

Trailink 2003

Balancing Access and Impacts

(Presented by Bruce Leish, Principal, Carol R. Johnson Associates, Inc.)

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Today I'll be using the Upper Charles River Reservation Greenway as a case study in locating trail systems in sensitive environments and show how we can balance access and impacts. I have also prepared a handout which outlines specific strategies for trail location, construction and maintenance. The Upper Charles project also illustrates successful reclamation of encroachments and restoration of disturbed areas.

The Upper Charles River Reservation is a tenuous ribbon of greenway in a highly urbanized area. More than 100,000 people live within walking distance.

It is blessed with a rich cultural heritage and striking natural beauty.

This river edge or riparian environment is a critical habitat for wildlife..... fish, amphibians, reptiles, birds, and mammals.....some endangered

(Riparian zone one of the most productive ecosystems)

Diversity of vegetation....brush, trees, shrubs, snags

Abundant food sources

Cover/protection

Nesting, breeding and perching areas

Proximity to water

Travel corridors/escape routes

However, it is a complex and fragile system....., wildlife sensitive to disturbances such as:

Alteration of mature vegetation, invasive vegetation, compaction, erosion, pesticides; machinery, noise, visual intrusion, habitat fragmentation (must also connect to larger upland tracts of habitat), and water quality degradation. (Sedimentation, pollution, nutrient loading, warming)

Unfortunately, the Reservation had suffered decades of abuse and neglect. There were more than 92 separate encroachments onto public land by private industrial and residential abutters.

Carol R. Johnson Associates, Inc. was hired by the Metropolitan District Commission (MDC) to prepare a master plan for the Upper Charles River Reservation, followed by detailed designs for more than 6 miles of riverbank, 2 mini-parks and 3 pedestrian bridges. The master plan area, extending west from Watertown Square to Commonwealth Avenue in Newton and Weston, Massachusetts is approximately 5.75 miles long, and is part of the greater Charles River Reservation, which connects to Boston.

The 2 primary objectives of the project were the long-term ecological restoration of the river corridor as a self-sustaining natural environment, and the introduction or enhancement of public access to and along the river, where appropriate and feasible. Other project objectives included promoting the Upper Charles River Reservation as a community greenway resource, maintaining and improving visual and scenic quality, ensuring safety of greenway users and privacy of abutters, protecting and enhancing wildlife habitat, and developing interpretive facilities to explain the historic and natural resources of the river corridor.

Just removing the encroachments would have been an improvement in environmental quality, but we still had to be careful to minimize the impacts of trails on the wildlife populations.

(Slides were shown, illustrating mitigation strategies, with many before and after photos)

Ultimately, the greenway's ecological health has been successfully restored and the public is able to enjoy this forgotten resource, which was hidden and inaccessible for so many years.

We think we have been able to strike a reasonable balance between human access and wildlife habitat preservation.

(Handout summarizing the strategies illustrated)



Greenways + Multi-purpose Trails

STRATEGIES FOR BALANCING ACCESS AND IMPACT

DESIGN STRATEGIES: (site design and detailing, choice of materials, planting)

Minimize trail width and cleared width. 9 foot wide path to accommodate wheelchairs, pedestrians, bikes, maintenance and emergency vehicles on Upper Charles.

Keep people on path - railings, vegetation (thorny), grading, signage

Permeable surfacing where possible in stabilized soil, no surfacing on secondary paths

Limit number of trails

Limit trails to one side of the river, especially in sensitive areas (may need to bridge across river)

Route trails through areas of least habitat value i.e. disturbed areas and stands of invasive vegetation

Avoid long stretches of path immediately adjacent to riverbanks

Site trails in adjacent uplands if possible

Avoid nesting areas/sensitive habitats

Use spur trails or trails that return to the main path near sensitive areas

Avoid wetlands if possible (limited secondary unpaved paths or boardwalks only)

Minimize (and mitigate) wetland fills

Avoid depressions (possible vernal pools - amphibian breeding)

Avoid creating large areas of maintained grass at edge of river. Create dense riparian shrub border

Avoid loss of mature trees and native vegetation

Avoid steep areas to minimize cuts and fills, erosion, loss of mature vegetative cover

Use boardwalks on slopes to grade and minimize fill and impacts on vegetation

Boardwalk - use recycled plastic lumber for ground and water contact. Wider board spacing in wetlands.

Create/ maintain continuous, well vegetated wildlife corridors

Planting - native, low maintenance, multi-layered, high food & cover value. Reinforce circulation, create buffers

Leave some dead trees (snags) for wildlife habitat

Site parking/other intensive uses on disturbed sites/ areas of low habitat value

Drainage- structures with oil & gas separators, water quality swales, vegetated detention ponds, natural drainage where possible

**CONSTRUCTION STRATEGIES:** (site preparation, layout, grading, construction)

Strict orders of Conditions from Conservation Commissions

Careful sequencing

Layout paths in field

Field approval of path grading

Field locate new plant material, especially in wetland replication areas

Wetland replication during dry season

Clearly identify wetland edge during construction

Temporary erosion control measures: hay bales, silt fences, covered stockpiles, erosion control matting on slopes greater than 3:1

Protect vegetation to be saved

Low impact construction methods and materials

Restrict motorized vehicle access

Boardwalks - no concrete footings, no excavation. Helical piers or Pinned footings

Shut down construction during critical times (breeding season or nesting)

Ecologist on-team

MANAGEMENT/MAINTENANCE STRATEGIES

Seasonal closure or access limitations during nesting and stressful times

Closure during certain times of day

Signage

Control of vehicles, trash removal, mowing, weed and pest control

Limit size of parking areas to control access

Control type of activity/ behavior

Monitor target species populations

No salt in parking lots

No snow piling near or dumping in river

