Management and Maintenance of a Walkable Facility

Guiding Principles for Effective Management and Maintenance

If components of a pedestrian circulation system are well planned, designed, and constructed, long-term maintenance needs and management costs of the facility will be minimized. Initially, community support is high during the planning phase for a new trail or shared-use path. However, once the facility is construction, enthusiasm generally wanes and it is difficult to garner interest in management and maintenance responsibilities. It is critically important, therefore, to prepare a management plan during the master planning process to identify ongoing management and maintenance needs, responsibilities, and costs. While facilities must be designed with accessibility in mind, they also need to continue to be in good repair, accessible, and regularly inspected to meet ADA requirements.

The following guiding principles will help ensure the preservation of an effective management and maintenance system:

• Start with sound planning and design to address future maintenance needs.
• Consider protection of life, property, and environment as key aspects of management and maintenance.
• Maintain and promote a quality outdoor recreation and transportation experience.
• Develop a management plan that is reviewed and updated annually with operational policies, standards, tasks, and routine and curative maintenance goals.
• Maintain quality control and conduct regular inspections.
• Include police, fire/rescue personnel, and field crews in both the design review of the program and continuous management process.
• Maintain an effective, responsive public feedback system and promote public participation.
• Uphold good neighborly relationships with adjacent properties.
• Operate cost-effective programs with sustainable funding sources.

Stewardship

The stewardship process must consider both public-sector activities—such as the construction of roads and utilities—and private-sector activities—such as land subdivision and development. Coordination among agencies at the local, regional, state, and federal levels is vital to ensure that these activities are supportive of the plan and complementary to each other. Long-term stewardship also requires the enduring commitment of project staff, elected officials, project partners, stakeholders, and concerned citizens working cooperatively. This stresses the need for
a shared community vision and value system centered on the protection of a pedestrian circulation system, trail, bicycle, streetscape, and outdoor recreational resources.

Routine and Remedial Operations

Systematic Risk-Management Assessment

Safety is central for all maintenance operations and is the single most important maintenance concern of elements of a pedestrian circulation system. The City of Greenville, N.C., has implemented the following measures to ensure safety within its trail system:

- Schedule and document inspections to determine the amount of use, location, type of construction, age, and condition of bridges, trail surfaces, railings, and signage. Follow-up with the proper corrective measures in a well-timed manner.
- Evaluate and remove all obstacles or objects that could impede facility usage and provide solutions such as alternative routing and removal of obstacles.
- Implement a database management system, a crime-tracking system, and create a safety follow-up task force to address problems that may develop.
- Develop an emergency response protocol into operation that works with law enforcement, EMS agencies, and fire department that includes mapping of access points, design of pedestrian facilities, and access roads.
- Install emergency phones in appropriate remote areas. Each local emergency response unit should have an up-to-date map of all pedestrian and trail facilities.

Manage Interagency Responsibilities

It is crucial to coordinate the commitment of agencies responsible for walkable facilities to complete the following routine maintenance tasks. Listed below are the tasks assigned to a City of Greenville, N.C., greenway committee to monitor the maintenance of the community’s trail system:

- Establish a coordinating committee with representatives from each of the participating stakeholders and organizations.
- Identify which entity will provide ongoing oversight, leadership, and coordination for the overall network.
- Review important private and public projects that might impact the pedestrian circulation system and its components.
- Pursue other cooperative agreements and grants for ongoing maintenance needs.
- Monitor maintenance, operations, and other advocacy functions now and in the future.
- Assess accident and crime reports and take the necessary actions on a case-by-case basis to ensure that all facilities do not depreciate due to safety concerns, crime, or fear of criminal activity.
Remedial Program Development

Remedial program development refers to activities required to sustain the quality of the pedestrian network. Maintenance needs will depend on many factors including weather, climate, volume of use, type of surface treatment, installation procedures, and age of the facility. The establishment of a committee, maintenance hotline, or reporting procedures may help formalize a process for addressing remedial program needs. To develop the remedial aspect of the program, updates should be made in these respective areas:

- Informational signage (rules and regulations) to communicate proper usage of all network facility types.
- Directional signage to integrate new trail systems as new projects are implemented.
- User maps to reflect any additions or changes to the systems or overall network and also reference connections between trail facilities.

Table 5. Maintenance of Pedestrian and Bicycle Facilities Within Roadway Rights-of-Way (modeled after City of Greenville, N.C., Department of Transportation info)

<table>
<thead>
<tr>
<th>Task</th>
<th>Frequency</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular inspection</td>
<td>2X per year</td>
<td>All on-road bikeways, identifies needed repairs of pavement signs, markings, etc.</td>
</tr>
<tr>
<td>Shoulder and bike-lane</td>
<td>2X per year</td>
<td>All roadways with bicycle facilities.</td>
</tr>
<tr>
<td>sweeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder and bike-lane</td>
<td>As needed</td>
<td>Repair road surface, including potholes, cracks, or other problems on facilities.</td>
</tr>
<tr>
<td>repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median island and curb</td>
<td>As needed</td>
<td>Repair of curb and gutters, removal of debris.</td>
</tr>
<tr>
<td>extension repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder and bike-lane</td>
<td>During regular roadway repaving</td>
<td>Maintain or increase pavement width during repaving projects.</td>
</tr>
<tr>
<td>resurfacing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debris removal from</td>
<td>As needed</td>
<td>Remove debris roadway shoulders and bike lanes.</td>
</tr>
<tr>
<td>shoulders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snow and ice removal</td>
<td>As needed</td>
<td>Plow snow off roadway shoulders and bike lanes, and require property owners to shovel sidewalks.</td>
</tr>
<tr>
<td>Pedestrian signals</td>
<td>As needed</td>
<td>Replace burned-out or broken pedestrian signal heads; adjust pedestrian signal timing to accommodate standard pedestrian walking speed.</td>
</tr>
<tr>
<td>Signs and markings</td>
<td>As needed</td>
<td>Repair or replace pedestrian and bicycle signage or marking, crosswalk markings, as identified during inspections.</td>
</tr>
<tr>
<td>Vegetation control</td>
<td>As needed</td>
<td>Mow grass and trim limbs and shrubs two feet back from sidewalk edge.</td>
</tr>
<tr>
<td>Litter removal</td>
<td>6X per year</td>
<td>May be done with volunteers</td>
</tr>
</tbody>
</table>
Routine Maintenance Needs

Routine maintenance refers to the day-to-day regimen of litter pick-up, trash and debris removal, weed and dust control, sweepings, sign replacement, shrub and tree trimming, and other regularly scheduled upkeep of each segment of a pedestrian network. The rate of routine maintenance should be established as new facilities are implemented and should be updated annually to reflect any changes in usage and safety issues. Volunteers can be used to sweep and remove trash from pedestrian facilities. Regular attention should be given to the surrounding landscape, both man-made and natural, to maintain a high-quality network. This includes:

- Pruning and trimming trees and shrubs.
- Mowing vegetation.
- Mulching and edging.
- Controlling invasive species.

Remedial Maintenance Needs

Remedial maintenance refers to correcting major faults in the pedestrian network, as well as repairing, replacing, or restoring significant components of facilities that have been damaged, destroyed, or significantly deteriorated from normal usage and age. Some minor repairs may occur on a five- to ten-year cycle such as replacing signage, repainting, and seal coating asphalt pavement. Major reconstruction repairs will occur over a longer period or after a natural event such as flood. An example of major reconstruction remedial maintenance includes the stabilization of a severely eroded hillside. The repair and maintenance of existing facilities should be reflected in the projected budget for future maintenance costs. Listed below are the longevities for different types of surfaces used on shared-use paths and trails, and how frequently they should be repaired:

- Mulch: 2-3 years.
- Granular stone: 7-10 years.
- Asphalt: 7-15 years.
- Concrete: 20+ years.
- Boardwalk: 7-10 years.
- Bridge/Underpass/Tunnel: 100+ years.

Habitat Enhancement and Control

Habitat enhancement seeks to improve aesthetics, help prevent erosion, and prevent harm to the wildlife habitat. Habitat control seeks to alleviate damage caused by wildlife. To protect wildlife and enhance the natural habitat of the environment:

- Plant native vegetation.
• Protect man-made and natural features of the landscape from wildlife by installing fencing around sensitive or newly planted materials.
• Apply herbicide to remove any problem plant species.
• Apply herbicide to retain facility edges and prevent encroaching vegetation.
• Discourage interaction between facility users and facility inhabitants such as feeding the wildlife.

Administration and Jurisdictional Responsibilities

It is recommended that a municipal employee be designed as a “Pedestrian Coordinator,” to carry out administrative responsibilities of managing the pedestrian network. The duties of the coordinator may include carrying out recommendations of the management plan; applying for funds; overseeing planning, design, and construction of phases of the pedestrian network; organizing volunteer efforts; and coordinating responsibilities with other agencies such as DelDOT. The Pedestrian Coordinator should plan and direct administrative responsibilities in concert with:

• **Public works department/engineering** – To carry out the timely construction of project phases and remedial maintenance of all hard, municipality-owned trails, shared-use paths, and pedestrian facilities.

• **Parks and recreation department** – To maintain trails and shared-use paths in parks and park facilities. Active recreation of facilities should be planned through recreation and special events programming.

• **Police department** – To train municipal police officers on the latest laws governing bicyclists and pedestrians and to provide safety patrolling.

• **Volunteers** – To optimize success of programs and use of facilities, it is essential to build a pool of volunteers to build community pride and help connect the community to the pedestrian network. Volunteers may donate time to offset the cost of construction or maintenance of a facility. Citizen advocacy groups, recreation boards or councils, trail ambassadors, event assistants, or other volunteer positions may be established to lead volunteer efforts in advocacy, stewardship, fundraising, maintenance, and recreation programming.

• **DelDOT** – To enhance inter-jurisdictional coordination in the maintenance of all pedestrian and bicycle facilities within the state-owned rights-of-way, as well as the design and construction of state on-road facilities. This includes bicycle lanes, paved shoulders, sidewalks on state roads, and pedestrian signals.
• **Property owners** – To ensure that routine maintenance of off-road sidewalks and shared-use paths is conducted according to municipal ordinances.

• **Nonprofit group, task force, or coalition** – To develop stewardship for trails, shared-use paths, or other pedestrian facilities, which may include:

  • Attaining, refurbishing, protecting, and developing natural resources.
  • Incorporating public historical, cultural, and recreational facilities with compatible partners.
  • Developing an information center and education materials to increase awareness of environmental and historical value of the network
  • Assisting the local government in fund raising through grants, donations, leasing of concessions, and special events.
  • Maintaining committees/boards to represent diverse community interests.

*Note: All information for this section obtained from Chapter 6, “Operations and Management” of the “Trails and Greenways” master plan for Greenville, North Carolina.*