16 Maintenance and Other Improvements

Proper maintenance is essential to promote user safety, to ensure ease of access, and to encourage the use of a designated route, especially in school zones.

Why is maintenance important?

All facilities require regular maintenance to reduce the damage caused over time by the effects of weather and use. However, many maintenance issues can be reduced if properly addressed in the planning and design phases before construction even begins. It is recommended that an overall plan/schedule for the continued maintenance, repair and replacement of pedestrian and bicyclist safety related infrastructure along school walking routes and within school zones be developed, adopted and implemented. The plan should include criteria and guidelines for the maintenance of pedestrian and bicyclist-related facilities, such as sidewalks, crosswalks, bicycle lanes, shoulders, signs, signals, lighting, storm drains and multi-use paths. The extent and frequency of maintenance schedules will vary greatly depending on the location, amount of use, and resources available.

The plan should clearly specify the frequency of maintenance activities and how reported maintenance concerns will be addressed. The development of the plan should be coordinated between the Departments of Public Works, Engineering and Planning, the School District, and the agencies that have jurisdiction over the rights-of-way included within the school zone.



Installing high-visibility crosswalks in Hoboken, NJ.

AMERICANS WITH DISABILITIES ACT (ADA)

ADA/Accessible designs must be regularly maintained and should not be neglected or allowed to degrade to a condition where they cannot be used or must be avoided during travel. State and local government facilities should follow requirements of the 2010 ADA Standards for Accessible Design. This manual addresses sidewalks, walkways, and other pedestrian transportation routes that are located within a public right-of-way. Accessibility requirements for pedestrian facilities within the public right-of-way are also addressed in the U.S Access Board's Accessible Design Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). The 2010 ADA Standards for Accessible Design require, to the maximum extent possible, that newly designed and constructed or altered State and local government facilities must:

- Provide a continuous, unobstructed path of travel that is accessible to and usable by individuals with disabilities.
- Maintain accessible routes from the public street, sidewalk and public transportation stops to the accessible building or facility entrance they serve.
- Keep walking surfaces cleared (of snow and any obstructions) to a minimum width of 36 inches.

Roadway Maintenance

In general, the school district is responsible for providing ongoing maintenance of pedestrian and bicycle facilities and traffic control elements on the school site; public and private property owners are typically responsible for repairs and reconstruction of the sidewalk within the street right-of-way adjacent to their property; local jurisdictions are responsible for maintaining facilities and traffic control elements at intersections and mid-block crossings; and the governmental entity with authority over the roadway is responsible for maintaining the roadway.

Elements that affect pedestrian and bicyclist travel to school should be inspected annually. Assessments should also be completed after a catastrophic event, such as a flood or storm.

This includes making sure:

- Signs are legible and information is current. Signs should be removed or replaced when messages are no longer needed, the content of the information has changed, or schools' walking routes or traffic patterns have changed. For example, all in-street crosswalk signs at mid-block crosswalks should reflect the State's Stop for Pedestrians law. Any remaining signs informing motorists to Yield to Pedestrians should be replaced.
- Traffic control devices, signals and lighting fixtures are functioning and meet current standards and guidelines.
- Pavement markings and crosswalks are clearly visible. Installing stencils with thermoplastic may cost more initially, but these materials will last longer than paint and reduce long-term maintenance costs. In addition, thermoplastic is less slippery than paint when wet.
- Sidewalks are smooth and in good repair. Concrete is more expensive than asphalt to install but it lasts longer and requires less maintenance, which may make it a better value in the long run.
- Landscaping and vegetation are not impeding pedestrian use and/or obstructing a pedestrian's or a driver's view.
- Roadway shoulders are clear of debris and potholes.
- Storm grates are removing stormwater run-off from streets, in good working order, flush with the pavement, and are bicycle safe, with openings small enough to prevent a bicycle wheel from falling into the slots of the grate.



Example 1: Pavement Marking Maintenance



Example 2: Sidewalk Maintenance



Example 3: Sidewalk Vegetation Maintenance

How should roadway and sidewalk conditions be assessed?

Each municipality should have a current inventory and condition assessment of its roadways and sidewalks including information on the location of various deficiencies. Development of an inventory requires coordination with the County and State Departments of Transportation. This inventory can be used to set priorities for repair and replacement along with associated costs for budgeting and funding purposes.

In order to maintain accessible conditions, current and potential problems must be identified through an objective assessment process. There are many methods available for identifying maintenance needs on existing sidewalks. For example:

- larger municipalities may devote a branch of their public works department to sidewalk evaluation and roadway maintenance;
- a municipality may establish an improvement program that identifies sites requiring improvements, access or maintenance; and
- residents and visitors may identify and report maintenance problems.

COLLABORATIVE APPROACHES TO REPORTING NEIGHBORHOOD ISSUES

For a maintenance program to be effective, it must identify all conditions that can impede pedestrian access or diminish safety and quickly respond with repairs. Residents living in an area can often identify issues more rapidly than a centralized agency. The following techniques have been used successfully by a variety of municipalities to obtain maintenance input from users:

- SeeClickFix.com - SeeClickFix allows anyone to file a public report online or via a mobile phone. The issue is then available for public view, comment and resolution. This enables citizens, community groups, media organizations and governments to take care of and improve their neighborhoods. Government entities responsible for the public space become more accountable to the public by acknowledging problems and providing effective communication about solutions.
- Non-Emergency System Call Centers - Operated by the municipality (public works, independent service agency, etc.) to field “city service” calls such as potholes, graffiti removal, fallen trees, broken street lights or disabled traffic signals, etc. These systems are in place in Chicago, New York, Houston and Dallas. These are often accessible by dialing “311”; however, jurisdictions such as Jersey City have their own website and phone number. Jersey City’s service is called the “Resident Response Center”, and functions like 311 systems found in other cities. More information can be found here: https://www.jerseycitynj.gov/residentresources/rrc
- Online Forms – Many jurisdictions throughout the state have forms on their websites that allow residents to report roadway maintenance issues. For example, potholes, tall grass, and other maintenance concerns on a state highway can be reported to NJDOT through the Department’s website, https://www.njdotproblemreporting.nj.gov/
- Hotlines – All 21 counties in New Jersey have a number that residents can call to report issues on county routes. The phone numbers are available at www.state.nj.us/transportation/commuter/potholecounty.shtm

Who is responsible for sidewalk construction and maintenance in New Jersey?

The following information on sidewalk construction and maintenance comes from a 2006 report[1], Constructing, Maintaining and Financing Sidewalks in New Jersey, prepared by the Voorhees Transportation Center for the New Jersey Department of Transportation.

Sidewalk Management

Sidewalks provide an essential environment for safe, independent mobility, especially for children. However, sidewalks are a complicated issue due to multiple jurisdictions (local, county, and state), ambiguous responsibility for construction, reconstruction and maintenance, and contested liability. For sidewalks to be effectively maintained and properly repaired, responsibility for sidewalk management activities needs to be defined. Conversely, most of the problems involving sidewalk management result from ambiguity over responsibility or the lack of a responsible party. This combination of factors has led to a fragmented sidewalk network in New Jersey.

Sidewalk Maintenance

Municipalities play the most important role in assuring that sidewalks are constructed, inspected, properly maintained and repaired or reconstructed when needed. Chapter 65 of Title 40 provides the broad structure for sidewalk law in New Jersey; N.J.S.A. 40:65-1 gives municipalities the authority to adopt ordinances providing for sidewalk improvements and repairs such as construction, paving, and curbing.

This statute states that this work may be funded and performed by:

- the municipality;
- the adjacent property owner; or
- the municipality and the adjacent property owner.

The statute also authorizes municipalities to adopt standards for sidewalk construction and to inspect sidewalks. The law is worded to allow municipal construction, repair and improvement of sidewalks along all highways, whether the highway is a municipal street or a county or state highway.



Sidewalk closed for repairs. Image: VTC



Example of a discontinuous sidewalk.

The statute requires that municipalities secure county approval prior to constructing a sidewalk along a county highway, but does not explicitly require municipalities to secure state approval before constructing a sidewalk along a state highway. However, state approval may be required under N.J.A.C. 16:47 when construction is located within a state highway's right-of-way.

[1] The report is currently being updated.

When homeowners and businesses are responsible for sidewalk maintenance, they might decide to hire a contractor, perform repairs on their own or have the city do the repair. Homeowner associations in some neighborhoods address right-of-way maintenance as a group to minimize the cost to individual members. In some areas, the city will subsidize sidewalk repairs for property owners. Local laws may also dictate whether or not a homeowner must hire a professional contractor to undertake sidewalk repair. Regardless of the approach for sidewalk maintenance, municipal inspectors should review and approve all repairs to guarantee that the improved sidewalk meets pedestrian access needs and the requirements of the ADA.



Sidewalk ready to be poured. Image: VTC

Sidewalk Construction

In New Jersey, the cost of constructing and reconstructing sidewalks is typically borne by the landowner when it is required as part of a development, and by the State, county or local agency when constructed as part of road construction or reconstruction. Municipalities may assign all, a portion of, or none of the costs of constructing sidewalks to the abutting property owners. NJDOT Local Aid funding has also been used for municipal sidewalk-only projects. Sidewalks might not be constructed during development or road construction if the developer seeks an exception from the Residential Site Improvement Standards (N.J.A.C. 5:21-1.1, et.seq.) or local site plan requirements, or if the State or county has not identified a need in the project scoping process. As more municipalities and counties in New Jersey adopt Complete Streets Policies, sidewalks are more frequently recognized as essential elements of the public right-of-way and are being incorporated into the initial design of a project. For more on Complete Streets Policies, visit NJDOT's Complete Streets web-page, or the NJDOT Bicycle and Pedestrian Resource Center.

Development Review: Residential Site Improvement Standards (RSIS) and Municipal Master Plans

According to the RSIS, sidewalks shall be provided on both sides of the street when the minimum lot size in the development is smaller than two acres and the development is located within two miles of a school, regardless of road classification (N.J.C.A. 5:21-4.5). Since there is no comparable set of statewide standards establishing requirements for nonresidential developments, the circulation element to the municipal master plan can provide further guidance regarding where and when sidewalks and walkways should be constructed and how they should be designed. A municipality should identify locations for proposed sidewalks on the Circulation Plan Map within the municipality's adopted Master Plan. RSIS is also featured in the Target Zero Action Plan, where updating the standards is included under the 'Safer Land Use' objective category.



New sidewalk. Image: VTC

BEST PRACTICES FOR MAXIMIZING THE LIFE EXPECTANCY OF SIDEWALKS

Sidewalks, like other transportation infrastructure, are a major public investment. It is less costly to maintain sidewalks than to undertake major repair and reconstruction. Also, regular preventive maintenance of a sidewalk can extend the lifetime of the facility and delay the need for more extensive repairs. The average service life of a sidewalk depends on a variety of factors including environmental conditions, materials, design standards, construction quality and maintenance standards. If best practices are undertaken throughout the life cycle of the sidewalk, the expected service life is 80 years for concrete and 40 years for asphalt. Best practices for maximizing the life expectancy of sidewalks include:

- Providing adjacent trees with adequate room for root growth. This includes selecting the appropriate tree species for the proposed planting space to avoid conflicts later with sidewalks and other infrastructure.
- Providing good drainage across the sidewalk.
- Care should be taken to keep a sidewalk, walkway, or trail ice-free once snow has been shoveled. Using rock salt to melt ice should be avoided. Rock salt can damage concrete sidewalks, especially when they may not have been installed correctly or sufficiently cured. Instead, municipalities should advise property owners to use an environmentally friendly ice-melt pellet or de-icer.

Winter Maintenance Practices (snow removal, sanding)

Winter maintenance of pedestrian and bicyclist facilities is both a safety and an accessibility issue. Icy or snow-covered sidewalks are dangerous, especially when pedestrians are forced to walk in the street. Bicycle lanes with snow obstructions force bicyclists onto travel lane with cars that will feel unsafe for young riders and inexperienced bicyclists. In New Jersey, the responsibility of routine maintenance and snow and ice removal is typically assigned to the abutting property owner by local ordinance. Some cities and boroughs do operate programs to remove snow from downtown streets and similar areas that have inadequate space to store snow.

Winter Maintenance Management Plans

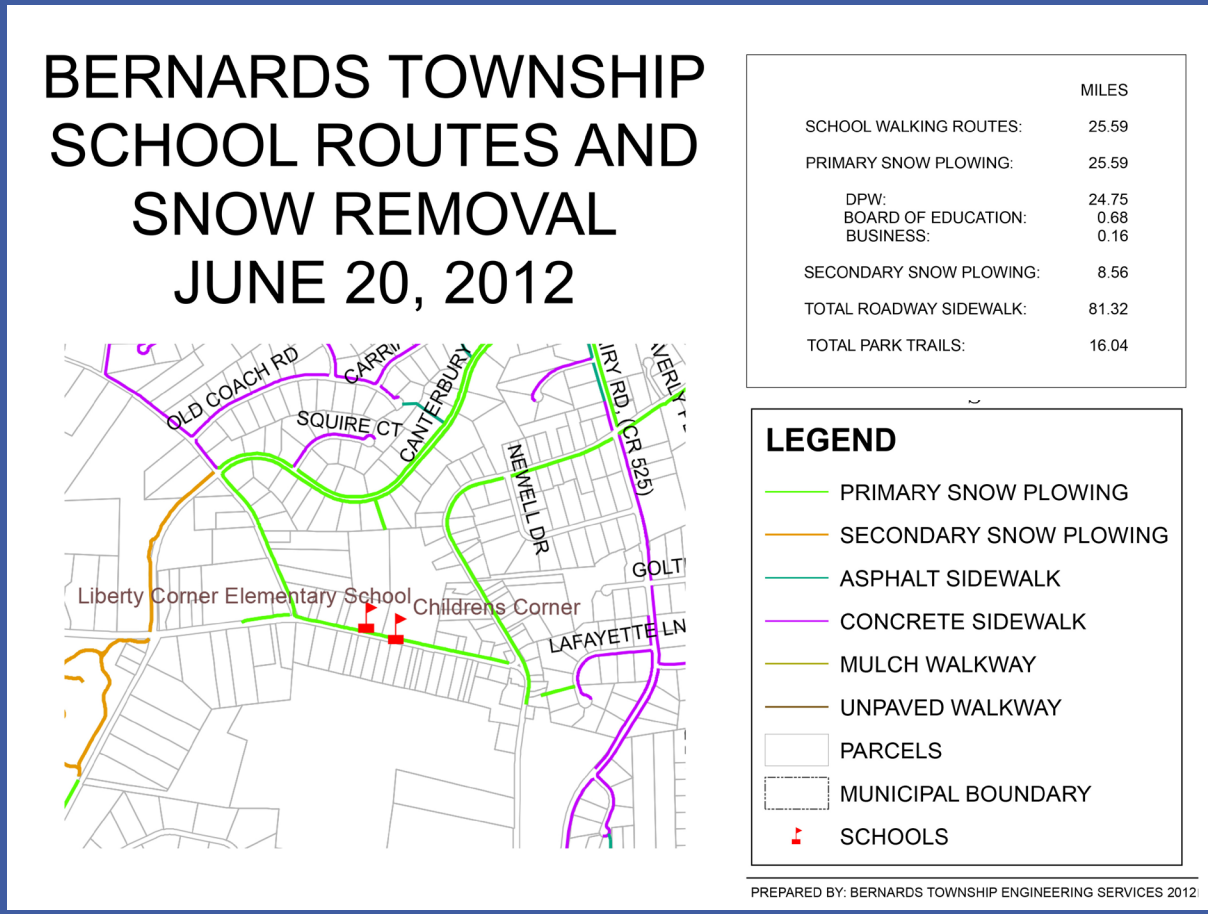
Local governments should adopt and routinely update winter maintenance–management plans or amend municipal emergency operations plans to address and delineate responsibilities for snow/ice removal—including pedestrian and bicycle facilities. Having a plan for snow and ice removal can also help prevent and minimize exposure to liability. While snow and ice removal is typically the responsibility of the abutting property owner in New Jersey, municipalities should consider taking on snow removal responsibility along identified routes to school. Municipalities should also inform residents of any designated school routes and give priority to helping those who need assistance with snow removal or other sidewalk repairs, such as elderly or disabled residents.



Snow blocks the child's path. Image: VTC

SPOTLIGHT: TOWNSHIP OF BERNARDS SCHOOL ROUTES AND SNOW REMOVAL POLICY

In August 2012, the Bernards Township Committee adopted a resolution delineating and formalizing the Township's Policy on Walking Routes to School, as well as setting primary and secondary priority status to the various routes to be cleared of snow and ice by the Township's Department of Public Works (Resolution #2012-0355). The Department of Public Works is responsible for snow and ice clearing of approximately 25 miles of primary sidewalks and approximately 8 miles of secondary sidewalks throughout the Township. The policy also dictates that the routes will be periodically re-evaluated and recommendations will be made if needed. The primary and secondary locations to be cleared are shown on the "Bernards Township School Routes and Snow Removal Map" dated June 20, 2012.



Bernards Township School Routes and Snow Removal Map.

Snow Removal Ordinances

Many local governments require property owners to remove snow/ice from an abutting sidewalk after a winter storm. The laws regarding snow and ice rules and regulations vary across the state. Municipalities may have different time limits on how long sidewalks can remain covered and where the snow can and cannot be shoveled. Often these ordinances and/or maintenance plans do not fully address the need to clear snow from other adjacent pedestrian facilities, such as curb ramps, crosswalks, pedestrian islands/ medians, transit stops/shelters, walkways on bridges, and year-round trail systems. In addition, higher mounds of snow frequently develop at street intersections, blocking crosswalks and reducing intersection sight distance.



A pedestrian is stranded in the street by snow blocking the mid-block crosswalk.

Curb ramps are rarely shoveled out, severely restricting mobility for disabled persons and making street crossings hazardous for all pedestrians. Abutting property owners often fail to remove snow from this area, and usually ordinances requiring property owners to shovel snow do not address the crosswalk area. Local ordinances should be revised and updated to address all pedestrian facilities and not just the sidewalk.

Liability

New Jersey sets different standards of liability depending upon whether the abutting property is owned by a private individual or a public entity and, if private, whether the use of the abutting property is commercial or residential. While commercial property owners have a duty to inspect for and remove snow and ice on the adjacent sidewalk, in general, a residential property owner or occupant is not liable for damages resulting from a failure to clear ice or snow from the sidewalk in front of the property. However, if the hazardous condition was aggravated by the action of the owner or occupant when clearing the sidewalk of snow or ice, the owner (or occupant) may be held liable. [1]

Nevertheless, it is recommended that residents clear the snow and ice from the sidewalks and paths along their property. If being a good neighbor is not incentive enough, many local municipalities have ordinances that require property owners to remove snow and ice, and failure to comply with these ordinances can lead to a fine. It does not lead, however, to an imposition of liability for injuries sustained by pedestrians unless the property owner or occupant had done a poor job at clearing the sidewalk of snow or ice.

Enforcement of ordinances requiring private property owners to clear adjacent sidewalks within a certain time period is often lax or non-existent. Local governments that fail to maintain accessible pedestrian facilities or enforce local ordinances may be at greater risk for liability or non-compliance with the ADA. To minimize risk and control this exposure, it is critical to ensure that if a jurisdiction has a sidewalk snow-removal ordinance, the ordinance is consistently enforced.



It is important to clear all bicycle and pedestrian related facilities of snow.

[1] VTC and Charles Carmalt, PP, AICP, Constructing, Maintaining and Financing Sidewalks in New Jersey (2006), 63. http://njbikeped.org/portfolio/constructing-maintaining-and-financing-sidewalks-in-new-jersey/

EXAMPLES OF WINTER MAINTENANCE MANAGEMENT PLANS

Bloomington, Minnesota

The City of Bloomington has a comprehensive Snow Response Program. As part of the program, city ordinances are referenced that address responsibilities for clearing snow from pedestrian facilities. While the City ordinance requires property owners to clear snow and ice from sidewalks, over 250 miles of sidewalks in the City are cleared by the city's Park Maintenance Department. The city code specifies a priority system that requires Park Maintenance to clear pedestrian facilities as follows (City of Bloomington, n.d.):

- **First priority:** School walking areas, heavily used wheelchair-accessible areas, and high use areas along main roads
- **Second priority:** Walks expanding out from a school and along major roads
- **Third priority:** Residential and industrial areas

It is clearly communicated that extreme weather events and long-term snowfall may cause the city to return to high priority areas before getting to the lower priority areas. Also, Bloomington's plan notifies citizens to keep obstructions—such as trash cans— off sidewalks so crews can complete their job more efficiently and quickly (City of Bloomington, n.d.).

Longmont, Colorado

The City of Longmont's Snow- and Ice-Control Plan provides guidelines for snow operations deployment, deployment levels, personnel responsibility, snow-plowing priorities, safety and training considerations, use of equipment, and environmental protection. The plan emphasizes the need to ensure motorist safety, cost effectiveness, environmental benefits, and operational logistics.

Deployment levels are based on factors such as expected accumulation, air and ground temperature, potential for back-to-back storms. Deployment levels consider the need for pedestrian accessibility in downtown areas and school zones. A snow team leader is assigned to each anticipated snow event and is responsible for deploying snow teams based on the category for four deployment levels as follows (City of Longmont, 2010):

- **Level 1** – Little or no accumulation is predicted; no back-to-back storm events predicted—limited deployment of on-call staff is on an as-needed basis.
- **Level 2** – 0- to 6-inch accumulation predicted; possible back-to-back storms—Entire maintenance staff required for 12-hour on and 12-hour off shifts. Fleet mechanics are placed on-call, and one sanitation truck is ready for deployment. Limited and/ or targeted snow removal operations are possible along the Downtown area and school zones based on conditions.
- **Level 3** – 6- to 15-inch accumulation predicted; regardless of multiple storm events—Entire snow team is called on for duty. Other city staff assistance and private contractors may be required. School zones are cleared curb-to-curb; walk-to-school routes may be cleared by staff/contractors.
- **Level 4** – 15-inch or greater accumulation; additional accumulation expected—Entire snow team is called on for duty; additional city staff and private contractors are called for duty; school zones cleared curb-to-curb by staff/ contractors and walk to-school routes cleared by staff/contractors. A level 4 deployment is triggered by:
  - Declaration of snow emergency by city manager
  - Activation of city's emergency operations center where "incident commander" takes charge of operations

http://longmontcolorado.gov/departments/departments-n-z/transportation/street-maintenance/snow-removal

Communicating With Your Neighbors

Students walking or bicycling to school may occasionally encounter avoidable barriers along their routes, such as active sprinklers, overgrown vegetation, or loose dogs. While school districts are limited in their ability to require private property owners to limit these obstacles, they are able to communicate with them and invite them to have a conversation with the school district about the importance of safety along routes to school.

The National Center for Safe Routes to School website has a resource called "Strategies for Reaching Neighbors." While it focuses on engaging neighbors during the Safe Routes to School (SRTS) planning process, the strategies are applicable to school districts regardless of whether they are in plan preparation or not. The recommendations ensure that routes remain safe, comfortable, and predictable for all students.

The National Center for Safe Routes to School provides several strategies for effectively communicating with neighborhood residents and encouraging their support:

- Attend neighborhood group meetings to introduce the SRTS program, explain goals, and invite neighbors to share their needs and concerns. In one California community, neighbors were invited to a "pruning party," where supplies and assistance were provided to trim vegetation obstructing sidewalks. When disagreements arise regarding trimming trees or bushes, local officials can help resolve conflicts by enforcing relevant ordinances.
- Host an open house for neighbors and parents to learn more about SRTS, ask questions, and understand how they can contribute to a safer walking environment.
- Install informational signs in highly visible locations around the neighborhood to raise awareness about SRTS activities and remind residents to maintain safe and walkable pathways.
- Distribute flyers to homes near the school. Some communities have also mailed SRTS information with utility bills to reach a wider audience and encourage participation.



Stafford Township Safe Routes to School Public Workshop, NJ. Image: Stafford Township