

New Jersey Green Streets



Planning for Green Streets
September 2021

About

We all consume water and create waste, but we seldom think about the underlying pipes, sewers, and utilities that sustain our water usage. Our lives depend on clean drinking water, and robust wastewater and stormwater infrastructure systems support local economies, create strong communities, and protect our environment.

Green infrastructure is one solution many communities are employing to maximize community benefits, including reduced flooding and improved water quality, local economies, community health, and long-term resilience. Specifically, green streets are an effective solution to tackle both water and transportation infrastructure issues. This chapter includes information on the goal setting and community education that can help plan for green streets.

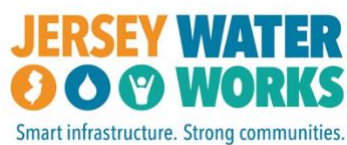
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About Jersey Water Works:

Jersey Water Works is a collaborative effort of many diverse organizations and individuals who embrace the common purpose of transforming New Jersey's inadequate water infrastructure by investing in sustainable, cost-effective solutions that provide communities with clean water and waterways; healthier, safer neighborhoods; local jobs; flood and climate resilience; and economic growth.

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Setting the Stage

Local leaders can obtain the many benefits of green infrastructure by integrating green street concepts into various levels of municipal and transportation planning. The department of public works, engineering department, elected officials, municipal officials on the planning board, environmental commission and green team are all part of green infrastructure implementation. Proper planning can improve project feasibility, reduce costs, streamline construction and address long-term maintenance needs. Educating municipal leaders is key to beginning the process of public engagement and increasing public acceptance of green streets projects.

Adding green street elements to a development or redevelopment project can benefit more than just a community's environment. For instance, green streets can improve pedestrian safety by slowing vehicle traffic and increasing foot traffic, which can also boost retail sales. A redevelopment project that includes green infrastructure may qualify for additional funding sources, such as the [U.S. Department of Transportation RAISE Grants](#). Securing funding is discussed in more detail in the [Funding Green Streets chapter](#).

Green street elements can also enhance local climate resiliency by reducing temperatures or improving runoff infiltration rates to prevent flooding, particularly in ultra-urban areas. See the [Green Streets Case Studies chapter](#) for more information on the benefits of green streets.

Climate Resiliency and Environmental Justice Benefits

As heavy downpours have increased in frequency, the risk of flooding is also expected to increase. Underserved, under-resourced, marginalized and overburdened populations often live in susceptible, low-lying areas. Green infrastructure can help minimize stormwater discharge and protect water quality. Practices like rain gardens and permeable pavements enhance infiltration and can reduce localized flooding events that cause damage to infrastructure and property. In addition, pavement, buildings and other urban surfaces retain heat, causing higher temperatures. These temperatures can contribute to heat-related illnesses and are more likely to affect vulnerable, marginalized populations who often occupy areas with less green space. Localities can mitigate temperatures in these areas by building green streets to help with shading surfaces and deflecting solar radiation.

Aligning Green Streets with Existing Community Goals

Adopt a Resolution of Support

Local elected officials can proactively pass a resolution in support of a green streets policy that benefits all users and modes of transportation. An approved resolution can direct local departments to update existing internal policy and planning documents to support incorporating green streets in both public and private projects. While it is not required, passing this type of resolution can be an important first step in developing a policy or ordinance that outlines specific mechanisms for incorporating complete and green streets into the community.

Develop a Green Streets Policy

A local green streets policy can establish a process to require or encourage departments to consider green street concepts during various types of local planning, such as:

- Master plan updates.
- Capital improvement planning.
- Planning transportation, bicycle and pedestrian projects.
- Application/permit review of private projects adjacent to a public right-of-way.
- Asset management planning.
- Hazard mitigation planning.
- Stormwater management planning.

A green streets policy can empower (or require) planners and engineers to review—and design for—green street practices when undertaking road, bridge and other capital improvement projects.

Localities with an existing complete streets policy can still incorporate green street practices that were not included in original plans. Complete streets policies provide design standards and guidance to ensure that roads are safe and usable for all vehicles, pedestrians, cyclists and transit; they may already include green street elements. Green infrastructure can encourage pedestrians and cyclists to use certain routes by enhancing aesthetics and providing shade while also calming traffic.

Local elected officials can encourage green streets projects in their community by adopting policies or ordinances that promote or require the use of green infrastructure in transportation corridors.

The [*Complete & Green Streets for All: Model Complete Streets Policy & Guide*](#), developed by the New Jersey Department of Transportation (NJDOT), provides guidance for developing and adopting a complete and green streets policy. The guide addresses localities with existing complete streets policies as well as those that are in the process of developing complete streets policies. It contains checklists, a public engagement toolkit, a sample resolution, and a sample policy that can be used as a starting point and tailored to meet local needs.

Integrate Green Street Components into Existing Planning Documents

Localities can also incorporate language about green streets into existing planning documents. This will formalize green street practices (and any associated policy) within the documents that provide direction for land use and transportation planning.

For example, New Jersey’s Municipal Land Use Law grants municipalities the power to enact a master plan that sets land-use priorities and direction. By including green street concepts and goals within a master plan, a municipality promotes the use of these concepts at a larger scale. Appropriate master plan elements could include land use, transportation, stormwater management, utility service, economy and green buildings and sustainability.

Allowing multiple departments to vet green streets policies will help ensure that any unintended negative consequences or conflicts with established planning policies are identified early and prevented. These departments may include planning and zoning, public works, transportation, water and sewer utilities, parks and recreation, business and economic development, and code enforcement. Collaboration across departments can also increase opportunities for public engagement and education by identifying diverse stakeholders.

Update Local Codes and Design Standards

To support, incentivize or require green streets in private developments, localities may need to adopt an ordinance to revise or insert specific design requirements into existing local code. Localities can use EPA’s [Water Quality Scorecard](#) to conduct a thorough review of their relevant local regulations, identify opportunities to remove barriers, and revise or create ordinances to support water protection and green infrastructure implementation. While the EPA Water Quality Scorecard includes many checklists, the [Design Complete, Smart Streets That Reduce Overall Imperviousness](#) section—and the associated checklists—is the most useful for reviewing existing code and adding green infrastructure elements (see Figure 1). It is important that local codes require adequate maintenance for private projects or developments, including self-inspections, maintenance frequencies and enforcement options. Once a locality determines which parts of the code need to be revised or updated, they can develop and adopt an ordinance or ordinances.

3 DESIGN COMPLETE, SMART STREETS THAT REDUCE OVERALL IMPERVIOUSNESS	
3.A STREET DESIGN	
3.A.1	<p>QUESTION: Do local street design standards and engineering practices encourage streets to be no wider than necessary to move traffic effectively?</p> <p>Do street designs vary according to:</p> <ul style="list-style-type: none">• street type (arterial streets, collector streets, neighborhood streets) and• urban context (urban core, transit station area, suburban center, general suburban, rural)? <p>Do policies allow narrow neighborhood streets designed to slow traffic and create safer conditions for pedestrians and bicyclists?</p> <hr/> <p>GOAL: Appropriate street widths allow narrower lanes for certain street types, thereby reducing overall imperviousness.</p> <hr/> <p>WHY: The width of travel lanes, parking lanes and sidewalks should be tailored to the urban setting. Where appropriate, narrowing travel lane width to 10-11 feet, rather than the standard 12-13 feet, can significantly reduce the total amount of impervious surfaces. Such streets can also substantially improve conditions for walking, biking, and using transit, which reduces automobile use and overall demand for parking spaces.</p>

Figure 1. EPA’s Water Quality Scorecard Street Design Checklist

Green street design standards for private projects can be incorporated into both existing code and a municipality’s design standards for public projects. Localities can refer to other established design manuals that include green street elements as a guide, such as the [Passaic County Green Streets Guidelines](#), a resource document to the Green Stormwater Infrastructure Element of the Passaic County Master Plan, or the [NACTO Urban Street Design Guide](#).

Writing a Local Ordinance

Example stormwater management ordinance text is included in [New Jersey Future's Enhanced Model Stormwater Ordinance for Municipalities](#). This tool was created to help municipalities develop stronger stormwater ordinances, and it includes recommendations for green infrastructure options, which New Jersey now requires.

Eatontown, New Jersey, has a [Complete Streets Ordinance](#), which encourages the development of complete streets that include green infrastructure design elements.

Plan a Green Streets Project

The use of green street design elements is more feasible and beneficial in certain types of public projects, such as utility relocation and road improvements. In addition, green streets may be most appropriate near schools, walkable retail areas, and locations prioritized for redevelopment, such as downtowns and brownfield areas, or areas which experience nuisance flooding or high traffic speeds.

Designing a green street is an interdisciplinary effort. Consulting available planners, roadway engineers, stormwater engineers and landscape architects is important when identifying potential obstacles that may arise throughout the life of the project, from design to installation and long-term maintenance. The same collaborative approach can be used when reviewing and approving any private projects that include green street elements. For example, early in the review process, localities should consider possible utility conflicts, traffic impacts, community resistance and stormwater management requirements; they should also plan for the long-term maintenance of the green street elements. Furthermore, when roads are retrofitted for planned upgrades, those working on the project can reach out to green streets leaders about opportunities to simultaneously install green infrastructure. Policymakers can flag these scenarios in a community's complete and green streets policy. Ensuring that these steps are considered in various types of projects can save localities valuable time and money during construction or post-construction maintenance.



Figure 2. Bonsall School stormwater planters in Camden, NJ. Credit: Camden County Municipal Utilities Authority

During the planning process, it is also important to identify who will maintain the green infrastructure. Depending on the location and type of practices used, maintenance responsibilities could fall on various local departments, such as parks and recreation, public works, a homeowners association, the neighboring private property owner or a large private property manager.

A locality's green street practices will have an associated maintenance plan and schedule that specifies which department is responsible for maintenance, plans the maintenance frequency and determines how maintenance will be funded. Rutgers New Jersey Agricultural Experiment Station (NJAES) has an example [Green Infrastructure Maintenance Manual](#) that localities can use as a starting point. For example, if a public project includes adding a bioretention cell within the street median, but that street median is considered a pocket park, the parks and recreation department could be charged with maintenance. Localities should promptly ensure that the appropriate staff have the necessary funding and equipment to conduct required maintenance.

Staff will also need training to ensure that green street practices are being properly maintained and that they continue to function as designed. Localities could contract a local business to conduct the training and/or maintenance work, providing additional jobs to the community. Examples of past maintenance partnerships are found in the [Funding Green Streets chapter](#).

Educate the Public

Educating the public is critical to generating long-term support for green streets projects and minimizing resistance to new projects. Identifying and utilizing green streets advocates from local naturalist groups, watershed protection societies, waterkeeper associations or neighboring community development corporations can provide support for the project and facilitate communication among resistant residents and business owners.

If green streets and green infrastructure are new to the community, it is important for localities to engage with and educate community members about the benefits early and often. Colorful renderings of green streets in public spaces can illustrate aesthetic improvements as well as provide information on how green streets will serve the public and encourage multi-modal transportation. After construction is complete, the green streets can become a form of public education themselves. Localities can install interpretive signage along pedestrian routes with information about the benefits of green infrastructure.



Figure 3. Rain garden with public education signage in Sea Girt, NJ. Credit: Mark C. Olsen

Common Misconceptions

Localities should proactively address community concerns through various engagement opportunities. Misconceptions may include:

“Green streets reduce parking.”

✘ **Not true!** Green streets do not always require on-street parking reductions. Even in cases where they do, these reductions may not negatively impact the community. A locality can first calculate how many on-street parking spaces are appropriate for the surrounding land uses and try to plan to maintain that number. Localities can also consider installing green street features at a stop sign or fire hydrant where parking is already not allowed. If a locality is trying to support more walkability in an area, it may be beneficial to trade parking spaces for green infrastructure that can provide shade and encourage people to linger in retail and restaurant areas, thereby increasing sales.

“Trash will accumulate in green infrastructure areas.”

✘ **Not the case!** Maintenance plans should require maintenance at a frequency that will not allow trash to build up. During the design process, localities should choose practices that can fit into their current maintenance capabilities. Many green infrastructure practices can be designed specifically to pretreat for trash, minimizing aesthetic issues.



Figure 4. Kemble Park bioswale with trash rack and riprap in Philadelphia, PA. Credit: E&LP, Inc.

“Underground utilities prevent the use of infiltration practices.”

✘ **Wrong!** Localities should consider the placement of underground utilities early in the design of green streets projects. Underground utilities can cause site constraints that determine where certain green infrastructure features can be used. These types of constraints can be mitigated, however, by implementing green streets into already-planned utility projects or street realignment projects that will require moving utilities. Certain types of green infrastructure, such as grass swales, will impact underground utilities less and can sometimes be used where utilities are present.

“Green streets are more expensive to design than traditional streets.”

✘ **Not so!** Green infrastructure elements can be incorporated into a larger planned streetscape or redevelopment project, increasing cost efficiency by completing multiple project types at the same time. Coordination across departments during long-term planning is crucial to keeping construction costs low.

“Green streets are more difficult to maintain than traditional streets.”

✘ **Not with proper planning!** Ensuring consistent maintenance is an important part of the planning process. By developing a maintenance plan, localities can prepare for potential problems that may occur in the future. A variety of [maintenance manuals](#) can be used as a guide for choosing appropriate plan elements and understanding future maintenance requirements.

“Green infrastructure obscures signage or lines of sight.”

✘ **Not with proper maintenance!** Green infrastructure elements will be required to comply with any existing landscaping line-of-sight standards that a locality has for signage or drivers and pedestrians. It is also recommended that vegetation species be selected with growth heights that comply. Maintenance plans should specify that vegetation be maintained in accordance with current pruning practices to prevent new growth from obscuring signs or sight lines.

“Tree roots break up the sidewalk and can cause tripping hazards.”

✘ **Not true!** Barriers can be installed to prevent future damage from growing roots. Tree boxes allow the tree to grow without damaging the sidewalk or other infrastructure assets. Including a landscape architect in the design process can provide insight into the appropriate tree species and sizes for differing site constraints and needs.

Conclusions

Local leaders can implement green streets to provide a wide range of benefits to both the environment and their community. Leaders can support green streets by encouraging planning, implementation and cooperation across government departments. Through advance planning, a community can improve the feasibility of projects, reduce planning and construction costs, consider long-term maintenance needs, and increase public acceptance for green streets projects.

Green streets can be incorporated into existing community goals. Leaders can consider adopting resolutions, policies and/or ordinances to help the locality begin including green infrastructure in public and private projects. Incorporating green streets into existing projects or redevelopments expands potential funding sources.

Concerns from community members should be addressed early and often to help neighbors understand the benefits of green infrastructure. To prevent opposition to future projects, it is important that residents and businesses understand that green streets can decrease flooding risks, beautify green space and provide a net benefit to their community.



Figure 5. Brimm School rain garden in Camden, NJ. Credit: Camden County Municipal Utilities Authority