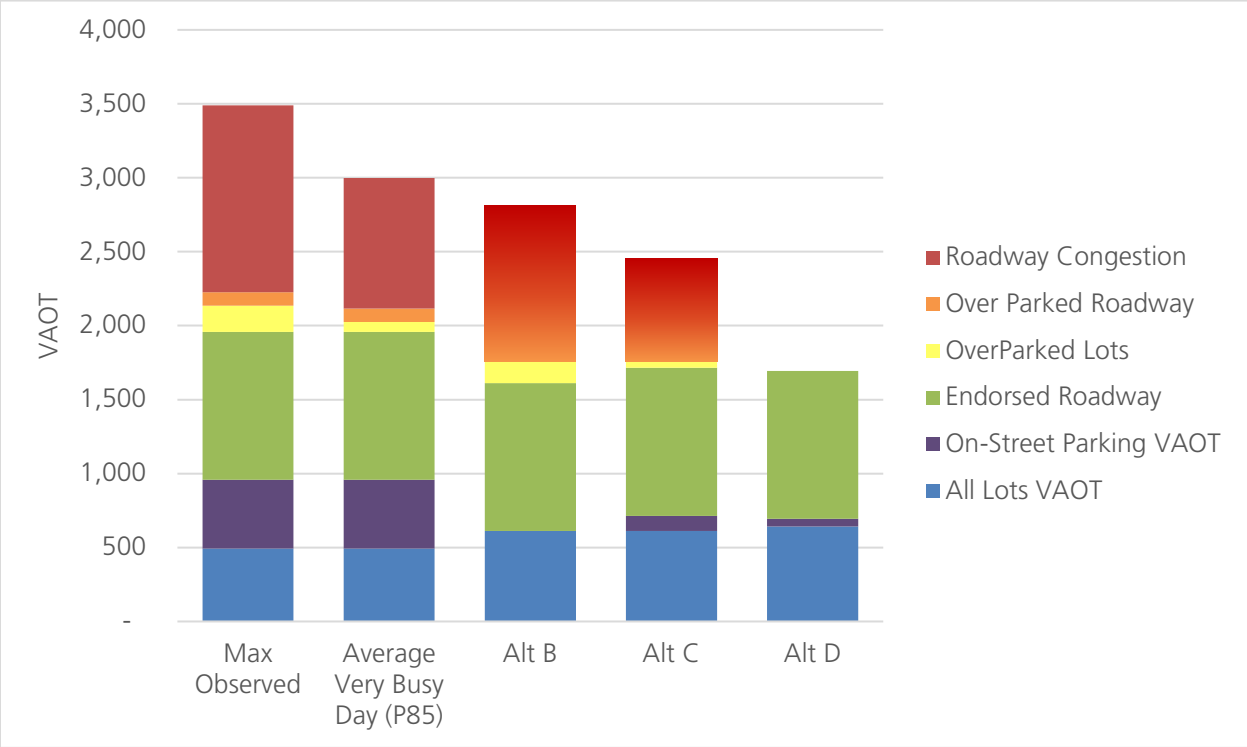
Visitor capacities for key areas of the park have been identified (see the section, "Visitor Use Framework," in chapter 2 and appendix A for discussions on visitor capacity). This capacity quantifies the amount of visitation that can be accommodated in these areas given desired conditions for visitor experience and resources. The capacity analysis took into account the management strategies being proposed in the plan that better distribute visitation through the park (e.g., reservation systems, parking changes) and address many of the current issues in the park (e.g., crowding, use conflicts, and resource impacts). By managing to the identified capacities of the most popular locations of the park, the quality of the experience in these locations is protected for the long term. See appendix A for how visitor experience quality informs visitor capacities.

Schoodic Peninsula— The strategies to manage the Schoodic Peninsula are common to all action alternatives and would result in beneficial impacts on visitor experience quality. The goal for Schoodic is to maintain opportunities for low-density recreation. This goal is reflected in the Schoodic general management plan and public comment on this plan. Additionally, research on visitor preferences for experiences on the Schoodic Peninsula overwhelmingly (95%) support this objective (Manning et al. 2002).

Impacts Related to Reservation Systems— Implementation of a reservation system could lead to visitor perceptions that the park is a place that is less easy to visit. Reservations commit visitors to visiting a location at a certain time and day. If the weather isn't compatible with the activity, this could lead to poor visitor experiences. Additionally, if current demand for experiences does not redistribute to other days of the year, those visitors who did not obtain a reservation for the directly managed areas would likely redistribute to other areas of the park, which could lead to overcrowded conditions and degraded visitor experience at those sites (e.g., Acadia Mountain, Eagle Lake, Schoodic Peninsula).

Figure 23 provides a summary of the number of vehicles at one time that could be accommodated on Park Loop Road under the conditions of each alternative, compared to the busiest and average busy days in 2016. The strategies in the action alternatives allow designated parking lots to become marginally more efficient through direct management strategies. The use that is currently over-parked in lots, over-parked along roadways, or classified as roadway congestion is redistributed to other times of day or days of the year to the extent practicable. However, as some alternatives (B and C) do not actively manage some lots and corridors and historic arrival patterns and demand prevail, it is expected that some areas of the roadways and some lots that are not directly managed through the reservation systems would likely still see higher demand than can be accommodated, resulting in overparking or roadway congestion on the busiest 20–25 days of the year. This "overuse" is represented in the gradients in figure 23 as where these vehicles will be (either on the roadway or overparked in lots) is not definitively predictable.

FIGURE 23. VEHICLES AT ONE TIME (VAOT) ON PARK LOOP ROAD BY ALTERNATIVE



Alternative B. The actions in alternative B (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to some beneficial, but more adverse impacts on visitor experience quality. In this alternative, some of the parking lots would be managed so that the sites proximal to these lots would not become overcrowded, therefore protecting the visitor experience in these locations. Congestion in these lots would be alleviated most of the time, reducing visitor stress on finding a parking spot and adaptive strategies would ensure that lots on the reservation system are maintained to desired conditions. This alternative manages some lots with a reservation system with a range of fixed duration of stay reservations for vehicles. While this fixed duration approach increases turnover rates and thereby increases the potential number of people who could access a site in a day, it may have adverse impacts to experience by limiting the duration of stay for visitors to a defined time block.

The current traffic patterns experienced at Acadia National Park would likely prevail because most roadway segments are not directly managed under this alternative. This would likely result in traffic jams at some times during high use times of the day and days of the year. These traffic jams may prevent visitors with reservations from accessing the location of their reservation in a timely manner, adversely affecting their experience. In some areas of the park, buses would continue to obstruct scenic viewsheds in some locations at some times, adversely impacting the experience quality of those views. Driving times may increase (people would likely drive slower or linger longer in pulloffs or along roadways as people try to enjoy the scenic corridors without the ability to park). This could increase congestion along scenic corridors and reduce the efficiency of the reservation system and associated roadway level of service. As parking near the most popular areas would be directly managed through reservation systems and right lane parking would no longer be allowed, visitors may begin to use temporary pullouts as long-term parking areas if they are unable to access a parking area for a proximal visitor use site. This would likely be most pronounced along Ocean Drive, particularly the roadway areas near Thunder Hole.

Alternative C (Preferred Alternative and Proposed Action). The actions in alternative C (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to mostly beneficial, but some adverse impacts on visitor experience quality. Those visitors who are able to obtain access to Ocean Drive and Cadillac Summit Road would benefit from a high-quality experience free of extended and systemic traffic jams. Additionally, the number of people at each site would be managed to expectations so crowding at attraction sites would not be experienced. Parking lots would be managed so that visitors with reservations are assured a place to park when they arrive. Because the most popular attractions at the park are directly managed through reservation systems, visitors can be confident that their experiences in those locations would be of high quality (i.e., free from visitor crowding). While the at one-time limits on use at Cadillac Summit (see appendix A) would limit the number of people at one time, overall this alternative could ultimately accommodate more visitor use in this area across the season (provided that the reservation systems for personal vehicle and road-based commercial tours are fully maximized). This could cause a negative impact on summit resources, and in turn adversely affect visitor experience of these resources. Additionally, concession service to Cadillac Mountain summit could provide increased interpretive opportunities as a part of that service, contributing to the benefits of this alternative.

Development of the Liscomb parking area as a well-designed, environmentally friendly parking facility would greatly enhance the quality of the arrival experience at this area of the park and the transition from vehicle to recreation experience. Also, the Hulls Cove Visitor Center would provide an enhanced experience for learning about the park and transitioning to transit service from private vehicle for those visitors who use this service. The addition of a formal lot near Acadia Mountain would result in people being able to access the trails in this location without having to park along the roadsides proximal to this location.

In some areas of the park, buses (i.e., Ocean Drive and Lower Mountain Road) would continue to obstruct scenic viewsheds during high use times of the day and year, which adversely impacts the visitor experience of these views in these locations. The current traffic patterns experienced at Acadia National Park would likely prevail along the segments of the roadway that are not directly managed by a reservation system. This would likely result in traffic jams along these road corridors during high use times of the day and days of the year, which would adversely affect visitor experience. However, the driving experience on the most popular road segments

(Ocean Drive and Cadillac Summit Road) would be protected by implementation of the reservation system, which limits the number of vehicles at one time that can move through these corridors.

Alternative D. The actions in alternative D (in addition to the actions analyzed under "Common to All Action Alternatives") would lead to mostly beneficial, but some adverse impacts on visitor experience quality. Those visitors who are able to obtain access to Park Loop Road would benefit from a high-quality experience, free of extended and systematic traffic jams. However, as individual sites and corridors in this system are not directly managed, there may be some transient congestion at the most popular destinations during high-use times of the day and days of the year. Relatedly, some areas of the park would continue to be less used. Monitoring indicators related to crowding would ensure that the number of people at each attraction site is managed to desired conditions so that crowding is not experienced. Additionally, limited bus access to key corridors would increase the quality of scenic views along the roadways. Additionally, concession service to Cadillac Mountain summit could provide increased interpretive opportunities as part of that service, contributing to the benefits of this alternative.

Limited access points to Park Loop Road could cause moderate congestion at those locations at the beginning of access times as many visitors may try to enter at these gates at the top of the hour to maximize their time in the corridor. Additionally, as drive in access to the resources and experiences to the Park Loop Road would be actively managed and limited it is expected that at some locations (West Street, Schooner Head Road, Otter Cliff Road, Great Meadow Drive, Kebo Street, and the Jordan Pond Road) visitors may park along the roadsides to either walk into or bike into the Park Loop Road system. This roadside parking could lead to adverse conditions along the roadway and may lead to crowding at sites that would require additional management strategies in those locations if thresholds are approached (see appendix A for more information on indicators, thresholds, and associated potential management actions).

The change in the direction of travel for Park Loop Road would provide a safer alternative for slow-moving traffic because they would have easier access to the scenic pullouts on the right side (ocean side) of the roadway. Making the majority of Park Loop Road one-way would correct current confusion at the Stanley Brook / Park Loop Road intersection, reducing the potential for vehicle incidents and increasing perceived driver safety. This change in direction of travel could also temporarily cause confusion along the newly reversed segments of road and intersections for drivers who are used to driving the road in the current designated travel pattern.

Cumulative Impacts. In all alternatives (including the no-action alternative) the completion of the Bold Coast Bike Tour Route could likely result in increased bicycle use along Schoodic Loop Road. This could result in the increased possibility of vehicle-bicycle incidents along this road segment and potentially impact the experience quality for cyclists if this route becomes popular during the peak season. For other cumulative impacts see the section on "Visitor Access and Recreation Opportunity."

Conclusion. The greatest benefit resulting from implementation of this plan is common to all the action alternatives. Instituting a visitor management framework, including monitoring indicators and taking management actions if thresholds are exceeded, would have a beneficial effect in the long term, reducing the extent and frequency of overcrowding in current and future popular areas of the park and ensuring the opportunity for visitors to experience quiet, low-use areas of the park.

Additionally, while implementation of a reservation system has some adverse impacts on visitor experience quality (see discussion above), over the long term it would result in sites that yield higher quality visitor experiences, more in keeping with the desired conditions for the "Range of Visitor Experiences" FRV. These benefits would be significant when compared to the current condition of these sites and experiences (alternative A).

The actions in alternative B would lead to some beneficial and mostly adverse impacts on visitor experience quality. While the reservation systems at some locations would directly manage the experience quality, this alternative does not proactively address the adverse impacts associated with high competition for parking at most of the parking lots and does not directly manage the most congested road corridors. As a result, it is likely that there would still be high levels of congestion in lots and along roadways during most days of the summer season. As the unique benefits of this alternative are only limited to a few locations, this alternative has fewer benefits and more adverse impacts related to visitor experience quality than either alternatives C or alternative D.

The actions in alternative C would lead to mostly beneficial impacts on visitor experience quality. This alternative takes action to directly manage the most popular (and therefore congested) corridors in the park. This action, in addition to the visitor use management actions (see impacts common to all action alternatives), would ensure that visitors have high-quality experiences in these key areas of the park. While there may be some intermittent crowding and congestion on other corridors, these events aren't likely to detract from the overall quality of the experience of the park resources and the transportation system. These benefits would be most acutely experienced on the managed corridors. As this alternative directly manages the most critical areas of the park to protect and maintain a high-quality visitor experience, this alternative has more beneficial impacts than alternatives A or B, and similar beneficial impacts as alternative D.

The actions in alternative D would lead to mostly beneficial impacts on visitor experience quality, with some potential adverse impacts. As this alternative directly manages the park loop road system, it would result in significant benefits to experience quality for those visitors who have access to these areas. However, as the individual sites are not directly managed there could be some intermittent congestion and crowding in some of the most popular locations. Also, stricter limits on use (see access section) could result in crowded and congested conditions (and therefore degraded visitor experience quality) at those locations that are not directly managed. This alternative has more benefits than alternatives A and B, and similar benefits to alternative C.

VISITOR AND USER SAFETY

Methods and Assumptions for Analyzing Impacts

This analysis discusses impacts on visitor and user safety related to the Acadia transportation systems. Some of the specific factors influencing transportation safety in Acadia National Park include increasing visitation, congestion that inhibits emergency response times, shared use of the roadway for vehicles and bicycles, and nontraditional and disorganized parking habits. Other factors that affect visitor safety in the corridor include traffic speeds, signs and markers that help orient visitors, and visitor behavior. Visitor behavior varies across individuals, and can be dependent on an individual's skills, abilities, and experience. These interrelated factors are discussed together in this section.

The level of detail varies because the level of impacts would vary. If there are no impacts or only slight impacts associated with certain actions, then they are not discussed here. The effects of the alternatives are analyzed based on anticipated results from changes to traffic management strategies, visitor use patterns, types of use, timing of use, changes in levels of development, and management actions associated with each alternative. The impacts of each alternative are determined by describing how each impact topic would change compared to existing conditions. This analysis is driven by the key question: "How would visitor safety, both real and perceived, be affected by the alternatives?"

Alternative A: No Action. The continuation of current management in alternative A would result in some beneficial impacts, but mostly adverse impacts on visitor safety. Because of the historic road width, one-way sections are generally safer and more pleasant to drive. Where right lane parking is prohibited, one-way sections of roadway provide safe space for passing vehicles and bicyclists. The one-way sections of roadway allow safer operation of buses and RVs.

However, the congested condition of the roadways under current conditions can mean that emergency response times are delayed during busy days (primarily on Ocean Drive and Cadillac Summit Road). To manage these peak congestion periods, the ranger division often has to allocate a majority of resources to these incidents, which makes the park staff unavailable to respond to other potentially more pressing, emergencies. Additionally, the current two-way traffic pattern nominally increases traffic on Park Loop Road by encouraging commuter traffic through the park (instead of taking other routes designed for commuter use). Due to the historic road width, the two-way section of Park Loop Road and Cadillac Summit Road is not designed for safe use by larger vehicles such as buses or RVs, especially when passing bicyclists or when meeting one another from opposite directions, which results in perceived safety risks and adverse impacts on safe use of the roadways. Finally, there is the potential for visitor injury from collisions between historic structures and motor coaches and other large vehicles that do not fit under historic bridges without straddling center lanes. Implementing the recommendations from the Traffic Safety Management Plan (2011) would mitigate many, but not all of these concerns.

Common to All Action Alternatives— Reductions in vehicle size would reduce the number of instances where vehicles need to cross the centerline, increasing safety along roadways for vehicles and bicycles. Ensuring buses fit within the dimensions of the historic bridges and roadways would result in safer bicycle/bus encounters and would allow them to stay in their lanes, especially under historic bridges and in tight curves, reducing the likelihood of collisions. Though the road would still provide shared motor vehicle and bicycle use, replacing large coach buses (+/- 60 passengers) with more small buses (+/- 30 passengers) would result in nearly double the bicycle/bus encounters on two-way sections of roadway, and could increase the potential for collisions.

Alternative B. In addition to the impacts discussed in common to all, benefits in this alternative would result from the overall reductions in vehicle volumes on Cadillac Summit Road (resulting from the managed access actions in this alternative) and would reduce the likelihood of vehicle conflicts.

Alternative C. The removal of right lane parking in some areas would reduce the number of vehicle-pedestrian conflicts and increase the safety of bicyclists. Overall, reductions in vehicle

volumes would also reduce the likelihood of vehicle conflicts on the corridors that are actively managed through the reservation system. The elimination of roadside parking at Eagle Lake would vastly improve visitor safety along this section of road for both pedestrians accessing trailheads and bicyclists. Additionally, the active management of the most used corridors would mean that ranger staff would not need to actively manage the congestion in these areas and would be able to respond more readily to other incidents in the park. The overall reduced traffic volumes in these corridors would increase the likelihood that emergency response vehicles would have unrestricted access to these areas of the park. These benefits, while limited to the locations where the NPS has jurisdiction of the road, could greatly reduce overall safety concerns.

The actions in this alternative could result in some site specific adverse impacts on visitor safety. Because the road would still provide shared motor vehicle and bicycle use, keeping right lane parking would increase the potential for vehicle/bicycle conflicts. Regulated access to corridors could increase the number of people who walk-in or bicycle in, which could pose safety issues along roadways.

Alternative D. Similar to alternative C, removal of right lane parking in some areas would reduce the possibility of vehicle-pedestrian conflicts and increase the perceived safety of bicyclists. Overall, reductions in vehicle volumes would also reduce the likelihood of vehicle conflicts on the corridors that are actively managed through the reservation systems, resulting in a lower probability of incidents. Additionally, the active management of Park Loop Road would mean that ranger staff would not need to actively manage the road congestion and would be able to respond more readily to other incidents in the park. The overall reduced traffic volumes on Park Loop Road would increase the likelihood that emergency response vehicles would have unrestricted access to these areas of the park.

Regulated access to corridors could increase the number of people who walk-in or bicycle in, which could pose safety issues along roadways. Changing Lower Mountain Road to one way could create temporary confusion and temporary driver safety hazards at the intersection of Lower Mountain Road and Cadillac Summit Road until visitors adjust to this change in traffic patterns.

Cumulative Impacts. In all alternatives (including the no-action alternative) the completion of the Bold Coast Bike Tour Route could result in increased bicycle use along Schoodic Loop Road. This could result in increased possibility of vehicle-bicycle incidents along this road segment and potentially impact cyclist safety if this route becomes popular during the peak season. For other cumulative impacts see the section on “Visitor Access and Recreation Opportunity” in “Visitor Use and Experience.”

Conclusion. The greatest benefit resulting from implementation of this plan is common to all the action alternatives. Reducing vehicle size so that vehicles can navigate park roadways without departing the travel lane greatly improves safety on roadways of all user types. These beneficial impacts would be permanent. Additionally, the active management of these areas and corridors would allow park staff to be more responsive (both in timing and number) to other incidents in the unit, resulting in long-term beneficial impacts to all users. In all alternatives, the regulated access to sites and corridors could lead to an increased number of visitors accessing the park as pedestrians or cyclists, and therefore increasing the potential for between-user conflicts on the roadways. However, this potential adverse impact is minor when compared to the overall reduction in volumes that would reduce the potential for between-user conflicts.

SOCIOECONOMICS

Methods and Assumptions for Analyzing Impacts

Economic data, visitor use data, expected future visitor use, park records, and future developments of the park as well as studies of similar actions and impacts were all considered in identifying, discussing, and evaluating expected impacts. The geographic area analyzed for potential impacts on socioeconomics is the five-county area around the park including Hancock, Knox, Penobscot, Waldo, and Washington Counties in Maine.

The effects of the alternatives on the socioeconomic environment were qualitatively analyzed based on potential changes in visitor use patterns, visitor demand, tourism, commercial visitor services, visitor spending, and resultant contributions to the local and regional economy.

General Assumptions for Socioeconomics. The following assumptions were considered when assessing the effects of each alternative management action:

- With no changes in park management, visitation levels for all uses would increase throughout the park during the time frame of the plan.
- Visitation levels in the shoulder season would continue to increase.

Alternative A (No Action). Alternative A (no-action alternative) would not result in any change to current contributions that park visitation and operations have on the local and regional economy. The dynamic and interdependent relationship between the park and local communities would remain unchanged. Management of park visitors would continue to vary seasonally as visitor demand and needs change and the physical capacity of roads and designated parking lots would remain generally the same. This can be expected to result in similar volumes of use as currently experienced where finding parking in preferred locations is very challenging at peak times. Visitors who prefer less crowded park experiences and who may not have the flexibility to adjust their travel plans to lower use days of the year would continue to be displaced from the most popular park sites. Visitors would continue to be able to arrive at sites and choose recreational experiences and opportunities spontaneously.

Under this alternative, restrictions and prohibitions on roads and parking areas would continue to be implemented when needed to address safety concerns. An example of this is the temporary closure of Cadillac Summit Road due to extreme congestion. For visitors who have flexibility in their schedule to adjust their travel plans, the temporary closure of a popular location may result in spending more time exploring nearby attractions and returning at a less congested time. Longer visits to nearby areas are likely to result in higher visitor spending in the visitor service sector, a localized, beneficial impact to the local economy. For visitors on tight schedules, such as cruise ship visitors, traffic delays and lack of parking space for their road-based commercial tour bus can result in having to drive by and not being let off at popular destination points. In 2016, almost 70% of cruise ship passengers spend between 4 and 7 hours off the ship. Because there are no substitutes for visiting another national park within a 20-mile radius from Bar Harbor, increased congestion that reduces access and opportunity to explore the park would have adverse impacts on the tourism experience of visitors on tight schedules. The ongoing extreme congestion at peak times, lack of visitor parking at popular visitor destinations in the park and at the town of Bar Harbor, as well as large visitor crowds could result in negative visitor experience and discourage some visitors from visiting the park again or completing their average

stay. These would result in long-term minor adverse impacts on the local and regional economy from decreased visitor-related spending and the associated induced effects (e.g., reduced seasonal employment).

This alternative would not result in changes to current contributions to commuting times. Half of the park's visitation (over 1.5 million visitors) is expected to continue to be concentrated into the three-month period of July through September; therefore, summer congestion and traffic slowdowns are expected to continue to worsen. The particularly high traffic volumes and congestion on roads on the eastern portion of the island during peak visitor season may lead to park visitor experience being perceived as less safe and of diminishing quality—a potential long-term adverse impact on tourism and associated service-related business that depend on the inflow of tourism dollars. Under this alternative, local visitors who have the flexibility to adjust their plans would likely adjust their visit to coincide with either less congested times of the day or different times of the year when less nonlocal visitors are expected at the park. Changes to how locals visit the park would result in undetectable effects on the local and regional economy. However these effects would likely be noticeable in the locals' quality of life as the benefits of living next to a national park may be perceived as diminishing. The effects on local quality of life are likely to be localized to the Mount Desert Island communities.

The months of September and October are likely to experience an increase in large vehicle traffic due to increased cruise ship visitation in those two months. Cruise ship visitation previously discussed in chapter 3 has greatly increased over the last 15 years. There were 64 scheduled cruise ship visits to Bar Harbor in 2002, over 110 ships dropped anchor in Bar Harbor between April and October 2016, and over 160 were scheduled to visit by the end of the 2017 season. A similar level of growth was observed in the number of bus and van CUA holders, which grew from 25 in 2003 to almost 120 in 2016. As the number and size of cruise ships visiting Bar Harbor increases, an increased number of buses that use park and local roads would be expected to continue. The continuation of current management is expected to result in long-term, noticeable, adverse effects on local quality of life as local residents and commuter concerns with the high level of visitation to the park and the effects of this visitation on resources, park and local infrastructure, current traffic congestion, parking, and safety issues would continue.

As visitor season continues to expand especially during spring and fall months when park operations are not fully ramped up, the demand and pressure on park services and facilities would continue to increase. With expanded visitor season, additional staff is needed to clean restrooms, pick up trash, and conduct overall custodian activities. Furthermore, under this alternative, resource protection and visitor safety activities would continue to be reactionary and take away resources (people and funds for temporary fixes such as signage) when issues arise. Park operations and services would remain constrained by current budgetary conditions. However, the no-action alternative would not further constrain park operations or services.

Because visitor commercial services would generally continue as currently managed, business operators would not realize any changes to the current contributions resulting from visitor expenses. However, without any changes to current management, congestion issues are expected to continue to increase. Under this alternative, commercial operators would maintain flexibility to adjust tours to deal with delays; however, operators using oversize vehicles have less flexibility due to the geometry of park roads and bridges. In practice, this means that oversize commercial vehicles are limited to certain areas in the park and cannot take their clients elsewhere in the park to substitute an experience. The lack of reserved parking for road-based

commercial tour operators at some of the most popular park visitor sites would continue to be an operational risk to these operators as drivers may need to circle lots while a space becomes available. Continued growth in congestion can be expected to be unfavorable for the long-term sustainability of road-based commercial tour operators, resulting in a long-term adverse impact on the local and regional commercial transportation sector and associated service-related businesses that cater to these park visitors.

Continuation of current visitor commercial services management would continue to have short- and long-term adverse effects on facilities and roads damaged by oversize commercial vehicles. An example of this is the entrance station, which motor coaches collide with every year adding to the park facility maintenance needs. As no major changes in budgeted resources to fund NPS operations are anticipated under this alternative, addressing the above-mentioned damages would continue to be done at the expense of other park maintenance projects like culvert cleaning and mowing and with the limited available park maintenance staff. These would adversely affect the long-term sustainability of the park resources upon which visitation and the associated local economic activity relies. Current management would continue to provide commercial operators with short and long-term beneficial economic impacts from maintaining business in the park.

Service-related businesses supported by park visitation would continue to benefit from visitor expenditures inside the park and in the surrounding area. Contributions to the local and regional economies that result from park visitation would continue to be beneficial.

Common to All Action Alternatives. As described under "Visitor Access and Recreational Opportunities," increased parking and traffic condition information prior to visitor arrival and at arrival as well as decreased the number of private vehicles accessing certain areas of the park as part of implementing reservation systems would result in beneficial impacts on visitor access, opportunities, and experiences. Positive visitor experience tends to translate into visitors completing or extending their average stay and repeat visits, both of which would result in beneficial impacts on the local and regional economy.

As described under "Visitor Access and Recreational Opportunities," the a amount of available parking is relatively fixed across all the alternatives and therefore under any reservation system, establishing a structure that successfully move visitors from crowded areas toward other less-visited park areas would result in a long-term, beneficial impact to the local and regional economies from sustained visitor-related spending and the associated induced effects. If the alternatives were in place in 2016, there would have been between 26 and 72 days (alternatives B and D, respectively) of the 155 days of the reservation system when the demand for private vehicle access would have exceeded available parking. This also means that there would been between 129 and 83 days (alternative B and D, respectively) of the 155 days of the reservation system when the availability of private vehicle access was not fully utilized and there is room for potential private vehicle access growth. Assuming the reservation system is fully utilized and visitors are not dissuaded from visiting the park, an additional 5%–33% private vehicles could be accommodated under a reservation system resulting in beneficial impacts on the local and regional economy due to the potential for an overall increase in access to the park. Under any reservation system, visitors who prefer private vehicle access may be displaced from high use days due to lack of reservation availability and may not be flexible enough to change their travel plans to lower use days of the year. A decrease in visitation would result in a reduction of current contributions from visitor spending in the local and regional economy.

Under all action alternatives, the park would continue to promote the availability and expansion of the Island Explorer, up to the determined visitor capacities for key areas of the park and the carriage roads (see appendix A), in order to facilitate access for visitors unable to secure a reservation. Implementing any configuration of a reservation system has the potential to significantly increase demand for alternate means of transportation (i.e., Island Explorer, road-based commercial tours, and/or app-based on-demand rides). As only 2% of current visitors report being part of a commercial guided tour group, the implementation of a reservation system is likely to result in long-term beneficial economic impacts on the local and regional commercial travel and tourism sectors from the additional economic activity from new transportation operations including increased direct visitor spending and new jobs supported. Although the number of people arriving via oversize commercial vehicles at one time (PAOT) would decrease at key park destinations, over the course of the whole day and the whole reservation period the total number of visitors would increase at Cadillac Summit and Ocean Drive, respectively, by over 40%. The total number of visitors arriving via a commercial operator that are permitted at one time at key park destinations is identified in appendix A. To the extent that commercial operators are able to offer tours throughout the full reservation system period, an increase in access to these sites would result in long-term beneficial impacts to the local and regional transportation sector and businesses that benefit from this increased spending.

Furthermore, with a decrease number of private vehicles accessing certain areas of the park, it may provide new or expanded opportunities for commercial visitor services, a beneficial impact to the local and regional commercial transportation sector.

For visitors who arrive at the park in their own vehicles and have not made reservations in advance, and have flexibility in their schedule to adjust their plans, a reservation system may result in spending longer time in the area and exploring less visited areas of the park. Longer visits would result in beneficial impacts on the local economy as visitor services such as gas, food, and lodging accommodations are obtained in the local communities.

For visitors who are unable to secure a reservation to access the park and are on a tight schedule, the new Acadia Gateway Center along with improvements at Hulls Cove and associated large parking lots would provide the opportunity to park and transfer to alternate transportation options to access areas within the reservation system and would inform them of other areas of the park that can be explore outside the reservation system. This would support maintaining overall visitor access and diverse opportunities to explore the park which may result in improved visitor experience from dispersed visitor use. To the extent that these additional information and orientation maintains visitation levels and disperses use, this would represent a long-term beneficial impact to the local and regional tourism and recreation economy.

Implementing commercial vehicle size requirements is expected to result in neutral economic impacts on the local and regional commercial transportation sector. Although road-based commercial tour operators wanting to operate in the park would need to switch to vehicles that fit within the existing bridge height and/or road geometry, these requirements would be phased in over several years. With an average of 10 to 12 years of rated useful life for large and small heavy duty buses, it would be expected that operators would incrementally upgrade their fleet size as the vehicle size requirements are phased in or to meet potential commercial service requirements . The implementation of vehicle size requirements has the potential to displace some of the current commercial operators from the park and present new business opportunities for other commercial operators. Vehicle size requirements may favor businesses whose main focus is catering to park visitors and who are able to capitalize on the full park

visitor season. Commercial operators that include visiting the park as part of longer regional tours may need to maintain large motor coaches to serve the needs of their business which would require them to partner with tour operators who choose to invest in commercial vehicles that meet the new size requirements. Such change would result in long-term adverse impacts on the commercial operators who would no longer be able to conduct business in the park, but provide long-term beneficial impacts on the commercial operators that successfully invest in commercial vehicles that allow them to operate in the park. Smaller commercial vehicles would also help better maneuver park roads which would have a long-term beneficial impact on the preservation and conservation of park resources as well as reduce park repair expenses associated with facilities and roads damaged by oversize commercial vehicles. Furthermore, it may provide road-based commercial tour operators a new opportunity to take customers to other areas of the park that may have been previously out of reach. The switch to smaller buses that meet the new vehicle size requirements would result in a larger number of authorized commercial vehicles that would employ additional drivers. This would be a long-term beneficial impact on the transportation sector and the number of jobs it supports.

Under all action alternatives, the number of oversize commercial services allowed at key locations of the park would be actively managed through requirements established in their operating conditions to ensure desired conditions are maintained and visitor capacities at primary attractions are not exceeded. An example of how commercial vehicles may be managed would be through the use of a reservation system which would require additional pre-planning for commercial operators on when their services may be provided. Having a system in place to manage oversize commercial vehicle access would reduce operational risks associated with limited parking and would ensure that operators' customers access the primary park destinations. This would be expected to result in satisfactory, high-quality visitor experiences that are beneficial to the long-term health of the operators' business. However, under a reservation system commercial operators would lose some of the flexibility afforded by the current management practices.

Acadia National Park would continue to be a significant economic driver for local and regional communities and would continue to work in preserving the qualities and values (recreational, aesthetic, ecological, and cultural/historical, among others) that enhance local quality of life. The elimination of roadside parking at the Eagle Lake carriage road entrance along SR 233 and at the Acadia Mountain off SR 102 would result in beneficial impacts on the local quality of life because it would improve traffic flow and safety concerns associated with sharing the limited road space with pedestrians, bicyclists, and moving traffic. The switch to smaller buses that meet the new vehicle size requirements would result in a larger number of authorized commercial vehicles on the road, which may increase traffic congestion both within the park and in local communities. The smaller size of these buses and improved ability to navigate and park in local communities may result in noticeably beneficial impacts to local quality of life. However the increased number of these smaller commercial vehicles in local communities would result in adverse impacts on the local quality of life as it could further aggravate locals concerns associated with parking in Bar Harbor and traffic problems in and around the park. Promoting the availability and expanding the Island Explorer public transit service under all of the action alternatives, as funding allows, would provide visitors the ability to access the park and move freely about the island. This would result in beneficial impacts to local quality of life and local economy by alleviating some of the congestion caused by too many vehicles on island roads and by creating an opportunity to provide an improved visitor experience to the area.

Schoodic Peninsula. The opportunity for partners and local communities to provide bike rentals and other necessary and appropriate commercial visitor services in the Schoodic District would result in beneficial impacts to the local economy. The increased range of access and visitor opportunities in this area such as improved bicycle connection to the park, bike rentals, and accessible pedestrian trails between the Schoodic Education Center and Research Center campus and Schoodic Point would support increased visitation in this area. Furthermore, this may help accommodate some of the displaced visitors from Mount Desert Island who did not secure a reservation to visit other key areas of the park. Increased visitor access in this area in conjunction with opportunity for high-quality experiences would result in long-term beneficial impacts to the local and regional tourism and recreation sectors.

Alternative B. In addition to the actions analyzed under "Common to All Action Alternatives," alternative B's site management actions emphasize the protection of high-quality visitor experiences and resources at five of the primary attractions and trailheads along Park Loop Road through implementation of parking reservations at each of those areas. As a result of reservation system proposed under this alternative, roughly 53% of the parking that provides access to sites along the Park Loop Road would be actively managed. Having the certainty and ability to access the five sites that are in the reservation system by securing a parking reservation would enhance visitor experience and support visitors maintaining the average length of stay and desire to return for future visits. As visitors who wish to spontaneously engage in scenic driving to all segments of the park roads will continue to be able to do so and there will be other areas of the park accessible without a reservation, the reservation system proposed under this alternative would support improved visitor experience and proactive destination stewardship. This would support sustainable tourism levels which in turn provide long-term beneficial impacts to the local and regional economies. Alternative B would result in the least number of days (26 out of 155 days in the reservation system) in which demand for private vehicle access to Park Loop Road would exceed number of available parking. Please refer to figure 20 under "Visitor Access and Recreational Opportunity" for the estimated daily vehicles on Park Loop Road by alternative. Comparted to alternatives C and D, the reservation system proposed under this alternative is relatively more efficient and provides greater visitor access. The smoothing of visitation levels and spreading of visitors to other areas of the park would allow local communities and businesses to continue to reap the benefits of tourism while addressing some of the current congestion, crowding and safety concerns.

The elimination of right lane parking along Park Loop Road has the potential to improve visitor experience as it will likely decrease vehicle-pedestrians conflicts and visitor safety concerns. This would contribute to positive visitor experiences which support maintaining or expanding average stays and desire to return to visit, a long-term beneficial impact on the local and regional tourism economy. However, until alternative parking options at Hulls Cove and the Acadia Gateway center are developed, removing right lane parking may displace vehicles that would have otherwise been parked in the right lane to other areas of Mount Desert Island. This influx of vehicles into the community would further aggravate locals concerns associated with parking in Bar Harbor and traffic problems in and around the park resulting in adverse impacts to the local quality of life.

Under this alternative, future construction expenditures associated with the new facility at Hulls Cove, rehabilitation of the existing Hulls Cove Visitor Center structure, a new Acadia Gateway Center as well as the gate and signage improvements associated with the reservation system would be greater than alternative A and would support local construction trades industry and

associated vendors and suppliers. This would result in beneficial economic impacts during the three- to five-year-long construction period.

Alternative C (Preferred Alternative and Proposed Action). In addition to the actions analyzed under "Common to All Action Alternatives," alternative C would actively manage vehicle access to three of the most popular visitor destinations (Cadillac Mountain, Jordan Pond, and Ocean Drive), which would provide high quality visitor experiences at these sites while alleviating some of the congestion and crowding along Park Loop Road. As a result of reservation system proposed under this alternative, roughly 58% of the parking that provides access to sites along the Park Loop Road would be actively managed. Having the certainty and ability to access the sites that are in the reservation system by securing a parking reservation would enhance visitor experience and support visitors maintaining the average length of stay and desire to return for future visits. As visitors who wish to spontaneously engage in scenic driving to all segments of the park roads will continue to be able to do so and there will be other areas of the park accessible without a reservation. The reservation system proposed under this alternative would support improved visitor experience and proactive destination stewardship. This would support sustainable tourism levels which in turn provide long-term beneficial impacts to the local and regional economies. Based on 2016 data, there would be 42 days (of the 155 where the reservation system would be in place under this alternative) when the demand for number of private vehicles access to Park Loop Road would exceed available parking under alternative C. Please refer to figure 20 under "Visitor Access and Recreational Opportunity" for the estimated daily vehicles on Park Loop Road by alternative. Comparted to alternatives B and D, the reservation system proposed under this alternative would provide the most significant increase (+87%) in vehicle access to Ocean Drive. The smoothing of visitation levels and spreading of visitors to other areas of the park would allow local communities and businesses to continue to reap the benefits of tourism while addressing some of the current congestion, crowding and safety concerns.

Visitor access, in conjunction with high-quality visitor experiences, is the most influential factor in determining length of stay in an area and willingness to return for a visit. The economic impacts of visitation and tourism depend on length of stay (generally speaking, the longer visitors stay, the more visitors spend) and willingness to return. The eventual elimination of right lane parking along Park Loop Road would improve visitor experience as it would help decrease vehicle-pedestrians conflicts and visitor safety concerns. This would contribute to positive visitor experiences which support maintaining or expanding average stays and desire to return to visit, a long-term beneficial impact on the local and regional tourism economy.

Under the timed-entry reservation system proposed under alternative C, there would be no restrictions on length of stay as in alternative B. This may result in visitors continuing to have difficulty securing parking at the most popular visitor destinations during peak days and times, however the ability to secure parking in advance, coupled with reduced levels of congestion is likely to result in improved visitor experience from current conditions. Additionally, the construction of new large parking lots such as the parking areas at Eagle Lake, Liscomb Pit, and Acadia Mountain with associated new trail connections would further support enhanced visitor access at destinations outside the reservation system.

The implementation of a timed entry reservation system with no restrictions on length of stay would likely result in visitation changes including strategizing park visits that could have an effect on the goods and services demanded (e.g., higher demand for ready-to-go meals) and

amount of time spent in the local area. To the extent that other areas of the park outside the reservation system would satisfy visitor's expectations for their park visit then the actions under alternative C would have long-term beneficial impacts on the local and regional tourism industry.

Under this alternative, future construction expenditures associated with the new and enlarged visitor center at Hulls Cove, substantial expansion of parking capacity at Liscomb Pit and Hulls Cove, relocation of maintenance area to Satterlee Pit, as well as the gate and signage improvements associated with the reservation system would be greater than alternatives A and B and would support the local construction trades industry and associated vendors and suppliers. This would result in beneficial economic impacts during the two- to three-year-long construction period.

Alternative D. In addition to the actions analyzed under "Common to All Action Alternatives," alternative D would manage the volume of vehicles on Park Loop Road at a systemwide level during the peak visitor season. This is likely to significantly alleviate congestion and crowding along Park Loop Road and provide for high-quality visitor experiences. Visitor access in conjunction with high-quality visitor experiences are the most influential factors in determining length of stay in an area and willingness to return for a visit. Under alternative D, less visitors are able to access the park via private vehicle at one time than in alternatives A through C. Based on 2016 data, there would be 72 days (of the 155 where the reservation system would be in place under this alternative) when the demand for number of private vehicles access to Park Loop Road would exceed available parking under alternative D. Please refer to figure 20 under "Visitor Access and Recreational Opportunity" for the estimated daily vehicles on Park Loop Road by alternative. It is expected that visitors who do gain access via private vehicle would have exceptionally higher quality experiences and therefore are more likely to return to the park and Mount Desert Island for a repeat visit. Visitors who wish to spontaneously engage in scenic driving to all segments in Park Loop Road will not be able to do so without a reservation although there will be other areas and roads of the park accessible without a reservation. With significantly less visitors having access to these sites by private vehicle than current levels and with the reservation system including most of the park's iconic destinations, it is possible that some visitors may perceive access to the park as restrictive which may dissuade them from visiting. A decrease in visitation or reduce length of stay due to an inability to access iconic park areas would result in long-term, adverse, economic impacts on the local tourism industry and associated service-related businesses.

The proposed timed-entry reservation system supports a high degree of flexibility and spontaneity once visitors enter Park Loop Road, which would result in a beneficial impact on visitor experience. With no limits to length of stay and without the option for re-entry, visitors may adjust their visit patterns to maximize the amount of time they can spend at favored destination sites. Such change may increase demand for ready-to-go food items and create new demand for on-site services and goods such as vending machines and walking tours.

Additional access to the Sand Beach area from the new Satterlee Pit parking lot and new larger parking lot at Eagle Lake that would accommodate the vehicles typically parked along the highway would reduce the possibility of vehicle-pedestrian conflicts and general vehicle conflicts, resulting in beneficial impacts to visitor experience, access and safety.

The impacts resulting from the elimination of most parking in the right-hand lane of Park Loop Road on local quality of life would be the same as those described under alternative B. The

implementation of a timed-entry reservation system for all of Park Loop Road would affect locals who use sections of this road for commuting purposes. A reduction in access to park roads for local recreation and travel would result in long-term, noticeable, adverse impacts on local quality of life.

Under this alternative, future construction expenditures associated with improvements at Hulls Cove, widening the intersection of Stanley Brooke Road and Park Loop Road; parking lot improvements at Thunder Hole, Satterlee Pit, and Eagle Lake; new entrance stations at Wildwood Stables and at Paradise Hill as well as the gate, and signage improvements associated with the reservation system would be greater than alternative A, but less than alternatives B and C. The proposed infrastructure improvements under this alternative would support the local construction trades industry and associated vendors and suppliers. This would result in beneficial economic impacts during the two- to three-year-long construction period.

Cumulative Impacts. A number of projects analyzed in the cumulative impacts analysis (e.g., Maine Office of Tourism's Five-Year Strategic Plan, potential plans to renovate Bar Harbor's ferry terminal, the Jackson Laboratory Campus Zoning Plan) would ultimately result in additional visitors and workers being drawn and accommodated on Mount Desert Island and in proximity to the park. These actions would likely increase the demand for access to the park via Island Explorer and commercial services (in all alternatives). This could increase competition for the limited capacity at the iconic park sites such as Cadillac Mountain and Jordan Pond House, resulting in degraded visitor experience. Park visitors are an important economic driver that contribute to the local and regional economy through the wide variety of activities they engage in when visiting—eating out, shopping at local stores, exploring museums, going on tours, etc. However, large numbers of visitors have other impacts on the local community including increases in foot and traffic congestion in Bar Harbor, increase pressure on community infrastructure and services including roads, restrooms, and emergency services as well as changes to the town character that locals wish to preserve.

Social and economic impacts from implementing the action alternatives would be similar to those of other past, current, and future development across the region and those under the no-action alternative. These include population and economic growth across the region that would result in minor, long-term increases in traffic on regional and local roads; minor, long-term increases in visitor spending, bolstering tourism-related business in the region; long-term demand on community infrastructure and services; as well as tax and fee revenues to fund public services and facilities. The action alternatives could result in long-term, minor, economic effects on tourism-related business and on local traffic and safety due to the changes in visitor use, visitor distribution and levels.

The effects of these other past, current, and reasonably foreseeable future actions by others, including the possible renovation of Bar Harbor's ferry terminal and the ongoing construction projects on Jackson Laboratory's Bar Harbor campus in combination with the effects of the NPS action alternatives, would result in minor to moderate, beneficial, cumulative effects. The effects of the NPS action alternatives would add a small contribution to these effects. For example, the visitor spending from changes in visitor use, distribution and levels would be small in relationship to the total spending by area residents, businesses and other industries in the area.

Conclusion. Visitor access, in conjunction with high-quality visitor experiences, are the most influential factors in determining length of stay in an area and willingness to return for a visit. Longer length of stays and return visits tend to result in beneficial economic impacts on

surrounding communities. With increasing visitor levels, traffic, and parking issues, the actions in alternative A would be inadequate to support the regional efforts in enhancing tourism and increasing visitor access in the area. The increased trip planning resources and enhanced transit services under "Actions Common to All Alternatives" make all action alternatives more beneficial than alternative A.

The most notable impact of alternative B and C is the improvement of visitor access to key park sites via private vehicle for those without a parking reservation. These alternatives maintain high levels of private vehicle access to Park Loop Road while providing greater certainty and access to parking for those who are able to secure a parking reservation. In terms of economic impacts due to the levels of visitor access, alternative B and C would be more beneficial than alternatives A and D.

All of the action alternatives involve beneficial and adverse impacts on the local and regional economies and on the local quality of life. All action alternatives improve visitor access and support high-quality visitor experiences over alternative A. All action alternatives would result in short-term, beneficial impacts on the local construction trades industry and associated vendors and suppliers as a result of future construction expenditures associated with infrastructure improvements.

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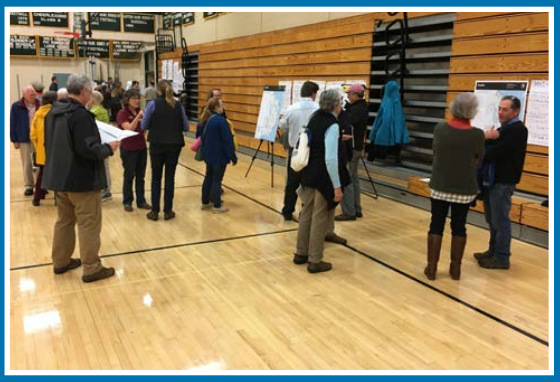
Chapter 5

Consultation and Coordination



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CHAPTER 5: CONSULTATION AND COORDINATION

INTRODUCTION

The National Park Service consulted with various agencies, tribes, organizations, and interested persons in preparing this document. The process of consultation and coordination is an important part of this project. The public had two primary avenues for participation during the development of the plan—participation in public meetings and responding to newsletters by submitting comments via regular mail, by hand, and electronically through the NPS Planning, Environment, and Public Comment (PEPC) system website. This chapter summarizes the opportunities the public had to participate in the planning process and consultations that occurred with federal and state agencies and tribes.

PUBLIC SCOPING

On August 28, 2015, the National Park Service published in the *Federal Register* (vol. 80, no. 167, pages 52336–52337) a notice of intent to develop a transportation plan / environmental impact statement for Acadia National Park. The notice requested the public share their thoughts, concerns, and ideas for the plan during a comment period extending from May 18 to September 30, 2015. The planning team sought this public input to understand the public's perspectives on key issues and management options for the future of transportation in the park. These comments were instrumental in the subsequent creation of the range of preliminary concepts.

To inform the public of the scoping process, a newsletter describing the context for the plan and how to comment was distributed in the summer of 2015. This newsletter provided a general overview of the planning schedule, provided background on issues and opportunities regarding transportation in the park, and opportunities for the public to engage in the planning process.

To reach a broad audience, the newsletter and information about public scoping were shared with the public in a variety of ways. An electronic copy of the newsletter was distributed to individuals on the park's mailing list (185 contacts). A press release was issued announcing public scoping. Social media, including Facebook and Twitter, were also used during the scoping period to inform people about the planning effort.

Approximately 148 people also attended public open house events during the comment period. This included two meetings at the Peninsula School in Prospect Harbor on June 3 and July 30, 2015, respectively, and two at Mount Desert Island High School in Bar Harbor on June 4 and July 29, 2015, respectively. All handwritten comments received during the public open house were transcribed and entered into the PEPC system.

The National Park Service also held six public outreach sessions in which uniformed employees solicited public feedback at a booth with sign-in sheets, newsletters, comment cards, and an informational poster. The public was encouraged to provide comments related to the same questions presented at the public open house events. Verbal public comments received at the sessions were recorded by the staff and later entered into the PEPC website. Visitors were also encouraged to mail in a public comment card or enter their comments directly into the PEPC website. A total of 44 visitors signed the sign-in sheets during these sessions. Dates and locations of these visitor outreach sessions included:

- August 3, 2015, at Schoodic Point

- August 8, 2015, at Eagle Lake
- August 8, 2015, at Sand Beach
- August 11, 2015, at Hulls Cove Visitor Center
- August 13, 2015, at Jordan Pond House
- August 25, 2015, at Bass Harbor Head Light

A large majority of the public comments (61%) submitted during the public scoping period were from Maine, but comments were also received from across the country. A total of 289 individual correspondences were submitted, a majority of which were submitted directly to the NPS PEPC website. Hard copy letters and e-mails that were mailed or delivered to the park, including those submitted on behalf of user and advocacy groups, were entered into the PEPC system. The PEPC system serves as a database where the National Park Service can analyze and summarize public scoping comments.

PUBLIC ENGAGEMENT ON THE PRELIMINARY CONCEPTS

During the summer of 2016, the NPS planning team began developing a range of preliminary concepts for the transportation plan. While not required by the National Environmental Policy Act, the planning team felt that public feedback on the preliminary concepts would be vital to inform development of the draft environmental impact statement.

To inform the public of the range of preliminary concepts and provide an update on the planning effort, a newsletter was released on October 13, 2016. The newsletter described the draft goals and desired conditions for each fundamental resource and value, management strategies for each preliminary concept, and identified next steps in the planning processes. The public was asked to provide feedback on the preliminary concepts during the comment period that ran from October 13 to November 30, 2016.

To reach a broad audience, the newsletter and information about the preliminary concepts were shared with the public in a variety of ways. Both the availability of the newsletter; the length of the comment period; and the dates, times, and locations for the open house events were announced in a news release issued on October 12, 2016. An electronic copy of the newsletter was e-mailed to individuals on the park's mailing list (201 contacts), which included public scoping meeting attendees who provided e-mails and indicated that they would like to be added to the park's mailing list.

Approximately 230 people attended open house events. These open houses were held in Prospect Harbor, Maine, on Wednesday, November 2, 2016, and in Bar Harbor, Maine, on Thursday, November 3, 2016. All handwritten comments received during the public open house were transcribed and entered into the PEPC system.

A large portion of public comments (77%) submitted during the public review of the range of preliminary concepts were from Maine, but comments were also received from across the country. A total of 213 individual correspondences were received, the majority of which were submitted directly to the PEPC website. Hard copy letters and e-mails that were mailed or delivered to the park also were entered into the PEPC system.

AGENCY AND TRIBAL CONSULTATION

US Fish and Wildlife Service, Section 7 Consultation

The Endangered Species Act requires (section 7(a)(2)) that each federal agency, in consultation with the Secretary of the Interior, ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. The National Park Service initiated informal consultation with the US Fish and Wildlife Service, Maine Field Office, in a letter dated July 1, 2015. The National Park Service also initiated informal consultation with the National Marine Fisheries Service, Greater Atlantic Regional Fisheries Office, in a letter dated July 1, 2015.

These letters notified the US Fish and Wildlife Service and the National Marine Fisheries Service that the National Park Service had begun developing a transportation plan for Acadia National Park and was initiating informal consultation on the project. The letter to the US Fish and Wildlife Service included a list of federally listed endangered, threatened, and candidate species for Acadia National Park that were assessed for potential impacts, including roseate tern (*Sterna dougallii*), Atlantic salmon (*Salmo salar*), and northern long-eared bat (*Myotis septentrionalis*). The letter requested that the agencies review for and provide advice to ensure adequate evaluation of the potential impacts that the transportation plan / environmental impact statement project would have on federally listed endangered, threatened, and candidate species. In a letter dated July 15, 2015, the US Fish and Wildlife Service confirmed the possible presence of these species in the project area.

In a letter dated July 21, 2015, the National Marine Fisheries Service advised that no consultation was necessary due to the lack of potential for the plan to impact endangered species protected under the Endangered Species Act nor any essential fish habitat protected under the Magnuson-Stevens Fisher Conservation and Management Act.

A separate biological assessment is being prepared that analyzes the effects of the preferred alternative on the federally listed species listed above in accordance with the Endangered Species Act. The biological assessment will be submitted to the US Fish and Wildlife Service for their concurrence and will be included in an appendix in the final environmental impact statement.

Section 106 Consultation with Maine State Historic Preservation Office

In a letter dated July 1, 2015, the National Park Service (Acadia National Park) notified the Maine state historic preservation office of the intent to consult under section 106 of the National Historic Preservation Act regarding the preparation of a transportation plan / environmental impact statement for the park. The Maine state historic preservation office has been informed of the status of the project throughout the planning process and was provided a copy of the preliminary concepts newsletter.

Park staff have substantially completed cultural resource surveys of the area of potential effect. There may be a need to conduct additional surveys for specific project areas that are yet to be finalized (e.g., entrance station development, vehicle turnouts, additional parking areas) and to carry out monitoring during construction. However, the historic properties currently identified

in the document reflect the best available information regarding the known resources that could be affected by project actions.

The SHPO will be provided a review copy of the draft plan / environmental impact statement to assess the potential effects of the proposed alternatives on cultural resources (archeological resources; ethnographic resources; historic structures, sites, and cultural landscapes). In accordance with section 106 provisions, the National Park Service will continue to consult with the SHPO, associated American Indian tribes, and other stakeholders as actions identified in the plan advance to more detailed design development and implementation stages.

Consistency with the Coastal Zone Management Act of 1972

The Coastal Zone Management Act was enacted by Congress to balance the competing demands of growth and development with the need to protect coastal resources (16 USC 1451 et seq.). The Maine Coastal Program was established in 1978 and is administered by the Department of Agriculture, Conservation and Forestry, Bureau of Resource Information and Land Use Planning.

The National Park Service is in the process of preparing the draft Federal Consistency Determination for consistency review by the Maine Coastal Management Program.

Consultation with American Indian Tribes

In letters dated July 1, 2015, the National Park Service (Acadia National Park) notified representatives of the park's associated tribal governments of the intent to prepare a transportation plan / environmental impact statement for the park and to seek to consult with the tribes under section 106 of the National Historic Preservation Act.

Associated tribes will be provided copies of the draft plan / environmental impact statement for their review and comment. In accordance with section 106 provisions, the National Park Service will continue to consult with the tribes as actions identified in the plan advance to more detailed design development and implementation stages.

AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING COPIES OF THIS DRAFT ENVIRONMENTAL IMPACT STATEMENT

Partners

Abbe Museum
Acadia National Park Tours
Carriages of Acadia
Dawnland, LLC
Downeast Transportation, Inc.
Eastern National
Frenchman Bay Conservancy
Friends of Acadia
Isle au Haut Boat Services
Maine Coast Heritage Trust
Mount Desert Island Search and Rescue
Oli's Trolley
Schoodic Institute

Tourism/Business

Acadia Corporation
Acadia Regional Chambers of Commerce
Bangor Regional Chamber of Commerce
Bar Harbor Bicycle Shop
Bar Harbor Chamber of Commerce
Bar Harbor Merchants Association
Bar Harbor Resorts
Bar Harbor Whale Watch Co.
Bermello, Ajamil & Partners
Boland Properties
Cruise Lines International Association
CruiseMaine
Cyr Bus Lines
Destinations North America
Down East Resource Conservation and Development Council
DownEast & Acadia Regional Tourism
Downeast Windjammer Cruises
Eastern Maine Development Corporation
Ellsworth Chamber of Commerce
Frenchman Bay Research Boating
Hub of Bar Harbor
Intercruises Shoreside & Port Services
Island Bike Rental
Maine Motorcoach Network
Maine State Chamber of Commerce
Maine Tourism Association
Mount Desert Chamber of Commerce
Mount Desert Regional Chambers of Commerce
New England Bus Association
Northeast Charter & Tour Co.
Ocean Properties Hotels Resorts & Affiliates
Schoodic Peninsula Chamber of Commerce
Southwest Cycle
Southwest Harbor & Tremont Chamber of Commerce
Sunward Tours
Trenton Chamber of Commerce
Tucker Downeast Resources, Inc.
Witham Family Limited Partnership

Elected Officials

Hancock County Commissioners
Maine State Representative - 132th District
Maine State Representative - 134th District
Maine State Representative - 135th District
Maine State Representative - 136th District
Maine State Senator - 6th District
Maine State Senator - 7th District
Maine State Senator - 12th District
U.S. Representative Chellie Pingree
U.S. Representative Bruce Poliquin
U.S. Senator Angus King
U.S. Senator Susan Collins

Towns

- Town of Bar Harbor
- Town of Cranberry Isles
- Town of Frenchboro
- Town of Gouldsboro
- Town of Isle au Haut
- Town of Mount Desert
- Town of Southwest Harbor
- Town of Swans Island
- Town of Tremont
- Town of Trenton
- Town of Winter Harbor

Libraries

- Bass Harbor Library
- Ellsworth Library
- Gouldsboro Library
- Jesup Library (Bar Harbor)
- Maine State Library
- Northeast Harbor Library
- Southwest Harbor Library
- Thorndike Library (College of the Atlantic)
- Winter Harbor Library

Community

- Acadia Scenic Byway Committee
- Acadia Senior College
- American Driving Society (The)
- Bar Harbor Historical Society
- Bar Harbor Village Improvement Association
- Beatrix Farrand Society
- Bicycle Coalition of Maine
- Bike MDI
- Camp Beech Cliff
- Carriage Association of America
- College of the Atlantic
- Hancock County Planning Commission
- Hancock County-Bar Harbor Airport
- Harbor House Community Service Center
- Healthy Acadia
- Island Institute
- Jackson Laboratory (The)
- Maine Audubon Society
- Maine Island Trail Association
- Maine Sea Coast Mission
- Maine Sierra Club
- MDI Land and Garden Preserve
- Mount Desert Island Biological Laboratory
- Mount Desert Island Historical Society
- Mount Desert Island Hospital
- Mount Desert Island League of Towns
- Mount Desert Island Regional School System
- Mount Desert Island YMCA
- Natural Resources Council of Maine
- The Neighborhood House (The)
- Northeast Harbor Village Improvement Society
- Otter Creek Aid Society
- Peninsula School
- Schoodic Arts for All
- Schoodic Scenic Byway Committee
- Seal Harbor Auto Museum
- Seal Harbor Village Improvement Society
- Somes Pond Center

Somesville Village Improvement Society

Summer Festival of the Arts

Town Hill Village Improvement Society

University of Maine Cooperative Extension/Maine Sea Grant

Wendell Gilley Museum

Winter Harbor Historical Society

YWCA Mount Desert Island

State of Maine

Department of Economic & Community Development

Department of Environmental Protection

Department of Inland Fisheries and Wildlife

Department of Marine Resources

Department of Natural Resources

Department of Transportation

Maine Historical Preservation Commission (SHPO)

Maine Port Authority

Office of the Governor

National

American Bus Association

National Park Conservation Association

National Park Foundation

United Motorcoach Association

Federal

Acadia National Park Advisory Commission

Federal Highway Administration

Federal Transit Administration

US Coast Guard – Sector Field Office Southwest Harbor

US Environmental Protection Agency

US Fish and Wildlife Service

Tribes

Aroostook Band of Micmacs

Houlton Band of Maliseet Indians

Passamaquoddy – Pleasant Point Reservation

Passamaquoddy Tribe of Maine - Indian Township Reservation

Penobscot Nation

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Glossary and Acronyms, and Appendixes

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APPENDIX A: INDICATORS, THRESHOLDS, AND VISITOR CAPACITY

The visitor use management framework created by the Interagency Visitor Use Management Council (the council) includes a series of elements by which planning decisions are made concerning visitor use management. Establishing indicators and thresholds and determining visitor capacity are key components of this framework as applied by the National Park Service. Indicators measure conditions that are related to visitor use, and monitoring is conducted to track those conditions over time. The results of monitoring are used to inform and select strategies to be used by park managers in order to not exceed the maximum amount of visitor use that can be accommodated for a site (visitor capacity determination). In this section, potential management strategies are described for each indicator and would be applied together with the actions and intents of each alternative presented in this plan. This iterative practice of monitoring, implementing corrective strategies, and then continuing to monitor to gauge the effectiveness of those actions allows park managers to maximize benefits for visitors while achieving and maintaining desired conditions for resources and visitor experiences in a dynamic setting. In this section, the indicators to be monitored at Acadia National Park are presented, and the associated thresholds and strategies included below are used to inform the visitor capacity determination.

INDICATORS AND THRESHOLDS

Indicators translate the broad description of desired conditions into measurable attributes (i.e., people at one time (PAOT) at key locations, number of visitor-created trails) that can be tracked over time to evaluate change in resources or conditions that relate to visitor experience. They are a critical component of the visitor use management framework and are considered common to all action alternatives. The planning team considered many potential issues and related indicators that would identify impacts of concern, but those described in this section were considered the most noteworthy, given the importance and vulnerability of the resources or visitor experiences affected by visitor use. In identifying meaningful indicators the planning team also reviewed the experiences of other park units with similar issues.

Thresholds that represent the minimum acceptable condition for each indicator were then assigned, taking into consideration the qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, and staff management experience. Although defined as "minimally acceptable," thresholds still represent acceptable conditions. Also, establishing thresholds does not imply that no action would be taken prior to reaching the threshold. One goal of visitor use management is to strive to make progress toward desired conditions. Thresholds identify when conditions are about to become unacceptable and accordingly serve as a "line in the sand," letting managers and the public know that corrective action must be taken to keep conditions acceptable so that progress toward desired conditions can be achieved over time. For some indicators, triggers have been developed. A trigger reflects a condition of sufficient concern for an indicator to prompt a management response to ensure that desired conditions continue to be maintained before the threshold is crossed.

Indicators, thresholds, triggers (when identified), and associated potential management strategies (see figure A-1) that would be implemented as a result of this planning effort are described below. Indicators are applied across all action alternatives within the plan. In this

plan, thresholds can vary either by alternative, zone, or site. These variations reflect the content of the management strategies ascribed for each alternative. For example, if access to a site is restricted under one alternative the threshold would differ from that for an alternative where visitor opportunities at that site remain the same or are expanded. Where actions across the alternative do not result in differences of visitation or visitor experience to sites the threshold does not vary.

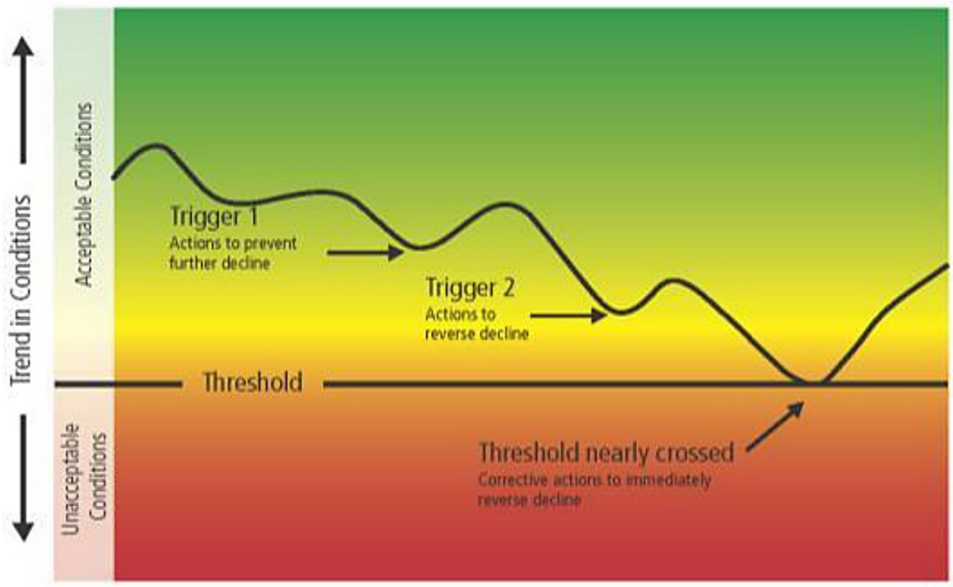

Figure A-1. Management Triggers and Thresholds in Relation to Trend in Conditions

Some management strategies vary across alternatives and would be implemented on completion of the plan to ensure thresholds are maintained and desired conditions are achieved. Several of these strategies are currently in use at the park and may be increased in response to changing conditions. The implications of indicators, thresholds, potential management strategies, and visitor capacity determinations are considered as part of the actions common to all alternatives and therefore are analyzed as part of the alternatives in chapter 4. If additional strategies are needed as outlined in the potential management strategies, details of their application would be developed as thresholds are exceeded or approached and would be informed by monitoring results.

Visitor use management is an iterative process in which management decisions are continuously informed and improved through monitoring to determine the most effective way to manage visitor use to attain desired visitor experience and resource conditions. As monitoring of conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and experiential conditions. Information on NPS monitoring efforts, related visitor use management actions, and any changes to the indicators and thresholds would be available to the public. This section presents the potential corrective strategies component of the plan common to all action alternatives. For each indicator, potential management strategies are identified. These strategies represent the range of actions in addition to those found within the alternatives that the National Park Service may take to meet the goals and desired conditions of this plan. If it is determined through monitoring that thresholds are

being approached or exceeded, the National Park Service would use one or more of these management strategies. Details of potential management strategies would be developed at the time they are needed in order to ensure that the most effective approach is identified. The potential impacts of these actions are included in chapter 4 of this plan.

Vehicles at One Time at Key Destinations

Rationale for Indicator and Thresholds. Monitoring and managing visitor use according to this indicator helps ensure that visitors have safe and stress-free access to popular visitor destinations at key areas and along key corridors by reducing vehicle congestion and conflicts in parking lots. Vehicles at one time (VAOT) is a measure commonly used by park managers and researchers to quantify vehicle congestion in parking lots (Lawson and Kiser 2013a; Manning, Lawson et al. 2014). It provides an important measure of parking lot conditions in relation to visitor access to popular destinations as well as potential park resource impacts as a result of parked vehicles in unauthorized areas when lots are full.

Parking lot capacities provide an ideal threshold on which to base monitoring efforts for VAOT. Instances in which parking lot capacities are exceeded are indicative of vehicle congestion, potential safety concerns, and possible park resource impacts stemming from vehicles parking in unauthorized areas (Lawson, Newman, and Monz, in press). This indicator also helps to ensure that the reservation systems for lots, corridors, or systems are appropriately allocated to ensure that visitors with reservations can reach their intended destinations as allocated. The VAOT thresholds are determined such that the permit system in each alternative can be fully utilized without hitting the threshold.

Vehicles at one time in parking lots at along the Park Loop Road, Cadillac Summit, and Schoodic Peninsula will be used as an indicator of transportation and access conditions at popular visitor destinations. Parking lots at these destinations provide visitors with access to important park resources and experiences, including viewing scenery, hiking on trails, visiting historical and cultural sites, and walking or biking on carriage roads. Monitoring VAOT at one or more of these locations provides a reasonable basis on which overall transportation and access conditions at visitor destinations can be inferred. Sites that initially will be included in the VAOT indicator are:

- Thunder Hole
- Jordan Pond
- Sand Beach
- Hulls Cove Visitor Center
- Sieur de Monts
- Schooner Head Overlook
- Bubble Rock
- Wildwood Stables
- Eagle Lake
- Bass Harbor Head
- Acadia Mountain
- Echo Lake Beach
- Cadillac Summit
- Blue Hill Overlook
- Schoodic Point
- Frazer Point
- Schoodic Woods Day Use Lot

Thresholds. VAOT does not exceed the design capacity of parking lots at the visitor destination more than 25% of the time (about 2 hours per day or 14 hours per week) during the peak hours of the day (9:00 a.m. to 5:00 p.m.).

Triggers and Corrective Actions.

- **Trigger 1: Lots not on Reservation Systems.** VAOT does not exceed the design capacity of parking lots at the visitor destination more than 20% of the time per day during peak hours of the day (9:00 a.m. to 5:00 p.m.) for two consecutive years.
  - Corrective Management Action: Implement a strategy (e.g., reservation system, gated access) to actively manage vehicle demand at this lot.
- **Trigger 2: All Park Loop Road Lots.** VAOT does not exceed the design capacity of parking lots at the visitor destination (more than 80% of lot spaces) for more than 20% of the time per season for two consecutive years.
  - Corrective Management Action—Implement Alternative D.
  - Rationale for Trigger—There may come a point where changes in visitation numbers or patterns are such that managing these areas or corridors is problematic for both visitors and for park managers, and a systems management approach may be more effective for managing transportation in the park. Implementing the reservation system for all of Park Loop Road would require reconfiguring some existing park entrances as exit only, constructing new entrance stations or relocating existing entrance stations, and potentially making all of Park Loop Road one way in a clockwise or counterclockwise direction. This scenario is described in greater detail within the systems management alternative.

Related Potential Management Strategies—General.

- Enforcement of parking and access restrictions, as well as site-management (signage, curbing, paving, revegetation) to resolve overparking and visitor-created parking.
- Deploy Intelligent Transportation Systems (ITS) to provide visitors with information on status of parking lots (i.e., Frazer Point is full—park at Day Use Lot). This information would be conveyed to visitors prior to and/or on entry to the corridor to facilitate seeking alternative experiences, including those outside the corridor.
- Increase frequency of Island Explorer service in park.
- Increase extent of Island Explorer service in communities leading to park.
- Increase enforcement of endorsed parking only.
- System management alternative (see "Triggers").

Related Potential Management Strategies—Schoodic Peninsula Destinations.

- Consider reducing vehicles to a single lane to encourage increased bike use.
- Allow bike rental concession to encourage increased bike rental.
- Require park and ride/bike from day use lot when use of Park Loop Road reaches capacity.
- Establish reservation system to manage visitor use (see "Trigger 1").

Monitoring Strategies. Establish statistical and/or mathematical relationships among automated vehicle traffic recorder (ATR) data and VAOT as a basis for long-term monitoring of VAOT. Periodically conduct an observational study of VAOT in parking lots and adjacent overflow areas to establish and update statistical relationships between ATR data and VAOT counts. Compare observed and/or estimated VAOT to the design capacity of parking lots.

Roadway Level of Service

Rationale for Indicator and Thresholds. Ocean Drive offers sweeping views of the Atlantic coast and access to many of the park's most popular visitor destinations and, as a result, is the most popular section of the Park Loop Road for scenic driving. Results of research in Acadia National Park suggest that traffic conditions on Ocean Drive are important to the quality of visitor experience (Hallo & Manning 2009), and the same research suggests that visitor perceptions of vehicle congestion on Ocean Drive may be a primary indicator of the quality of scenic driving experience in Acadia National Park and roadway segments proximal to Jordan Pond House and Cadillac Road entrance are indicative of the general quality of driving (or levels of congestion) along the Park Loop Road. Monitoring of roadway level of service on segments Ocean Drive, roadways segments proximal to Jordan Pond House, and Cadillac Road entrance, therefore, could provide a reasonable basis on which the quality of visitor experience on Park Loop Road could be inferred.

According to industry standards, Level of Service D represents a travel condition where the demand for use is high. Under these conditions passing becomes challenging, and a high percentage of cars are travelling in platoons (limiting general freedom of travel along the roadway). Level of Service E represents a condition where demand is approaching the roadway capacity. Passing is virtually impossible and speeds are seriously curtailed (Highway Capacity Manual 2010).

Thresholds.

- Alternative B: Peak hour level of service does not fall below Level of Service E for more than 120 minutes per day for more than 14 days per summer for three consecutive summers along Ocean Drive.
- Ocean Drive Alternatives C and D: Peak hour level of service does not fall below Level of Service D for more than 180 minutes per day for more than 14 days per summer for three consecutive summers along Ocean Drive.

Triggers and Corrective Actions.

Trigger. Peak hour level of service does not fall below Level of Service D for more than 60 minutes per day on more than 14 days per summer along Ocean Drive.

- Corrective Management Actions
  - Conduct a study to better understand visitor attitudes toward roadway congestion and adjust this indicator and threshold to ensure metrics are consistent with operational needs and visitor acceptability.

Trigger. Peak hour level of service does not fall below Level of Service D for more than 60 minutes per day for more than 14 days per summer for two consecutive summers along Ocean Drive

- Corrective Management Actions
  - *Alternatives B*— Evaluate implementation of the corridor or systems management alternative.
  - *Alternative C and D*— Reduce the number of permits to correct condition.

Related Potential Management Strategies.

- Deploy Intelligent Transportation Systems to provide visitors with information on status of parking lots (i.e., Frazer Point is full—park at Day Use Lot). This information would be conveyed to visitors prior to and/or on entry to the corridor to facilitate seeking alternative experiences, including those outside the corridor.
- Increase frequency of Island Explorer service in park.
- Increase extent of Island Explorer service in communities leading to park.
- Adjust reservation system parameters (timing, number, duration) to reduce roadway congestion.

Monitoring Strategies.

- TBD based on Summer 2018 data collections.

Number of Island Explorer Trips with "Leave-Behinds"

Rationale for Indicator and Thresholds. The Island Explorer is a popular means by which visitors to the park can avoid driving in congested conditions and still visit and experience popular destinations. The park promotes Island Explorer as a means of reducing roadway and parking lot congestion and improving the quality of the visitor experience. Therefore, it is important that Island Explorer services operate in a manner that is reliable and convenient for visitors to use. Monitoring "leave-behinds" provides a reasonable basis by which the quality of Island Explorer service along Park Loop Road can be inferred. The number of "leave-behinds" per Island Explorer service trip will be used as an indicator of the quality of Island Explorer service access to visitor destinations along Park Loop Road. The term "leave-behinds" refers to instances in which users of Island Explorer service are unable to board a next arriving bus because there is no room on the bus for additional passengers. "Leave-behinds" negatively affect wait times for and frequency of Island Explorer service trips, both of which have been shown to be among the most important factors in a visitor's decision to use Island Explorer in Acadia National Park and other national parks (Manning 2009; Pettengill, Manning et al. 2012; Manning, Lawson et al. 2014). Instances of "leave-behinds" may also indicate that visitors onboard the bus may be experiencing crowded conditions on the bus. This indicator would apply to Island Explorer service in and connecting to Acadia National Park.

This indicator will be monitored at two types of loading locations: transportation hubs and park destinations. Transportation hubs (Hulls Cove, Village Green, Acadia Gateway Center, Schoodic Marina, and Schoodic day-use parking) are those places where a large number of people are arriving and transitioning to transit service. Because these areas are larger in size and

have more visitor services, there is a higher tolerance for leave-behinds. Park destinations are smaller stops with limited visitor services where leave-behinds could have a stronger negative influence on visitor experience because at these locations visitors have limited options to make other decisions (i.e., return to private vehicle, choose other route).

Thresholds.

- **Transportation Hubs.** No more than 3% riders are left behind on any Island Explorer service trip.
- **Park Destinations.** No more than 1% riders are left behind on any Island Explorer service trip.

Related Potential Management Strategies. This indicator is also monitored in concert with the people per viewscape and encounter rates indicators (see below). Where transit service can be increased or modified to reduce the number of leave-behinds without violating the thresholds in these indicators those changes will be made. However, if changes to the transit service result in negative trends on related indicators, other actions (such as reservations for transit service) will be pursued.

- Mount Desert Island
  - Increase size of transit vehicles operating on the island (if this increase can be accomplished consistent with the capacity determination for the related locations).
  - Increase frequency of transit service on the island (if this increase can be accomplished consistent with the capacity determination for the related locations).
- Schoodic Peninsula
  - Modify transit service (i.e., timing, routes, number of stops) to ensure visitor capacities are not exceeded and desired conditions are maintained.

Monitoring Strategies. On each Island Explorer service trip, bus operators or other monitoring staff record each instance of a "leave-behind" and the number of people unable to board the bus.

People per Viewscape at Key Visitor Use Sites

Rationale for Indicator and Thresholds. Sites: People per viewscape (PPV) is a measure often used by park managers and researchers to quantify visitor crowding (Lawson, Chamberlin et al. 2011; Lawson, Newman et al. 2009; Manning, Valliere et al. 2011; Lawson; Newman & Monz, in press). Crowded conditions have been documented to adversely affect the quality of visitor experience in national parks (Whittaker & Shelby 2010). Research suggests that visitors can identify site-specific standards for crowding (Manning, Valliere et al. 2011). These visitor-based standards can be used to guide the development of social indicators and thresholds for crowding. PPV is also used by park managers and researchers to quantify visitor crowding impacts along higher use hiking trails, walking paths, and other scenic, nonmotorized transportation corridors in national parks (Lawson, Newman et al. 2009; Lawson, Chamberlin et al. 2011; Lawson, Newman & Monz, in press).

- **Thunder Hole.** People per viewscape at Thunder Hole will be used as an indicator of the quality of visitor experience at popular visitor destinations along Park Loop Road. Thunder Hole is an iconic feature of Acadia National Park and is easily accessed by a short path from a parking area off Park Loop Road. The popularity of this feature can lead to high numbers of people at one time on the Thunder Hole observation deck, which can cause crowding that negatively affects the quality of visitor experience. Monitoring of PAOT at Thunder Hole provides a reasonable basis on which the quality of visitor experience at popular destinations along Park Loop Road can be inferred. The well-delineated and contained space at Thunder Hole ensures that monitoring efforts will be reliable and accurate. A 2004 and 2005 study of visitors to Acadia National Park identified approximately 30 PAOT as the threshold beyond which visitors generally felt the Thunder Hole observation deck was unacceptably crowded (Anderson, Manning et al.; Manning 2009).
- **Cadillac Summit.** People per view in the Cadillac Summit Loop Trail area will be used an indicator of the quality of visitor experience on Cadillac Mountain's summit. Cadillac Mountain is an iconic feature of Acadia National Park. The summit is accessible to visitors arriving on three hiking trails or traveling in private vehicles, road-based commercial tours, or activity-based commercial use authorization holders up Cadillac Mountain Road. The popularity of Cadillac Mountain can lead to high numbers of PAOT on the summit. Monitoring of PPV in the summit area loop trail provides a reasonable basis on which the quality of visitor experience on Cadillac Mountain's summit can be inferred and helps ensure that visitors can experience an uninterrupted view from the summit area. There is also a high correlation between the number of people in the loop trail area and the total number of people on the summit (visitor capacity). Therefore, this indicator also allows park managers to ensure that visitor capacity on the summit is not exceeded with regularity.
- **High-Use Trails.** Persons per viewscape along the Jordan Pond Path, Beehive Trail, and/or Gorham Mountain Trail will be used as an indicator of the quality of visitor experience on higher use hiking trails along Park Loop Road. Hiking trails along Park Loop Road provide access to scenic vistas of the Atlantic coast and the forests and lakes of Mount Desert Island. Many of these trails provide relatively short (i.e., a few miles or less) round-trip hikes, and are accessible to hikers with a broad range of ability levels. Correspondingly, these trails are popular and can become crowded at times, which can negatively affect the quality of visitor experience (Manning 2009). On some high-use trails in the park, such as the Beehive Trail, which has narrow ledges and steep ascents, visitor crowding may cause unsafe conditions. Monitoring of PPV along one or more of the trails noted provides a reasonable basis on which the quality of visitor experience on higher use hiking trails along Park Loop Road can be inferred. Because the transportation system along Park Loop Road and associated park roads serves as the primary mechanism by which people access these trails, it is important to monitor these experiences to ensure that the transportation system is not delivering more people to a trail than that trail can accommodate given its desired condition and related threshold.
- PPV will be monitored on one or more of the following higher use trails:
  - Jordan Pond Path
  - Beehive Trail
  - Gorham Mountain Trail

- South Bubble Trail
- Wonderland Trail
- Ship Harbor Trail
- Cadillac Mountain Gorge Path
- Schoodic Head Trail

To date, no studies have been completed to determine acceptable PPV levels along higher use hiking trails in Acadia National Park. (PPV studies on the carriage roads do not translate directly to potential PPV thresholds for the hiking trails.) However, studies of PPV on trails in other national parks can provide a range within which acceptable PPV levels for typical viewscapes on trails in Acadia National Park might fall. Results of a 2005 study in Muir Woods National Monument included a visitor-based acceptability threshold of **16** PPV for higher use or "primary" hiking trails, and a visitor-based acceptability threshold of **7** PPV on lower use or "secondary" hiking trails (Manning et al. 2005). Results of a 2003 study of visitors to Yosemite National Park included a visitor-based acceptability threshold of **26** PPV on the trail to Vernal Fall, a high-use hiking trail in Yosemite Valley (Lawson, Newman et al. 2009). It should be noted that the differences in PPV thresholds in these studies may be due, in part, to differences in the lengths of trail sections for which the visitor-based standards were measured.

Carriage Roads. Persons per viewscape on one or more sections of the carriage roads will be used an indicator of the quality of visitor experience on the carriage roads. Acadia National Park's carriage roads are an iconic feature of the park and offer car-free bicycling and walking opportunities with access to scenic vistas of the forests and lakes of Mount Desert Island. Correspondingly, the carriage roads are popular and can become crowded at times (Manning 2009). Monitoring of PPV along one or more of the carriage roads provides a reasonable basis on which the overall quality of visitor experience on the carriage roads can be inferred. Because the transportation system along Park Loop Road and associated park roads serves as the primary mechanism by which people access this recreation opportunity, it is important to monitor these experiences to ensure that the transportation system isn't delivering more people to the carriage road system than the system can accommodate given its desired condition and related threshold.

A 1998 study of visitors to Acadia National Park identified approximately 14 PPV per 100-meter segment as the threshold beyond which visitors generally felt that the carriage roads were unacceptably crowded. A 2009 study of visitors to Acadia National Park identified approximately 21 PPV per 410-foot segment as the threshold beyond which visitors generally felt it was unacceptably crowded (Manning 2007; Pettengill, Manning et al. 2012).

Schoodic Peninsula. People per viewscape at Schoodic Point, Frazer Point, and/or Little Moose Island will be used as an indicator of the quality of visitor experience on Schoodic Peninsula. Acadia National Park's General Management Plan (GMP) Amendment for Schoodic Peninsula states that opportunities for "low-density recreation" and "solitude" should be maintained on Schoodic Peninsula to preserve the character of the area. Schoodic Point, Frazer Point, and Little Moose Island are visitor use locations on Schoodic Peninsula where the park's objectives include providing visitors with opportunities to experience the beauty of the park in lower-density recreation areas. Monitoring of PPV at these locations provides a reasonable basis on which the overall quality of visitor experience on Schoodic Peninsula can be inferred.

A 2003 study of visitors to Acadia National Park identified 70 PPV as the threshold beyond which visitors generally felt a selected "photo area" at Schoodic Point was unacceptably crowded and 85 PPV as the threshold beyond which visitors generally felt a selected "photo area" at Frazer Point was unacceptably crowded (Manning 2009).

No visitor crowding studies have been conducted to date at Little Moose Island. Little Moose Island has no established trails or facilities, and use on the island is dispersed. Given the relatively small size of the island and that there are no formally defined visitor use areas on the island, the indicator is specified as people at one time on all of the island. The relatively small size of the island suggests that the presence of even just a few groups on the island (or approximately 6–12 PAOT) might have a significant impact on visitor experience there.

PPV will be monitored at one or more of the following locations:

- Schoodic Point
- Frazer Point
- Little Moose Island

Thresholds.

- Sites
  - No more than 30 PAOT are on the Thunder Hole lowermost observation deck more than 80% of the time per season.
  - No more than 220 PAOT are on the Cadillac Summit more than 80% of the time per season.
- High-Use Trails. No more than 10 PPV are on a selected 165-foot (50-meter) section of trail more than 80% of the time per day.
- Carriage Roads.[7] No more than 10 PPV are on a 100-meter section(s) of the carriage roads more than 70% of the time per day for peak zones. No more than 5 PPV are on a 100-meter section(s) of the carriage roads more than 85% of the time per day for nonpeak zones.
- Schoodic Peninsula
  - No more than 70 PPV are in the Schoodic Point "photo/monitoring area" more than 80% of the time per day.
  - No more than 85 PPV are in the Frazer Point "photo/monitoring area" more than 80% of the time per day.
  - No more than 12 PAOT are on all of Little Moose Island more than 80% of the time when the island is accessible by foot.

[7] This threshold is not new to this plan. It has been carried forward from the carriage road visitor experience and resource protection process (1996). Because this threshold is directly related to the transportation system, it is restated here.

Related Potential Management Strategies.

- Develop and implement a public information effort about the desired conditions for the park and actions the National Park Service is taking to achieve those conditions and how visitors can best experience the park. This information could be distributed through direct visitor contact, park publications, wayside exhibits, maps, social media, websites, and park partners. The goal would be to have visitors self-disperse to approved sites or come during lower use periods of the day or season to accommodate similar levels of hiker use but without concentrating that use during peak periods.
- Ensure that informational materials that cover a wide variety of topics such as locations for permitted activities, park rules and regulations, and Leave No Trace practices, are available for visitors in a variety of languages, including at times when visitor centers are closed.
- Use up-to-date technology to provide information to visitors before and during their visits.
- Collect information or data for sites, trails, or destinations where additional information on visitor use patterns, levels, and behaviors could further inform thresholds. This information would be collected and used to refine thresholds before actions that limit or reduce visitor use are taken.
- Encourage hikers to take a certain route during peak use times.
- Provide information on other visitor destinations in the corridor. Focus on destinations that typically have lower use levels.
- Increase maps and signage about various destinations both in and outside the park.
- Provide real-time parking lot status updates. Rangers at contact stations could relay this information to visitors before they reach that location.
- Limit group size to 10 individuals along trails.
- Manage commercial uses to ensure smaller group sizes and/or timing and places tour groups can visit. Enforce parking in authorized spaces for commercial groups.
- Separate when and where visitor use occurs at a location. Separation could be done by allowing private and commercial entities to access a location at different times or by physically separating where one type of use occurs from others.
- Implement a permit system for certain trails or trailheads.

Monitoring Strategies. Establish statistical and/or mathematical relationships among ATR data on proximal traffic counters and site locations for long-term monitoring of PPV using automated counter data. Periodically conduct an observational study of PPV at site locations (via photo monitoring or direct counts) to establish and update statistical relationships between ATR data and PPV counts. Compare observed and/or estimated PPV to crowding thresholds.

Encounters on Medium-Use and Low-Use Trails

Rationale for Indicator and Thresholds. Encounters along the North Ridge Trail, South Ridge Trail, and/or Gorge Path on Cadillac Mountain will be used as an indicator of the quality of visitor experience on lower-use hiking trails along Park Loop Road. Encounters is a measure

often used by park managers and researchers to quantify crowding on lower-use hiking trails (Lawson 2006; Lawson, Itami et al. 2006; Kiser, Lawson, & Itami 2008). Crowded conditions have been documented to adversely affect visitor experience in national parks (Whittaker & Shelby 2010). The North and South Ridge Trails of Cadillac Mountain feature open ridgelines with expansive views as they climb toward the summit. The Gorge Path is a steep, rugged trail and is the most challenging of the three trails. Because park visitors can drive private vehicles or ride tour buses to the summit of Cadillac Mountain, these trails experience lower levels of visitor use than if they provided the only access to the mountain summit. Correspondingly, these trails provide visitors with opportunities for lower density experiences on Cadillac Mountain before and after visiting the higher use summit area. Monitoring encounters along these trails provides a reasonable basis on which the quality of visitor experience on lower use hiking trails along Park Loop Road can be inferred.[8]

A 2007 study of visitors in Acadia National Park measured visitor-based standards for hiking encounters on trails throughout the park (Manning 2009), and a 2004 study monitored visitor groups' island-wide encounters on Isle au Haut (Manning 2009). However, these studies pertained to encounters, not only on low-use trails, but also high-use trails and roads and they focused on encounters over the course of an entire day. Therefore, the results of these studies are not easily applicable to hiking encounters per hour on low-use trails. Studies of encounters in other parks and protected areas, however, can provide a range within which an acceptable number of encounters on lower-use trails in Acadia National Park might fall. A 2005 study of visitors to 13 wilderness areas in Oregon and Washington reported a median "displacement level" (level beyond which visitors would opt to go somewhere else to hike) of nine encounters per hour on relatively high use wilderness trails (Cole & Hall 2005). As a point of reference, observed levels of visitor use on the high-use wilderness trails in the study (20 or more groups per day) are similar to those observed on the Gorge Path but well below those for the North and South Ridge Trails (Reigner, Belensz & Lawson 2016).

Number of people encountered per hour will be monitored on one or more of the following lower use trails:

- Norumbega Mountain Trail
- Triad Trail
- Hunters Brook Trail
- Western Mountains Trails
- Cadillac Mountain North Ridge Trail
- Cadillac Mountain South Ridge Trail
- Other trails based on needs identified in observational data

[8] Future trail planning may include data collections and/or management actions that would suggest amending this indicator and/or thresholds.

Thresholds.

- Low-Use Trails: 80% of visitors encounter no more than 15 encounters with other people per hike.
- Medium-Use Trails: 80% of visitors encounter no more than 40 encounters with other people per hike.

Related Potential Management Strategies. The following potential management actions would be implemented as part of the management strategy and in a descending order if determined to be necessary.

- Develop and implement a public information effort to inform local businesses and other information providers (e.g., guidebooks) about the desired experience in the corridor and actions the park is taking to achieve those experiences and how visitors can best experience the corridor. This information would be distributed through direct visitor contact, park publications, and wayside exhibits. The goal would be to have visitors self-disperse or to come during lower use times of day or season to accommodate similar levels of hiker use but without concentrating that use during peak periods.
- Place physical barriers along roadsides so that visitors cannot park on the roadside and then walk to trailheads. Formalize road edges where possible.
- Actively manage (through reservation systems or other mechanisms) the proximal parking areas during peak periods to ensure that visitors only park in authorized spaces.
- Reduce the usable size of parking lots to reduce encounter rates on trails.
- Establish statistical and/or mathematical relationships among automated counter (e.g., ATR, infrared trail counter, camera) data and encounters as a basis for long-term monitoring of encounters using automated counter data. Periodically conduct an observational study of encounters via trail patrols to establish and update statistical relationships between automated counter data and encounter counts. Compare observed and/or estimated number of encounters to encounters threshold.

Extent of Informal Trails

Rationale for Indicator and Thresholds. The percent change in the condition class of informal trails in sensitive environments will be used as an indicator of visitor use-related impacts to natural resources. Condition class measures are used by park managers and researchers to quantify the severity of visitor-caused trampling of and damage to vegetation and soil resources in national parks (Manning 2009; Monz et al. 2010). Condition class is a qualitative scale, ranging from one to five, where one refers to minimal trail disturbance and five refers to major trail disturbance.

- **Cadillac Summit.** Cadillac Mountain's summit features large areas of sensitive subalpine vegetation. Subalpine habitats are unique, isolated ecosystems that show little resilience to repeated trampling (Monz et al. 2010). The popularity of Cadillac Mountain as a visitor destination, combined with visitors' interest in and tendency to roam off-trail on the mountain summit, has resulted in a network of informal trails that represents a threat to the long-term health of the subalpine ecosystem on the summit. Monitoring the

condition class of informal trails provides a reasonable basis on which the overall health of the subalpine environment on the summit of Cadillac Mountain can be inferred.

- In 2010, a study was completed to inventory the lineal extent and condition class of informal trails on Cadillac Mountain's summit (Monz et al. 2010). The results of this study will be used as a baseline against which to compare future monitoring for tracking the percent change for thresholds and triggers.

Objectives.

- No (or 0% of) informal trail segments on the summit of Cadillac Mountain will decline in condition class from the previous monitoring period.
- There will be no increase from baseline in the total lineal extent of informal trails on Cadillac Summit.

Related Potential Management Strategies (in descending order).

- Rehabilitate visitor-created trails in a timely manner whenever possible.
- Educate visitors regarding the sensitivity of resources and the importance of staying on the trail.
- Improve trail identification and signage.
- Consider designating (or re-engineering) visitor-created trails in strategic locations, as appropriate.
- Initiate annual monitoring in this location to confirm trends.
- Close the area to off-trail travel or consider formalizing (hardening) additional trails to reduce visitor-created trails.

Monitoring Strategies. Every three years, perform GPS-based census mapping of informal trails in a systematically delineated area of the Cadillac Mountain summit and derive measures of condition class for informal trails from the remote sensing data. Compare recorded condition class measures and/or lineal extent to the thresholds for this indicator.

IDENTIFYING AND IMPLEMENTING VISITOR CAPACITY

Overview

This appendix provides additional information about the identifying and implementing visitor capacity as it relates to the visitor use management framework. Please refer to chapter 1 of this plan for a description of this framework that is common to all alternatives.

Broadly speaking, visitor use management is the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting, using a variety of strategies and tools to sustain desired resource conditions and visitor experience. Within this framework, desired conditions, indicators and thresholds, and management strategies have been drafted. Another component of this framework is identification of visitor capacities. Visitor capacity is a component of visitor use management defined as the maximum amount and types

of visitor use that an area can accommodate while sustaining desired resource conditions and visitor experiences, consistent with the purpose for which the area was established. Visitor capacities will be used to inform and implement the management strategies selected as part of this visitor use management plan / environmental impact statement (plan). The National Park Service is legally required to identify and implement visitor capacities for all areas of a park unit per the National Parks and Recreation Act of 1978 (IVUMC 2016).

The primary goal of this planning effort is to preserve the fundamental resources and values of Acadia National Park. By managing the maximum amounts and types of visitor use, the National Park Service can help ensure that resources are protected and that visitors have the opportunity for a range of high-quality experiences. Although visitors have mostly noted that their experiences are of high quality, they have also identified a number of concerns related to increasing use levels such as congestion in parking areas, conflicts between user groups, and concerns over resource impacts at swim areas and near sensitive resources.

Through this planning effort, Acadia National Park has an important opportunity to proactively safeguard the highly valued experiences and resources throughout the park unit. At some sites, current use levels are so high that these use levels are resulting in adverse impacts to experiences and could lead to adverse impacts to resources. In these cases, the visitor capacity has been identified such that these conditions are corrected as this plan is implemented. For other sites, current use levels do not appear to be impacting experiences or resources, and therefore, the visitor capacity has been identified to be at or near current use and are based on the limiting attributes described at the site. This appendix outlines the considerations and processes used to identify and implement visitor capacity for key destinations.

Background on Visitor Use Levels and Patterns

The amount, timing, distribution, and types of visitor use in Acadia National Park influence both resource conditions and visitor experience. Since its establishment, visitation to the park has increased. Average visitation in the 1990s and early 2000s was 2.4 million visitors per year. In 2013, visitation to the park started to climb steadily reaching 2.8 million in 2015 and 3.2 million in 2016. Currently, there is high demand for recreational opportunities and high levels of use in the park, particularly during peak summer months. Other issues facing the park that are associated with visitor use include crowding, visitor-created trails, impacts to soil and vegetation, visitor conflicts, and roadway congestion. Please see the visitor use and experience sections of chapters 3 and 4 of this document for more details on visitor use trends and impacts.

Visitors arrive at Acadia National Park in a variety of ways including by personal vehicle, authorized commercial services, and alternative transportation. The levels and patterns of visitor use are causing negative impacts to visitor experience and resources and influencing the ability of the National Park Service to maintain desired conditions. Identifying visitor capacity can direct managers in how and when visitors access the park. Appropriate management strategies can then be selected and implemented to maintain desired resource conditions and visitor experience consistent with the purposes for which the park was established.

Process for Determining Visitor Capacities

The approach for developing visitor capacities is based on the Interagency Visitor Use Management Council's Visitor Use Management Framework and associated publications and is consistent with the literature and best practices on this topic. Visitor capacities were identified

using best practices and examples from other plans and projects across the National Park Service. Based on these best practices, the planning team describes the process for identifying capacity following four key steps: (1) determining the analysis area, (2) reviewing existing direction and knowledge, (3) identifying the limiting attribute, and (4) identifying visitor capacity.

Step 1: Determine the Analysis Area. The amount, timing, distribution, and types of visitor use at Acadia National Park influence both resource conditions and visitor experiences. Currently, there is high demand for recreational opportunities in the park, particularly during summer months. The eight primary activities associated with the fundamental values of the park are scenic driving, hiking, bicycling, bird-watching, boating, climbing, fishing, horseback riding, picnicking, swimming, exploring natural habitats (tide pools and rocky summits), night sky viewing, and a variety of winter recreational activities. Further guidance for addressing visitor capacity in other areas of the park can be found in the Isle Au Haut Visitor Use Management Plan (2015) and the Schoodic General Management Plan (2006).

This plan and identified visitor capacities are needed to manage and protect the park through the identification of appropriate kinds and amounts of visitor use so that visitors have the opportunity to engage with the resources at the park while ensuring the protection of those resources.

Following guidance from the Interagency Visitor Use Management Council, the level of analysis that occurs during visitor use management planning and visitor capacity is identified based on a sliding scale depending on the complexity and context of the plan. During the planning process it was determined that 10 key areas of the unit would benefit from a capacity analysis.

A higher level of analysis has been identified as necessary for the key locations due to present visitor use issues. For the other locations, desired conditions are being met under current use levels and a lower level of analysis is being used. The visitor capacities at these other locations have largely been determined to be near, at, or slightly above current use level. Future monitoring of use levels and indicators will inform the National Park Service if visitor capacities are encroached. The level of detail provided in the rationales for each capacity determination is commensurate with the level of complexity related to visitor capacity at that site.

Per the 1978 Parks and Recreation Act (54 USC 100502) and following guidance from the IVUMC, visitor capacity determinations are legally required for key destinations and areas that this planning effort addresses (IVUMC 2016). Together, the eight key areas comprise the majority of the areas with issues and plan actions are directly related to visitor use levels. These locations are:

- Sand Beach
- Cadillac Mountain
- Jordan Pond House
- Echo Lake
- Acadia Mountain and Echo Lake Ledges
- Eagle Lake
- Hulls Cove
- Schoodic Point

There are other areas of the park (e.g., trails, summits, and other destinations) that are subject to this legal requirement to define visitor capacity. However, as decisions about the management of

these areas are out of scope for this plan, these capacity determinations will be addressed in subsequent planning.

Step 2: Reviewing Existing Direction and Knowledge. During this step we reviewed desired conditions, indicators and thresholds, with particular attention to conditions and values that must be protected and are most related to visitor use levels. Below, under each key area relevant indicators are listed, the associated thresholds and associated actions can be found earlier in this appendix. Relevant desired conditions, for both resources and visitor experience, were reviewed for each site as part of this process. For descriptions of the goals and desired conditions by fundamental resource or value see chapter 1. An overview of visitor use issues and current use levels is also provided for each key area.

Step 3: Identify the Limiting Attribute. Step three requires the identification of the most limiting attribute(s) that most constrain the analysis area's ability to accommodate visitor use. The limiting or constraining attribute(s) may vary across the analysis area and is described under each key. This is an important step given that a key area could experience a variety of challenges regarding visitor use issues.

Step 4: Identify Visitor Capacity. To determine the appropriate amount and types of use at key areas, a variety of data was reviewed to understand current conditions compared to goals and objectives for the area.

As strategies directly influence how many people can reach a site and therefore influence identifying the visitor capacity. For this reason, visitor capacities can vary between the alternatives depending on management strategies of that individual alternative. For instance, if in one alternative a site is closed to visitor use the capacity determination is zero as no use is authorized under that alternative. In another alternative, a site may be expanded with additional facilities therefore resulting in a visitor capacity determination at or above current use levels.

For Acadia National Park, visitor capacities are most frequently expressed as people at one time increments. PAOT refers to the total number of people that are present at a site at any given point in time. Delineations of sites may vary depending on the specific location, and monitoring can be done in a variety of ways but should serve to approximate as best as possible the total number of people present at a location. The visitor capacities will be implemented as part of this planning effort. Where applicable, specific management strategies outlined in the alternatives that will be used to implement visitor capacities have been included in the visitor capacity for each area. For these and all other locations, visitor capacities will be monitored as described in the "Indicators and Thresholds" section of this appendix, and if associated thresholds are exceeded, potential management strategies would be implemented to ensure that capacities are not exceeded.

Methodological Considerations. To determine the appropriate amount of use at one time at key locations, a variety of data was reviewed to understand current conditions compared to desired conditions and to quantify limiting attributes. Visitation data is collected annually by the park staff to track levels of visitor use parkwide. Research was conducted by a variety of researchers from 2005 to present on use levels, types, patterns, and preferences and perceptions of visitors at a specific number of key locations in the park. Results from visitor surveys inform visitor capacity determinations below. Research on visitor impacts to trails, including visitor-created trails, has been used to understand and determine appropriate kinds and amounts of

visitor use with regard to natural resources. The National Park Service collects annual data including counts of fees, parking availability, trail counters, and other pieces of information.

Lot functionality and efficiency was also taken into consideration in the identification of visitor capacities. Given the dynamic nature of visitor use patterns (mostly duration of stay), lots cannot be assumed to be 100% full at all times. Therefore, the reservation system lots use an efficiency factor to ensure that lots both operate at a high efficiency but simultaneously are not "oversold" and to ensure that when visitors arrive with a reservation they will have a parking space. For a directly managed lot (i.e., on a reservation system) the efficiency factor is relatively high (90%). Where lots are not actively managed, the efficacy factor applied is slightly lower (85%) to account for what could reasonably be accommodated in the lots under those conditions (Smith 2005).

Parking Spaces x Efficiency factor = VAOT

Where necessary, approximations have been made. For instance, a persons-per-vehicle (PPVh) multiplier has been used to estimate the average number of people (PAOT) who come to a site based on private vehicle use (VAOT). While some vehicles may include more or less than the multiplier used, it represents a reasonable average. The persons-per-vehicle multiplier used at Acadia National Park is 3 persons/vehicle (NPS 2016).

VAOT x PPVh = PAOT (visitor capacity)

Key Locations

Sand Beach.

Review of Existing Direction and Knowledge— This analysis area includes Sand Beach itself, the parking areas that facilitate access to this beach and the Beehive trailhead. During a 2005 visitor survey, 25% of Sand Beach users said that crowding was an issue in this location, and 15% said that the lack of parking or difficulty finding parking was an issue. More than half of visitors in this survey said the current number of people in this area was too many, and 42% said that the number of people on the beach was problematic. The parking at Sand Beach also provides access to the Beehive Trail, which currently receives approximately 400 hikers per day.

There are currently 113 parking spaces in the two lots that provide access to Sand Beach and its related trailheads. These lots allow 340 PAOT to this area when the PPVh is applied to the number of possible vehicles. During the peak times of the day, it is estimated that an additional 19 vehicles (maximum observed) create their own parking spaces in these lots or along the drive paths leading to these lots (VHB 2014). This unendorsed parking contributes an additional 57 PAOT to the area. Additionally, right lane parking facilitates access to this area of the park. During busy days up to 217 cars have been observed parked in the right lane proximal to Sand Beach (VHB 2014). This results in an additional 650 PAOT parked in this location (only about half of which will go to the beach). Given the current length of stay for visitors at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to the Sand Beach area for up to 80 PAOT. On average, 15% of people who are arriving at Sand Beach (either via the parking lot or Island Explorer service) use this area as a trailhead and do not go to the beach itself.

During a 2004 study, visitors were asked what their preferences were toward the number of people at one time on the beach in this location. The mean acceptability from this study was 248

PAOT on the beach. Visitors, on average, said that the National Park Service should allow 557 PAOT on the beach and they would no longer use this area at 724 PAOT. (Park Studies Lab 2011). During the 2017 summer season, an average of 244 PAOT were counted on the beach during the peak time of day, and a maximum of 480 PAOT were observed on the beach (NPS 2017c).

Limiting Attribute and Relevant Indicators(s)— The limiting attribute in this area is social. At the time of the last visitor survey in this area (2004) visitor experience quality on the beach and trails was acceptable; lingering visitors were dispersed enough throughout the areas and surrounding trails such that experiences have not been notably or measurably impacted. Monitoring on trails proximal to this area indicate that most of the time the level of use on trails is within acceptable ranges most of the time, but approaching thresholds for PVV on the high use trails accessed by this lot and shuttle stop.

Allowing more PAOT than expressed preferences in the 2004 visitor study (see above) this would cause visitors to begin to displace (which the parks considered contrary to the desired experiential conditions) and may cause visitors to disperse to sensitive natural resource areas off the beach or trails that would result in natural resource impacts.

Relevant Indicators

- VAOT at Key Destinations (Sand Beach)
- People per View on High Use Trails (Beehive Trail)

Visitor Capacity.

All Action Alternatives— Based on the expressed visitor preferences for social conditions on the beach and management guidance, the capacity for this area is identified to be 550 PAOT on Sand Beach, consistent with visitor preferences to what the public believes the beach should be managed to (Anderson et al. 2009). This level of use facilitates appropriate access to the variety of resources, without causing conditions that would lead to adverse conditions on the beach or along the trail segments. However, the conditions of the alternatives will allocate this visitor capacity differently. See below for a discussion of these allocations and for a summary of current conditions compared to the action alternatives.

Alternative B— Both lots that facilitate access to Sand Beach would be maintained. However, a permit system would increase the efficiency of these lots. The conditions of this alternative would lead to up to 102 vehicles at one time to access the Sand Beach area contributing 310 PAOT in the area. Based on current use distributions, its anticipated that 45 PAOT would never reach the beach (i.e., trail users and short duration sightseers), leaving 260 PAOT on the beach. Given the visitor use patterns, lengths of stay for visitors (median 60 minutes, mean 81 minutes; Park Studies Lab 2011) at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to Sand Beach for up to 80 PAOT. Under the conditions of this alternative, Island Explorer service may be expanded (based on feasibility), to provide an additional 160 PAOT.

Alternative C— Both lots that facilitate access to Sand Beach would be maintained. However, a permit system would increase the efficiency of these lots. The conditions of this alternative would lead to up to 102 vehicles at one time to access the Sand Beach area contributing 310

PAOT to the area. Based on visitor distributions, it's anticipated that 290 of these PAOT would go to the beach. Given the visitor use patterns, lengths of stay for visitors (average 81 minutes; Park Studies Lab 2011) at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to Sand Beach for up to 80 PAOT. Under the conditions of this alternative, Island Explorer service may be expanded (based on feasibility) to provide an additional 180 PAOT at Sand Beach.

Alternative D— Both lots that facilitate access to Sand Beach would be maintained. However, a permit system would partially increase the efficiency of these lots. The conditions of this alternative would lead to up to 96 vehicles at one time to access the Sand Beach area, contributing 290 PAOT to the area. Based on visitor distributions, it's anticipated that 280 of these PAOT would go to the beach. Given the current length of stay for visitors at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to Sand Beach for up to 80 people at one time. Under the conditions of this alternative, Island Explorer service may be expanded (based on feasibility), to provide an additional 190 people at one time to Sand Beach.

Table A-2. Sand Beach Visitor Capacity and Allocation Summary

Allocations	Current Condition	Alt. B	Alt. C (Preferred)	Alt. D
People arriving via private vehicle (PAOT)	*660*	260	290	280
People arriving via Island Explorer (PAOT)	*80*	80	80	80
Potential Island Explorer or other commercial transit expansion (PAOT)	N/A	210	180	190
Visitor Capacity	**740**	**550**	**550**	**550**

Cadillac Summit Area.

Review of Existing Direction and Knowledge— At 1,530 feet (466 m), Cadillac Mountain is not only the tallest mountain in the park, but also the tallest mountain along the eastern coast of the United States. Cadillac Mountain is accessible via a winding, narrow, 3.5-mile road. The road is closed from December through April 14 and whenever weather conditions (e.g., dense fog or ice) require. Cadillac Mountain is the focal point for Acadia National Park visitors because it offers sweeping views of an island-dotted landscape in all directions. A recent study reported that 75% of visitors went to the summit during their stay (Manni et al. 2010). This area of analysis includes the whole of Cadillac Summit including the summit viewing platforms, hiking trails, parking lots, gift shop, and ledges area.

An estimated 259,000 vehicles and at least 777,000 visitors went to Cadillac Mountain between June 2, 2016 and October 31, 2016 (NPS 2017b). This is an 8% increase over the same period in 2015. Sunrise and sunset, holidays, June 25 to August 31, and 10:00 a.m. to 5:00 p.m. are the busiest times. Each month has peak traffic in excess of 2,000 vehicles per day. August 2016 averaged 2,100 vehicles and at least 6,300 visitors per day. The busiest day in the year was Sunday, July 3, 2016, when 2,830 vehicles climbed Cadillac Mountain, even with an 81-minute closure in the early afternoon (NPS 2017b).

In 2014, vehicle counts were conducted on Cadillac Summit. In this study, the maximum observed number of vehicles on Cadillac Summit and Blue Hill lots was 192 vehicles at one time, which contributed 580 people at one time. On an average busy day in this study (P_{85}) 153 vehicles were counted in these two lots, contributing 460 people at one time to the summit area (VHB 2014). In addition, up to five road-based commercial tours are allowed in the summit lots at one time, contributing 175 PAOT. On average busy days there are 80 PAOT on Cadillac Summit that have arrived there by one of the trails that leads to the summit (RSG 2015). Based on these data collections it's estimated that maximum observed people at one time in the analysis area is 830 PAOT and 715 PAOT on average busy days.

Visitor studies suggest that visitors prefer to have about 195 PAOT in the summit area. Beyond this point, conditions are such on the trails and viewing platforms that visual crowding begins for some visitors. When there are roughly 365 PAOT in the summit area, physical crowding begins on the viewing platforms, and visitors in the interpretive area start to have difficulty moving freely (Pettengill, Manning et al. 2009; Transportation Research Board 2010). When visitors were asked about their preferences and tolerances for crowding on Cadillac Summit, they responded that the point at which management action should be taken (and also what the respondents viewed to be "acceptable conditions" was roughly 600 people in the summit area (or 30 PAOT in the 100 m section of trail) (Manning 2009). Visitors expressed that roughly 700 PAOT in the summit area (or 25 PAOT in the viewing platforms and 225-330 PAOT in the Loop Trail Area) represents a condition at which visitors would begin to displace and would no longer return (RSG 2015; Manning 2009).

A 2008 study assessed visitor preferences for alternative combinations of public access, resource protection, and design solutions to manage and protect the summit of Cadillac. Results of this study showed that visitors strongly support access to the summit and strongly oppose management actions that would result in many people being turned away. There was some minor support for a few visitors being turned away to support resource protection. Results of this study indicated that the most important issue to visitors was "visitor-caused damage to vegetation and soils" and visitors strongly oppose use of the summit area that leads to extensive damage to these resources. Relatedly, visitors were opposed to use levels that result in many visitors traveling off-trail. (Bullock and Lawson 2008).

Private Vehicle Use— There are currently 157 parking spaces in the two lots (Cadillac Summit and Blue Hill Overlook) that provide access to Cadillac Summit. These lots contribute 355 (157*3PPVh) PAOT to Cadillac Summit. During the peak times of the day it is estimated that 35 vehicles at one time create their own parking spaces along the roadway. This unendorsed parking contributes an additional 105 PAOT to the summit area for a total of 460 PAOT on the summit.

Oversize Commercial Vehicles— There are currently five commercial vehicle spaces in the Cadillac Summit lot. The average occupancy of these tour vehicles is 35 visitors. This contributes up to 175 PAOT to Cadillac Summit.

Hiker Access— On average busy days there are 80 PAOT on Cadillac Summit that have arrived there by one of the trails that leads to the summit (RSG 2015).

Limiting Attribute(s)—There are three potential limiting attributes related to visitor capacity in this area. They include: protecting natural resources, promoting visitor enjoyment, and reducing traffic congestion and crowding.

Natural resource constraints. The summit of Cadillac Mountain is home to plant species that are sensitive to visitor use. While some infrastructure solutions (trail paving, fencing, signage) have been implemented to prevent impacts to these resources, overuse of this area could result in impacts to these summit communities. Additionally, geographic and natural resource constraints limit the ability to expand parking beyond the current (2016) footprints.

Relevant Indicators

– Extent of Informal Trails

Transportation system performance. Parking is limited in the lots that provide direct access to Cadillac Summit making competition for parking high during most of the day during the peak summer season. Additionally, visitor-created roadside parking creates safety issues and roadway congestion. Given the historic nature of the road and its cultural significance, expanding the roadway to provide endorsed parking along the shoulders is not feasible.

Relevant Indicators

– VAOT at Key Destinations

Visitor enjoyment. Providing quality recreational opportunities also requires that visitor use be managed and distributed to avoid unacceptable levels of crowding at popular recreation sites and primary attractions. One of the desired conditions for this area is that views from Cadillac summit are dominated by the natural landscape. Therefore, visitor capacity on the summit needs to ensure that use of the summit provides for conditions such that these views are achievable. Research related to visitor enjoyment of the summit and associated levels of use are discussed in the "Review of Existing Direction and Knowledge" section above.

Relevant Indicators

– People per View on High Use Trails
– People per Viewscape

Visitor Capacity— Extensive research and study of this area suggests a number of benchmarks by which visitor capacity could be determined. While visitors prefer low-density experiences on Cadillac Summit (Manning 2009), this is a place where they are willing to tolerate higher levels of use so that many visitors do not need to be turned away from this resource and experience, provided that the natural resources in this location remain protected (Bullock and Lawson 2008). Considering all of these factors and studies along with the operational conditions of the environment, the visitor capacity for this area is identified at 600 PAOT in the summit area. Beyond this point, social conditions would be so degraded that visitors would have previously visited would be displaced by crowded conditions and therefore desired conditions for this area would not be met.

In practice, the conditions of each alternative lead visitor use rates and allocations that may vary by alternative in this analysis area due to the anticipated efficiencies of the lots under the

different conditions of the reservation systems. See below for the visitor use allocations by alternative. A summary.

All Action Alternatives.

Private Vehicle Use— The 23 spaces on the outside loop would be removed to improve safety by removing parking from the travel way consistent, in part, with its historic design and balance the allocation between private vehicle and commercial access.

Commercial Vehicles— Five commercial vehicle spaces in the Cadillac Summit lot would continue to be maintained. Due to all alternatives size restrictions, it is assumed that no more than 25 visitors can be accommodated per vehicle. This would contribute 125 PAOT to Cadillac Summit.

Hiker Access— It is anticipated that with vehicle access restrictions to the summit, more visitors will likely choose to hike to the summit, increasing this allocation to 100 from the current average estimate of 80). Should encounter rates along these trails approach the threshold, trail access to Cadillac Summit may need to be re-evaluated.

Alternative B.

Private Vehicle Use— Both lots that facilitate access to Cadillac Summit would be maintained. However, a permit system with a managed turnover rate would increase the efficiency of these lots. This lot would be managed for 121 spaces in the two lots (Cadillac Summit and Blue Hill Overlook) that provide access to Cadillac Summit. Under the conditions of this alternative, these lots contribute 360 PAOT to Cadillac Summit.

Alternative C.

Private Vehicle Use— Both lots that facilitate access to Cadillac Summit would be maintained. A permit system (that allows variable length of stay) would allow for a moderate efficiency of these lots. There would be 117 managed spaces in the two lots that provide access to Cadillac Summit. Under the conditions of this alternative these lots contribute 350 PAOT to Cadillac Summit.

Alternative D.

Private Vehicle Use— Both lots that facilitate access to Cadillac Summit would be maintained. A permit system for the Park Loop Road would increase the efficiency of the summit lot, but would not increase the efficiency of the Blue Hill Overlook lot. There would be 108 managed spaces in the two lots that provide access to Cadillac Summit. Under the conditions of this alternative these lots contribute 325 PAOT to Cadillac Summit.

Table A-3. Cadillac Summit Visitor Capacity and User Allocation Summary

Allocations	Current Condition	Alternative B	Alternative C Preferred	Alternative D
People arriving via Private Vehicle (PAOT)	*360*	360	415	390
People arriving via Hiking Trail (PAOT)	*80*	100	100	100
People arriving via Commercial Vehicles (PAOT)	*180*	125	125	125
Visitor Capacity	*715*	*600*	*600*	*600*

The alternatives to not sum to 600. This is to ensure that allocations do not exceed 600 should cars arrive with more visitors or should hiking to the summit increase beyond projected rates.

Jordan Pond House Area.

Review of Existing Direction and Knowledge— The only dining facility in the park, the Jordan Pond House Restaurant, serves lunch, tea, and dinner (mid-May through late October). Afternoon tea with popovers remains a popular tradition on a visit to Acadia. Visitors are encouraged to make reservations or to visit this restaurant during off-peak times. This area also serves as a trailhead for many popular hiking trails including the Jordan Pond Path and is a popular starting point for pedestrians and cyclists to access the carriage road system, and a major stop for cyclists who entered the carriage roads from other locations. This area of analysis includes the Jordan Pond House itself, its associated grounds, and the trailheads and trails that this parking lot provides access to.

In the summer, visitors who can find a space to park typically still wait 45 minutes for a table; however, this wait time during peak use is considered acceptable. This area was intentionally designed to accommodate high levels of visitor use. There are currently minor natural resource impacts from use levels in this location. There was a general consensus among park managers that use levels in this area can continue at current levels (which is being driven primarily by available parking). In a 2004 visitor survey, visitors reported that the things they enjoyed least about their visit were crowding (19.5%) and lack of parking or difficulty of locating parking (17%) (Park Studies Laboratory 2011).

There are currently 198 spaces in the two lots that provide access to The Jordan Pond House area. These lots contribute 600 PAOT to this area. During the peak times of the day it is a maximum of an additional 44 vehicles create their own parking spaces in these lots and 20 vehicles are parked along the roadway segments in this area (VHB 2014). This unendorsed parking contributes an additional 190 PAOT to the area. Given the current length of stay for visitors at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to the Jordan Pond House area for up to 170 PAOT. Currently, three commercial vehicles could be accommodated at one time at Jordan Pond House. These buses have a maximum capacity of 45 passengers each, contributing up to 135 PAOT to this area.

Limiting Attribute(s)— The limiting attributes in this area are social. Despite currently acceptable visitor experience; on busy days, the carriage roads in the area can be very crowded, and visitor experiences of this recreation opportunity would become impacted if the number of visitors on busy days were to become the norm. For this reason, expanded parking should not be considered and bus drop offs need to be intentionally managed. At this location lingering visitors are dispersed enough throughout the areas and surrounding trails such that experiences have not been notably or measurably impacted. Monitoring on trails proximal to this area

indicate that most of the time the level of use on trails is high (NPS 2014). In the 2013 selected trail census, 948 hikers (or 135 hikers per hour) were counted passing through the high use trail junction near Jordan Pond House. While visitor surveys (Park Studies Lab 2011) show that this level of use isn't considered crowding by many as it is by some. And minor natural resource damage near theses trails indicates that some visitors may be departing trails to seek lower density experiences.

Relevant Indicators

- VAOT at Key Destinations
- People per View on High-Use Trails
- Number of Island Explorer Leave Behinds
- Encounters on Medium-Use and Low-Use Trails

Visitor Capacity

All Action Alternatives. Given the current length of stay for visitors at this location and shuttle headway schedule for Island Explorer, this service will facilitate access to the Jordan Pond House area for up to 170 PAOT. Exceedances of this number would likely lead to passenger leave behinds or stranded visitors at rates that would be incompatible for the desired conditions of this service. The likely reduction in vehicle size, with sustained level of parking for commercial vehicles would result in 105 PAOT in this area arriving in road-based commercial tours.

Alternatives B and C. To ensure the continued protection of the resources and experiences at Jordan Pond House, visitor use of this area will be managed to the capacity of the parking lots, as these lots were designed to accommodate an appropriate level of use on proximal resources. The direct managed access strategies applied in these alternatives will allow for 210 vehicles at one time and 630 PAOT. See table A-4 for a summary of these allocations and a comparison to current conditions.

Alternative D. To ensure the continued protection of the resources and experiences at Jordan Pond House, visitor use of this area will be managed to the capacity of the parking lots, as these lots were designed to accommodate an appropriate level of use on proximal resources. The less direct managed access strategies applied in these alternatives will allow for 200 vehicles at one time and 600 PAOT. As private vehicle access to this area is most restrictive in this alternative, additional visitors could be accommodated through other means (likely carriage roads) without crossing related thresholds. See table A-4 for a summary of these allocations and a comparison to current conditions.

Table A-4. Jordan Pond House Visitor Capacity and Allocation Summary

Allocation	Current	Alt B	Alt C	Alt D
People arriving via Private Vehicle (PAOT)	*790*	630	630	600
People arriving via Carriage Roads (PAOT)	*N/A*	+20	+20	+30
People arriving via Island Explorer (PAOT)	*170*	170	170	170
People arriving via Road-Based Commercial Tours (PAOT)	*135*	105	105	105
Visitor Capacity	*1155*	935	935	935

Hulls Cove.

Review of Existing Direction and Knowledge— Hulls Cove is currently the only visitor center for the park. At this location some visitors will park for a short duration to learn about the park, purchase park passes (required for entry to the park), and then return to their vehicles to enter the park. Other visitors use this location as a transportation hub to transfer to Island Explorer buses. Still other visitors use this parking area as a place to transfer from vehicles to other modes of travel (bicycle/foot) on the carriage roads.

The physical design of the building is limiting, and the theater and bathroom capacities are often exceeded. Although social capacity thresholds are likely high, as visitors expect the facility to be busy, wait times to speak to a ranger about park information or purchase a park entrance pass can be at unacceptable levels.

The current Hulls Cove parking lot has 270 spaces. This lot is occasionally overparked by marginal degrees (101%), but on an average design day this lot runs at 81% efficiency (which is considered acceptable by industry standards for this type of lot). This means that at any one time there are 648 PAOT (or up to 820 PAOT when parking is maximized) who are using the parking at Hulls Cove and are either on carriage roads, in the Hulls Cove visitor center or in the park via Island Explorer.

Limiting Attribute(s)— The limiting attributes in this area of the park are experiential and based on a number of factors. Too many people at Hulls Cove could lead to long wait times in the visitor center or at bus stops for Island Explorer. Also, too many people at Hulls Cove could result in unacceptable conditions along the carriage roads proximal to this parking area.

Relevant Indicators

- Number of Island Explorer Leave Behinds
- People per Viewscape on Carriage Roads
- VAOT at Key Destinations

Visitor Capacity

Alternative B. Parking at this site will be limited to the endorsed spaces in the lot. This lot will accommodate 270 vehicles at one time and 1,425 PAOT using this lot to access either carriage roads, the visitor center, or transfer to Island Explorer or a commercially provided tour.

Alternatives C and D. Parking at this site will be limited to the endorsed spaces in the lot. This lot will accommodate 470 vehicles at one time and 1425 PAOT using this lot to access either carriage roads, the visitor center, or transfer to Island Explorer. The expansion of parking in this area is not expected to increase the number of people on-site at Hulls Cove, rather, to provide visitors a place to park private vehicles and transfer to Island Explorer service or a commercially provided tour if they cannot or choose not to secure parking (either via reservation or spontaneous arrival) in another location in the park.

Echo Lake.

Review of Existing Direction and Knowledge— This beach is one of a limited number of locations in the park where swimming is allowed due to public water supply restrictions on this activity. It is one of two beaches in the park with lifeguarded swimming. Most visitor groups are made up of family and friend groups at this location, rarely (if ever) do commercial groups visit this site (Park Studies Laboratory 2011). More than half of visitors to this site (63%) are repeat visitors, with the median visits to this site being five visits and many had intentions to return to Mount Desert Island in the next two years (69%) (Park Studies Laboratory 2011).

Echo Lake Beach is a small site but can be heavily used during the summer months. Parking lot is often over parked, and overparking on roadways. This overparking can lead to crowded conditions on the beach, and visitors reported that crowding was the thing they enjoyed least on their visit to this site and about half of the visitors surveyed thought there were too many people in this area of the park (Park Studies Laboratory 2011). About a third of visitors think no changes are needed at this site (27%) and fewer visitors think that action needs to be taken at this location to manage congestion or limit use (11%) (Park Studies Laboratory 2011). However, visitors report that generally, crowding levels are low (Park Studies Laboratory 2011).

In 2005, visitors reported that they typically see 156 PAOT on the beach. Currently, the lot can accommodate 99 vehicles at one time and 297 PAOT in the lot. During busy days up to 29 additional vehicles have been observed parked along roadways adding an additional 87 PAOT. The maximum observed condition at this site is therefore 384 PAOT. Roughly 10% of users to this area use it as a trailhead, leaving up to 345 PAOT on the beach. This condition is considered more people than would be acceptable by visitors per results of the social science survey. In July 2017, an average of 83 PAOT were counted on the beach, with a maximum observed of 200 PAOT (NPS 2017c).

Limiting Attributes— The limiting attribute at this site is social and is related to the number of people that can be accommodated on the beach before visitors start to feel crowded. On most summer days when the lot is not over parked, use at the beach itself is at acceptable levels, and the number of users do not exceed the limits for lifeguards. While visitors prefer to see an average of 109 people on this beach and at 303 people the conditions would be so unacceptable that they would no longer visit this area. Visitors think that the beach should be managed to 238 PAOT (Park Studies Laboratory 2011). While there are nesting loons near the beach that are sensitive to visitor use levels, the lifeguards in this location manage the visitors such that this does not present a significant issue.

Relevant Indicators

- VAOT at Key Destinations
- Encounters on Medium-Use and Low-Use Trails

Visitor Capacity

All Action Alternatives. The capacity for this area has been identified at 300 PAOT, consistent with visitor preferences for acceptable conditions on the beach. Per management decisions in the alternatives, parking at Echo Lake will be limited to the endorsed spaces in the lot to protect natural resources and mitigate safety concerns along the roadway. This lot will accommodate 99 vehicles at one time and 297 PAOT to this area. If current use patterns continue this should create conditions on the beach that are below the displacement rate all of the time and within visitors' preferred management range most of the time.

Acadia Mountain and Echo Lake Ledges.

Review of Existing Direction and Knowledge— This site serves as the trailhead to Acadia Mountain and other popular trails in this area of the park. Most visitors to this area have visited the park before (79%) and intend to visit again (76%) (Park Studies Laboratory 2011). Visitors spend an average of 164 minutes in this area of the park (Park Studies Laboratory 2011). This site is serviced by Island Explorer transit service.

Major issues in this area relate to the number of cars that are parked along roadsides to access this site. This leads to visitor-created trails that lead to official trailheads and resource impacts directly along the roadside. The visitor-created trails are found along the shoreline as swimmers seek out less crowded, more secluded places to swim. The hiking trail to Acadia Mountain is much widened and braided. These are the major trail-related resource impacts that are found at the site. This lot was designed to protect the quality of the experience along the trails, but the overparking also leads to crowding on the trails in this area during the busiest days of the year. Crowding was noted as the third-most sited issue detracting from quality experiences in visitor surveys (Park Studies Laboratory 2011). Visitors state that finding a parking place was the biggest issue facing this site followed by too many people on the trails (Park Studies Laboratory 2011).

This parking lot can accommodate 27 vehicles at one time leading to 81 PAOT. During peak times there are up to 62 vehicles parked along the roadside contributing an additional 186 PAOT. Maximum observed use (based on parking lot counts) at this site is 267 PAOT. This is consistent with trail counts, which have documented an average of 85 hikers an hour through the two major trail junctions in this area.

Limiting Attribute(s)— The limiting attribute in this area is the number of people that can be accommodated along the trails while maintaining desired conditions for this type of activity and the desired conditions of the trails. Informal monitoring of current use levels by park staff indicate that the current number of people on trails in this area is within acceptable levels most of the time, but that on days where overparking is at its worst, the trails become crowded. The Acadia Mountain Trail is one of several that have an excessive amount of widening and braiding because of the numbers of hikers and their behaviors (not staying on the trail), or visitors creating new trails along the lake in an effort to disperse from the main trail. While increasing

the resiliency and sustainability of these trails may increase the number of people that could be accommodated, this would likely result in approaching or crossing thresholds for encounters on this and other nearby trails.

Therefore, a slight reduction in numbers of people at this site from current conditions should be considered. Additional parking could be arranged (see alternative C), provided that the additional parking does not exceed current observed conditions.

Relevant Indicators

- VAOT at Key Destinations
- Encounters on Medium-Use and Low-Use Trails

Visitor Capacity Determination

Alternatives B and D. Parking at this site will be limited to the endorsed spaces in the lot. This lot will accommodate 27 vehicles at one time and 80 PAOT to this site from private vehicles.

Alternative C. Parking at this site will be limited to the endorsed spaces in the lots. These lots will accommodate 63 vehicles at one time and 190 PAOT to this site from private vehicles.

Eagle Lake.

Review of Existing Knowledge and Direction— Eagle Lake parking lot is located along route 233 and provides access to the carriage road system. As this lot is located close to the town of Bar Harbor, it is a popular site for visitors to transition from the roadway system to the carriage road system. Currently the lot can accommodate 23 vehicles at one time that contribute 69 PAOT to this site. During busy summer days, up to 66 vehicles have been observed parked along roadsides. This contributes 198 PAOT to this site. Total maximum observed use at this site is 267 PAOT.

Limiting Attributes— Current use at Eagle Lake is at an acceptable level from a visitor experience perspective. The number of vehicles parked here are not contributing visitors to the trails or carriage road system in such a way that thresholds are being approached related to experiential indicators. However, in this location resource damage is a concern related to overparking along roadsides. This roadside parking also raises safety concerns as this roadway sees steady traffic and there are no paths or sidewalks to move visitors safely from their cars to the trailhead.

Relevant Indicators

- VAOT at Key Destinations
- Encounters on Medium-Use and Low-Use Trails
- Number of Island Explorer Leave Behinds

Visitor Capacity

Alternatives B & D. Alternatives B and D will manage Eagle Lake to its currently designed capacity to mitigate resource and safety concerns. The visitor capacity of this site is determined to be 69 PAOT.

Alternative C. All alternatives will manage Eagle Lake to its currently designed capacity to mitigate resource and safety concerns. The visitor capacity of this site is determined to be 69 PAOT.

Schoodic Point.

Review of Existing Direction and Knowledge— Schoodic Point is the most popular visitor destination on the Schoodic District with 88% of all visitors to the district visiting this destination (Manning 2002). Per the general management plan, parking is only allowed in designated lots. This is the site that based on both staff and visitor observations is the place most often to become crowded (Manning 2002). Current parking lot infrastructure was designed to achieve desired conditions for visitor densities on Schoodic Point. This lot can accommodate up to 31 vehicles at one time contributing 93 PAOT to this site. A 2002 study reported that at peak seasons and times of day an average of 70 PAOT were observed at Schoodic Point. Park staff have observed that over time more groups are coming in larger vehicles (up to 15-passenger) that are increasing relative numbers of people at the site compared to the number of parking spaces. Additionally, transit service has been added to this location. On busy summer days, transit service delivers an estimated 166 visitors per day to this site over the 14 trips to Schoodic Point. It is estimated that about 10 people at a time are on Schoodic Point via Island Explorer.

Limiting Attributes— Visitor studies indicate that Schoodic Point can accommodate 100 people per view (or 110 PAOT) before the visitor experience at this site is compromised and visitors begin to displace from this site (Manning et al. 2002).

Relevant Indicators

- People per Viewscape
- VAOT at Key Destinations
- Number of Island Explorer Leave Behinds

Visitor Capacity

All Action Alternatives. Parking at this site will be limited to the endorsed spaces in the lot. This lot will accommodate 31 vehicles at one time and 93 PAOT to this site. This site will accommodate up to 17 PAOT arriving via transit or trail. Therefore, the visitor capacity of this site is determined to be 110 PAOT.

OTHER LOCATIONS

Table A-5. Visitor Capacity Determinations

Location	Current Use Level	Visitor Capacity Determination	Rationale
Frazer Point	42 PAOT (average)	90 PAOT	Visitor survey results (Manning 2001) indicate that at this level NPS managers should take action to correction an unacceptable condition.
Sieur de Monts	274 PAOT	190 PAOT	The desired condition for the area is a quiet, intimate environment. Changes in infrastructure to support more use would detract from this desired condition. Therefore, this determination is consistent with managing to the current infrastructure capacity to protect the quality of the social environment as a part of the Range of Experiences FRV.

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APPENDIX B: ALTERNATIVE SUMMARY TABLE

Issues	Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D
Application of the Reservation System	All parking would continue to be available to visitors on a first-come, first-served basis. Parking related congestion would be managed on a case-by-case basis.	Parking related congestion would be managed by establishing a parking reservation system for vehicles at five of the primary attractions and trailheads along Park Loop Road—Cadillac Mountain, Jordan Pond House, Thunder Hole, Sand Beach, and Sieur de Monts. During initial implementation of the plan, all other parking lots would continue to be managed on a first-come, first-served basis. Parking reservations for these five areas would be valid for a specified time period and vehicles would be required to exit the parking lot prior to the expiration of their permitted time period thereby managing length of stay.	Parking-related traffic congestion on Park Loop Road would be managed through establishing a timed-entry vehicle reservation system for the Ocean Drive corridor (between the Sand Beach Entrance Station and the Fabbri picnic area/Monument), Cadillac Summit Road, and the Jordan Pond House North Lot. During initial implementation of the plan, all other parking lots would continue to be managed on a first-come, first-served basis. The timed-entry system would provide reservation holders with a specific time window during which their vehicle would be permitted to enter the corridor or parking lot. Once inside the corridor or parking lot, there would be no limits on length of stay.	The overall volume and timing of vehicles on Park Loop Road would be managed through consolidating entrance points and implementing a timed-entry reservation system for access onto the Park Loop Road. Most of Park Loop Road would be converted to one-way traffic in a counterclockwise rotation. This is opposite the direction of existing one-way sections. Once visitors entered the park loop road during their assigned timed entry window, they would be able to travel freely anywhere on Park Loop Road and all parking would be available on a first-come, first-served basis. There would be no limits on length of stay.
Right Lane Parking	Right lane parking along Park Loop Road would be retained.	All parking in the right-hand lane of Park Loop Road would be eliminated to improve traffic flow and allow passing of bicycles and slow-moving vehicles.	Right lane parking along Park Loop Road would be retained in the near term but eventually phased out as other options and parking become available.	Right lane parking along Park Loop Road would be eliminated except for a short northbound section of the road near Sand Beach where a portion of the right lane would be demarcated as parallel parking spaces.
Eagle Lake	The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would remain a first-come, first-served parking lot.	The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would remain a first-come, first-served parking lot with the addition of an automated gate to restrict access when the lot is full. This gate may be modified or replaced to validate reservations if this lot is added to the reservation system.	The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be removed. These facilities would be relocated to the south (off the highway) at Liscomb Pit, an approximately 2-acre area currently used as a maintenance storage yard.	The existing parking lot and restroom on the north side of SR 233 at Eagle Lake would be removed. These facilities would be relocated to the south (off the highway) along an abandoned section of SR 233 (old route 233).
Hulls Cove	No changes would be made to the existing function or footprint of Hulls Cove.	Hulls Cove Visitor would continue to serve as the primary contact and orientation point for visitors to Acadia National Park. The site would be redeveloped with a substantial expansion of parking capacity and a new and enlarged visitor center. The existing visitor center building would either be repurposed or removed and the area revegetated.	Same as alternative B.	The existing visitor center at Hulls Cove would be demolished and the area restored to natural conditions. A small visitor contact station would be rebuilt closer to an expanded Hulls Cove parking lot.
Acadia Gateway Center	The Acadia Gateway Center would be developed as described in the Acadia Gateway Center environmental assessment (MDOT and FTA 2006) (see also chapter 1).	Same as alternative A.	Same as alternative A.	No substantial changes would be made to the planned physical development footprint of the Acadia Gateway Center facility as described in the Acadia Gateway Center environmental assessment (MDOT and FTA 2006) (see also chapter 1, "Relationship to Other Plans"). However, under this alternative the Acadia Gateway Center would serve as the park's primary visitor center.
Thompson Island	No changes would be made to the existing function or footprint of the Thompson Island Information Center.	The visitor services at the Thompson Island Information Center (on the west side of SR 3) would be removed and the structures repurposed. Visitor information services would be relocated to the Acadia Gateway Center. The picnic area and restrooms on the east side of the highway would be maintained for visitor use.	Same as alternative B except all the information center infrastructure on the west side of SR3 would be demolished and the area restored to natural conditions.	Same as alternative B.

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APPENDIX C: MISSION, GOALS, AND PRESERVATION STANDARDS FOR HISTORIC MOTOR ROAD SYSTEM

In addition to the management guidance presented in the general management plan, the park has identified a mission statement for the historic motor road system to articulate the goals and preservation standards expected for the resource:

- The historic motor road system at Acadia National Park is a cultural resource. Operations and maintenance shall preserve its rustic character and significant characteristics and features, while considering potential adverse effects on natural resources and make all reasonable efforts to avoid or mitigate these effects whenever possible and practicable.
- Visitors using the historic motor road system should have an experience consistent with the goals of the park. This experience may contrast with the experience of traveling on a typical public road or public highway and may differ from the initial expectations of the visitor.
- Before any modifications are made to the historic motor road system, changes should be carefully evaluated for their impact on the historical integrity of the significant characteristics and features. In carrying out individual actions or routine maintenance, the overall or cumulative effect of each change will be evaluated to ensure that the historical integrity is not diminished.
- During motor road construction projects, impacts on the park and its visitors will be reduced as quickly as possible. Major projects should consider potential environmental, social, and economic impacts, and include a construction sequencing strategy that minimizes road congestion and delays. Whenever possible, the motor roads will remain open during construction projects.
- The following goals are intended to maintain the significant characteristics and features of Acadia's historic motor road system while protecting Acadia's natural resources and high-quality visitor experiences:
- Preserve the historic vertical and horizontal alignment and cross-sections that are unique to each motor road segment as a testament to its designers and dates of construction.
- Preserve the natural features associated with the construction of the motor roads such as roadside rock outcrops and rock cuts.
- Preserve the historic vistas and associated paved pullouts and parking areas.
- Preserve the diversity of vegetation adjacent to the road corridors.
- Preserve the rustic character of built features designed in the rustic design style (stone-faced bridges and causeways; vegetated shoulders and ditches; stone embankments, retaining walls, guardwalls, culvert headwalls, drop-inlets, waterways, medians, curbs; asphalt walkways).
- Preserve historic features designed by the Bureau of Public Roads (concrete and brick drop-inlets, concrete curbs).
- Manage visitor parking that is consistent with the carrying capacity of the historic motor road system. This will include management of informal pullouts, right lane parking, and

the use of parking management stones. Historic features should not be modified solely to accommodate larger automobiles, recreational vehicles, or buses.

- Minimize use of standard regulatory signs and pavement striping.
- Protect perennial and intermittent streams that intersect the road corridor.
- Preserve habitats that use the road corridor.
- Preserve the historic character of the historic motor road system for future generations.

APPENDIX D: BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

BEST MANAGEMENT PRACTICES

To ensure protection of the park's fundamental resources and values, the following best management practices would be implemented under all action alternatives. These best management practices are grounded in NPS *Management Policies 2006*, and they are intended to provide a practical approach to everyday management of Acadia National Park's transportation system. These best practices are different from the mitigation measures described in the next section of this appendix, which are intended to avoid or minimize potential adverse impacts from implementing the management actions proposed in this plan.

General

- Minimize expansion of impervious surfaces in the park. Pervious pavement would be used where practical and abandoned roads or parking lots would be rehabilitated to restore natural conditions.
- Incorporate the principles of sustainability in the design, construction, and operation of all facets of the NPS transportation system.
- Ensure that all new facilities maximize protection of the park's fundamental resources and values and are scaled to achieve the desired visitor capacity of the site.

Natural Resources

Scenery.

- Design, site, and construct developments to avoid or minimize visual intrusion.
- Strategically place signs within the road corridor based on established design guidelines. Where signs are necessary, locate them to minimize visual intrusion.
- Design new traffic and parking control structures to minimize visual intrusion to the maximum extent possible.
- Maintain selected vistas and other remarkable views through vegetation pruning to allow visitors to experience the intended scenic design of the historic road system without disrupting the integrity of the natural ecosystem.
- Manage appropriate visitor and administrative uses to minimize impacts on scenic qualities.
- Place proposed utility lines underground in existing and/or new corridors to minimize visual intrusion, except where such placement would cause significant damage to natural or cultural resources.

Ecological Communities, Functions and Species.

- Monitor human use areas (e.g., road corridor, trails, turnouts) for signs of native vegetation disturbance and manage visitor use to minimize or avoid vegetation

disturbance and the spread of nonnative species (e.g., through public education, erosion control, and barriers to control potential impacts on plants).

- Monitor populations and distribution of various wildlife "indicator" species to assess for possible effects from visitor use and triggers for adaptive management actions.
- Restore native species, ecological function, and habitat values to disturbed areas where possible.
- Develop and implement revegetation plans for disturbed areas, which would specify native seed/plant source and mixes, soil preparation, etc.
- Implement best practices to ensure construction equipment and machinery construction areas are free of nonnative plant and aquatic invasive species.
- Develop cooperative integrated pest management vegetation management practices with state and local agencies for road corridors transecting or adjacent to NPS lands.
- Conduct pre- and post-project plant monitoring in the project area to ensure successful revegetation, manage invasive exotic plants, and determine maintenance needs in establishing vegetation.

Aquatic Resources.

- Periodically monitor chemical, physical, and biological properties of water bodies and waterways in Acadia National Park (including coastal waters, Eagle Lake, Echo Lake, Jordan Pond, and smaller bodies) to ensure water quality remains in excellent condition.
- Implement best practices to reduce pollution, erosion, sedimentation, and compaction and to control surface runoff from parking areas, roads, and other ground-disturbing activities.
- Avoid or minimize salt use in winter to protect adjacent waters.
- Delineate and avoid work in wetlands, and apply protection measures before any ground disturbance (e.g., construction). Wetlands would be delineated by qualified NPS staff or certified wetland specialists and clearly marked before construction work begins.
- Perform construction activities in a careful manner to prevent damage by equipment, erosion, siltation, etc.
- Restore stream connectivity and natural hydrological flows and ensure that stream and wetland crossings and culverts are designed for the natural movement of fish and aquatic wildlife.
- Design and build infrastructure to address increased storm intensities and flows related to a rapidly changing climate.
- Ensure protection of drinking water quality in Eagle Lake, and Bubble, Jordan, Lower Hadlock, and Long Ponds in compliance with the Safe Drinking Water Act of 1974.

Natural Soundscapes and Acoustic Resources.

- Follow all applicable guidance and policy regarding natural soundscapes and acoustic resources, including Director's Order 47: *Soundscape Preservation and Noise Management* and NPS *Management Policies 2006*.
- Maximize noise-free intervals and limit the intensity and duration of noise intrusions.

- Purchase and encourage use of quiet fleet and transit vehicles when possible.

Night Sky.

- Minimize lighting and use only dark-sky friendly light fixtures and practices in all aspects of the park transportation system and infrastructure including along roadways and in parking lots.

Cultural Resources

- Consider modifications to historic roads and infrastructure that maintain historic integrity but also mitigate the effects of anticipated increases in intensity and frequency of precipitation storm events.

Quality of the Visitor Experience

- Periodically conduct visitor surveys and collect and analyze data to determine visitor satisfaction with park programs, services, and facilities.
- Conduct community outreach and education about the park and provide collaborative and consistent messaging regarding appropriate visitor uses and means of access.
- Continue appropriate and strategic signage and wayfinding where needed.
- Implement a visitor use management and monitoring program using indicators and thresholds to effectively manage visitor use and related impacts.
- Encourage park staff to limit administrative use of vehicles within the transportation system as much as possible through carpooling and other means.
- Ensure that the facilities, programs, and services of the National Park Service and its partners are accessible to and usable by all people, including those who are disabled. This policy is based on the commitment to provide access to the widest cross-section of the public and to ensure compliance with the Architectural Barriers Act of 1968 (42 *United States Code* [USC] 4151 et seq.) and the Rehabilitation Act of 1973 (29 USC 701 et seq.).

MITIGATION MEASURES AND MONITORING GUIDELINES

Under all of the alternatives evaluated in this draft plan/EIS, the following mitigation measures would be applied to avoid and minimize potential adverse impacts on Acadia National Park's fundamental resources and values.

General Construction Measures

- Locate staging and stockpiling areas in previously disturbed sites, away from visitor use areas to the extent possible, to minimize the amount of ground disturbance. All staging and stockpiling areas would be returned to preconstruction conditions and/or revegetated following construction. Parking areas for construction vehicles would be limited to these staging areas, existing roads, and identified previously disturbed areas.
- Identify and fence construction zones with construction fencing, silt fencing, or some similar material prior to any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction.

All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities, including materials staging and storage, beyond the construction zone as defined by construction zone fencing.

- Place nonvegetation construction debris in refuse containers at least daily, and dispose of refuse at least weekly. No refuse burying or burning would be allowed inside the park.
- Design, build, and landscape all new structures with defensible space around the structures in case of wildfires.
- Comply with applicable federal and state regulations on the storage, handling, and disposal of all hazardous materials and waste. Provisions would be made for storage, containment, and disposal of hazardous materials used on-site. To minimize possible petrochemical leaks of construction equipment, all equipment would be monitored frequently to identify and repair any leaks and would be staged in designated areas suitable to contain leaked materials. Trained personnel would clean up and dispose of any leak or spill from construction equipment such as hydraulic fluid, oil, or fuel. Fueling and fuel storage areas would be permitted only at approved locations and comply with park refueling guidelines.
- Develop and implement a comprehensive spill prevention and pollution control program that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements.
- Limit all construction activities in Acadia National Park to the period from 30 minutes after sunrise to 30 minutes prior to sunset.

Sustainable Development

- Design development projects (e.g., parking lots, infrastructure, utilities, roads) or rehabilitation projects (e.g., road and parking lot rehabilitation, utility upgrades) to blend with the natural and historic surroundings. Projects would reduce, minimize, or eliminate air and water point and nonpoint source pollution. Projects would be sustainable whenever practicable by recycling and reusing materials, minimizing materials, minimizing energy consumption during the project, and minimizing energy consumption throughout the lifespan of the project.

Climate Change

Climate change has the potential to adversely affect future conditions at Acadia National Park, including natural and cultural resources, visitor experience, and the transportation system, particularly low-elevation road corridors. As global and regional climate change continues, a management approach that enhances the protection and resilience of climate-sensitive resources, assets, and values is increasingly important. All of the action alternatives would incorporate the strategy outlined in this section, which incorporates the growing understanding of climate change influences and the effectiveness of management to contend with these influences.

Climate change science is a rapidly advancing field, with sophisticated models being refined and new information being collected and released. The full extent of climate change impacts on resource conditions is not fully understood, and therefore, park managers and policy makers

have not determined the most effective response mechanisms for minimizing impacts and adapting to change. As a result, the following management strategies do not provide definitive solutions or directions; instead, they provide science-based and scholarship-based management principles to consider when implementing the Acadia transportation plan.

Acadia National Park would use the following management approach to address climate change throughout implementation of this transportation management plan. Many of these specific management strategies are adopted from the publication, *Some Guidelines for Helping Natural Resources Adapt to Climate Change* (Baron et al. 2008). Further elaboration and adaption of these strategies is anticipated as implementation of the plan proceeds.

- Identify key natural and cultural resources, facilities, and processes that are at risk from climate change. Establish baseline conditions for these resources, identify their thresholds, and monitor for change. Increase reliance on adaptive management to minimize risks.
- Apply best management practices to climate change to improve the resilience of ecosystem features and processes, cultural resources, and facilities.
- Use best management practices to reduce human-caused stresses (e.g., park infrastructure and visitor-related disturbances) that hinder the ability of species or ecosystems to withstand climatic events.
- Manage park transportation facilities and infrastructure (e.g., structures, trails, roads) in a way that prepares for and adapts to the effects of climate change.
- Manage transportation infrastructure (e.g., structures, trails, roads) in a manner consistent with NPS policy regarding climate change. Prepare for and adapt transportation infrastructure to climate change. Carefully evaluate storm-damaged infrastructure and the risk of further damage. If there is an unacceptable risk of continued damage, the damaged infrastructure would likely not be replaced unless extenuating circumstances were present.

The 2017 Coastal Hazards and Climate Change Asset Vulnerability Assessment identifies park assets threatened by sea level rise and inundation. That document and associated GIS databases list park assets identified in Acadia's Facilities Management Software System with minimal, low, moderate, and high vulnerability to climate change impacts. For the most part, the park's motor vehicle transportation systems are well shielded from negative impacts, but some parts of Park Loop Road and Schoodic Loop Road are at sufficiently low elevations that they could experience erosion or storm-related damage (including areas on Schoodic Point (Arey Cove) Road and along the Schoodic Loop Road, as well as several locations on Ocean Drive and at Sand Beach on Mount Desert Island). This transportation plan does not propose any new facilities or infrastructure in the threatened areas. Nevertheless, climate change impacts could

necessitate adaptive changes to the transportation corridor plan in the future. The National Park Service would evaluate any future proposed facility investments prior to project approval using the best scientific information and climate modeling available and the climate change strategies described above to ensure the long-term sustainability of these investments. The National Park Service may conclude that such financial investments would be unwise and that other options should be considered or, potentially, that the project should not be pursued or implemented.

Wildlife and Wildlife Habitat

- Employ temporary or seasonal use restrictions or area closures for all visitor uses, including pedestrians, bicyclists, and vehicles, to protect sensitive wildlife habitat and sensitive wildlife behavior or life stages.
- Implement standard construction measures to avoid or minimize wildlife impacts including:
  - scheduling construction during seasons that are least disruptive to wildlife behavior
  - evaluating habitat for species likely to occur prior to construction activities, and taking steps to minimize impacts on those species determined to be especially vulnerable
  - monitoring for adverse impacts on wildlife or wildlife habitat
  - installing and maintaining temporary fences or other barriers to protect sensitive resources adjacent to construction sites (as defined by wildlife-friendly fence specifications)
  - maintaining routes of escape for animals that might fall into excavated pits and trenches and covering post holes and other narrow cavities or crevices
  - minimizing the potential for "taking" a nest or egg of a migratory bird species by (1) avoiding any activity that would destroy a nest or egg, or (2) conducting a survey for any nests in the project area prior to construction activities to avoid loss or disturbance of nests
- Perform mitigation actions during normal park operations as well as before, during, and after construction to minimize immediate and long-term impacts on wildlife and wildlife habitat. These actions would vary depending on the type of project and its location. Many of the measures listed for vegetation would also benefit wildlife by preserving habitat.
- Limit the effects of light and noise on adjacent habitat through control of sources during construction activities.
- Develop and implement restoration and/or monitoring plans, as warranted. Plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.

Federally Listed Wildlife Species

- The northern long-eared bat (*Myotis septentrionalis*) is present in Acadia National Park and is federally listed as a threatened species under the Endangered Species Act. Appropriate conservation measures such as avoidance of critical habitat and seasonal restrictions on activities would be implemented in consultation with the US Fish and

Wildlife Service. For example all trees over 4-inch diameter at breast height (DBH) would be cut at a time that avoids bat maternity periods.

- Site and design of facilities and actions would be applied to avoid adverse effects on rare, threatened, and endangered species. If avoidance is infeasible, adverse effects on rare, threatened, and endangered species would be minimized and compensated, as appropriate, and in consultation with the appropriate resource agencies.
- Inform construction workers and supervisors of the potential for special status species in the work vicinity. Contract provisions would require the cessation of construction activities if a special status species were discovered in the project area until park staff could reevaluate the project. This would allow modification of the contract for any measures determined necessary to protect the discovery.

Vegetation

- Fence or clearly mark and enforce disturbance zones and construction and staging areas to prevent impacts on vegetation outside the approved construction limits.
- Minimize construction effects on vegetation and ensure that no vegetation would be damaged or removed without prior approval via the project documents or by staff.
- Cut woody materials would be chipped and spread no more than 2-inches thick in adjacent natural areas to avoid smothering regenerating plants or would be stored and managed to avoid moving nonnative invasive pests such as wood-boring insects or European red fire ants.
- Areas where vegetation has been disturbed by transportation activities would be inspected and invasive nonnative plants would be managed for three growing seasons following restoration.
- Provide construction workers and supervisors with tree pruning guidelines to minimize damage to trees during project implementation.
- To the extent possible, salvage and preserve existing native vegetation for use in revegetating disturbed areas. Existing trees would be preserved to the extent possible.
- All off-site fill (e.g., dirt, gravel) would be required to be weed-free prior to being transported to the park.
- Implement measures to ensure that construction equipment and machinery entering the park are free of nonnative invasive species. All construction equipment that has the potential to leave the road would be pressure washed before entering the park.
- Develop a project revegetation plan that addresses, among other things, the use of native genetically appropriate species, plant salvage potential, and nonnative vegetation/noxious weed management. Disturbed areas would be replanted with native vegetation. Revegetation efforts would include imitating the natural spacing, abundance, and diversity of native plant species. Natural groupings of vegetation, rocks, or other natural features would be used for screening, as appropriate. Local native species would be used; no irrigation would be needed except during plant establishment.

Wetlands and Floodplains

- Avoid transportation-related activities in wetlands and floodplains whenever possible.
- Use the most up-to-date data on the extent of floodplains and wetlands, precipitation, and stormwater flows to anticipate and plan for climate-related changes in hydrology.
- Delineate all wetland boundaries and install protective fencing along adjacent wetlands to prevent accidental disturbance.
- Perform construction activities in a careful manner to prevent damage caused by equipment, erosion, siltation, etc.
- As appropriate, protect wetland resources by
  - avoiding wetlands during construction, using properly sized and installed bridge crossings or retaining walls wherever possible
  - exercising increased caution to protect wetland resources from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect wetlands
  - taking measures to keep construction materials from escaping work areas, especially near streams or natural drainages
  - using elevated pathways over wetland sections where it is not feasible to avoid the wetland from trail construction

Soils

- Minimize soil erosion by limiting the time soil is left exposed and by applying other erosion control measures such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce soil erosion, surface scouring, and discharge to water bodies. Once work is completed, disturbed areas would be revegetated with native plants in a timely manner.
- Separate all soil stockpiles based on soil type. Topsoil materials would be stockpiled in a predetermined designated area away from excavations and future work sites without intermixing with subsoils. Stockpiles would then be graded and shaped to allow unimpeded surface water drainage. Stockpiles would be temporarily seeded and periodically treated to prevent wind from scattering topsoil and to prevent the introduction of nonnative plants.
- Respread topsoil as near the original location as possible and supplement with scarification, mulching, seeding, and/or planting with species native to the immediate area. Conserving topsoil would minimize vegetation impacts and potential compaction and erosion of bare soils. The use of conserved topsoil would preserve microorganisms and seeds of native plants.
- Follow existing contours to the degree possible for constructed elements. Locally excavated material would be used at fill locations.
- As appropriate, reuse excavated soil in the project area and store excess soil only in approved areas. Topsoil would be removed and returned to the same area once construction activities are completed. Live vegetation less than 3 feet in height and limbs less than 2 inches in diameter may be incorporated as topsoil in the stockpiles. Care

would be taken to ensure that topsoil and fill material are not mixed and are stockpiled in separate areas (i.e., topsoil to the right of the trench and fill to the left).

- In an effort to avoid introduction of nonnative plant species, use only weed-free materials for erosion control. Any proposed materials would be reviewed on a case-by-case basis; allowable materials for erosion control would be weed-free purchased and materials that are identified as unlikely to draw wildlife to construction sites or roadsides such that wood excelsior fibers may be preferred over straw-filled waddles. This selection may be determined based on location, quantity, and duration of material use.
- Obtain any fill materials from a park-approved source, approved by the park biologist. Borrow and aggregate materials from sources outside the park would be inspected to avoid importation of nonnative plants.
- When construction is ended prior to a winter season, protect all disturbed areas and soil stockpiles from snowmelt impacts by using erosion control best management practices for subsoil and soil conservation practices for topsoil.

Air Quality

- Implement a dust abatement program. Standard dust abatement measures may include the following elements: water spraying or otherwise stabilizing soils, covering haul trucks, employing speed limits on unpaved roads, minimizing vegetation clearing, and revegetating after construction.
- Reduce or eliminate idling of construction and private vehicles. Signs at entrance stations and messages in park materials would be used to encourage visitors to not idle their vehicles while waiting in parking areas or queue lines.
- Ensure that all construction equipment complies with Environmental Protection Agency (EPA) emission standards in effect at the time of manufacture.

Historic Structures, Sites, and Cultural Landscapes

- Design all new construction within or adjacent to historic sites, districts, and cultural landscapes to be compatible in terms of architectural elements, scale, massing, materials, and other character-defining features.
- New construction would be carried out in accordance with The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.
- To minimize the visual and auditory intrusions on cultural resources from new development screening or other sensitive design measures would be used that are compatible with historic resources and cultural landscapes.
- Adverse impacts on cultural resources would be avoided to the extent possible in accordance with *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.*
- If adverse impacts (under section 106 of the National Historic Preservation Act) cannot be avoided, appropriate mitigation measures would be developed in consultation with all interested parties.

Archeological Resources

- Routinely monitor known archeological sites to assess and document the effects of natural processes and human activities on the resources. Archeological resources would be left undisturbed and preserved in a stable condition to prevent degradation and loss of research values unless intervention could be justified based on compelling research, interpretation, site protection, or park development needs. Recovered archeological materials and associated records would be treated in accordance with 36 CFR Part 79, NPS *Management Policies 2006*, and the NPS *Museum Handbook*. All identified sites would be entered in the Archeological Sites Management Information System (ASMIS) and previous records would be updated.
- As appropriate, conduct archeological surveys or monitoring prior to any ground disturbance. During construction, significant archeological resources would be avoided to the greatest extent possible. If such resources could not be avoided, an appropriate mitigation strategy (e.g., the excavation, recordation, and mapping of cultural remains prior to disturbance) would be developed in consultation with the Maine SHPO and, as necessary, associated American Indian tribes. The mitigation strategy would ensure that important archeological data is recovered and documented.
- If, during construction, previously unknown archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented. If the resources could not be preserved in situ, an appropriate mitigation strategy would be developed in consultation with the Maine SHPO and, as necessary, associated American Indian tribes. Archeological sites would be fenced and/or appropriately marked by a NPS-approved archeologist. All project personnel would be briefed to stay out of areas with sensitive archeological resources.
- Adverse impacts on cultural resources would be avoided to the extent possible in accordance with *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*.
- If adverse impacts (under section 106 of the National Historic Preservation Act) cannot be avoided, appropriate mitigation measures would be developed in consultation with all interested parties.

Visual Resources

- Fence off and consolidate construction areas and equipment to visually screen construction activity and materials if possible.
- Site and design trails to route people away from sensitive natural and cultural resources while allowing access to important viewsheds. Vegetation screening would be used where appropriate.

Quality of the Visitor Experience

- Implement measures to reduce adverse effects of construction on visitor experience. Measures may include, but are not limited to, noise abatement, visual screening, and directional signs so that visitors are able to avoid construction activities.
- Conduct construction work to avoid peak visitor use times (i.e., weekends, holidays) to the extent practicable to minimize inconveniences to visitors.
- Make information public regarding implementation of projects in public areas.

Health and Safety

- Implement measures to reduce adverse effects of construction on safety.
- Develop an emergency notification plan that complies with park, federal, and state requirements and allows contractors to properly notify park, federal, and/or state personnel in the event of an emergency during construction activities. This plan would address notification requirements related to fire, personnel, and/or visitor injury, releases of spilled material, evacuation processes, etc. The emergency notification plan would be submitted to the park for review/approval prior to commencement of construction activities.
- As necessary, institute temporary closures of park transportation corridors to pedestrians, bicycles, and vehicles when construction activities are ongoing.

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APPENDIX E: SELECTED REFERENCES, GLOSSARY, AND ACRONYMS AND ABBREVIATIONS

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GLOSSARY AND ACRONYMS

GLOSSARY OF TERMS

Adaptive management: A process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists. It requires a continual learning process, a reiterative evaluation of goals and approaches, and redirection based on increased information and changing public expectations.

Affected environment: Existing biological, physical, social, and economic conditions of an area that are subject to change, both directly and indirectly, as a result of a proposed human action.

Alternatives: Sets of management elements that represent a range of options for how, or whether to proceed with a proposed project. An environmental impact statement analyzes the potential environmental and social impacts of the range of alternatives presented.

Archeological resources: Historic and prehistoric deposits, sites, features, structure ruins, and anything of a cultural nature found within, or removed from, an archeological site.

Area of potential effect: The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effect is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.

Best Management Practices: Effective, feasible (including technological, economic, and institutional considerations) conservation practices and land- and water-management measures that avoid or minimize adverse impacts to natural and cultural resources. BMPs may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.

CEQ Regulations: The Council on Environmental Quality (CEQ) was established by the National Environmental Policy Act (see NEPA) and given the responsibility for developing federal environmental policy and overseeing the implementation of NEPA by federal agencies.

Commercial Use Authorization: A permit that authorizes suitable commercial services to park area visitors in limited circumstances.

Concession Contract: A concession contract is defined in 36 CFR Part 51 as a binding written agreement between NPS and a concessioner to provide specified visitor services within a park area.

Cultural landscape: A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Cumulative impact: An impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

Desired condition: Statements of aspiration that describe resource conditions, visitor experiences and opportunities, and facilities and services that an agency strives to achieve and maintain in a particular area.

Environmental consequences: This section of an environmental assessment describes the impacts a proposed action would have on resources. Direct, indirect, and cumulative impacts, both beneficial and adverse, are analyzed. The context, duration, and intensity of impacts are defined and quantified as much as possible.

Environmental Impact Statement (EIS): A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment.

Environmentally Preferable Alternative: The environmentally preferable alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that best promotes the goals of the National Environmental Policy Act (NEPA). In general, this is the alternative that causes the least damage to the environment and best protects natural and cultural resources. In practice, one alternative may be more preferable for some environmental resources while another alternative may be preferable for other resources. (The NEPA Handbook).

Facilities: Buildings and the associated supporting infrastructure such as roads, trails, and utilities.

Historic building: For the purposes of the National Register of Historic Places, a building can be a house, barn, church, hotel, or similar construction, created principally to shelter human activity. "Building" may also refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.

Historic district: A historic district is an area which possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. To be eligible for the National Register of Historic Places, a district must be significant, as well as being an identifiable entity. It must be important for historical, architectural, archeological, engineering, or cultural values.

Historic property: A historic property is any prehistoric or historic building, site, district, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places. Types of historic properties can include archeological sites, historic cultural landscapes, and traditional cultural properties.

Historic site: A historic site is the location of significant event which can be prehistoric or historic in nature. It can represent activities or buildings (standing, ruined, or vanished). It is the location itself which is of historical interest in a historic site, and it possesses cultural or archeological value regardless of the value of any structures that currently exist on the location. Examples of sites include shipwrecks, battlefields, campsites, natural features, and rock shelters.

Historic structure: For the purposes of the National Register of Historic Places, the term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter. Examples of structures include bridges, gazebos, and highways.

Indicator: Indicators are specific resource or experiential attributes that can be measured to track changes in conditions so that progress toward achieving and maintaining desired conditions can be assessed.

Management zone: A geographical area for which management directions or prescriptions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations.

Mitigation: Activities that will avoid, reduce the severity of, or eliminate an adverse environmental impact.

National Environmental Policy Act (NEPA): The federal act that requires the development of an environmental impact statement for federal actions that might have substantial environmental, social, or other impacts.

National Historic Landmarks (NHL): Are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

National Historic Preservation Act (NHPA): In 1966, Congress established a program for the preservation of additional historic properties through the country. The NHPA requires federal agencies to evaluate the impact of all federally funded or permitted projects on historic properties through the section 106 process.

National Park Service Organic Act: In 1916, the National Park Service Organic Act established the National Park Service in order to "promote and regulate use of parks" and defined the purpose of the national parks as "to conserve the scenery and natural and historic objects and wild life therein and to provide for the enjoyment of the same in a manner and by such means as will leave them unimpaired for the enjoyment of future generations." This law provides overall guidance for the management of the park.

National Parks and Recreation Act: The 1978 law that establishes national parks, monuments, recreation areas and other recreation lands under the jurisdiction of the Department of the Interior. This law continues to be amended as new lands are acquired or boundaries of existing lands are changed.

National Register of Historic Places: As a result of the NHPA of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources.

No-Action Alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

National Park Service Management Policies: A policy is a guiding principle or procedure that sets the framework and provides direction for management decisions. National Park Service policies are guided by and consistent with the US Constitution, public laws, executive proclamations and orders, and regulations and directives from higher authorities. Policies translate these sources of guidance into cohesive directions. Policy direction may be general or

specific. It may prescribe the process by which decisions are made, how an action is to be accomplished, or the results to be achieved. The primary source of National Park Service policy is the publication *Management Policies 2001*. The policies contained therein are applicable servicewide. They reflect National Park Service management philosophy. Director's Orders supplement and may amend management policies. Unwritten or informal "policy" and people's various understandings of National Park Service traditional practices are never relied on as official policy.

Planning: A dynamic, interdisciplinary, process for developing short- and long-term goals for visitor experience, resource conditions and facility placement.

Preferred Alternative: The preferred alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that the agency believes would best fulfill the purpose and need of the proposed action. While the preferred alternative is a different concept from the environmentally preferable alternative, they may also be one and the same for some EISs. (The NEPA Handbook).

Pristine: Unaltered, unpolluted by humans.

Programmatic plan: Programmatic plans establish broad management direction for the park. The 1987 General Management Plan is a programmatic plan with a purpose to set a "clearly defined direction for resource preservation and visitor use" and provide general directions and policies to guide planning and management in the park. The Visitor Use Management Plan is also a programmatic plan that guides future visitor use management decisions for the park. Programmatic plans are required to undergo NEPA review.

Public comment process: The public comment process is a formalized process required by the National Environmental Policy Act (NEPA) in which the National Park Service must publish a Notice Of Availability in the Federal Register which provides public notice that a Draft Environmental Impact Statement (EIS) and associated information, including scoping comments and supporting documentation, is available for public review and input pursuant to the Freedom Of Information Act. In addition, the National Park Service must conduct formal public hearings on the Draft EIS when required by statute or the Council on Environmental Quality NEPA Regulations.

Public scoping process: Scoping is a formalized process used by the National Park Service to gather the public's and other agencies' ideas and concerns on a proposed action or project. A Notice Of Intent (NOI) is published in the Federal Register announcing the agency's intent to prepare an Environmental Impact Statement and a request for written public/other agency scoping comments to further define the goals and data needs for the project. In addition, although not required by the National Environmental Policy Act (NEPA) nor the Council on Environmental Quality (CEQ) NEPA Regulations, public scoping meetings may be held and integrated with any other early planning meetings relating to the proposed project.

Record of Decision: The public document describing the decision made on selecting the "preferred alternative" in an environmental impact statement. See "environmental impact statement."

Site hardening: Any development that creates an impervious ground surface. Usually used as a way to direct visitor use and reduce impacts to resources.

Scoping: See "Public Scoping Process"

Soundscape: The component of the acoustic environment that can be perceived and comprehended by humans.

Superintendent's Compendium: Under the authority of 16 USC Section 3, and Title 36 *Code of Federal Regulations*, Chapter 1, Parts 1-7; the Compendium of Superintendent's Orders was established for DEWA. Each park superintendent has discretionary authority to regulate or limit certain uses, and/or require permits for specific activities within the boundaries of a national park.

Threshold: Minimally acceptable conditions associated with each indicator.

Timed-Entry Reservation System: A system to reserve a permit for entry to an area or experience at a designated time of day.

Traditional cultural resource: Any site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Traditional cultural property: Traditional cultural resource that is eligible for or listed in the National Register of Historic Places as a historic property.

Treatment: Work carried out to achieve a historic preservation goal. The four primary treatments are preservation, rehabilitation, restoration, and reconstruction (as stated in the Secretary of the Interior's Standards for the Treatment of Historic Properties).

Trigger: A point that reflects a condition of concern for an indicator that is enough to prompt a management response to ensure that desired conditions continue to be maintained before the threshold is crossed.

User: Visitors and employees in the park.

Visitor capacity: A component of visitor use management. The maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining desired resource conditions and visitor experiences consistent with the purposes for which the area was established.

Visitor-created trails: A visitor-created trail is an informal, nondesignated trail between two locations. Visitor-created trails often result in trampling and stresses to sensitive vegetation types.

Visitor experience: The perceptions, feelings, and reactions a park visitor has in relationship with the surrounding environment.

Visitor use: Refers to the types of recreation activities visitors participate in, numbers of people in an area, their behavior, the timing of use, and distribution of use within a given area.

Visitor use levels: Refers to the quantity or amount of use a specific area receives, or the amount of parkwide visitation on a daily, monthly or annual basis.

Wetland: Wetlands are defined by the US Army Corps of Engineers (CFR, Section 328.3[b], 1986) as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

ACRONYMS AND ABBREVIATIONS

CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dB	Decibel
dBA	Decibel (on the "A-weighted" scale)
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
FEIS	Final Environmental Impact Statement
GIS	Geographic Information System(s)
GMP	General Management Plan
IVUMC	Interagency Visitor Use Management Council
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
PAOT	People at One Time
PEPC	Planning, Environment, and Public Comment
RV	Recreational Vehicle
SHPO	State Historic Preservation Officer
USFWS	US Fish and Wildlife Service
VAOT	Vehicles at One Time

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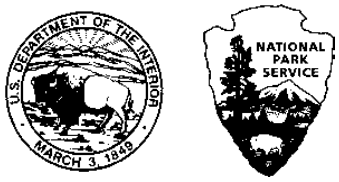

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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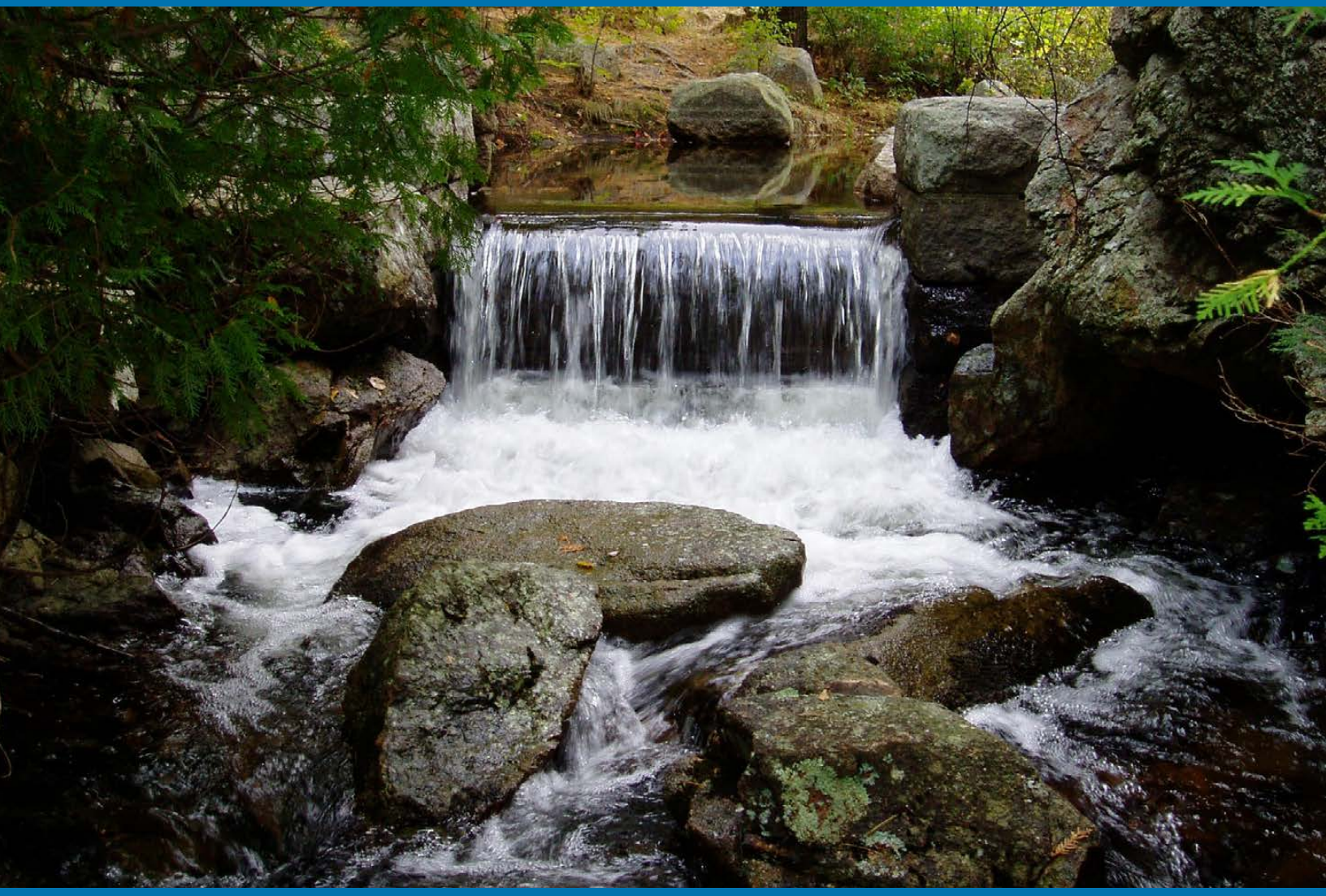

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