Appendices

Appendix A: Parkway History

The parkways of the Metropolitan Parks System contained the first American recreational travel ways. Their management over the past century reflects the changing context of automobile culture and transportation design nationwide.

The metropolitan Boston parkways evolved from the work of noted landscape architect Frederick Law Olmsted who, along with Calvert Vaux, created the first scenic carriageways in Central Park in 1858. Ten years later, the partners coined the term "parkway", as part of their 1868 designs for the Park and Parkway System of Buffalo, New York and Prospect Park in Brooklyn. Olmsted's parkway concept came to Boston in 1887, when he proposed a system of parkways linking the Boston Common and Public Garden to the Fens, Leverett Pond, Jamaica Pond, the Arnold Arboretum and Franklin Park in an "Emerald Necklace" of public green space that would encircle the city. This ribbon of green space, connected by parkways, heavily influenced the development of the metropolitan parks system.

Construction of the Emerald Necklace was nearing completion in 1893 when the Metropolitan Park Commission was established for the purpose of protecting open space for regional public benefit. For this new agency, journalist Sylvester Baxter and landscape architect Charles Eliot proposed a parkway system, noted as "the most notable scheme of comprehensive metropolitan park planning" in the United States.[1] As Charles Eliot wrote in 1893, "Local breathing spaces and the existence of pleasant features of natural scenery in the neighborhood are really as essential to the moral and physical health of a community as the absolutely utilitarian improvements that are usually given precedence."[2] Although Eliot was himself a noted landscape architect with ties to the Olmsted firm's Boston work, it was Baxter, the journalist, who envisioned landscaped "special Pleasure-ways" as part of the system from the start.

Since the 1870s, Baxter argued for a regional government for Boston and towns within a ten mile radius to handle functions that " are of general public concern rather than local interest," including water supply, sewers, transportation and public parks. The state's creation of the Metropolitan Sewerage Board in 1887 and the founding of the Trustees of Public Reservations by Eliot and Baxter in 1891 set the stage and illustrated the need for establishing a regional governmental body to protect the threatened open spaces of the Boston area. Within ten years of its creation, the Metropolitan Park Commission had acquired much of the park system known today, including major woodland reservations at Blue Hills and Middlesex Fells, Revere Beach, the Upper Basin of the Charles River, Hemlock Gorge and Beaver Brook.

The Commission quickly added parkways to its vision of publicly owned reservations of significant uplands, river corridors, and beaches. The Boulevard Act of 1894 empowered the Commission to create parkways to connect the reservations to each other and to population centers in order to increase recreational access. The two earliest Connecting Parkways were the Middlesex Fells and Blue Hills Parkways, which linked Boston with the two largest

Metropolitan Park reservations. These parkways were designed to provide a pleasing travel experience within scenic surroundings, with carriages, horseback riders and trolleys traveling on separate travel ways separated by planted medians.

The first generation of metropolitan parkways provided direct access from urban areas to major reservations, defined the edges of shore reservations, or followed Boston's major rivers. After the Metropolitan Park Commission merged with its water and sewer counterparts to form the Metropolitan District Commission (MDC) in 1919, a second generation of parkways was created to link various parts of the regional park system. Parkway character was protected by legislation restricting parkway cross-traffic and "curb cuts" for abutters. While most parkways were restricted to recreational pleasure vehicles, some Connecting Parkways were open to general traffic, and later became part of the state highway system.

Park-ways and the state park system

Although the park roads of the broader state park system did not grow out of one regional vision, their history is closely tied to the history of outdoor recreation in Massachusetts. Long before the Commonwealth even had a park system, the early road systems of many early state parks such as Mount Greylock (1898) and Wachusett Mountain (1899) were improved to provide access to profitable summit houses and observatories at the state's higher peaks. The Department of Conservation (DOC) was created in 1919 to manage these state reservations, and by World War II had acquired 180,000 acres, all with an increasing need for improved access. Between 1933 and 1940 the Civilian Conservation Corps (CCC) transformed many nineteenth century roads into comprehensive recreational park-ways. The CCC had thirty-one camps in operation, providing forty-seven state forests with roads and recreational facilities based on the rustic planning and design principles of the National Park Service.

Between 1905 and 1945 the popularity of automobile travel soared, and demand for public access to the reservations in the Boston area spurred great developments in the parkways of the Metropolitan District Commission. During this period some travel ways were widened, and traffic circles and overpasses were built to accommodate the growing traffic flow. These "modern" improvements were an important phase of the parkways' historic evolution. Despite these growth spurts, however, the parkways remained a defining recreational function of the Metropolitan Park System.

After World War II, the growth of the middle class, the relocation of urban populations to the suburbs, and the expansion of the national movement toward superhighways changed the management context of the MDC parkways. Between 1949 and 1956, many Boston parkways were transferred to MDC and Route 128 was built to reroute traffic around Boston. On June 29, 1956, President Eisenhower signed the Federal Aid Highway Act, in response to overwhelming national pressure for safer and speedier highways. The Cold War-era President also felt that the

newer, multi-lane highways were essential to a strong national defense. The same year, the American Association of State Highway Officials (now AASHTO) published the first national road standards. The emphasis of highway development had shifted to safety, utility and efficiency, and away from recreational and scenic values – a trend that continued into the 1990s.

In the 1990s the federal transportation model experienced a renaissance that reintroduced beautification, natural resource enhancement, and cultural resource protections into the federal highway program. Passage of the Intermodal Surface Transportation Act (ISTEA) of 1991 and the Transportation Equity Act (TEA-21) of 1998 provided incentives for systematic integration of aesthetics and place-making and provided comprehensive planning and design opportunities for transportation facilities. In 1997 the Federal Highway Administration published *Flexibility in Highway Design*, underscoring the positive movement of highway engineers to integrate historic and aesthetic considerations into highway design. The FHA stated that "this Guide has been prepared for the purpose of provoking innovative thinking for fully considering the scenic, historic, aesthetic and other cultural values, along with safety and mobility needs, of our highway transportation system."

More recently, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) authorized the federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009, emphasizing safety and flexibility of approach in design decisions.

Following the larger trends in traffic engineering and road design, the New England region took the lead in parkway preservation in the 1990s. For example, the sensitive treatment of the Merritt Parkway in Connecticut provided a compelling example for heavily used parkways everywhere. The 2006 District Court decision preventing major alterations to the parkway continues this trend.

Vermont was at the forefront of context sensitive design, publishing its own Vermont State Design Standards in 1997 as an alternative to the AASHTO model, and in 2001 the Vermont Agency of Transportation published its *Study of Guardrail Selection Criteria for Vermont Highways*, driven substantially by scenic road issues.

In Massachusetts, however, the history of parkway management in the second half of the twentieth century is complicated. As the Eisenhower Interstate Highway System evolved as the primary transportation model, funding for the maintenance of the MDC parkways decreased. As a result, many of the metropolitan parkways and the roads of the Massachusetts park system fell into disrepair between 1945 and 1970. In 1959, the state legislature first considered and decided against a transfer of MDC parkways to the Department of Public Works, establishing a precedent for the doctrine articulated here that parkways should not be managed like ordinary highways.[3]

Although state legislature authorized open space bond bills in the 1980s that funded park and parkways improvements, maintenance funding continued to shrink. In 1991, a proposed organizational merger of the MDC and the Department of Environmental Management (DEM) recommended that the Massachusetts Highway Department (MHD) manage parkways. This

proposal has not been realized despite ten years of legislative efforts supporting the transfer of parkways to the highway department.

In 2001, the Executive Office of Environmental Affairs (EOEA) launched the Historic Parkways Initiative to establish a framework for the preservation and management of the historic parkways under the care of the MDC and the DEM. This interagency initiative involved the DEM and MDC as well as the Massachusetts Highway Department and the Massachusetts Historical Commission (MHC). The development of these parkway treatment guidelines was one of the primary goals of the Initiative.

Despite changes in leadership in state government since 2001, the work of the Historic Parkways Initiative continued. In 2003 the Metropolitan District Commission and the Department of Environmental Management merged to form the Department of Conservation and Recreation (DCR), bringing the management of the state's parkways under one parks agency. Over the past five years, the Massachusetts Historical Commission has nominated and listed most of the parkways of the Metropolitan Parks System of Greater Boston on the National Register of Historic Places. In addition, the Massachusetts Highway Department published their new context-sensitive-design-based *Project Development and Design Guidebook* in January 2006.

The completion of these parkway treatment guidelines is an important step into the next phase of historic parkway stewardship.

Appendix B: Managing Historic Parkways---Understanding the Threats and Issues

The Commonwealth is under constant pressure to modernize parkways. Legitimate issues such as safety and increasing traffic volume are often cited as the primary reasons for altering a parkway in the name of modernization (see Tort Liability sidebar). However, the actual culprit is the lack of information concerning the historic status of the parkway and the characteristics that support this determination. Preserving parkways while ensuring that safety guidelines are followed is an attainable goal. Collaboration between designers, engineers, planners, historic commissions, and preservationists can prevent the degradation or loss of parkways or parkway features. Through collaboration, stakeholders who start on opposing sides can find common ground and identify methods to preserve their historic characteristics and ensure public safety.

A major milestone in this effort is the Massachusetts Highway Department's *Project Development and Design Guide* (2006). It promotes collaboration between design and preservation professionals in road development projects. Not only do the guidelines address issues directly associated with road features, they also emphasize the setting and how changes in the surrounding corridors and communities can strongly affect the character of a road. Addressing the larger picture when developing road projects is known as "context sensitive design" – a relatively recent strategy in municipal transportation planning, and one that takes into account the historic significance of a parkway.

The following is a selection of the major threats to the integrity of a parkway.

Lack of Awareness and Understanding

Engineers and preservationists can find themselves in opposition when discussing options for the alteration of a parkway. However, the root of this disagreement often lies in reluctance to learn the language of the other's profession, and not in the stubbornness or ignorance (real or perceived) of the other side. It is imperative that all parties learn each other's vocabulary, which often uses the same words with different definitions, and attempt to develop a common language for furthering their project.

For example, to preservationists the terms restoration and rehabilitation (as well as preservation and reconstruction) are defined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and are exclusively concerned with outlining the levels of treatment for historic properties. For traffic and civil engineers, the terms restoration and rehabilitation usually refer to roadway improvement projects (also known as "resurfacing, restoration, and rehabilitation" or 3R projects) projects that are associated solely with federally-funded projects that address pavement condition and minor road modifications. When discussing the future of a historic parkway, not being clear with vocabulary can needlessly hamper communication and affect the outcome of the project.

Inappropriate Zoning and Altering the Setting

The character of the privately-owned lands along parkway boundaries contributes to its historic integrity, visual quality, and its experience as a pleasure route. The zoning, land use, and development density in the surrounding community may have drastically changed since the

parkway was first built, severely impacting the surrounding setting. While commercial development is most often cited as the primary culprit, residential subdivision and the re-zoning of abandoned agricultural lands also alter the historic setting of a parkway.

Transportation Demands

As population and traffic demands grow, the pressure to increase capacity and speed on historic parkways is greatly increased, often as the result of traffic mitigation for adjacent development. Without adequate protections in place, historic parkways may be subject to construction efforts that do not consider the parkway's place in the context of the larger community. This type of construction may result in significant changes to historic parkway character including:

Realignment

Altering the parkway's original vertical and horizontal placement on the topography is often done to increase traffic flow, safety, and speed in reaction to increased population and traffic. The subsequent roadway alterations such as straightening curved segments, widening curves, adding lanes, increasing superelevation, removing rotaries, or leveling steep grades can destroy historic parkway integrity.

Widening

Adding lanes, or widening existing lanes, shoulder, or clear zones not only affects the character of the parkway itself, but also may affect the parkway corridor as a whole, particularly median width, roadside planting and other features. Widening projects often involve a widened clear zone to meet safety requirements of increased traffic and higher design speeds.

Impacts to Trees and Stone Walls

Altering or removing trees, ledges, or stone walls during road widening, clear zone expansion, or adjacent development can significantly change these highly characteristic elements of many Massachusetts parkways.

Inappropriate Treatment

Joined with the pressure to increase capacity and speed is the pressure to update those design characteristics of a parkway that are most easily lost, sometimes by adopting a highway design vocabulary that may be inappropriate for parkway design.

Resurfacing

Resurfacing raises a number of issues for historic parkways that may not be immediately apparent. Obvious changes such as converting the surface of Vernacular Roads from dirt to pavement can heavily alter historic character. However, more subtle changes in the color of asphalt, the size of the aggregate, and additional travel way elevation if accumulated underlying layers are not removed, can have significant impacts on historic integrity.

Threats to Roadside Plantings

Automobile exhaust, public utility placement, deicing chemicals and other automobile impacts threaten trees. In addition, historic planting beds and groundcovers associated with historic parkways can also be easily affected by any number of roadway alterations.

Guardrails and Guardwalls
Historic guardrails and guardwalls are often heavily altered, removed, or replaced to implement current design standards. These changes are most prevalent and easiest to implement and detract significantly from the historic character of the parkway. The new barrier is usually a far more intrusive style of rail or wall than is necessary to ensure public safety.

Small-scale Features
The steady accretion of small-scale features can ultimately cause a historic parkway to lose integrity. Inappropriate utilities, lighting, signage, parking meters and curbing can clutter and overwhelm a parkway with non-historic features. Examples include cobra-head light fixtures, "Jersey" barriers, boulders, and salvaged granite curb lining the roadside to prevent vehicular off-road access.

Deferred Maintenance
Faced with declining physical conditions, rising maintenance costs and budgetary constraints, the Commonwealth has been unable to perform essential cyclic maintenance on many parkways. The resulting pattern of deferred maintenance and reliance on interim repairs can result in the unintentional loss of significant parkway character or even complete loss of portions of the roadway itself.

Vegetation Decline
Neglecting to prune dead branches or replace dead trees, inadequate watering, lack of soil aeration to relieve compaction, and mechanical injury to tree trunks caused by grass mowing equipment increase trees' susceptibility to disease and contribute to the decline of tree health along parkways.

Overgrowth
Trees, brush, shrubs, and grass left unattended decrease sightlines and affect the physical stability of parkway features. If allowed to grow unchecked, vegetation along the parkway will grow over the clear zone and shoulders. Furthermore, vegetation will grow in joints and cracks in the pavement, curb, sidewalks and walls, breaking apart the roadway and roadside features, thereby exposing them to further water and frost damage. Allowing parkway vegetation to grow unchecked also results in the loss of informal views and designed vistas to the surrounding setting, an essential part of parkway design and experience.

Drainage Features
The swales, drains, and culverts along the travel ways are often neglected and quickly become clogged by overgrowth and debris. The resulting drainage problems may pose a safety hazard for passing motorists and result in the loss of historic features, or the undermining of the travel way itself through erosion.

Surface Patching
The high costs of road paving projects often result in road surface patching with inappropriate materials. Broken pavement may be filled with quick-setting concrete and asphalt mixes whose quality and color detract from the historic character of the parkway.

Appendix C: Historic Parkways Initiative

Mission of the Historic Parkways Initiative

The Historic Parkways Initiative (HPI) —a coalition of the Executive Office of Environmental Affairs (EOEA) and other public and private organizations—works to protect, preserve and enhance historic parkways throughout the Commonwealth. Through advocacy, education and action, and in the spirit of partnership, the Initiative celebrates the invaluable scenic, cultural, recreational, and transportation roles of these remarkable and diverse parkways. A catalyst for change, the Initiative is building new models of stewardship and revitalization for these treasured resources.

The goals and philosophy of the Initiative are founded on the visionary thinking that produced the state's incredibly diverse system of parkways we enjoy today. That thinking is relevant for us now, as we work to preserve, strengthen and build awareness of the legacy of historic parkways in every region of the Commonwealth.

The parkways forming the former metropolitan system of roads became the links and pleasure drives of America's first regional park system at the turn of the twentieth century, created by the farsighted commitment of leaders who recognized the need for comprehensive protection of "the rock hills, the stream banks, and the bay and seashore"[4] for present and future generations. The parkways were integral ingredients in that park system, and with the "reservations" they provided a rational response to the explosive growth of metropolitan Boston at the turn of the century. The variety of parkway types represented within the MDC system reflects a design response to physical place, circumstance and need, rather than imposition on the land of an efficient route to a destination. Whether it be Hillcrest Parkway, a Border Road that marks the boundary between Middlesex Fells and private land, Revere Beach Boulevard, an Ocean Parkway that provides beach access and dramatic ocean views, or VFW Parkway, a Connecting Parkway that extends the park experience beyond the Charles Reservation into the residential and commercial environs, each parkway type and individual road responds to the topography and natural features of its landscape to provide a pleasurable as well as practical travel.

The parkways that serve the state forests and parks system represent the combined vision of Franklin D. Roosevelt's Civilian Conservation Corps of the 1930s and the Massachusetts legislature's move to preserve areas of dramatic natural scenery as well as to restore the state's depleted forest resources. The legacy of the efforts of that time—during which thousands of acres of land and valuable scenic resources were made accessible—is a system of roads and associated structures that are some of the most impressive examples of their kind. The parkways that serve the state parklands include the incredible design achievements of this era as well as those of previous times in the parkways of estate and vernacular sites, such as the rich network of roads at Moore State Park or Borderland State Park.

The planning and design principles that created today's well integrated DEM parkway system were based on those of the National Park Service and summarized in the Massachusetts Department of Conservation's 1934 Annual Report:

> *In planning for recreation, every effort is made to provide the most intensive recreation possible without changing the character of the place; for example, if any area is a typical forest possessing a wildness or a natural beauty, the problem is to make that accessible and to provide facilities and such recreational opportunities that the natural character of the forest is not changed into that of the city park.*

Today these parkways are integral contributors to a community's character and quality of life. They are the front yards of residential neighborhoods and institutions, and the routes along which we can enjoy the recreational treasures of our state parks. The beautiful details and composition of their designs are too often taken for granted by the millions for whom they are essential means of travel or of recreation.

There are multiple challenges to stewardship of these irreplaceable historic resources. As commuter routes, urban parkways face the stresses of high volumes of traffic which threaten their restorative experience and pose safety challenges which have necessitated additions such as guardrail structures out of character with the historic landscape. Allees of mature trees are one of the most fundamental elements that define the urban parkway, and yet along many parkways, trees are in poor condition due to urban stress combined with inadequate maintenance resources, or have been removed altogether and not replaced. The parkways that thread throughout the state's forests and parks suffer from overuse in places, inadequate resources and competition for dwindling dollars.

The perspective of historic landscape preservation has not been regularly integrated into processes of parkway improvements, with the result that engineering needs have been satisfied at times without taking advantage of opportunities to preserve or enhance a historic parkway's character-defining features. There is a clear need to bring multiple interests together in a collaborative effort to protect and improve the health and vitality of these incomparable open space treasures.

HPI Accomplishments

The Initiative has demonstrated a remarkable interagency partnership, with a broad spectrum of public agencies and stakeholders meeting regularly to discuss issues and shepherd the process. The product of this multi-pronged initiative is a preservation planning prototype for the treatment and management of historic parkways.

Stakeholder workshops held in the fall and winter of 2001-2002, drew hundreds of participants across the state in lively and constructive dialogue. Listening to the public and raising awareness of the values and threats to these historic parkways have been critically important components of the effort. This approach will continue to be a core element in the sustainability of the Initiative's plans, elaborated below in Public Education and Outreach Strategy.

In the fall of 2002, a daylong workshop was held at the Harvard Graduate School of Design with a delegation from Los Angeles working to protect and enhance the Arroyo Seco Parkway. Also attending was Dan Marriott of the National Trust for Historic Preservation, a nationally known advocate for historic road preservation and author of *Saving Historic Roads*. Landscape architect Grant Jones and his colleague from Jones and Jones attended to contribute insights

from their innovative work on historic road preservation and collaborative process in Kentucky and Montana. The workshop found that there was a national groundswell of change and acceptance of historic road preservation—a "tipping point" for the visions and strategies embodied in the work being done within the Initiative.

The development of the Initiative was guided by a statewide Steering Committee representing a broad spectrum of perspectives including public agencies, public officials, non-profit and professional organizations, and community representatives. The Steering Committee and several subcommittees, as well as an interagency committee representing EOEA, DEM, MDC, the Massachusetts Historical Commission (MHC) and the Massachusetts Highway Department (MHD) met regularly during the planning of the Initiative to discuss issues and shape a process. The consultant team also met with agency engineers to discuss their work, needs and issues relative to their agency's parkways, to receive specific information about their roads, and to ensure that the Guidelines will be responsive and useful to them.

Because of the complexity of parkways as historic resources, scenic travel ways and transportation networks, the interagency process was critical for the Initiative. It provided fertile ground for improved understanding across agencies and disciplines of the missions, perspectives and priorities of agencies that have not historically come together to find common ground and mutually agreeable courses of action. The working relationships that have been forged during the Initiative will provide a platform for continuing conversations and shared stewardship.

Subcommittees of the Steering Committee included a Communications Committee that focused on the message of the Initiative and the most effective way to deliver it. Members of this committee contributed expertise in marketing and communications as well as public education and advocacy. They worked with a marketing and communications consultant to explain their ideas about the purposes and vision of the Initiative in clear and arresting text and graphics. The mission of the Initiative was initially formulated for review by the entire Steering Committee, while the Communications Committee spent several meetings delving into the Initiative's purpose and goals to craft a mission statement for full committee review. The Communications Committee met several times to review and make recommendations to the Steering Committee for a Historic Parkways Initiative logo that captures the concept and energy of the Initiative.

Another important committee was the Guidelines Subcommittee. Members of this committee brought expertise in historic preservation, landscape architecture, landscape preservation, transportation engineering, and municipal transportation design and process to work closely with the consultant team conducting the statewide parkway assessment and formulating the Guidelines. Committee members made valuable contributions throughout the process of inventory, and served as peer reviewers of this document.

Research on National Models

Awareness of the importance of concerted action to save our threatened historic road resources has risen exponentially across the country in recent years. Conferences focused on historic road preservation, books dedicated to the subject, and friends groups have proliferated. The Initiative has benefited from this climate of attention and the growing expertise in the national road

preservation community over the last several years. Guidelines and management plans have been collected and assessed from over a dozen states. The advice and perspective of advocates and researchers, locally and nationally, have been sought. Models and best practices from initiatives elsewhere have been culled and used as reference points for the current effort. Of particular importance has been the excellent work done by the National Park Service, documented both in proceedings from conferences, corridor management plans, and in the rehabilitation guidelines for the motor road system at Acadia National Park.

Study of the breadth of excellent nation-wide work revealed that the Initiative is the first attempt to define, categorize, assess and make recommendations for preservation treatment of an entire statewide system of parkways. The Initiative has also reached beyond current assumptions to expand the definition of parkways to include the variety of roads within parks as well. It has looked critically at AASHTO's functional classification to conclude that the system does not provide adequate guidance for historic parkway resources, and has adapted that system to define functional classes that meaningfully respond to the variety of conditions present on historic parkways.

In addition, another factor that limited the utility of existing national models for the Massachusetts effort was that most of the existing documents focused on a single historic road, the individual corridor and its historic and current context. While the preservation principles were applicable, and the processes good ones, the level of detail and specificity was more at the level of a corridor management plan for a specific parkway than guidelines for a system of parkway types. Some projects addressed parkway systems, but often did so as part of a larger plan for a park and parkway system. In these cases, recommendations for the parkway components were helpful to an extent, but were less focused and therefore less useful than an initiative solely addressing a historic road system would have been.

Several documents do address systems, and they were important sources of guidance for the Initiative. One is the *Vermont State Standards for the Design of Transportation Construction, Reconstruction and Rehabilitation on Freeways, Roads and Streets.* While it does not treat roads from a purely historic preservation perspective, and addresses all roads from freeways to rural corridors, a central purpose of the document is the enhancement of a road's context and the mitigation of negative impacts on its important scenic, cultural and natural resources. This inspiration and practical guidance helped develop the treatment guidelines for Massachusetts' parkways.

The Federal Highway Administration's *Flexibility in Highway Design* was another important guide. The Foreword states that it "has been prepared for the purpose of provoking innovative thinking for fully considering the scenic, historic, aesthetic, and other cultural values, along with the safety and mobility needs, of our highway transportation system." This represents a sea change in thinking about how roads should be treated, and was an important touchstone for the development of these guidelines.

Perhaps the Initiative's two most significant early accomplishments were leading the National Register Nomination process and launching the first two Demonstration Projects: Memorial Drive in Cambridge and on Mount Greylock.

Appendix D: National Register Nomination and Metro-Boston Historic Parkways Matrix

Another important component of the Initiative has been the effort to secure formal recognition of the historic significance of the metropolitan parks and parkway system and to heighten public awareness of this remarkable system. The Massachusetts Historical Commission funded and prepared a National Register of Historic Places Multiple Property Documentation Form for the Metropolitan Park System of Greater Boston, and National Register nominations for the parkways within the system. Extensive historical research and documentation of existing conditions supported this process, proceeding under an unusually accelerated timetable. Over 40 nominations were prepared, covering more than 60 parkways. They are listed here.

If the parkway is not yet listed on the Register, first consult the Massachusetts Historical Commission for a determination of eligibility for listing on this official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. National Register properties have significance to the prehistory or history of their community, state or nation. Properties listed on the National Register must possess historic *significance* and *integrity* (see sidebar).

In order for a property to be listed on the National Register, prepare a nomination form, which includes a detailed description of the property and an evaluation of its historic significance. With the exception of federally owned properties, nominations for properties in Massachusetts are submitted to the Massachusetts Historical Commission for evaluation. Nominations recommended for listing by the state review board are then referred to the National Park Service who administers the National Register program.

Significance of a historic property is determined by evaluating it against four criteria laid out in the National Register:

Criterion A: Associated with historic events or activities or patterns
Criterion B: Associated with important persons
Criterion C: Distinctive physical characteristics of design, construction, or form
Criterion D: Potential to provide important information about prehistory or history

Most parkways would be eligible for listing under Criterion C, because of their subtlety of design integrating the road into the topography and natural surroundings, and the quality of their associated structures such as stone walls, bridges or box culverts. Vernacular Roads could qualify under Criterion A, their association with pre-park patterns such as the road systems of former villages or farm access roads.

Integrity, as defined by the Secretary of the Interior's *Guidelines for the Treatment of Cultural Landscapes*, is "the authenticity of a property's historic identity, evinced by the survival of physical characteristics that existed during the property's historic or prehistoric period. The seven qualities of integrity as defined by the National Register Program are location, setting, feeling, association, design, workmanship, and materials." The National Register Bulletins 16 and 16A, *How to Complete the National Register Registration Form*, are helpful resource documents for this part of the process.

Preparation of a National Register nomination often provides the first complete record of the history, significance, and current conditions of a resource, and can be a valuable asset in the Design Control Report. The findings are not only an enormous benefit to the design process, but they also increase public awareness and appreciation of the parkway system as one of the most significant in the nation.

Listed National Register properties are eligible to apply for state and federal preservation grant programs, and the nomination provides guidelines for a more efficient, informed and timely review process. Listing does not in itself impose restrictions on a property; it does, however, require Massachusetts Historical Commission review for all actions funded, licensed or permitted by state or federal government agencies.

Appendix E: Public Participation Summary

The Historic Parkway Preservation Treatment Guidelines were developed in conjunction with a public participation process to ensure that all interested parties had an opportunity for involvement in the formulation of the document. This appendix provides:

- An Overview of public participation process,
- A Summary of comments, and
- DCR's response to comments.

In November 2005, DCR announced its plans to finalize the Historic Parkway Preservation Treatment Guidelines. The general project goals included:

- Reorganization of format and reworking of Guidelines content,
- Identification of gaps in content or topics that require additional analysis,
- Resolution of areas of conflict between preservation, transportation planning, and roadway design,
- Illustration of key concepts and content through diagrams, photographs, and graphics and
- Presentation of guidelines in a clear, concise, and consistent format.

The draft Guideline document was completed and made available for public review on May 25, 2006 with written comment due on June 28, 2006. DCR posted the Guidelines on the agency website and noticed the availability of the draft and public meeting dates in the Environmental Monitor. DCR also issued a statewide press release announcing the release of the Guidelines. DCR received over 50 requests for copies of the Guidelines.

Two public meetings were held to present the guidelines and solicit public comment. The first meeting was held on Tuesday, June 13, 2006 at the Doyle Conservation Center in Leominster. Another meeting was held on Wednesday, June 14, 2006 at the Boston Public Library, Copley Branch. Written comments were received by DCR until July 1, 2006.

A summary of the written comments received and the DCR response is presented in the following tabular format. Copies of the comment letters are on file with the DCR office of cultural resources.

Summary of Written Comment and DCR Response

Code	Name	Comment Summary	Response Summary
HP-1	John S. Allen 7 University Park Waltham, MA 02453	Commenter expressed concern over preservation and recreational focus of the report and the inadequate attention given to the needs of bicyclists especially commuting cyclists.	DCR revised the report to explicitly acknowledge the legal right of bicyclists as road users. The report now includes recommendations that support on-road bicycle accommodations wherever possible in a manner compatible with the historic character of the parkways.
HP-2	City of Boston Environment Department Boston City Hall, Room 805 Boston, MA 02201	Comments reflect the need for consistency in planning, design and maintenance of parkways. Commenter also noted the increased efficiencies in traffic management on parkways resulting from coordination with local municipalities.	DCR revised the report to clarify applicability of the guidelines and thresholds for triggering comprehensive assessment and planning process.
HP-3	City of Boston Water and Sewer Department	Commenter requested that the report include specific reference to coordination with municipal officials in description of parkway planning process. BWSC also wants castings installed by catch basins to indicate “No Dumping” in storm drains and to receive copies of storm water pollution prevention plans where they are required for parkway work in Boston.	Comments in the BWSC letter reflect common goals and approaches with the proposed guidelines with their emphasis on communication of proposed work and confirmation of ownership of storm drains where they may interconnect with drains or sewer lines owned by BWSC. Catch basin stenciling or identification of catch basins with castings are elements included in the DCR storm water management plan, but may not be elements necessary to include specifically in the historic parkway preservation guidelines.

HP-4	Charles River Conservancy	Comment letter noted support for the effort and implementation of the guidelines. Commenter felt the current tone of the guidelines was more roadway oriented and requested that the document focus more on recreation user experience and preservation of parkland. Commenter expressed concern over the use of the adoptive references to AASHTO design standards. CRC was one of many commenters that questioned the oversight of an implementation strategy.	All references to AASHTO have been removed unless a strong justification is provided. AASHTO publications are now referenced in the bibliography. DCR has made changes throughout the text to reinforce the recreational value and user experience of the parkways. DCR Historic Parkways Policy # (not yet assigned) sets forth an implementation strategy and oversight role by the DCR Stewardship Council.
P-5	Charles River Watershed Association	Letter commended DCR on the development of the guidelines. Comments focused on three areas: Maintenance, Stormwater Management and Public Participation. The letter requested that the maintenance standards be detailed and clear to ensure appropriate level of maintenance. The letter noted that the guidelines should include policy of DCR use of herbicide for invasive and weed management. CRWA letter also requested the guidelines include specific references to low impact development practices. CRWA felt that DCR storm water plan should be included in the guidelines. Commenter made numerous suggestions for expanding the public role in project development and developing a mechanism for incorporating public input into a given project.	A policy for use of herbicide by DCR for weed control and invasive vegetation management is currently in development and will not be adopted in time for inclusion in the document. Inclusion of the policy will be considered upon adoption. Low impact development practices are currently included by reference in the guidelines As the environmental standards applicable to storm water continue to evolve, it is preferable to refer to the changing rules with appropriate references rather than identify each standard separately in these guidelines. DCR revised text throughout the parkway planning process to enhance the public participation and outreach and to ensure the public's input into the process is validated.

HP-6	Communities for Fells Preservation 37 Ravine Road Stoneham, MA 02180	CFFP letter asked for clarification on a number of aspects of the guidelines including project thresholds, project roles, responsibilities, design process and terminology. The letter applauded DCR on outreach plan and maintenance goals of guidelines. CFFP requested that examples of parkway projects be included in the appendix to build a case history. The letter also questioned oversight of guideline implementation	See HP-2. DCR made revisions to text to differentiate roles and responsibilities of DCR project manager and those of the project team. DCR agrees with the need to develop a case history and will explore ways including use of DCR internet site to make project information available to the public. Refer to HP-4
HP-7	Emerald Necklace Conservancy Two Brookline Place Brookline, MA 02445	The ENC applauded DCR on completion of the draft document. Letter emphasized importance of oversight strategy. ENC identified speeding as a major problem and felt that guidelines fail to recommend design solutions to address the problem. ENC also questioned references to AASHTO standards	Refer HP-4. Enforcement of speeding is primarily a management issue and is outside the scope of this document. Reference to AASHTO standards has been removed.
HP-8	Environmental League of Massachusetts 14 Beacon Street Boston, MA 02108	ELM noted comprehensive approach to the guidelines and congratulated DCR on the effort. Letter expressed concern over implementation and oversight and suggested Stewardship Council should be involved in carrying out this responsibility. As other commenters pointed out, references to AASHTO standards are a concern. The letter also noted the need to raise awareness and, recognizing that it may be beyond the purview of this document, offered assistance with ways ELM can assist DCR in carrying out this goal.	Refer to HP-4,

HP-9	The Fenway Alliance	The commenter's primary concern was the lack of attention paid to the issue of access on parkways, particularly truck and bus use. The Commenter requested that consideration be given to creating a separate section of this issue.	The issue of enforcement of use restrictions on parkways is primarily an operations issue and outside the scope of the document. In response to this issue. DCR made changes to the signage guidelines specifically stating the need for signage restricting heavy vehicles from pleasure vehicle only parkways.
HP-10	Sarah Freeman 22 Arborway Jamaica Plan, MA 02130	Commenter made editorial comments to improve user-friendliness.	DCR noted comments and incorporated suggestions.
HP-11	Isabella Stewart Gardner Museum 280 The Fenway Boston, MA 02115	Letter urges DCR to include language in the guidelines specifically outlining what types of vehicles should be permitted on pleasure vehicle only parkways which explicitly should not.	This is primarily a management/enforcement issue to be addressed by legal and operations staff. The guidelines have incorporated general language about access restrictions on pleasure vehicle only parkways
HP-12	Stephen H. Kaiser 191 Hamilton Street Cambridge, MA 02139	Letter provides engineering insights into the issues of AASHTO, Value Engineering, and Speed Control. Commenter stresses the need for flexibility in parkway design.	Comments do not require a modification of the guidelines or a DCR response.
HP-13	Massachusetts Audubon Society	MAS letter acknowledges that the completion of the draft guidelines is a key step in addressing concerns about parkway maintenance and improvement. The letter expressed thanks for efforts that were made to include input from all interested stakeholders. MAS recommends that DCR staff work with the Stewardship Council over the next month or so to prepare for Council endorsement of the final	Refer to HP-4

		guidelines and to identify the process and appropriate thresholds for Council review and approval of parkway projects. The MAS letter also notes the importance of an outreach and public education program as part of implementation strategy.	
HP-14	MassBike, Metro Boston Chapter 230 Lexington Ave. Cambridge, MA 02138	MassBike also expressed concern over the lack of attention and detail on accommodating bicycle use for transportation purposes. The letter urged DCR to acknowledge explicitly the rights of cyclist as users of the roadway and requested that the agency establish a policy that would provide on road accommodation, wherever possible. The letter provided specific comments and suggestions for design guidelines and urged DCR to maintain the same level of maintenance and management of the parkway shoulders and bicycle lanes as vehicle travel lanes.	Refer to HP-1 DCR incorporated specific comments on design of shared use paths, maintenance and lighting.
HP-15	Massachusetts Historical Commission 220 Morrissey Boulevard Boston, MA 02125	MHC's letter suggests further clarification on the MHC's regulatory review and request that language be added to describe more fully the internal DCR procedures for compliance. The letter provides specific recommendations and proposed revised language on the treatment guidelines including vegetation, curbs, traffic barriers, and traffic signals. MHC also noted several corrections.	DCR revised the discussion of environmental review to include a more prescriptive process for compliance with MHC regulatory review. DCR incorporated revisions suggested by MHC and made corrections as requested.

HP-16	MASCO 375 Longwood Avenue, Boston, MA 02215	MASCO letter request flexibility in DCR's consideration of restrictions on access by heavy commercial vehicle on pleasure vehicle only roadways.	DCR regulations, not the treatment guidelines restrict access. Pleasure vehicle only parkways have prohibitions in place, outlined in CMR 350 4.00, that restrict use by vehicles weighing more than 5,000 pounds or exceeding an overall height of seven feet. Parkways designated as "general traffic" allow for use by all vehicles. For a list of the parkways and their designations, refer to Appendix D.
HP-17	Hugh Mattison hmattison@aol.co m	Commenter provided editorial comments and corrections.	Editorial comments and corrections incorporated as appropriate.
HP-18	Muddy River Restoration Project Maintenance and Management Oversight Committee	MMOC letter comments on two primary areas: public participation and maintenance. The letter urges DCR to engage the public early and often to make the process meaningful. The letter suggests that the sample consultant scope be modified to include early consultation with the public. The MMOC recommends that outreach should not be limited to immediate abutters, but should include a broader constituency for parkways. The MMOC, as have other commenters, expressed the need to provide a mechanism for incorporating public input into design process. Regarding maintenance, MMOC reinforces others comments for the need to develop parkway specific maintenance plans and suggest that the scope should be included in the consultant scope. The MMOC letter recommends that the plans address Storm water BMPs, graffiti removal and contending with homeless.	DCR revised text throughout the parkway planning process to enhance the public participation and outreach and to ensure that the public's input into the process is validated. DCR's goals for public participation, required public meetings and preparation of meeting materials (agendas, graphics, presentation slides) have all been included in the scope for consultant services. Discussion of design process and consultant scope has been revised to include maintenance and operational planning.

HP-19	Mike Ryan	The commenter provides detailed editorial and organizational comments. The letter requests that the guidelines include public education and outreach strategy. The commenter also recommends that DCR and EOEA reconstitute Historic Parkways Steering Committee. The letter asks for an explanation of the role of the Massachusetts Historical Commission in the evaluating and overseeing Historic Parkway projects. The commenter suggests a role for the Stewardship Council in providing oversight and further opportunities for public involvement. .	DCR editorial and organizational comments were incorporated as appropriate. DCR revised the text to describe MHC's regulatory authority and process. Comments regarding the development of a public education and outreach program and reconstitution of the HPI Steering Committee are beyond the scope of guidelines development and will be considered in future implementation.
HP-20	David Spiller david.j.spiller@volpe.dot.gov	Commenter raises concerns about making incremental decisions that may in effect destroy the character of a parkway over time.	The guidelines lay out a comprehensive planning process with the Design Control report as its centerpiece. The purpose of developing the Design Control Report is to provide a basis for informed decision-making.
HP-21	Ron Headrick Headrick@vollmer.co m	Commenter urges DCR to phase-out use of jersey barriers, type SS and Thrie-beam barriers.	The guidelines recommend steel-backed wood guardrails as the DCR standard to be installed as part of major rehabilitation project
HP-22	WalkBoston Old City Hall 45 School Street Boston, MA 02108	WalkBoston's letter provides detailed comments on improving pedestrian facilities along parkways. The letter expresses concern about a lack of attention to pedestrian needs and urges a change in tone and focus in guiding the incorporation of pedestrian facilities.	DCR revised text throughout the document to incorporate specific comments of WalkBoston. DCR revised the guiding principles to reflect that pedestrian use, whether for recreation or commuting, is an important design control and must be accommodated at an equal level with other uses.

Appendix F: Table of Cross Reference with Federal Highway Administration
Flexibility in Highway Design (1997) and MassHighway *Project Development and Design Guide* (2006)

Historic Parkways Initiative Historic Parkways Treatment Guidelines	Federal Highway Administration *Flexibility in Highway Design* (1997)	MassHighway *Project Development and Design Guide (2006)*
1. Introduction		**Chapter 1**
2. Parkway Planning and Project Management	**Chapters 1-4**	**Chapters 2, 3 and 18**
3. Guidelines		
Alignment	**Chapter 5**	**Chapter 4**
Roadway Cross Section Elements	**Chapter 6**	**Chapters 5, 9, 11, 13 and 16**
Bridges	**Chapter 7**	**Chapter 10**
Intersections	**Chapter 8**	**Chapter 6**
Drainage		**Chapter 8**
4. Maintenance		

Appendix G: List of Common Regulatory Thresholds

Appendix H: Standards for Preservation and Rehabilitation

from *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, (Washington, D.C.: U. S. Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative, 1996), pages 18-19 and 48-49.

Standards for Preservation

Preservation *is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of technical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.*

Standards

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Standards for Rehabilitation

Rehabilitation *is defined as the act or process of returning a property to a state of utility and of making possible a compatible use for a property through repair, alterations, and additions which makes possible an efficient contemporary use while preserving those portions or features which convey its historical, cultural, or architectural values.*

Standards

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Appendix I: Massachusetts Prohibited Plant List

**Effective January 1, 2006: The importation of the plants listed below is banned by the listed [importation ban] date. The one and three year propagation ban phase--outdates listed -are allowed only on plants that have entered the state *prior to the listed importation ban date* and remain in the channels of trade within the Commonwealth.
NOTE: After the listed 'propagation ban' date, the sale, trade, purchase, distribution and related activities for that plant are prohibited.

Latin	Common	Importation Ban	Propagation Ban
Acer platanoides	Norway maple	July 1, 2006	January 1, 2009
Acer pseudoplatanus	Sycamore maple	July 1, 2006	January 1, 2009
Aeginetia		January 1, 2006	January 1, 2006
Aegopodium podagraria	Bishop's goutweed; bishop's weed; goutweed	July 1, 2006	January 1, 2009
Ageratina adenophora	Crofton weed	January 1, 2006	January 1, 2006
Ailanthus altissima	Tree of Heaven	January 1, 2006	January 1, 2006
Alectra Thunb.		January 1, 2006	January 1, 2006
Alliaria petiolata	Garlic mustard	January 1, 2006	January 1, 2006
Alternanthera sessilis	Sessile joyweed	January 1, 2006	January 1, 2006
Ampelopsis brevipedunculata	Porcelain-berry; Amur peppervine	January 1, 2006	January 1, 2006
Anthriscus sylvestris	Wild chervil	January 1, 2006	January 1, 2006
Arthraxon hispidus	Hairy joint grass; jointhead; small carpetgrass	January 1, 2006	January 1, 2006
Asphodelus fistulosus	Onion weed	January 1, 2006	January 1, 2006
Avena sterilis	Animated oat	January 1, 2006	January 1, 2006
Azolla pinnata	Mosquito fern	January 1, 2006	January 1, 2006
Berberis thunbergii	Japanese Barberry	July 1, 2006	January 1, 2009
Berberis vulgaris	Common barberry; European barberry	January 1, 2006	January 1, 2006
Cabomba caroliniana	Carolina Fanwort; fanwort	January 1, 2006	January 1, 2006
Cardamine impatiens	Bushy rock-cress; narrowleaf bittercress	January 1, 2006	January 1, 2006
Carex kobomugi	Japanese sedge; Asiatic sand sedge	January 1, 2006	January 1, 2006
Carthamus oxyacantha Bieb.	Wild safflower	January 1, 2006	January 1, 2006
Caulerpa taxifolia		January 1, 2006	January 1, 2006
Celastrus orbiculatus	Oriental bittersweet; Asian or Asiatic bittersweet	January 1, 2006	January 1, 2006
Centaurea biebersteinii	Spotted knapweed	January 1, 2006	January 1, 2006
Chrysopogon aciculatus	Pilipiliula	January 1, 2006	January 1, 2006
Commelina benghalensis	Benghal dayflower	January 1, 2006	January 1, 2006
Crupina vulgaris	Common crupina	January 1, 2006	January 1, 2006
Cuscuta	Dodder	January 1, 2006	January 1, 2006
Cynanchum louiseae	Black Swallow-wort; Louise's swallow-wart; Autumn olive	January 1, 2006	January 1, 2006
Cynanchum rossicum	European swallow-wort; pale	January 1, 2006	January 1, 2006

Digitaria abyssinica		January 1, 2006	January 1, 2006
Digitaria scalarum	African couch grass	January 1, 2006	January 1, 2006
Digitaria velutina	Velvet fingergrass	January 1, 2006	January 1, 2006
Drymaria arenarioides	Alfombrilla	January 1, 2006	January 1, 2006
Egeria densa	Brazilian waterweed; Brazilian eloda	January 1, 2006	January 1, 2006
Eichhornia azurea	Anchored waterhyacinth	January 1, 2006	January 1, 2006
Elaeagnus umbellata	Autumn Olive	January 1, 2006	January 1, 2006
Emex australis	Three-cornered jack	January 1, 2006	January 1, 2006
Emex spinosa	Devil's thorn	January 1, 2006	January 1, 2006
Epilobium hirsutum	Hairy willow-herb; Codlins and Cream	January 1, 2006	January 1, 2006
Euonymus alatus	Winged euonymus; Burning Bush	July 1, 2006	January 1, 2009
Euphorbia esula	Leafy Spurge; Wolf's Milk	January 1, 2006	January 1, 2006
Euphorbia cyparissias	Cypress spurge	January 1, 2006	January 1, 2006
Festuca filiformis	Hair fescue; fineleaf sheep fescue	January 1, 2006	January 1, 2006
Frangula alnus	European buckthorn; glossy buckthorn	January 1, 2006	January 1, 2006
Galega officinalis	Goatsrue	January 1, 2006	January 1, 2006
Glaucium flavum	Sea or horned poppy; yellow horn poppy	January 1, 2006	January 1, 2006
Glyceria maxima	Tall mannagrass; reed mannagrass	January 1, 2006	January 1, 2006
Heracleum mantegazzianum	Giant hogweed	January 1, 2006	January 1, 2006
Hesperis matronalis	Dames Rocket	January 1, 2006	January 1, 2006
Homeria	Cape tulip	January 1, 2006	January 1, 2006
Humulus japonicus	Japanese hops	January 1, 2006	January 1, 2006
Hydrilla verticillata	Hydrilla; water-thyme; Florida elodea	January 1, 2006	January 1, 2006
Hygrophila polysperma	Miramar weed	January 1, 2006	January 1, 2006
Imperata brasiliensis	Brazilian satintail	January 1, 2006	January 1, 2006
Ipomoea aquatica Forsk.	Chinese waterspinach	*Permit required - contact Department *January 1, 2006	*Permit required - contact Department *January 1, 2006
Iris pseudacorus	Yellow Iris	July 1,2006	January 1, 2007
Ischaemum rugosum	Murain-grass	January 1, 2006	January 1, 2006
Lagarosiphon major	Oxygen weed	January 1, 2006	January 1, 2006
Lepidium latifolium	Broad-leafed pepperweed; tall pepperweed	January 1, 2006	January 1, 2006
Leptochloa chinensis	Asian sprangletop	January 1, 2006	January 1, 2006
Ligustrum obtusifolium	Border privet	January 1, 2006	January 1, 2006
Limnophila sessiliflora	Ambulia	January 1, 2006	January 1, 2006
Lonicera japonica	Japanese honeysuckle	July 1, 2006	January 1, 2009
Lonicera maackii	Amur honeysuckle	July 1, 2006	January 1, 2009
Lonicera morrowii	Morrow’s honeysuckle	July 1,2006	January 1, 2009
Lonicera tatarica	Tatarian honeysuckle	July 1,2006	January 1, 2009
Lonicera x bella *[morrowii x tatarica]*	Bell’s honeysuckle	July 1,2006	January 1, 2009
Lycium ferrocissimum	African boxthorn	January 1, 2006	January 1, 2006

Lysimachia nummularia	Creeping jenny; moneywort	July 1, 2006	January 1, 2009
Lythrum salicaria	Purple loosestrife	January 1, 2006	January 1, 2006
Melaleuca quinquenervia	Melaleuca	January 1, 2006	January 1, 2006
Melastoma malabathricum		January 1, 2006	January 1, 2006
Microstegium vimineum	Japanese stilt grass; Nepalese browntop	January 1, 2006	January 1, 2006
Mikania cordata	Mile-a-minute	January 1, 2006	January 1, 2006
Mikania micrantha	Mile-a-minute	January 1, 2006	January 1, 2006
Mimosa diplotricha		January 1, 2006	January 1, 2006
Mimosa invisa	Giant sensitive plant	January 1, 2006	January 1, 2006
Mimosa pigra L.	Catclaw mimosa	January 1, 2006	January 1, 2006
Miscanthus sacchariflorus	Plume grass; Amur silvergrass	July 1,2006	January 1, 2007
Monochoria hastata	Monochoria	January 1, 2006	January 1, 2006
Monochoria vaginalis	Pickerel weed	January 1, 2006	January 1, 2006
Myosotis scorpioides	Forget-me-not	July 1,2006	January 1, 2007
Myriophyllum aquaticum	Parrot-feather; water-feather; Brazilian water-milfoil	January 1, 2006	January 1, 2006
Myriophyllum heterophyllum	Variable water-milfoil; Two-leaved water-milfoil	January 1, 2006	January 1, 2006
Myriophyllum spicatum	Eurasian or European water-milfoil; Spike water-milfoil	January 1, 2006	January 1, 2006
Najas minor	Brittle water-nymph; lesser naiad	January 1, 2006	January 1, 2006
Nassella trichotoma	Serrated tussock	January 1, 2006	January 1, 2006
Nymphoides peltata	Yellow floating heart	January 1, 2006	January 1, 2006
Opuntia aurantiaca	Jointed prickly pear	January 1, 2006	January 1, 2006
Orobanche L.	Broomrape	January 1, 2006	January 1, 2006
Oryza longistaminata	Red rice	January 1, 2006	January 1, 2006
Oryza punctata	Red rice	January 1, 2006	January 1, 2006
Oryza rufipogon Griffiths	Red rice	January 1, 2006	January 1, 2006
Ottelia alismoides	Duck-lettuce	January 1, 2006	January 1, 2006
Paspalum scrobiculatum	Kodo-millet	January 1, 2006	January 1, 2006
Pennisetum clandestinum	Kikuyugrass	January 1, 2006	January 1, 2006
Pennisetum macrourum Trin.	African feathergrass	January 1, 2006	January 1, 2006
Pennisetum pedicellatum Trin.	Kyasuma-grass	January 1, 2006	January 1, 2006
Pennisetum polystachyon	Missiongrass	January 1, 2006	January 1, 2006
Phalaris arundinacea	Reed canary-grass	January 1, 2006	January 1, 2006
Phellodendron amurense	Amur cork-tree	January 1, 2006	January 1, 2006
Phragmites australis	Common reed	January 1, 2006	January 1, 2006
Polygonum cuspidatum	Japanese knotweed; Japanese arrowroot	January 1, 2006	January 1, 2006
Polygonum perfoliatum	Mile-a-minute vine or weed; Asiatic Tearthumb	January 1, 2006	January 1, 2006
Potamogeton crispus	Crisped pondweed; curly pondweed	January 1, 2006	January 1, 2006
Prosopis pallida	Kiawe	January 1, 2006	January 1, 2006
Prosopis reptans	Tornillo	January 1, 2006	January 1, 2006

Prosopis strombulifera	Argentine screwbean	January 1, 2006	January 1, 2006
Prosopis velutina		January 1, 2006	January 1, 2006
Pueraria montana	Kudzu; Japanese arrowroot	January 1, 2006	January 1, 2006
Ranunculus ficaria	Lesser celandine; fig buttercup	January 1, 2006	January 1, 2006
Ranunculus repens	Creeping buttercup	January 1, 2006	January 1, 2006
Rhamnus cathartica	Common buckthorn	January 1, 2006	January 1, 2006
Robinia pseudoacacia	Black locust	January 1, 2006	January 1, 2006
Rorippa amphibia	Water yellowcress; great yellowcress	January 1, 2006	January 1, 2006
Rosa multiflora	Multiflora rose	January 1, 2006	January 1, 2006
Rottboellia cochinchinensis	Itchgrass	January 1, 2006	January 1, 2006
Rubus fruticosus	Wild blackberry complex	January 1, 2006	January 1, 2006
Rubus moluccanus	Wild blackberry	January 1, 2006	January 1, 2006
Rubus phoenicolasius	Wineberry; Japanese wineberry; wine raspberry	January 1, 2006	January 1, 2006
Saccharum spontaneum	Wild sugarcane	January 1, 2006	January 1, 2006
Sagittaria sagittifolia	Arrowhead	January 1, 2006	January 1, 2006
Salsola vermiculata	Wormleaf salsola	January 1, 2006	January 1, 2006
Salvinia auriculata	Giant salvinia	January 1, 2006	January 1, 2006
Salvinia biloba	Giant salvinia	January 1, 2006	January 1, 2006
Salvinia herzogii de la Sota	Giant salvinia	January 1, 2006	January 1, 2006
Salvinia molesta	Giant salvinia	January 1, 2006	January 1, 2006
Senecio jacobaea	Tansy ragwort; stinking Willie	January 1, 2006	January 1, 2006
Setaria pallidifusca	Cattail grass	January 1, 2006	January 1, 2006
Setaria pumila		January 1, 2006	January 1, 2006
Solanum tampicense	Wetland nightshade	January 1, 2006	January 1, 2006
Solanum torvum	Turkeyberry	January 1, 2006	January 1, 2006
Solanum viarum	Tropical soda apple	January 1, 2006	January 1, 2006
Sparganium erectum	Exotic bur-reed	January 1, 2006	January 1, 2006
Spermacoce alata	Borreria	January 1, 2006	January 1, 2006
Striga Lour.	Witchweed	January 1, 2006	January 1, 2006
Trapa natans	Water-chestnut	January 1, 2006	January 1, 2006
Tridax procumbens	Coat buttons	January 1, 2006	January 1, 2006
Tussilago farfara	Coltsfoot	January 1, 2006	January 1, 2006
Urochloa panicoides	Liverseed grass	January 1, 2006	January 1, 2006

Appendix J: HPI Sample Project Scope of Work

Please note: The following is a composite scope of work based on the demonstration projects developed through the Historic Parkways Initiative. It is intended to be representative of the range of research, planning and design that may be needed on a typical historic parkway project. This scope is for reference only. The scope of work for a parkway project should be determined based on project goals and the specific resource.

SCOPE OF WORK

CONSULTANT SERVICES FOR THE REHABILITATION OF THE [insert name of parkway]

I. INTRODUCTION

A. Background

The historic **[insert name of parkway]** is located in **[insert town name]**, Massachusetts and **[include any other geographic description here]**. The Parkway and surrounding Reservation are a part of the DCR parkways network and are listed on the National Register of Historic Places. The Reservation lands are also home to a number of significance flora and fauna, protected under the Natural Heritage and Endangered Species Program. It is the intent of this project to maintain the overall character of the roadway and avoid impacts to rare species while implementing safety improvements.

The Historic Parkways Initiative

This project must be consistent with the preservation protocols of the DCR Historic Parkway Preservation Treatment Guidelines.

B. Purpose/Objective

The Massachusetts Department of Conservation and Recreation (DCR) is seeking professional consulting services for preliminary and final roadway design, natural and cultural resource assessment, permitting, and designer services during construction, for improvements relative to **[insert name of parkway]** in the town of **[insert town name]**, MA. The Consultant shall assess the historic roadway and its associated landscape and develop recommendations for rehabilitation and reconstruction that are appropriate to the historic character and natural features of the resource. The consultant will develop detailed construction plans, assist with bidding and provide construction oversight of the **[insert name of parkway].**

The proposed **[insert name of parkway]** improvement program includes preservation, rehabilitation, and/or reconstruction of the following components within the context of the historic landscape:

- Pavement
- Drainage Structures (culverts, headwalls and inlets, sub-drains, paved and rip-rap drainage channels)
- Roadway side-slopes and retaining walls
- Bollards and guard rails.
- Vista Restoration

The **[insert name of parkway]** project is intended to be designed and bid as a single construction contract for the entire XX roadway system.

If the project will be phased:
The **[insert name of parkway]** project may be implemented in phases as follow:

Phase I – Scope/project limits and schedule
Phase II – Scope/project limits and schedule

Work in Phase 1 will consist primarily of demolition, civil and structural work in the first segment. Work for Phase 2 will consist of final landscape work for the entire project area as well as civil work in the second segment. Plans and Specifications will be prepared for two independently biddable construction phases. Conceptual planning for Phase 2 shall begin with the initiation of the contract and following completion of Task 1. Although unanticipated, if budget considerations appear to result in a substantial delay in the bidding of Phase 2, the final landscape work for the first segment should be in a format able to stand alone for bidding as an intermediate phase. Cost estimates for Phase 1 should insure that funds for this landscaping work are reserved either for application to Phase 2 or as Phase 1A.

DCR has established a construction budget in the amount of **[dollar amount]** for this project.

All work and proposed design shall be consistent with the recommendations of the **[insert name of reservation]** Master Plan, the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Cultural Landscapes* and the DCR *Historic Parkway Treatment Guidelines*.

II. <u>GENERAL</u>

A. DCR Personnel
Staff of the Department of Conservation and Recreation's (DCR) Division of Planning and Engineering are the primary contacts for all work performed under this contract.

B. Consultant Team Composition
The consultant team shall include all necessary professional disciplines necessary for the successful completion of all project elements including, but not limited to civil engineers, historical/cultural landscape specialists, bridge engineers, transportation planner or engineer knowledgeable about bicycle requirements, landscape architects, arborists, ecologists, botanists and environmental permit specialists.

C. Reduction of Non-Point Source Pollution & Adoption of Best Management Practices
The DCR is committed to the reduction of non-point source pollution through the adoption and implementation of Best Management Practices. Project designs should include BMP features designed to eliminate or attenuate pollution from storm water run-off and other sources; construction plans should incorporate BMPs to eliminate or minimize pollution from erosion and construction related run-off.

D. Reporting Formats
All deliverables submitted to the DCR shall be in hard copy and include two copies in digital format. The DCR IT Department shall specify the computer format for the individual pieces of information (i.e., reports, plans, maps, or details). The standard software used by the Division is Access, Excel, and ArcInfo (E00 exchange format), EDSC AutoCAD, Microsoft Word 2002. ASCII files should be in comma-delimited format with character strings in quotes.

E. Locus for Project Work
The locus for project work is the **[insert name of parkway]** section of the historic **[insert name of reservation]** and includes all roadways, pathways, open space and parklands, landscaping and plantings with the jurisdiction of the DCR from the northern terminus of the **[insert name of parkway]** at First Street to the southern terminus at Main Street, inclusive of the University Rotary.

III. SCOPE OF WORK

A. Orientation
The Consultant shall review and become familiar with available materials related to the engineering, history and design of **[insert name of parkway],** as well as current manuals on historic parkway treatment, project design and development including:

1. **[insert name of reservation]** base survey maps
2. **[insert name of reservation]** Master Plan or Resource Management Plan **(if one exists)**
3. **[insert name of parkway]** Scenic Byway Corridor Management Plan **(if one exists)**
4. National Register nomination for **[insert name of parkway]**
5. Massachusetts Historical Commission (MHC) Inventory Forms for **[insert name of reservation]**
6. DCR's *Historic Parkways Treatment Guidelines*;
7. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Cultural Landscapes*
8. Mass Highway Department *Project Development and Design Guide(2006)*
9. *Flexibility in Highway Design* (FHWA-PD-97-062).
10. DFW/NHESP Maps Pertaining to Locations and Extent of Rare Species

The Consultant will have access to the DCR Plans Library and Archives, by appointment with the respective archivists.

B. Documentation

The consultant shall prepare baseline documentation of the **[insert name of parkway]** as described below:

1. Site Survey

The Consultant shall conduct field surveys and prepare base plans as necessary for conceptual plans and final designs including bathymetry and geotechnical borings, as required. All surveys shall be referenced to the State Plan Coordinate System and supplied to the DCR in a digital format in addition to plan form. Plans should include, at minimum, relevant elevations, the locations of all site drainage, utilities, surface and subsurface natural (including wetland resource areas in accordance with 310 CMR 10) and artificial features. Survey plans should be in forty-foot scale with one-foot contours. Datum reference is the Boston City Base. Construction plans shall include horizontal controls.

2. Mapping and Data Collection

In addition to traditional survey, the **[insert name of parkway]** project requires collection of geographical data on specific features including:

- Locations and identification of all trees over 6" dbh
- Locations and materials of trails and pathways
- Locations of light posts

Geographic data shall be assembled in an Excel compatible spreadsheet and tied into a base map. The Consultant shall work with DCR's GIS Director to insure consistency among data.

C. Design Control Report (Inventory and Analysis)

1. The Consultant shall document and assess the **[insert name of parkway]** including inventory and analysis of historic and character-defining features and elements and intrusive elements. The report shall also include an assessment of the historical integrity of individual features and the overall resource area.

2. The Consultant shall prepare a graphic and written inventory and report of the existing conditions at the project site, as necessary to augment, but not duplicate, the ***[insert name of reservation]*** *Master Plan.* The report shall include any additional required detailed description and analysis of site elements including facilities, circulation and parking, utilities (including DCR and municipal facilities) site furnishings, structures (including shore protection), environmental, wetland and water quality issues. The report shall include an analysis of the opportunities and constraints of the site.

3. The Consultant shall make recommendations for the rehabilitation of the parkway in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Cultural Landscapes*;

4. The Consultant shall prepare illustrative sections and other drawings as needed to supplement the narrative assessment;

5. The Consultant shall prepare maintenance guidelines for the roadway in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*;

6. The Consultant shall perform an assessment of natural resources along the **[insert name of parkway]**. The assessment shall locate and define the extent of rare and endangered species that may be impacted by this road improvement project. The consultant shall prepare guidelines for species protection prior to, during, and after construction.

7. The Consultant shall prepare a draft and final **Design Control Report** in accordance with the requirement described in the Historic Parkway Treatment Guidelines.

8. The Consultant shall meet as necessary with the Department, and shall prepare and submit to the Department a statement, relative to the Consultant's review of existing design plans and roadway assessment plan for **[insert name of parkway]**. The statement shall be based on the Consultant's review and analysis of the existing documentation including drawings, cost estimates, assessments, and collected data. It shall present a corroboration of all information in the design plans and master plan and/or a modification to the information wherever appropriate and necessary in order to make the documents acceptable to the Consultant.

9. The Consultant shall analyze the proposed construction work represented by the roadwork repairs and reconstruction and shall prepare a graphic representation of a time and function schedule. The schedule shall relate to licenses, permits and variances requiring Departmental application to municipal, state and federal agencies during the final design phase. The schedule shall include a detailed outline of time scheduled for all required applications, appeal periods, and sequences of applications. The consultant is required to obtain and furnish to the Department a draft application or blank form for each of the required licenses, permits, variances, and the like.

   Deliverables
   Six (6) Copies, Draft and Final Survey Plans
   Six (6) Copies, Draft and Final Design Control Report
   Six (6) Copies, Draft and Final Summary Statement and Schedule

D. Project Management

1. General Contract and Project Management
Under this task, the consultant shall be required to complete the following:

a. An Initial Plan and Schedule for all Work for review and approval and thereafter, Semi-Monthly Progress Reports and Meeting will be required to summarize the activities that have been conducted during the reporting period and outline work planned for the upcoming period. A project status table shall indicate the budget, person-hours, and percent completion, for all project activities shall accompany Progress Reports and Invoices for payment. At an initial meeting an outline of the final report shall be submitted for review and approval. Progress meetings may be conducted at the Department's Boston Office or on site and are to be a requirement of the Consultant's services.

b. Interim Reports shall be submitted upon completion of each task's deliverables.

Deliverables
Six (6) Copies, Semi-monthly Progress Reports & Tables

2. Public Participation Requirements
The Consultant shall be responsible for coordinating, attending, and keeping minutes of up to four (4) public meetings as directed by the DCR Project Manager and as indicated in the Historic Parkways Treatment Design Process. The Consultant shall prepare materials and handouts and provide any necessary audio-visual equipment for the public meetings. The Consultant shall provide an up-to-date listing of project abutters to the DCR Project Manager, at least four weeks prior to the second public meeting. A meeting may precede these meetings with DCR personnel to brief the Commissioner and Deputy Commissioners. In addition, the Consultant shall meet with other DCR personnel, including landscape, parkway and maintenance, as directed.

E. Design
The Consultant shall design roadway improvements to accommodate existing uses, meet current safety needs, protect listed plant species and preserve the historic parkway in accordance with standards and guidelines established in the Design Control Report.

1. Schematic Design
The consultant shall prepare a series of cost effective alternatives for parkway treatment consistent with the recommendations of the Design Control Report.

Alternatives shall take into consideration any potential impacts to historical, natural and wetlands resource features and areas. Plans shall avoid, where practicable, unnecessary or adverse impacts to historical, natural and wetland resource areas. Conceptual alternative plans shall include landscape preservation and renewal as determined in the Design Control Report (Cultural Landscape section).

Following completion of the services of this task, and after acceptance by the DCR, the plans shall be presented for review and discussion at a public meeting. This meeting shall be scheduled and coordinated in conjunction with the DCR Office of External Affairs. Public presentation materials shall include graphical presentation plans and perspective drawings in color, as appropriate.

Based on input from the public, the consultant will prepare layout plans, elevations, cross sections, key details, outline specifications, narrative description, and an outline cost estimate for the preferred alternative for review and approval by DCR

Deliverables
Six (6) Copies, Each Alternative, Conceptual Plan
Six (6) Copies, Preliminary Specifications
Six (6) Copies, Preliminary Cost Estimates

2. Design Development
The consultant shall develop a preferred design for implementation including plans, outline specifications and a cost estimate.

The consultant, in conjunction with DCR personnel, shall evaluate public response to the conceptual plans as presented. This review period may include other public meetings and presentations. Following the consultative process, the consultant shall proceed to develop the design including plans, outline specifications and revised cost estimates.

Following completion of the services of this task, and after acceptance by the DCR, the preferred design plan shall be presented for review and discussion at a public meeting. This meeting shall be scheduled and coordinated in conjunction with the DCR Office of External Affairs.

Deliverables
Six (6) Copies, Design Development Plans for each Phase
Six (6) Copies, Design Development Specifications for Each Phase
Six (6) Copies, Design Development Cost Estimate for Each Phase
Public Meeting materials in quantities as needed

3. Permitting
The Consultant shall be responsible for obtaining all permits, approvals, licenses, variances, and the like, and for the preparation of all applications for permits, licenses, and the like which will be required prior to construction together with any and all required application fees and copies of supplementary materials, plans, and specifications. All documents, applications and appeals shall be submitted in draft and final forms. The consultant shall present as many drafts as necessary to prepare a final form acceptable to the DCR. The consultant is responsible for calculation and payment of all fees that are reimbursable expenses.

The Consultant shall identify all necessary environmental permits and required filings including, but not limited to, Massachusetts Historical Commission (MHC) review (950 CMR 71.), wetlands protection act filings, water quality permits, and Federal Section 10, 401 and 404 permits. All permit applications for this project shall meet all of the requirements of

the Massachusetts Environmental Policy Act (MEPA), Massachusetts Endangered Species Act (MESA), and the Massachusetts Historic Commission.

The Consultant shall prepare sufficient copies of all necessary applications, notices and documentation for submission by the DCR. The consultant shall prepare for and attend all necessary meetings and hearings. At the discretion of the DCR project manager, the Consultant shall prepare any supplementary information necessary for clarifications or appeals. This task shall be completed and all drafts prepared at the 50% design stage.

The Consultant shall be responsible for responding to all issues raised and for incorporating into design documents any procedures or alterations to plans as required by permits.

The Consultant shall work with public agencies, boards and commissions as necessary and will attend any required public hearings and meeting in order to obtain the required approvals.

Deliverables
Draft and Final Environmental Filings, as Required

4. Preparation of Final Design & Construction Documents
The Consultant shall be responsible for preparing all design and construction documents for all phases including necessary plans, elevations, specifications, schedules and cost estimates. Plans shall be presented to the DCR for review and approval at the 20%, 50% and 100% **[% complete submission at the discretion of the project manager depending on complexity of project]** design. Plans shall incorporate all permit and licensing requirements and conditions. 100% Plans shall include horizontal survey controls. Plans shall be prepared in accordance with DCR format with supplements from the MHD Design Guide.

The final estimate shall be prepared in "unit price" format with all estimated quantities. Lump sum prices and allowances should only be included when unit prices are demonstrated to be impractical.

a. 20% Plan Submittal
The Consultant shall prepare a 20% Design Submittal of Construction Documents (plans, specifications and cost estimate) conforming to guidelines established under the Design Control Report, as well as the Massachusetts Highway Department format and recommended standards. The Report shall discuss all components to be included in the roadway improvement project. Conclusions, options, and costs shall be presented in this Report. Any Design exceptions (waivers) identified earlier in the Design Control Report should be fully documented at this stage. The plans shall show the locations of all proposed improvements. The Consultant will submit six (6) copies of the 20% Plans for Department approval. Comments resulting from the review will be addressed in writing prior to proceeding. When the Department grants the approval of this submittal, the project will proceed to the next design phase.

b. 50% Design Submittal

The Consultant shall prepare 50% Design Submittal of Construction Documents (plans, specifications and cost estimate) conforming to guidelines established under the Design Control Report, as well as the DCR Project Management Manual format and recommended standards. Six (6) copies of the 50% submittal are required. In addition to all known existing details, the plans shall include, but not be limited to, the following proposed details:

- Road surface
- Roadway width
- Base line
- Edging, curbing and berms
- Drainage appurtenances and channels
- Sub-drains
- Guardrail and Bollards
- Demolition
- Slopes and retaining walls or structures
- Fences
- Pavement markings
- Erosion Control
- Signage
- Resource Protection Barricades

Contract documents shall be in such form that competitive bids can be received from contractors.

c. Obtain 50% Project Approval

The Consultant will submit six (6) copies of construction documents (plans, specifications, and cost estimate) for Department approval. Comments resulting from the review will be addressed in writing prior to proceeding to 100% documents. When the 50% approval is granted, by the Department, the project will proceed to final design plans, specifications and estimate.

d. Final Design (100%)

Construction Plans shall be prepared in accordance with the DCR Project Management Manual and accepted guidelines established in the Design Control Report. The complete set of construction plans shall include:

- Title Sheet
- Index Sheet
- Key Sheet
- Typical Sections
- Plans and Profile of the roads
- Grading
- Drainage and Special Construction Details
- Erosion Control Plans

- Sign Plans
- Landscape Plans and Details
- Cross-Sections.
- Renderings

All items required in the 100% submission guidelines shall be submitted to the Department for approval.

e. Traffic Management Plan

A traffic management plan shall be developed working with DCR staff, to allow vehicular traffic to flow along the parkway as well as allowing pedestrian and bicycle traffic within the reservation while work is in progress. The Consultant shall prepare a Traffic Management Plan and Drawings to be used during each construction phase. Plans must indicate work hours, lane closures, signs, barricades, drums and traffic signals as required.

f. Development of Special Provisions

The Consultant shall develop Special Provisions to explain conditions and construction practices not covered in the current edition of the DCR Standard contract form. Special Provisions may include but not necessarily be limited to the following:

- Scope of Work
- Provisions for Travel and Prosecution of the Work
- Work Schedule
- Special Precautions (Protection of natural and historic resources)
- Individual items nor covered in the Standard Specifications
- Copies of Permits, Licenses, Certificates and Order(s) of Conditions
- Scheduling requirements, milestones, completion dates
- Special requirements of the Department of Environmental Management.
- Staging and Mobilization

g. Bid Form

A bid form shall be developed that contains all items of the work based on the standard MHD nomenclature, along with the estimated quantities of each item.

Deliverables

Six (6) Copies, 20%, 50%, 100% Plans, Specifications, Traffic Management Plan, Schedules, Special Provisions, Cost Estimates and Bid Form

F. Services During Construction

1. Assistance with Bidding

The consultant shall attend any pre-bid conferences, respond (in writing) to inquiries, as directed by the DCR, prepare addenda as required and provide other services as required. Otherwise, the DCR shall be responsible for providing all bidders with plans and specifications, issuing addenda, as well as qualifying bidders in accordance with laws and practices. The consultant shall be required to review bids, prepare a canvas of bids in an electronic format and provide a written analysis of the bidding process and actual bids. The

consultant shall include a line expense for printing of construction drawings for distribution by the DCR.

2. Construction Phase Services

The DCR shall provide full-time resident engineer services for construction, which accounts for the majority of construction oversight. The Consultant shall review and approve shop drawings and submittals, prepare change orders, interpretations and alterations as required, attendance at weekly job site meetings, field inspections as needed and consultation and otherwise assist the DCR Resident Engineer during construction. Subtasks are outlined below:

a. Review of Submittals

Within one week of receipt, the consultant shall check and approve shop drawings, samples, schedules, and other required submittals from the General Contractor after the construction contract has been awarded. The Consultant will provide advice during construction and site visits on a bi-weekly basis to address questions and unanticipated conditions.

b. Reporting

The Consultant shall report bi-weekly to the Department, in writing, on the following subjects: site visits including job meeting minutes; construction progress with photos; work found to be non-compliant or deficient; project schedule and completion status; shop drawing reviews; and any problems. The consultant shall keep track of all field changes and verify all as-built plans as submitted by the general contractor. The consultant shall prepare all necessary certificates of compliance required for project permits.

c. Closeout Report

The Consultant shall prepare and submit a final construction closeout report that documents the construction phase. The report shall include, but not be limited to the following: construction progress photos, job site meeting minutes, all consultant project correspondence, and final inspection punch list. It is anticipated that the Department will provide full-time resident representation.

Deliverables

Attendance at Pre-Bid Conferences
Addenda and Clarifications as required
Canvas of Bids
Evaluation of Bids
Weekly Job Site Meetings
Verification of As Built Drawings
Prepare and submit all Permit Certificates of Compliance
Review and Approve Submittals, Shop Drawings & Construction Schedules
Closeout report

G. Additional Services

The Consultant agrees to provide additional services not specified in the Scope of Services on an hourly basis as required by the Department to complete unanticipated tasks required for this project. Additional services may include, but are not limited to:

- Additional project meetings or public hearings with interested parties or agencies.
- Modifications to the contract documents subsequent to the submission of the Final Plans, Specifications, and Estimate.
- Additional copies of reports and plans.

Additional Services shall be provided on an hourly basis at the Consultant's and all Sub-consultants' Standard Billing Rates for the year in which the services are provided.

IV. PROJECT SCHEDULE

The Department expects to meet the following schedule and milestones:

Bidders Conference	**[insert date]**
Proposals Due	**[insert date]**
Notice to Proceed Issued	**[insert date]**
Submission of draft Design Control Report	**[insert date]**
Schematic Design Submission	**[insert date]**
Preliminary permit application	**[insert date]**
Design Development Submission	**[insert date]**
Final Design	**[insert date]**
100% Design Submittal	**[insert date]**
Begin Construction	**[insert date]**
Construction Completion	**[insert date]**

- END OF SCOPE -

Appendix K: Glossary

3R – term generally used by engineers to refer to "resurfacing, restoration, rehabilitation" projects that are usually solely associated with paving projects.

access control – the degree of connection and separation between the travel way and the surrounding land use.

area type – the built and natural environment surrounding a parkway.

average daily traffic (ADT) – the daily average number of vehicles traveling on a particular road.

border road – parkway that historically formed the edges of reservations.

character defining features – those historic aspects of a parkway that establish its unique character.

clear zone – sometimes called a recovery zone, an area free of obstacles beyond a road shoulder.

connecting parkway – primary parkway type that links communities to public parks and reservations, and links parks and reservations to each other.

context sensitive design – collaborative, interdisciplinary approach to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility for all users.

cross-section – sometimes called the road prism, it is the locations, dimensions, and materials of a road and its adjacent environment.

cultural landscape assessment – that part of the design control report that documents history and historic role and significance, existing conditions and character defining features.

cyclic maintenance – scheduled routine parkway maintenance on an established timeline.

design control report – report outlining the parkway-specific design controls.

design controls – the acceptable parameters for speed, congestion, curvature, peak hour service, and other design elements on a parkway project.

design hour volume – one-hour volume in the design year selected for determining the highway design.

design speed – selected speed used to determine the various design features of the travel way.

estate road – parkway originally designed to serve private grounds, and has been adapted for use in estate-turned-park.

functional classification – classification of roadway types based on the degree of access and mobility provided.

geographic information system (GIS) - a collection of computer hardware, software, and geographic data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

historic integrity – the physical evidence of the history of a historic entity and the entity's ability to convey that significance; defined by the NPS as the culmination of location, setting, design, materials, workmanship, feeling, and association.

horizontal alignment – sometimes called the plan, the curves and straight tangents of a travel way.

intelligent transportation system (ITS) – wireless and wire line communications-based information and electronics technologies which relieve congestion, improve safety and enhance productivity.

internal park road – primary parkway type that is the primary circulation system within a park, providing access to recreational sites; alignments generally follow the natural topography and are often more curvilinear, with greater changes in vertical alignment than on other parkways.

level of service (LOS) – measure of user satisfaction with degrees of movement through a transportation network.

metropolitan planning organization (MPO) – federally mandated transportation decision-making organization charged with allocating federal funding to transportation projects.

natural resources inventory – identification of natural resources directly associated with a parkway corridor.

ocean parkway – located exclusively along the ocean and follow the horizontal alignment of the shoreline.

period of significance – years during which a site achieved the local, state, or national significance as required by the National Register of Historic Places.

plan – road engineering term referring to the layout of a road including its location and alignment.

profile – road engineering term referring to the vertical layout of a road.

project manager – leads an internal planning process to determine a scope of work, schedule, budget, and roles and responsibilities of team members.

project review committee (PRC) – convenes for formal review of parkway projects and gives full consideration to the project's viability and design details.

reconstruction – the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

rehabilitation – the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

restoration – the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

river parkway – parkway that follows one side of a watercourse in a generally level, curvilinear alignment that parallels the shoreline.

roadway type – the role the parkway roadway plays in providing regional connections and local access.

shoulder – portion of a roadway adjacent to a traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the base and surface courses.

sight distance – line of sight available to the driver to see another roadway user or a fixed object.

summit road – parkway that winds up steep mountain slopes in a series of ascents, with rests at pullouts at overlooks; provides an experience of rugged progress up steep, winding topography, with dramatic views on the way to the summit.

superelevation – also known as banking, the tilt of a road surface to counteract centripetal forces.

target speed – the desirable vehicular operating speed along a roadway for a particular context.

technical evaluation criteria (TEC) – criteria, as specified in the request for proposal, for scoring for ranking proposals based on technical merits

tort liability – when an injury is sustained due to negligence on behalf of a managing agency or design professional and the responsibility of the managing agency to make restitution for damages.

traffic volume – number of vehicles or persons that pass over a given section of a lane, roadway, or other traffic way during a time period of one hour or more; can be expressed in terms of daily traffic or annual traffic, as well as on an hourly basis.

transportation demand – demand by motorists, pedestrians, and bicyclists for a facility, assessed in terms of volume, composition, and patterns.

transportation improvement program (TIP) – five year funding program that allocates state and federal transportation funds, both highway and transit, for the region; prepared by MPOs every year.

vernacular road – parkway found in virtually all forests, parks and reservations in the Commonwealth; typically simple in construction and located in undeveloped areas.

vertical alignment – sometimes called a profile, the up and down movement of a road.

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[1] John C. Teaford, *The Unheralded Triumph: City Government in America, 1870-1900* (Baltimore: Johns Hopkins University Press, 1984), pages 256-257.
[2] Sylvester Baxter, Secretary's Report, House No. 150, *Report of the Board of Metropolitan Park Commissioners*, (Boston: Commonweatlh of Massachusetts, January, 1893), page 13.
[3] For more detailed discussion of the history of the urban parkways, see the National Register of Historic Places Multiple Property Documentation Form for the Metropolitan System of Greater Boston, prepared by Virginia H. Adams et al., 2002.
[4] Charles Eliot, Report of the Landscape Architect, house No. 150, *Report of the Board of Metropolitan Park Commissioners*, (Boston: Commonwealth of Massachusetts, January, 1893), page 91.