



CHAPTER I OVERVIEW OF THE PARK ROADS AND PARKWAYS PROGRAM

This chapter provides a summary description of the Park Roads and Parkways Program (PRP Program), which operates as a partnership between two federal agencies—the Federal Highway Administration and the National Park Service. As a general summary of these guidelines, the chapter highlights the recent history of the PRP Program, the current investment strategy, the development of annual and multiyear work programs, and key improvements in the delivery of projects.

A. FEDERAL LANDS HIGHWAY PROGRAM (FLHP)

The first federal funds for roads serving federal lands (national forests) were provided by the Congress in the Federal-Aid Road Act of 1916. In that same year, Congress established the National Park Service (NPS or Park Service). The NPS Organic Act, codified in Title 16, United States Code (USC) Chapter I, established the National Park Service’s mission, which remains in place to this day:

[T]o conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such man-

ner and by such means as will leave them unimpaired for the enjoyment of future generations.

Federal funding for roads, trails, and bridges in national park system units¹ began about 1924. The first interagency agreement between the Park Service and the Bureau of Public Roads (predecessor of today’s Federal Highway Administration) to provide road design and construction assistance was executed in January 1925. This relationship continues today, making it one of the longest, if not the longest, formal partnership between any two federal agencies.



Yosemite

Today, the partnership between these two agencies is known as the Park Roads and Parkways Program (PRP Program). The PRP Program is a component of the Federal Lands Highway Program (FLHP), which was established by federal legislation in 1982. The Federal Lands Highway Office (FLH) provides financial management, engineering, and construction management support for the PRP Program and similar programs with the U.S. Forest Service, the Bureau of Indian Affairs, and (most recently) the U.S. Fish and Wildlife Service. Funding for the Federal Lands Highway Program began in fiscal year (FY) 1983. The current interagency agreement addressing roles and responsibilities between the two agencies was signed on May 19, 1983. (See discussion of the interagency agreement in Chapter IV.)

Funds are allocated to the Federal Lands Highway Program on an annual basis from the federal Highway Trust Fund (Trust Fund), which is supported by the federal motor vehicle gas tax and certain excise taxes. The funds may only be used on roads and transportation facilities open to the public (as opposed to administrative and residential roads), and funds may not be used for routine maintenance activities (e.g., snow plowing, patching, and restriping). All operational and routine maintenance costs remain the responsibility of each agency. (See Appendix D for a complete eligibility list.)

Under the auspices of the PRP Program, the two agencies maintain and improve the quality and condition of some 8,000 miles of public roads (paved and unpaved) and 1,792 bridges and tunnels. Since 1999, alternative transportation projects, such as transit services, also have been supported with PRP funds. In 2006 Congress approved a new program for transit, trails, and bicycle and pedestrian facilities, known as the Alternative Transportation in Parks and Public Lands (ATPPL) Program. This competitive program is the primary source of funds for these purposes in park units, with FLHP funds now used to augment grant awards, where needed. The ATPPL Program is adminis-



Blue Ridge Parkway

tered jointly by the U.S. Department of Transportation (DOT) and the Department of Interior (DOI).

B. PRP PROGRAM FUNDING HISTORY

Prior to 1983, all NPS infrastructure improvement projects—ranging from roads to sewage treatment plants—competed annually for appropriated NPS construction funds. With increasing park visitation and greater demands for spending on all types of infrastructure, support for transportation projects was unreliable and the condition of the NPS transportation system was deteriorating. The Federal Lands Highway Program was established² with the hope that a dedicated and reliable funding source for park roads from the Highway Trust Fund would reverse this trend.

In 1987, after four years of reasonably adequate funding, financial support for the program was substantially cut and remained low until 1998.³ The decade of reduced funding resulted in a substantial decline in the condition of park system roads and bridges. Circumstances improved in 1998 when federal legislation doubled the annual dollars available. At the same time, however, the Federal Highway Administration placed controls on spending—known as obligation limits. This limitation has reduced the funding available to the PRP Program each year by 8% to 16% below the authorized levels. The result of this funding situation is that funds have been adequate to arrest the steep decline in road pavement conditions, but the overall condition of NPS transportation facilities remains at a much lower level than anticipated or desirable. The backlog of maintenance and rehabilitation needs



Great Smoky Mountains National Park

for roads was estimated at \$4.9 billion in 2005, more than twice the estimated costs to remedy the maintenance backlog of all other NPS assets.

During the next legislative cycle in 2005, Congress⁴ increased PRP Program funding to more than \$200 million annually. At this level, the PRP Program is one of the largest NPS programs. Nevertheless, steep inflation in materials and energy costs in 2005 and 2006 meant that the 29% funding increase barely kept the PRP Program even with inflation, as shown in chart I.1. At the time the legislation was passed, NPS Washington Office (WASO) staff analysis showed that funding levels would enable moderate improvement in overall road condition by 2009. As a result of the decreased purchasing power of available dollars, however, the staff estimated in 2007 that overall road condition would remain the same or decline from 2005 conditions in that time period.

C. PRP PROGRAM RESTRUCTURING

In the early years of the PRP Program, most of the funds were expended on projects to widen and upgrade roads to more modern standards. These types of projects were extremely expensive, with a high cost per mile of construction. The result was that very few miles of the NPS road system were rehabilitated or reconstructed in a given year. This pattern of spending, combined with inflation in costs and inadequate funding, accelerated the rate of decline in roadway conditions. In addition, there was a general feeling among both NPS and FHWA staffs that the program was not operating in the most efficient manner.

In 1998 the two agencies restructured the PRP Program, recognizing that this spending pattern was unsustainable and that program management improvements were needed. These changes were phased in during three years and fully implemented by 2001. The major components of this restructuring were as follows:

1. Creation of three program categories

- a. Category I for rehabilitation and reconstruction of the primary road system
- b. Category II to complete the congressionally authorized parkways

- c. Category III as a pilot to develop alternate modes of transportation

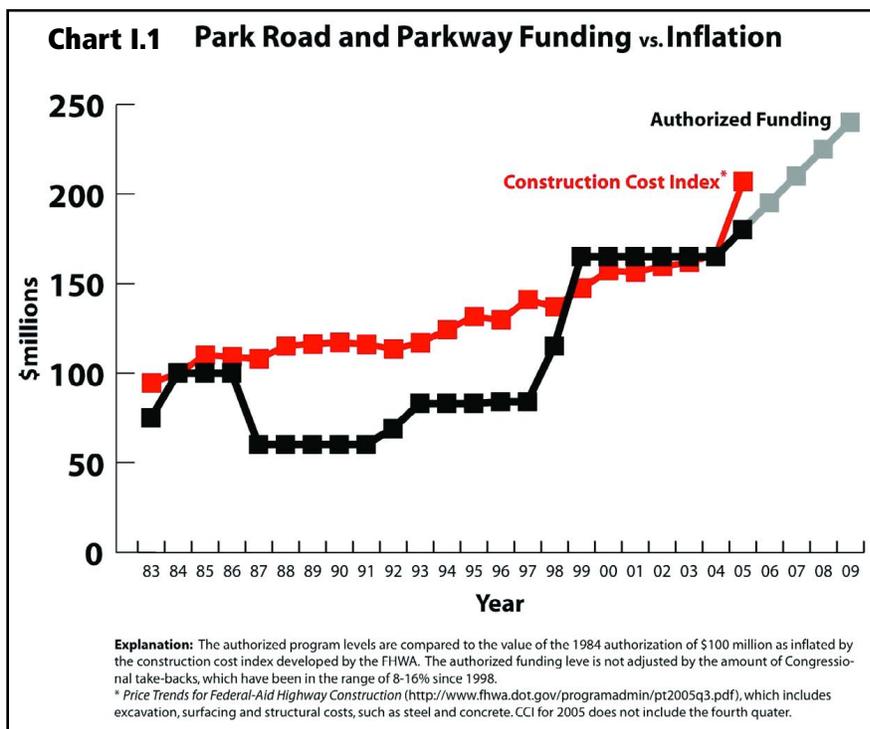
2. Shifting management of the Category I portion of the PRP Program from the Washington Office headquarters (known as WASO) to each of the seven NPS regional offices. Management of Categories II and III remains in the Washington Office. The Washington Office retained the primary responsibility for setting policy and overseeing program direction.

3. Allocation of Category I funds among the NPS regions using a mathematical formula.

4. Within Category I, establishing two subcategories of projects and allocating funds between the two subcategories in a manner that optimizes investments:

- a. Most funds are directed to Resurfacing, Restoration and Rehabilitation (3R) projects.
- b. A lesser level of funding is directed towards Resurfacing, Restoration, Rehabilitation, and Reconstruction or Realignment (4R) projects.

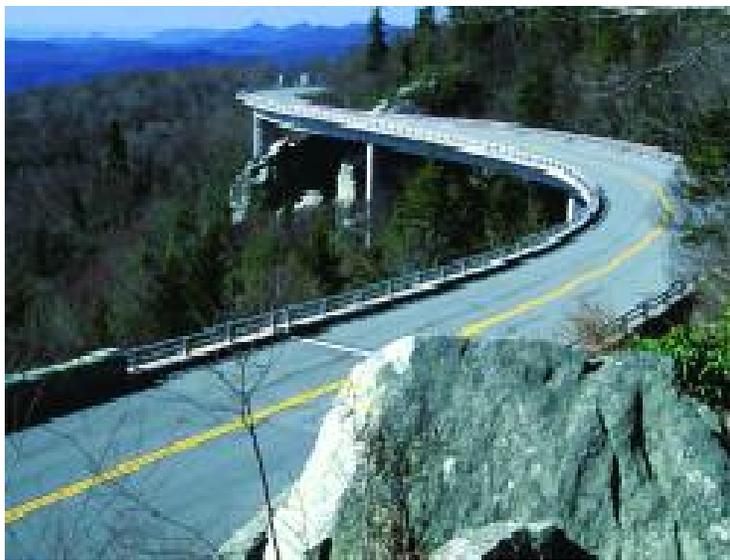
Funds for 3R projects may only be used for work that extends the service life of an existing road and/or enhances safety. Such 3R work includes the placement of additional surfacing materials and/or other work necessary to return an existing roadway (including shoulders, the roadside, and appurtenances) to a condition of structural



adequacy. Costs for 3R projects can range from as little as \$250,000 per mile to more than \$1.0 million per mile depending upon complexity and location.

Road reconstruction or realignment work (4R) consists of altering the geometry of the roadway either through widening or modifying the current horizontal and/or vertical alignment. These types of projects are typically much more complex and costly than 3R projects and result in more impacts to resources along the road. Included in 4R project work are the replacement of large bridges; the relocation of roads; and the construction of new roads, bridges, parking areas, or parallel bicycle paths. Costs for 4R projects can range from \$1 million to \$5 million or more per mile.

Daily management of the PRP Program is accomplished through a small staff in the NPS Washington Office and by the FLHP Regional Coordinator (Coordinator), a designated individual in each NPS region. The Coordinator serves as a bridge between the park units, NPS Washington Office, and the Federal Lands Highway. Over



Blue Ridge Parkway is one of the many engineering challenges for the PRP Program.

the years, Coordinators have taken on increased responsibilities within the transportation arena. In 1999 they assumed responsibility for managing the region's involvement in the Transportation Management Program (TMP) (formerly known as the Alternative Transportation Program). Most Coordinators also handle the region's involvement in other federal transportation programs, including Emergency Relief, Public Lands Discretionary Projects, High Priority Projects, Scenic Byways, and Transportation Enhancements.

The three Federal Lands Highway divisions (FLH divisions) provide technical services to develop projects, as well as to support research and data collection and analysis largely relating to transportation. Ideally each NPS region



New road surface contrasts with work yet to be done.

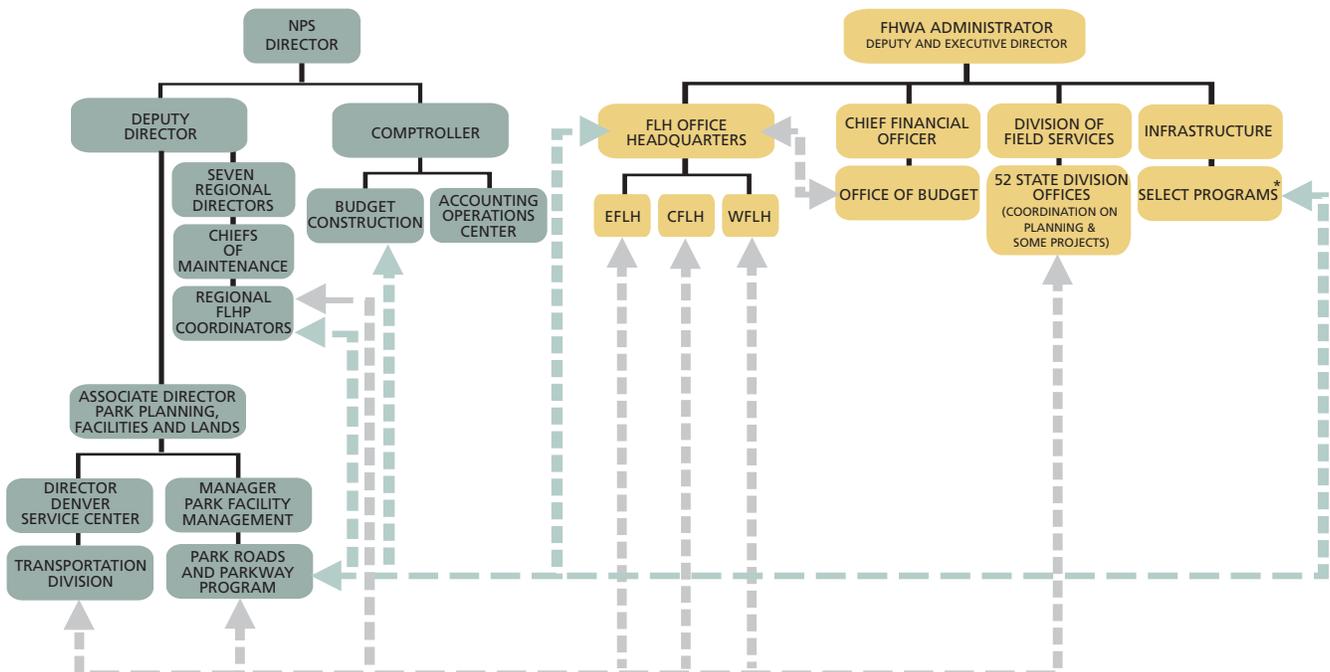
would work with one of the divisions. Due to the different geographic areas covered, however, three of the seven NPS regions work with two different FLH divisions. The NPS Denver Service Center (DSC) serves in a similar consulting position, but its focus is on landscape architecture, environmental compliance, and related disciplines. The two organizations (FLH divisions and Denver Service Center) undertake their work at the request of the NPS regions and park units as well as the Washington Office. The general way in which these organizations are aligned to successfully implement the PRP Program is in figure I.2. Maps of the NPS regions and FLH divisions are included in Appendix E.

D. PRP PROGRAM INVESTMENT STRATEGY

To ensure that the limited funds of the PRP Program are spent as effectively as possible, the first decision is focused on allocation among the three categories of PRP Program funds. Between 1999 and 2007, at least 80% of available dollars were used for Category I to preserve the basic function of the road system, which is also critical to other modes of travel in most park units. The ratio for each region, however, varied each year to respond to needs indicated by staff knowledge and modeling results. This overall direction continued for the FY 07–11 multi-year program.

The next decision is between 3R and 4R projects. To determine the split, the PRP Program staff model the condition of the transportation system with various splits between 3R and 4R spending over time. The split in allowable funding between 3R and 4R work is periodical-

Figure I.2 Organizational Relationships for Park Roads and Parkways Program*



*Includes certain special project funding from the Federal Lands Highway Discretionary Program and certain earmark projects (under Title 23 use).

ly revised to spend the available funding in the most efficient ways. In 2000, a minimum of 60% of Category I funds were expended on 3R projects. In 2004 this ratio was increased to a minimum of 65%, and in 2006, 3R funding further increased to a minimum of 80% of Category I.

In these models, rehabilitation (3R) work moves a road from its current condition to an excellent condition (which is a value of 100) for a much lower cost per mile than does reconstruction (4R) work. The primary difference between the two work categories is the cost of raising the road value to 100. In rehabilitation, funds are expended primarily on the existing roadway bench to raise a road condition to 100. In reconstruction (4R work), additional funds are expended on work such as widening or realigning outside the road bench, which significantly increases the cost of a project, while still only raising the road condition to a value of 100.

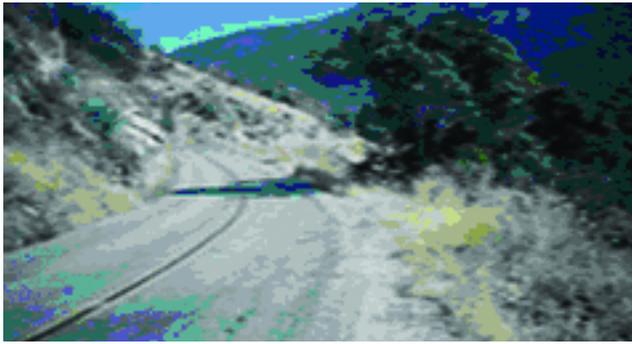
These models provide important information for policy development; however, they are not used alone in making decisions. The assumptions and condition data used are not 100% accurate or complete. The conclusions drawn from the data should only be used for predicting general trends in the condition of the road system. Similarly such modeling measures only the pavement condition within the roadway. Modeling does not measure or value the

multitude of other factors that may influence a decision to expend funds to widen, realign, or do other work on a road. Modeling also cannot predict a variety of other conditions and events, such as extremes of weather. And, basic enhancements beyond pavement repair may be needed to improve function, resource protection, and/or visitor experience.

E. ANNUAL AND MULTIYEAR PROGRAMS

The Park Service is responsible for proposing both a multiyear program and an annual program of projects to the Federal Highway Administration for approval. The multiyear program is developed based on funding levels included in the latest authorization. The annual program is derived from the multiyear program but also reflects changes in project status during the prior year.

The starting point for the development of the multiyear program is the servicewide budget call (servicewide comprehensive call, or SCC) in the fall, with parks reporting their requests to develop projects through the Project Management Information System (PMIS). The NPS Washington Office includes a request for new projects in the servicewide call only every three to four years, and regions may elect to add new projects at that time or not.



Before the Project



After the Investment

The park proposals are winnowed at the regional level, depending on the eligibility of the projects and possible other funding sources, as well as the PRP Program’s budget and goals. Several Coordinators use regional teams and DSC staff to review projects; others use the various program criteria and funding targets and make the selection for the region with a less structured process. The rule of thumb for allocating available funding once projects are selected is 65% to construction and 35% to planning, design, contract modification, and management. The NPS Washington Office oversees the process with the Coordinators and finalizes the program for submittal to the Federal Lands Highway staff for review and concurrence. (A more detailed description with timelines is provided in Chapter VI, section A.)

F. IMPROVING PROJECT DESIGN AND CONSTRUCTION

Once the program of projects is set, the job of planning and developing the projects falls to regions and the relevant park units. These units are supported by the regions, the Denver Service Center, and/or FLH divisions, depending on the nature of the project. A number of guidelines and standards are involved in the design of projects, but the overarching direction is provided by the *NPS Park Road and Parkway Standards*, which can be found in Appendix AA.

As part of the continuing effort to enhance the PRP Program, during the early 2000s staff instituted many improvements to ensure timely project completion and better management of the transportation system. Following are some of the highlights of those efforts:

- Development of a standard project agreement and a process for developing and revising it, which includes agency roles and responsibilities (Appendix M).

- Adoption of a process for project development involving NEPA (National Environmental Policy Act) compliance for 3R projects. A model 4R process is also being developed (Appendix K, L, Q, and R).
- Initiation of a uniform project tracking system, which will provide information on critical milestones for each project and enable staff to track the overall progress of the program in meeting defined goals (Appendix F).
- Development of NPS-wide management systems for pavement conditions, bridge conditions, safety management, and congestion management, which will help guide investments and also provide data to track system performance over time. Elements of the pavement and bridge systems have supported programming decisions since the early 2000s.

A focus on continuous improvement is the hallmark of this successful two-agency partnership.

¹ Park or park unit refers to the about 390 national park system properties, such as national parks, seashores, monuments, trails, historic sites, battlefields, etc.

² Codified in the U.S. Code under Title 23, Highways, Section 204

³ Transportation Equity Act of 1998

⁴ Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)