

Charles River Basin
Pedestrian and Bicycle Study for Pathways and Bridges

Pedestrian and Bicycle Connectivity Study

December 2014



Charles River Basin Pedestrian and Bicycle Study for Pathways and Bridges **Pedestrian and Bicycle Connectivity Study**



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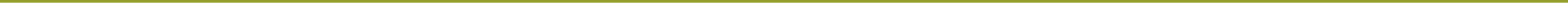
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Executive Summary

The Charles River Basin is a world-class resource for people and nature. This National Register historic park stretches eight-and-a-half miles along the river from Watertown to Boston. The convergence of the region’s built and natural environments, it is also a critical nexus in the metropolitan transportation network. As the Charles River approaches Boston Harbor, it passes through communities of increasing density. The path systems that frame the river banks and the bridges that span the river form a “trunk route” of non-motorized transportation for Newton, Watertown, Cambridge, Boston, and beyond. As many as 10,000 cyclists, pedestrians and runners an hour use these routes. Several of the

surrounding urban areas feature well-established bicycle and pedestrian links to the park system. However, many have fragmented or nonexistent connections due to the adjacent parkways, the Massachusetts Turnpike, rail yards or auto-oriented land uses. These barriers can discourage walking and bicycling to, along and across the river. Recognizing these and other concerns, the Department of Conservation and Recreation (DCR) and the Massachusetts Department of Transportation (MassDOT) in 2009 jointly commissioned a study as part of Governor Patrick’s Accelerated Bridge Program to evaluate the conditions and needs of the pedestrian and bicycle facilities along the Charles River Basin.

The Charles River Basin Pedestrian + Bicycle Study for Pathways + Vehicular Bridges begins with the need to identify connectivity gaps that exist where physical or other constraints impede bicycle and pedestrian travel throughout the network of paths, intersections and bridges along the Charles River Basin. The study area focuses on the Charles River Reservation from the Galen Street Bridge in Watertown downstream to the Craigie Dam Bridge and Drawbridge and includes areas in close proximity to the Reservation itself.

Typical Conditions in the Study Area



User-created “goat tracks” occur when users feel that the path surface provided is too narrow, too hard or both. Here, three informal paths have been created.



Access for pedestrians and cyclists on the important desire line between Arsenal Street and the river is uncontrolled and unmarked.



In some of the upstream portions of the Study Area, the character is more rural.



Accommodation for pedestrians and bicycles is needed on many of the bridges over the river, as well as safe and well-marked ways to negotiate the intersections at either end, such as Charles Circle, at the South Bank end of Longfellow Bridge.



The Bowker Overpass roadway may be wide enough, relative to its anticipated vehicular use, to accommodate a dedicated zone for bicycles.



A Halvorson Design staff person on the Esplanade records three different types of user sharing the path right-of-way: a jogger, a cyclist and a stroller.

The Pedestrian and Bicycle Connectivity Study was commissioned to evaluate existing conditions and make recommendations. The primary goal of the resulting report is to provide conceptual design recommendations for connectivity improvements to and along the Basin for DCR, MassDOT and the adjacent municipalities to incorporate in the future. Part I, Background + Analysis, (pages 1-10) provides a background and introduction to the study and description of the public process and analysis. It also illustrates the existing pedestrian and bicycle infrastructure and the activity generators within the study area. Part II, Recommendations, (pages 11-35) divides the Basin into segments bounded by the river bridges, beginning at the upstream end of the Basin. It details the recommended enhancements and includes supporting graphics.

The recommendations are listed at the end of the report in the Project Implementation Tables (pages 36-40), showing each project’s priority, relevant jurisdictions, and potential funding sources. Some of these recommendations can be implemented in the short term, while others will require further study and will need to be incorporated into long-term planning and fundraising. The recommendations are preliminary and conceptual in nature. Proposed improvements will need to be evaluated for design and construction feasibility, regulatory compliance, and long-term maintenance costs. Another key goal of the Connectivity Study is to provide a blueprint to guide DCR and MassDOT--and to some extent, adjacent municipalities--Capital Planning efforts over the next five to ten years.

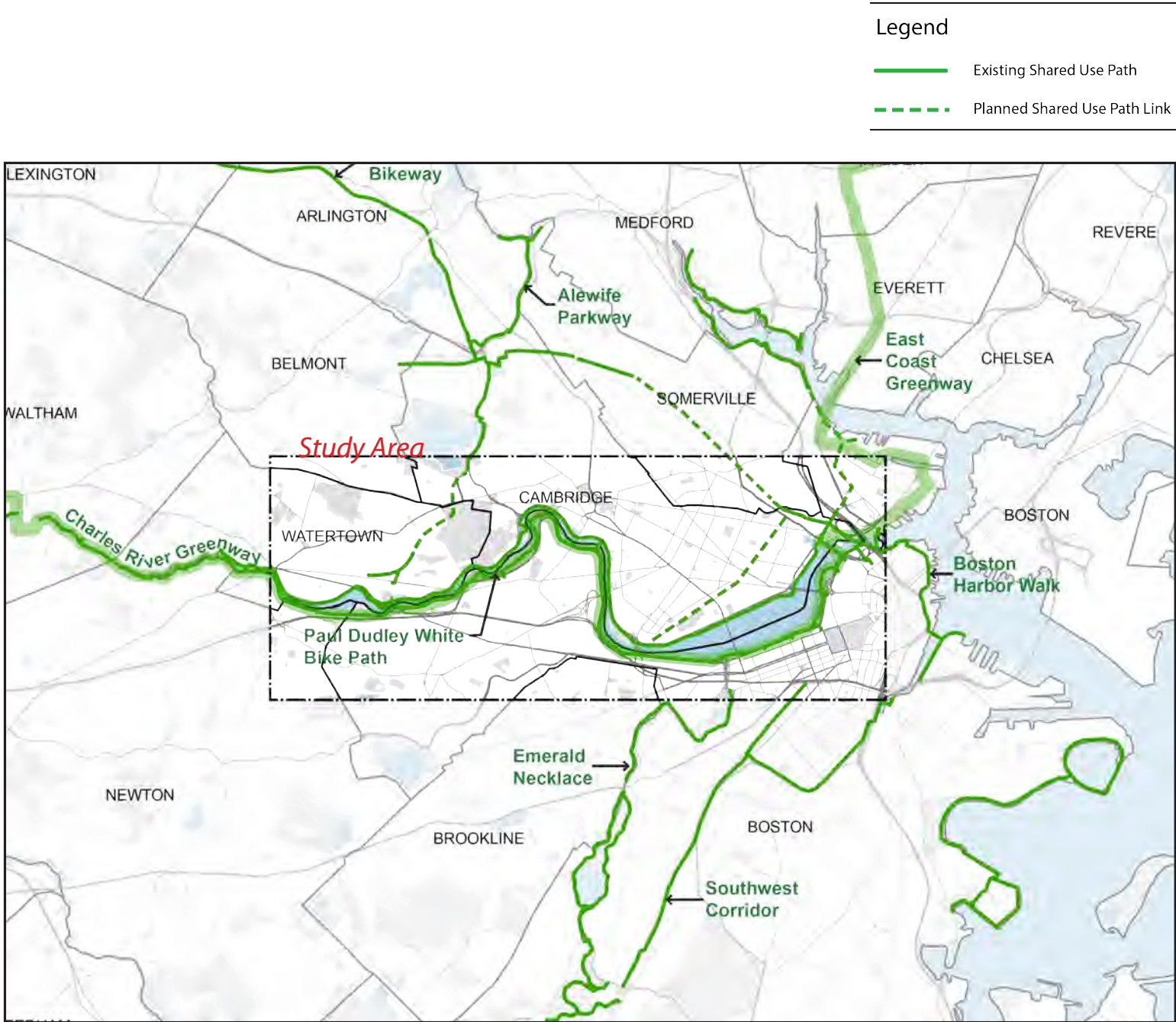
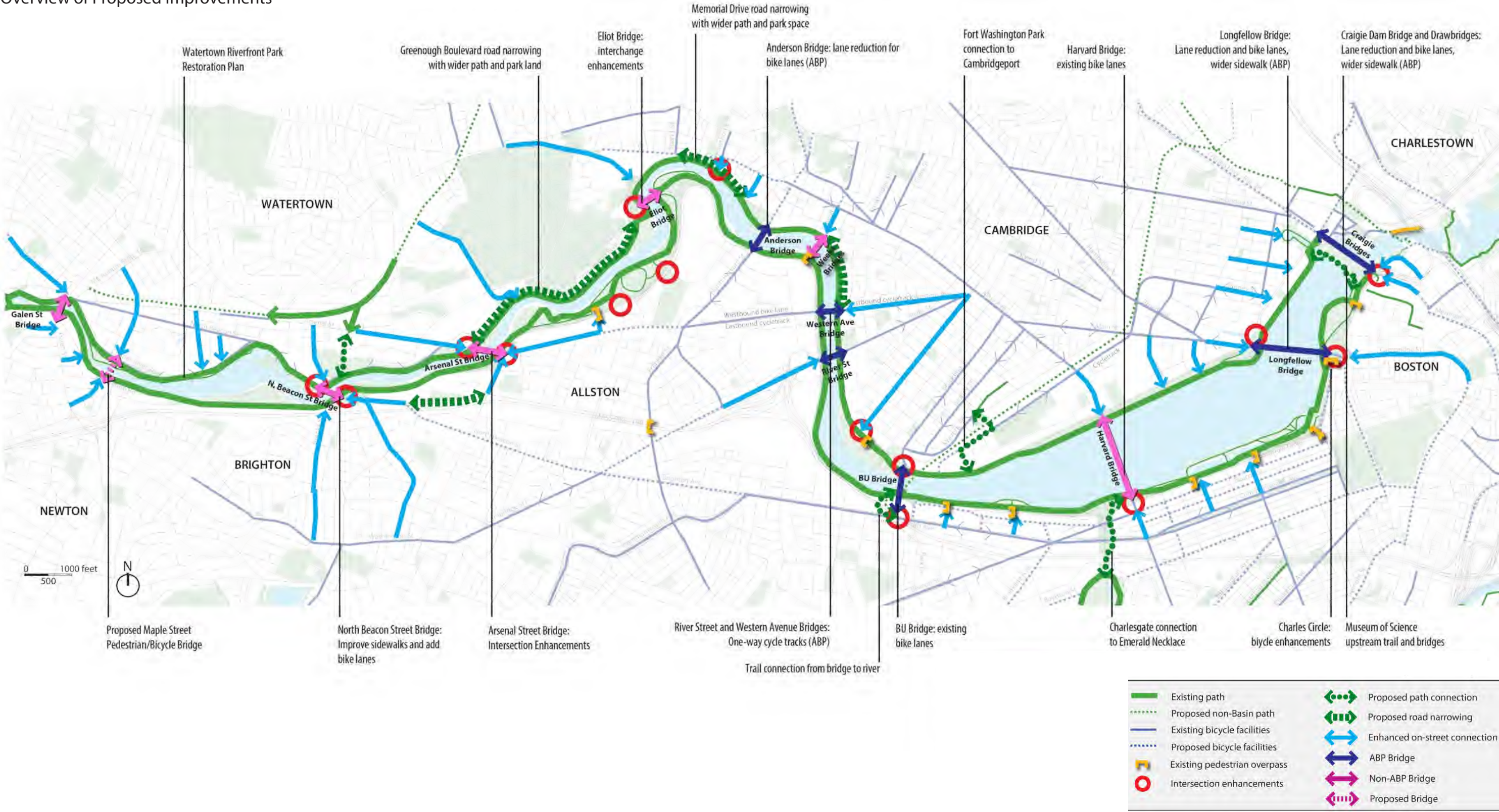


Figure A. Context map showing relationship of the Study Area to the existing regional path systems.

Figure B
Overview of Proposed Improvements



The Connectivity Study is intended for the use of DCR, MassDOT and the municipalities that line the Charles River as a blueprint for moving forward, with recommendations for both near-term and future projects. Both MassDOT’s GreenDOT Implementation Plan (<http://www.massdot.state.ma.us/GreenDOT/GreenDOTImplementationPlan.aspx>), and the 2013 Healthy Transportation Policy Directive (<http://www.massdot.state.ma.us/Portals/0/docs/GreenDOT/DirectiveHealthyTransportation.pdf>) include a commitment by recent Massachusetts Secretary of Transportation Richard Davey to triple walking, bicycling and transit mode share in the Commonwealth by 2030. MassDOT’s 2013 Healthy Transportation Policy Directive builds on the goals established by GreenDOT, requiring all state transportation projects to include bicycling, transit, and walking options. The variety of projects presented in this report will help Greater Boston become a truly multi-modal region and create a model for integrating green infrastructure that connects people and nature, providing safe, accessible and enjoyable places for people of all ages to walk, bike, and be active. It will also become a model for an integrated network of shared-use paths and other bike and pedestrian facilities designed for a multitude of users of various ages and abilities. As the primary corridor for pedestrian and bicycle transportation and recreation, the Charles River Basin will play a central role in ensuring a sustainable future for the region.

Connectivity Recommendations

General policy recommendations that apply throughout the Basin include:

- DCR should strive to develop a consistent 10’ wide paved path with a parallel, soft-surface trail or shoulder of 4’-6’ in width for runners and walkers where possible. All path widening projects must take into consideration the value of the Reservation as a natural resource. Exceptions to the path-width standards should be made in the presence of historic landscape , riparian habitat or large and mature trees. In “pinch point” conditions, a minimum 8’ paved path, with 3’ shoulder on one side, should be incorporated. Curb ramps should also be a minimum of 8’ wide;
- Along the primary paths within the Basin where bicycle traffic is expected and encouraged, yellow skip-striping should be incorporated to provide distinction between the two directions of travel.
- Traffic signals should be examined to determine if concurrent or exclusive pedestrian phases are appropriate. Determination of needs should consider pathway users a priority. Exclusive signals are recommended where feasible , and where not, incorporate countdown signals, Lead Pedestrian Intervals (and Lead Bicycle Intervals where appropriate), for enhanced safety;
- A wayfinding study should be conducted to identify the type and location of wayfinding signage to enhance pedestrian and bicycle connectivity and to support environmental stewardship, education and interpretation;
- Revise the name of the path system along the Charles River Basin to: The Paul Dudley White Pathway, an inclusive description reflecting the variety of users;
- Regular maintenance of the paths throughout the Reservation is essential to the continued success as a transportation, conservation and recreation corridor.
- At intersections, all crosswalks should be well marked and line up properly with existing or proposed curb cuts;
- A comprehensive lighting study should be conducted to identify areas in which current lighting levels are not sufficient and to explore opportunities for new lighting along the path and bridge system;
- Consider redeveloping some large paved areas within the Basin--such as parking lots--with permeable pavement. Note that because of the significant additional cost, it must be carefully balanced against other competing needs.

Key recommendations for specific projects include:

- A new footbridge over the Charles River that connects Newton and Watertown, providing additional opportunities for walking and bicycling loops between the Galen and North Beacon Street bridges;
- New crosswalks, roadway geometry and bike lanes on or adjacent to the North Beacon Street Bridge;
- The lane reduction of a mile-long stretch of Greenough Boulevard to provide new parkland and paths that form an integrated loop with Herter Park on the south bank of the river;
- Road narrowing along Memorial Drive between Mt. Auburn Hospital and John Fitzgerald Kennedy Park in Cambridge to improve connections to Brattle Street and provide space for separated paved and soft-surface paths;
- Path reconstruction and parkland restoration on the Cambridge side of the river between the River Street Bridge and the BU Bridge;
- Improvements to the Boston University Bridge on both sides of the river, linking to the Esplanade and incorporating the rail trestle that may be redeveloped as a part of the Grand Junction trail project;
- A plan to connect the Esplanade with the Emerald Necklace, utilizing a new path through DCR-owned land adjacent to the Bowker Overpass, paralleling the Muddy River and along a widened sidewalk of the viaduct over the Turnpike;
- Previously planned improvements as part of the Memorial Drive Phase II project that will widen the existing concrete path adjacent to the seawall, introduce a parallel soft-surface path in places and plant additional trees;
- Enhancements to improve connections from the Albany and Sidney Street corridors in Cambridgeport to the river using shared lanes, signage, an improved at-grade railroad crossing and new paths through Fort Washington Park;
- In conjunction with the planned improvements to the Longfellow Bridge through MassDOT’s ABP, new traffic signals and crosswalks to link the Broad Canal path to Cambridge Parkway;
- Bicycle connections through Charles Circle that will include green bike lanes, enhanced signage and frequent shared-lane markings;
- A critical link from the north to the south bank of the Charles utilizing a pair of new foot bridges along the upstream side of the Museum of Science, one located where Lechmere Canal and the River join, and the second spanning the 1910 lock, ideas being explored in a preliminary study initiated by DCR;
- At-grade pedestrian and bike enhancements at Leverett Circle (with provisions for a pedestrian overpass in the future).