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1

Transportation Planning Process for *Transit in Federal Land Management Areas*

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Office of Planning and Environment

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Transportation Planning Process for Transit in Federal Land Management Areas

Volume I: Executive Summary

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16. Abstract. The U.S. federal lands, among the country's greatest resources and treasures, are highly desirable visitor destinations. Unfortunately, high visitor demand at several Federal Land Management Areas (FLMAs) threatens to degrade both the natural and cultural resources and the visitor experience. During peak visitation periods, many FLMAs experience congested roads and insufficient parking, which can deter visitors from enjoying resources and are potentially harmful to the FLMAs. There are many different approaches to addressing transportation issues on federal lands. Some FLMAs are considering transit as a means to improve access to and within the FLMA, to reduce the impacts associated with private vehicles, and to improve the visitor experience. The purpose of this document is to ensure that transit planning occurs in a formal, step-by-step process using acceptable transportation planning practice. Transportation solutions can include high-cost transportation programs that are likely to require sustained funding far into the future. It is imperative that before committing to a costly program, the transportation need is fully quantified and ground rules for comparing and ultimately selecting a solution are established at the beginning of the process. Following a thorough planning process decreases the risk of implementing a project that does not respond to the goals of the FLMA and is not sustainable. This document provides a transportation planning process to help determine if and how transit is an appropriate response.					
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Foreword

The U.S. federal lands, among the country's greatest resources and treasures, are highly desirable visitor destinations. Unfortunately, large visitor demand at several Federal Land Management Areas (FLMAs) threatens to degrade both the natural and cultural resources and the visitor experience. During peak visitation periods, many FLMAs experience congested roads and insufficient parking, which can deter visitors from enjoying resources and are potentially harmful to the FLMAs. There are many different approaches to addressing transportation issues on federal lands. Some FLMAs are considering transit as a means to improve access to and within the FLMA, to reduce the impacts associated with private vehicles, and to improve the visitor experience.

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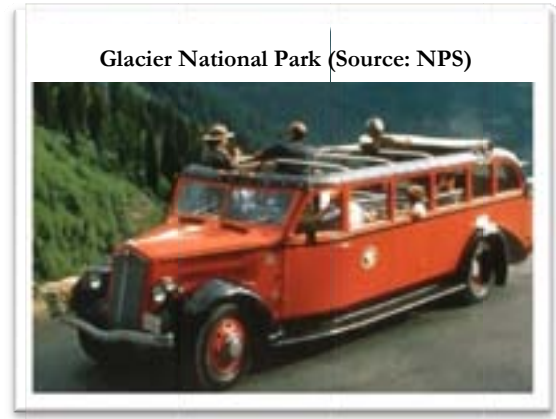
Volume 1 provides an overview of the planning process at the broadest level. It is appropriate for all users.

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1. Introduction

The U.S. federal lands, among the country's greatest resources and treasures, are highly desirable visitor destinations. Their natural beauty, as well as the significance of hundreds of sites located around the country, attracts millions of visitors each year. Unfortunately, the high visitor demand at several Federal Land Management Areas (FLMAs) threatens to degrade both the natural and cultural resources and the visitor experience. During peak visitation periods, many FLMAs experience congested roads and insufficient parking, which can deter visitors from enjoying resources and potentially harm the FLMAs. There are many different approaches to addressing transportation issues on federal lands. Some FLMAs are considering transit as a means to improve access to and within the FLMA, to reduce the impacts associated with private vehicles, and to improve the visitor experience.



FLMAs located in urban areas (e.g., historic sites in Boston and Philadelphia) have long relied on visitor and employee use of transit to deal with transportation issues. For more remote sites, such as Chincoteague National Wildlife Refuge/Assateague Island National Seashore, Yosemite National Park, and Inyo National Forest/Devils Postpile National Monument¹, there has been recognition over the past quarter-century that solutions are needed to help mitigate the harmful effects of growing visitation. While FLMAs located in major urban areas can take advantage of existing transit service, FLMAs in small urban areas and rural environments are not surrounded by a metropolitan area with a transit system. In these instances, developing programs to serve the transportation needs of both visitors and employees falls to FLMAs, including the National Park Service (NPS), the US Forest Service, US Fish and Wildlife Service (FWS), and the Bureau of Land Management (BLM). Transit is one of a several options that can be considered.

2. Purpose

The purpose of this document is to ensure that transit planning occurs in a formal, step-by-step process using acceptable transportation planning practices. When presented with a situation that could be addressed by a transportation improvement, it is common for professionals from all disciplines to propose solutions before the transportation need is thoroughly understood. Many transportation solutions can include high-cost

¹ Reds Meadow is part of Inyo National Forest and surrounds Devils Postpile National Monument.

transportation programs that are likely to require sustained funding far into the future. It is imperative that before committing to a costly program, the transportation need is fully quantified and ground rules for comparing and ultimately selecting a solution are established at the beginning of the process. The lack of a thorough planning process heightens the risk of implementing a project that does not respond to transportation need and may not be sustainable over the long-term. This document provides a transportation planning process to determine if and how transit is an appropriate response; it does not assume that transit is always the correct response for FLMAs.

Table 2-1 discusses what this planning process is and what it is not. First, it is a resource for evaluating transit as one potential transportation option for FLMA units. While the transportation planning process is described, it goes into greater depth for the transit mode. Future components could include detailed discussions of other

The lack of a thorough planning process heightens the risk of implementing a project that does not respond to transportation need and may not be sustainable over the long-term.

potential transportation improvements, such as access management, pedestrian and bicycle improvements, or physical improvements. Second, the planning process is a reference resource for several different audiences, from managers to transportation planners, as discussed in Section 4. Third, it discusses “good practices” for transportation and transit planning in FLMAs. By no means does it represent a comprehensive summary of all methods and procedures. Indeed, project planners will likely need to develop additional methods and procedures to respond to the unique needs of each study. In addition, while the examples in this document are largely focused on land-based modes, the methods and procedures can also be used for water-borne modes. Finally, this document only focuses on access within the FLMA and/or to the FLMA from a gateway community. It does not address trips to and from a FLMA from outside its immediate environs.

Table 2-1: What this Planning Process Is and Is Not

Planning process is:	Planning process is not:
<ul style="list-style-type: none"> ■ A resource for evaluating transit as one transportation option for FLMA units ■ A reference resource for several audiences ■ A summary of transit planning “Good Practices” for FLMAs ■ Focused on access within the FLMA and/or to the FLMA from a gateway community 	<ul style="list-style-type: none"> ■ Mandated by FTA for transit grant funding ■ A set of regulations ■ A NEPA process ■ A comprehensive transportation planning guide ■ A planning guide for nonmotorized transportation, access management, or physical improvements

Following good planning practices will improve the likelihood that FLMAs and gateway communities will receive funding for transit and other transportation investments. This document uses a transportation planning process that is applicable to all modes, to

This document presents some of the many methods and procedures that can be used to develop transportation and transit plans for FLMAs and gateway communities.

evaluate land- and water-based motorized transit systems. Transportation issues related to nonmotorized alternative transportation systems, such as bicycle and pedestrian improvements, should be considered as part of the planning processes, but are not discussed in this guide. As motorized transit is one potential

solution for transportation needs, these other modes are acknowledged in the planning process. In addition, the information gathered in this planning guide can be used to provide transportation and transit information to supplement (but not replace) the National Environmental Policy Act (NEPA) process and FLMA agency planning requirements. FTA and FLMAs are available to provide advice on conducting transit planning studies.

3. Putting Transportation into Perspective

The motivation and the approach to transportation planning for FLMAs is different than for a typical transportation planning process. For transportation agencies, such as the FTA and FHWA, addressing an issue drives the planning process, making it an issue-oriented process. For example, a transportation improvement in an urban area may be implemented to reduce congestion or a crosswalk may be installed to improve pedestrian safety. For FLMAs, planning processes focus on “desired future conditions,” which are based on protection of resources and providing sustainable visitor use. This is a goal-oriented approach to planning that is guided by the FLMAs mission, goals, and purposes (at both the national and individual unit level); legislative requirements; long-range management plans; transportation system plans; constrained long-range transportation plans; and carrying capacities of the resources and the visitor use and experience. In general, each FLMA manages and protects public lands and their resources, while providing for the enjoyment and needs of future generations.



When considering transportation improvements within a FLMA, the FLMA’s mission, goals, and purposes at both the national and individual unit level must be considered. The missions help guide the development of goals and objectives for the transportation planning process; the missions help to set acceptable boundaries for the planning

process and the proposed alternatives. Table 3-1 summarizes the missions of each FLMA.

Table 3-1: Missions of FLMAs

FLMA	Mission
National Park Service	Preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations.
US Fish and Wildlife Service National Wildlife Refuge System	Administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.
US Forest Service	Sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.
Bureau of Land Management	Manage, protect, and improve public lands in a manner that serves the needs of American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology.

In addition to the overall agency mission, each federal land management agency includes a transportation planning “mission” or guidance. These missions help to put transportation services into perspective for the agency. For the NPS, Section 9.2 of *Management Policies 2006* provides general guidance on transportation systems within national park units. Nonmotorized and nonconstruction alternatives are preferred; however, if these solutions will not preserve the natural and cultural resources while providing a high-quality visitor experience, then development solutions may be considered. Some of the factors that the NPS considers when designing a development solution are whether the project:

- Is designed with extreme care and sensitivity to the landscape through which it passes
- Will not cause use in the areas it serves that exceeds the area's visitor carrying capacities
- Is able to demonstrate financial and operational sustainability
- Is based on a comprehensive and multidisciplinary approach that is fully consistent with the park's general management plan and asset management plan
- Will enhance the visitor experience by offering new and improved interpretive or recreational opportunities, by simplifying travel within the park, or by making it easier or safer to see park features

Both the FWS and BLM are directed to include transportation options within their long-range management plans (comprehensive conservation plans and resource management plans, respectively). The FWS encourages the design of transportation projects that provide the greatest value to the greatest number of people while maintaining the integrity of the natural community. Within their resource management plans, BLM must identify areas that could support transportation facilities; what type of facilities are appropriate; and what types of improvements, repairs, and/or removals are needed (BLM Handbook H-1601-1).

The Forest Service Handbook 1902.12 provides guidance similar to the NPS. Their land management plans must address transportation projects that affect roads, trails, facilities, access, or travel management. The plan must:

- Identify the specific access and travel management options available to meet plan objectives
- Describe how access will be provided and how travel will be managed, including the forest transportation system and air and water access
- Integrate considerations of biological, physical, social, and economic factors and environmental design criteria
- Link access and travel management to the full spectrum of desired conditions and objectives

Overall, the missions direct each agency to consider transportation services that support the agency mission while minimizing impacts to the surrounding resources.

For both FLMA staff and transportation planners, it can be a challenge to integrate the goal-oriented and issue-oriented approaches to the transportation planning process. A key component of this planning process is to reconcile the two approaches. While the



Adams National Historical Park (Source: NPS)

goal-oriented approach may mandate a transit system to achieve a desired future condition, there are many different forms the transit system can take. The importance of the issue-oriented approach is to identify the most effective and sustainable transit solution, in a financially constrained environment, and to determine if it will successfully address the goals set out for it.

In general, the transportation system should support the protection of natural and cultural resources, as well as enhance the visitor use and experience of the site. A well-

designed transportation system should complement the visitor experience and resource protection but not define them.

4. Structure

The *Transportation Planning Process for Transit in Federal Land Management Areas* is divided into four volumes. Each volume is intended for a different audience (see Table 4-1).

- **Volume 1: Executive Summary** – This volume provides an overview of the planning process at the broadest level. It is appropriate for all users.
- **Volume 2: So You Think You Need Transit?** – This volume provides a discussion of the planning process, including examples. It is intended for some FLMA project managers, all FLMA transportation planners, and all consultants.
- **Volume 3: Methods to Define the Transit Need** – This volume provides detailed methodologies that can be used by some FLMA transportation planners and all consultants. It serves as a technical reference document for techniques discussed at a general level in Volume 2.
- **Volume 4: Case Study** – This volume tests the planning process at Red's Meadow/Devils Postpile National Monument and presents the results of the case study. Aspects of this volume are appropriate for all audiences, though some components will be more appropriate for FLMA project managers, FLMA transportation planners, and consultants.

Table 4-1: Intended Audience

Volume		FLMA Staff			
		Superintendents & Managers	Project Managers	Transportation Planners	Consultants
1	Executive Summary	Yes	Yes	Yes	Yes
2	So You Think You Need Transit?	No	Some	Yes	Yes
3	Methods to Define the Transit Need	No	No	Some	Yes
4	Case Study	Some	Yes	Yes	Yes

5. Transportation Planning Phases

Transportation planning for FLMAs, as illustrated in Figure 5-1, can be conducted in four phases:

- Phase One: Identify Motivations for a Transportation Improvement
- Phase Two: Define the Need
- Phase Three: Formulate and Evaluate Alternatives
- Phase Four: Select Preferred Alternative and Monitor

In addition, two further planning components both inform and are informed by the transportation planning process: stakeholder participation and National Environmental Policy Act (NEPA).

5.1. Phase One: Identify Motivations for a Transportation Improvement

Phase One of the planning process identifies the motivation for a transportation improvement study. The traditional motivation used in urban transportation is to provide mobility to the public or to address a perceived transportation-related need, such as traffic congestion or poor air quality. This document also discusses several additional motivations. These include legislative requirements, long-range management plans, system plans, constrained long-range transportation plans, and carrying capacities.

5.2. Phase Two: Define the Need

The second phase of the planning process is to determine if a transportation need exists, and, if so, to define the extent of that need. For FLMAs with a legislative mandate to implement a transit system, this phase will assist planners in determining the characteristics of the service. The need may be extensive, requiring buses to pick up visitors at the visitor center every 10 minutes, or it may be minimal, requiring service every 60 minutes or less. For FLMAs in which a transportation improvement study is initiated by a perceived existing or future issue, analysis may show that the issue can best be addressed with a different type of transportation solution, or that the issue is not substantial enough to warrant a response. If a response is required, the extent of the need is quantified during this phase.

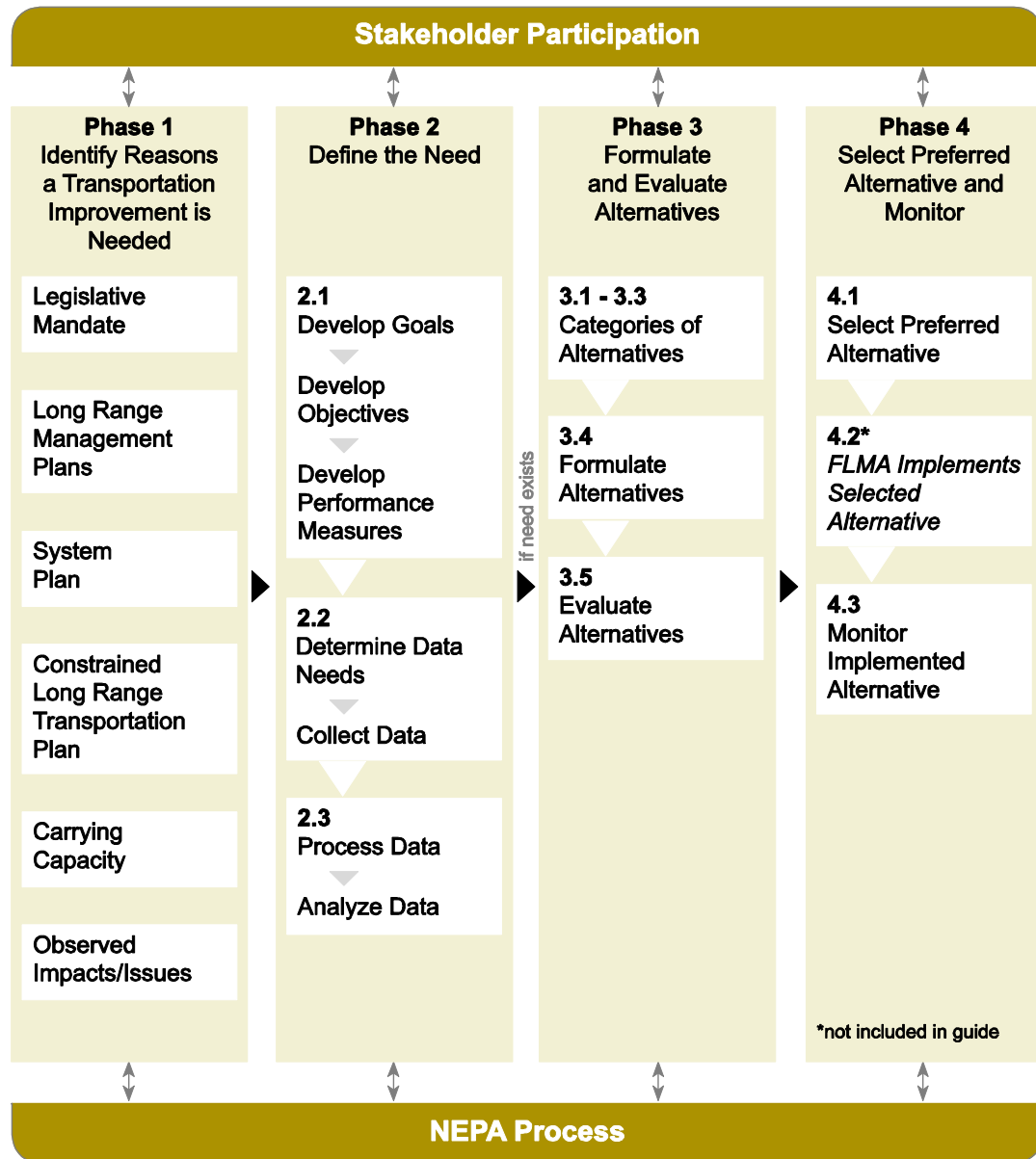
Phase Two consists of three steps:

- Step 2-1: Develop Goals, Objectives, and Performance Measures
- Step 2-2: Data Collection
- Step 2-3: Data Analysis

Step 2-1 discusses how to develop goals, objectives, and performance measures. Based on motivations for the transportation study, FLMA staff and other stakeholders develop goals to depict what they would like to accomplish at the FLMA with transportation services. Advancement of the goals is measured by objectives that are, in turn, quantified by performance measures. The performance measures serve several purposes: they determine the data requirements necessary to define the need (Phase Two), they are used to evaluate alternatives (Phase Three), and they establish the criteria that will be used to

monitor future performance of the implemented alternative (Phase Four). Stakeholder participation is crucial throughout this step to ensure that a variety of perspectives and interests are considered since this step serves as the foundation of the planning process.

Figure 5-1: Transportation Planning Process for FLMAs



Step 2-2 explains the data collection process, which is comprised of two distinct components. The first component is to develop a data collection plan. It starts by determining what data need to be collected in order to derive the performance measures. Existing data is identified first so that planners can determine which data need to be collected. They then design field studies to collect the data. Finally, planners develop a logistical plan for collecting the data. The importance of this step cannot be overstated, as

the planning process is built upon quality data. Data can either be available from existing sources such as state departments of transportation, or may need to be collected specifically for the transportation study. The second component of the data collection process is to collect the data. Tips are included for ensuring that quality data is collected and to minimize problems that will arise during the data collection period. Data collection methodologies for conducting several different types of studies are included in Volume 3.

Step 2-3 discusses the data analysis process. The first component of this process is to convert raw data collected in Step 2-2 into tabulated results that summarize the findings of the study. This requires entering the data into a spreadsheet or database, reviewing the data for errors, and summarizing the results. The second component is data analysis. It should be noted that while this document includes explanations of data analysis techniques, it is not a comprehensive discussion of all potential analytical methods. Indeed, analyses will vary depending upon the unique nature of each study. Detailed descriptions of methods and procedures for data analysis are found in Volume 3.

5.3. Phase Three: Formulate and Evaluate Alternatives

The third phase of the planning process is to formulate and evaluate potential alternatives to address the motivation for the study. This planning process focuses on transit alternatives but also discusses briefly other transportation alternatives that may be considered. It is composed of three components:

- Step 3-1 to Step 3-3: Characteristics of Transportation Improvements
- Step 3-4: Formulate Alternatives
- Step 3-5: Evaluate Alternatives

Step 3-1 to Step 3-3 review three broad categories of transportation improvements, such as access management, transit, and capital improvements. FLMA staff and stakeholders typically formulate and propose a range of alternatives. Step 3-4 discusses alternatives developed for two FLMAs: Great Smoky Mountains National Park (Cades Cove) and Rocky Mountain National Park. Planners then evaluate these alternatives based on the performance measures established in Step 2-1. Step 3-5 provides an overview of methods for evaluating alternatives.

5.4. Phase Four: Select Preferred Alternative and Monitor

Phase Four of the planning process contains three steps:

- Step 4-1: Select Preferred Alternative
- Step 4-2: Implement Preferred Alternative
- Step 4-3: Monitor Implemented Alternative

Step 4-1 discusses several potential frameworks that could be used to select a preferred alternative. These include Choosing by Advantages and tradeoff analysis, which is often used in transportation planning. The next step is to implement the preferred alternative (Step 4-2); however a discussion of this step is beyond the scope of this document. Once the preferred alternative is implemented, it is appropriate to conduct follow-up studies to ensure that it effectively addresses the situation it was developed to address (Step 4-3). If the situation has not been sufficiently addressed, modifications to the implemented system may be necessary, or further transportation improvements may be warranted. If the situation has been more than adequately addressed, it may be possible to reduce its scope. Regardless, due to ever changing travel patterns at FLMAs, transportation planning is a dynamic process, and the situation should be monitored periodically.

5.5. Stakeholder Participation

Stakeholder participation is an integral part of the transportation planning process. Stakeholders both inform and are informed as part of the process. Planners provide stakeholders with information through formal and informal meetings/presentations, and stakeholders have the opportunity to provide feedback. Stakeholder participation is also a requirement of federal law and FLMA guidelines. It provides people that have an interest in the FLMA, such as FLMA staff, community members, visitors, and others a meaningful opportunity to influence the planning process. This is important for two reasons. First, stakeholders can provide planners with valuable information about the FLMA, including challenges and potential solutions. Second, providing stakeholders the opportunity to participate early in the process can promote a trusting relationship with planners and invest stakeholders in the planning process and its results.

5.6. National Environmental Policy Act

The National Environmental Policy Act (NEPA), 42 U.S.C. 4321-4347, establishes a framework that allows federal agencies to maintain a balance between use and preservation of natural and cultural resources. Typically, the NEPA process runs parallel to the transportation planning process, as each informs the other. Table 5-1 identifies the steps of the NEPA process and how they compare to the phases in this document.

Table 5-1: Comparison of NEPA Process and Transit Planning Process

NEPA Process	Transportation Planning Process for Transit
Public and agency input (“scoping” and review)	All Phases
Identification of purpose, need, and objectives	Phase 1
Development of alternatives	Phase 3
Data collection and review of affected resources	Phase 2
Impact analysis of alternatives on affected resources	Phase 3
Determine the preferred alternative (in relation to stated purpose and need)	Phase 4



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