



Utility and infrastructure systems are the engineered facilities and conveyance networks required to serve the developmental and operational needs of Albany as a whole and day-to-day functional needs of citizens. While often taken for granted, these systems have an enormous impact on the sustainability and health of the City and its residents. For example, combined discharges from Albany’s aging sanitary sewer and stormwater systems are significantly impacting the quality of local water resources, including the Hudson River. In another example, how residents and businesses are supplied with and use energy impacts their personal financial situations, affects local air quality, and contributes to global climate change. “Retooling” utility and infrastructure systems through approaches such as “green” stormwater infrastructure (i.e., that absorbs and filters runoff through techniques that mimic natural hydrology) offers ample opportunities to move towards the sustainable, green city articulated in the Albany 2030 Vision Statement.

Transportation facilities, another type of community infrastructure, are addressed in Section 3.4 above.

The Livingston Avenue Bridge, built in 1901, is an operating swing bridge dedicated to freight and passenger rail at Albany’s north waterfront district.



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### 3.7 Utilities and Infrastructure

Key utility and infrastructure system components include energy supply and use, public drinking water, sewer systems, stormwater management, solid waste management, and communications.

#### ENERGY

The way we produce and use energy has a cumulative effect on human health, environmental resiliency, and economic sustainability. Whenever fossil fuels are used to generate energy for everyday needs – home heating, transportation, manufacturing - greenhouse gases are emitted into the atmosphere. These gases trap heat and the results change the earth’s climate in detrimental ways, including higher sea levels, degraded air quality, and extremes in temperature and precipitation. Using energy efficiently and conserving energy and materials will reduce greenhouse gas emissions and mitigate the effects of climate change.

#### Goal:

Promote energy conservation, efficiency, and use of renewable technologies as a mechanism for climate change mitigation.

#### Strategies and Actions:

- EN-1 Implement the initiatives developed by the Mayor’s Office of Energy and Sustainability and as outlined in the City’s Climate Action and Adaptation Plans.
- EN-2 Develop an education program to communicate energy and sustainability goals.
- EN-3 Promote Multi-Modal transportation choices to reduce vehicle miles traveled.
- EN-4 Incentivize energy-efficiency / renewable energy technologies in construction projects.



#### Utilities & Infrastructure Key Issues

- Albany is establishing itself as a leader in energy and sustainability planning:
  - o It has initiated the creation of an Energy and Sustainability Office.
  - o It has pledged to combat climate change by becoming a Climate Smart Community.
  - o It is developing a baseline inventory of Greenhouse Gas Emissions (GHGs) in order to set reduction targets and guide attainment programs.
- In 2007 and 2010, Albany won first prize for the best tasting drinking water in the State during a competition at the New York State Fair. In 2011, it was honored as a top-five best tasting city waters in America. Recent improvements at the Water Filtration Plant have further improved drinking water quality.
- About 2/3 of the City is serviced by an aging combined storm/ sanitary sewer system, which can overflow into the Hudson River during wet weather events.
- The Albany Water Board is currently undertaking a major planning study for mitigation of the combined sewer overflows.

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- The Rapp Road Landfill is near capacity and is located in a sensitive preserved ecosystem, the Pine Bush Preserve.
- Albany currently diverts 42% of its waste in the form of recycling, reuse and composting. The goal is to divert 65% of the city's waste from the landfill by 2030.
- A poll conducted by Tech Valley Communications found extremely low Internet usage in the city's poorest neighborhoods.

EN-1 Strategy: Implement the initiatives developed by the Mayor's Office of Energy and Sustainability and as outlined in the City's Climate Action and Adaptation Plans for energy efficiency, greenhouse gas emissions, and climate mitigation and adaptation. (Inter-related Strategies: Economy EMP-5; Social PS-6; Transportation VEH-4; Housing and Neighborhoods HDC-11; Utilities and Infrastructure EN-2, EN-3, EN-4, EN-5)

**Actions:**

- a. Identify funding sources and staffing to continue the operation of the Energy and Sustainability Office.
- b. Create a baseline inventory of greenhouse gas (GHG) emissions that identifies all sources of energy and GHG emissions from government operations and the community as a whole. Use the inventory as a benchmark to track progress towards GHG reduction goals.
- c. Reduce energy consumption in municipal operations:
  - Implement the Green Fleet Program, which aims to replace 25% of the City's gasoline or diesel vehicles with alternative fueled / hybrid vehicles by 2030.
  - Develop a Municipal Facility Energy-Efficiency Plan that includes comprehensive energy audits and a multi-year phasing and funding plan to retrofit municipal buildings with green building practices, such as energy efficient lighting, Energy Star appliances, green roofs, recycled materials, and renewable energy sources.
  - Incorporate green building practices in all new construction and renovation projects for municipal buildings.
  - Explore all options for renewable energy systems at City of Albany properties and facilities and implement demonstration projects.
  - Develop a municipal facility managers training program focused on energy-efficiency, operations, and monitoring building performance.
  - Develop and implement a Green IT Management Plan.
  - Implement the Green Fleet Program, which aims to replace City's gasoline or diesel vehicles with alternative fueled / hybrid vehicles.
- d. Develop a Residential Energy-Efficiency Program
  - Work with partners to develop a program to provide residents with low-cost or free energy audits for residential buildings.
  - Determine the feasibility of implementing a PACE (Property Assessed Clean Energy) Program to finance energy-efficiency improvements in residential properties.
- e. Work with National Grid and New York State Public Service Commission to develop a plan to convert existing streetlights to more energy-efficient LED's.

<sup>1</sup> Vehicle Miles Traveled (VMT) is the total number of miles driven by all motor vehicles within a given time period and geographic area. The transportation sector accounts for 28% of total greenhouse gas emissions in the US. The primary greenhouse gas is carbon dioxide, and every gallon of gasoline burned produces about 20 pounds of CO2 emissions (Ewing, Reid, et. al., Growing Cooler, ULI, 2007).

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EN-2 Strategy: Develop an education program to communicate the City's energy and sustainability goals and accomplishments to residents, businesses, and institutions (Interrelated Strategies: Utilities and Infrastructure EN-1, WS-2, SWM-1)

**Actions:**

- a. Establish a community advisory committee within the Mayor's Office of Energy and Sustainability comprised of neighborhood leaders, business leaders, and institutional leaders to communicate the City's energy and sustainability goals and objectives.
- b. Create a marketing program that communicates the relative costs and savings of incorporating energy saving techniques such as alternative energy sources, transit use, Energy Star materials and appliances, etc and provides links to existing state, federal, and private programs.

EN-3 Strategy: Promote multi-modal transportation choices to reduce Vehicle Miles Traveled (VMT)<sup>12</sup>. (Interrelated Strategies: Community Form UD-1; Economy EMP-1, INV-1; Transportation MM-1, MM-2, BIC-1, TR-2, TR-3, TR-4; Natural Resources AQ-1; Housing and Neighborhoods NS-2)

**Actions:**

- a. Develop a Complete Streets program including design standards, land use plans, and zoning regulations that provide the highest level of integration between pedestrians, cyclists and transit riders.
- b. Provide incentives for Transit Oriented Development at potential transit center sites and existing hubs.
- c. Implement the Albany Bicycle Master Plan to increase the number of bicycle routes and signage to encourage residents to safely commute by bicycle.
- d. Employ transportation demand management techniques to encourage the use of bicycling, transit, car pooling, and car sharing.
- e. Increase transit connectivity between and among City neighborhoods and employment centers.
- f. Explore transit expansion options, including the potential for bus rapid transit (BRT) service, and support the planning process for the implementation of high speed rail.

<sup>12</sup> Vehicle Miles Traveled (VMT) is the total number of miles driven by all motor vehicles within a given time period and geographic area. The transportation sector accounts for 28% of total greenhouse gas emissions in the US. The primary greenhouse gas is carbon dioxide, and every gallon of gasoline burned produces about 20 pounds of CO2 emissions (Ewing, Reid, et. al., Growing Cooler, ULI, 2007).

<sup>13</sup> The urban heat island effect is created when urban areas develop, and buildings, roads, and other impervious surfaces replace permeable open land and vegetation. These dry, impervious surfaces absorb heat, causing urban regions to become warmer than their rural surroundings, forming an "island" of higher temperatures in the landscape.

Figure 1 Example Green Building Techniques



Community Form

Economy

Social

Transportation

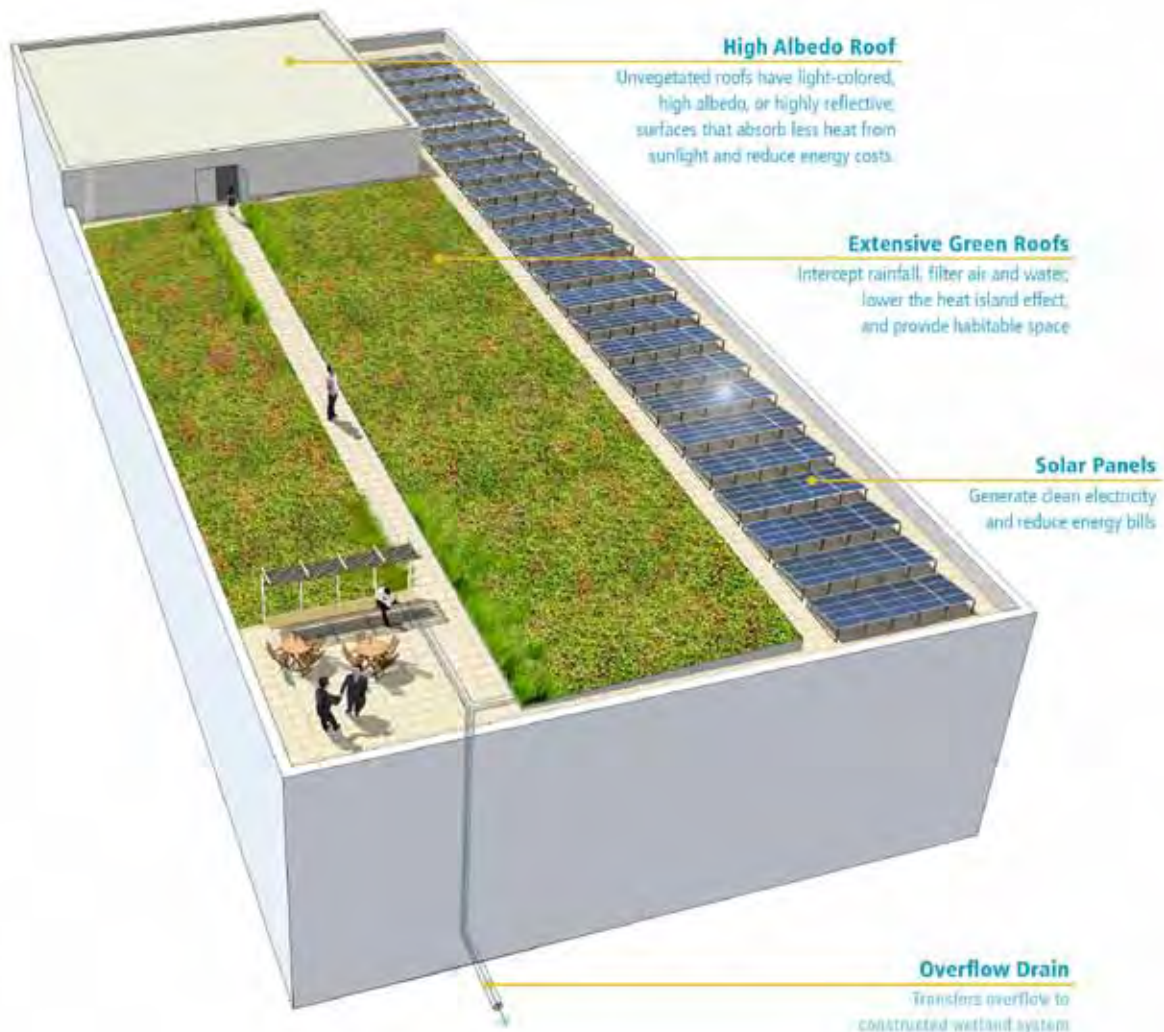
Natural Resources

Housing and Neighborhoods

**Utilities and Infrastructure**

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EN-4 Strategy: Incentivize energy-efficiency and renewable energy technologies in construction and rehabilitation projects. See Figure 1 for examples of green building techniques. (Interrelated Strategies: Economy EMP-5; Housing and Neighborhoods HDC-11; Utilities and Infrastructure EN-1)

**Actions:**

- a. Consider a code revision to encourage all new development and major rehabilitation projects to have “cool” roofs (i.e., white or grey roofs with a high solar reflectivity index or green roofs) or green to reduce the urban heat island effect<sup>13</sup>.
- b. Require that all new buildings, which meet certain size and/or density thresholds, built or rehabilitated with public-private funding be LEED Certified or meet some other established minimum level of energy-efficiency and sustainable site specifications established by the city.
- c. Consider developing a green building overlay that provides incentives, such as height and density bonuses or a green building liaison to assist in fast-tracking projects, to projects that meet specific green building and sustainable site standards.
- d. Create tax-rebates or incentives to encourage businesses and residents to replace older, inefficient appliances (e.g., refrigerators, toilets, heaters) with new Energy-Star appliances.
- e. Update building codes to reflect the latest in energy-efficient building code standards for new and rehabilitated housing (e.g., International Green Construction Code).
- f. Partner with New York State’s Weatherization Assistance Program and local utilities (e.g., National Grid) or non-profits to offer low-cost energy audits and services (e.g., weatherization) to Albany residents.
- g. Develop municipal renewable energy pilots to showcase and educate the public and development community about the feasibility and benefits of renewable energy.
- h. Develop lighting standards that promote energy-efficiency, reduce light pollution, while provide adequate lighting for safety.
- i. Investigate a potential site to pilot a district energy project.

**NEW YORK BEST MANAGEMENT PRACTICES (BMPS) FOR COMBINED SEWER SYSTEMS.**

The state’s 15 BMPs are designed to use the existing treatment facility and collection system to the extent possible and minimize water quality impacts from CSOs. To obtain a CSO permit, applicants must address the 15 BMPs.

<http://www.dec.ny.gov/chemical/48980.html>



**WATER AND SEWER**

Albany’s main drinking water source is the Alcove Reservoir, located on the Hannacroix Creek in the Town of Coeymans. Supplemental drinking water sources include the Loudonville Reservoir and the Six Mile Reservoir. Albany’s drinking water is considered very high quality and even won recognition as the “best tasting drinking water in the State of New York”. Protecting the quality and conserving the supply of this distinctive resource is critical to the health and welfare of Albany’s citizens.

The City’s and County’s system for wastewater treatment is key to protecting the quality of drinking water supplies, groundwater resources, and surface waters in the City and region. The Albany County Sewer District owns and operates two wastewater treatment facilities, designated North and South. The South Plant is located in the Port of Albany and treats waste only from the City of Albany. About two-thirds of the City’s sewers are combined (sanitary/storm) sewers. The combined sewers discharge to the South Plant. During heavy rains, excess water is discharged to the Hudson River. This is referred to as combined sewer overflow (CSO) and has serious impacts on water quality. The Albany Water Board and the Capital District Regional Planning Commission are currently undertaking a major planning study for mitigation of the CSOs, called the CSO Long Term Control Plan.

**Goal:**

Maintain the quality of the City’s wastewater management system, conserve water, and protect the City’s drinking water supply.

**BEST PRACTICE: RECLAIMED WATER PROGRAM, OLYMPIA, WA**

The LOTT Wastewater Alliance, which provides wastewater management services for Lacey, Olympia, Tumwater, and Thurston County, WA, started a Reclaimed Water Program in 2006. LOTT’s reclaimed water is treated to Class A Reclaimed Water standards – water that is clean enough for public contact and almost any use except drinking, (including many high demand purposes, thus allowing communities to stretch their water supplies). Class A Reclaimed Water can be used for irrigation, decorative fountains and ponds, industrial processing, pressure washing, toilet flushing, groundwater recharge, and streamflow and wetland enhancement.

<http://www.lottcleanwater.org/reclaimed.htm>



Since 1994, Albany’s Water Department has invested more than \$25 million in capital projects to upgrade Albany’s water and sewer systems.

**Strategies and Actions:**

WS-1 Implement Long-Term Control Plan to mitigate water quality impacts of CSO's.

WS-2 Encourage water conservation.

WS-3 Control sources of negative environmental impact.

WS-4 Assess the feasibility and market for selling excess drinking water to regional towns and municipalities.

WS-1 Strategy: Implement the Long Term Control Plan to mitigate the water quality impacts of combined sewer overflows (CSO's). (Interrelated Strategies: Natural Resources WW-1, WW-2; Utilities and Infrastructure SW-1, SW-2)

**Actions:**

- a. Complete the Long Term Control Plan currently under development by the CDRPC on behalf of the Albany Pool Communities.
- b. Implement New York State Best Management Practices (BMPs) for combined sanitary and storm sewers. Include BMPs that reduce stormwater runoff, restore wetlands, improve riparian corridors, and reduce costs associated with CSO solutions.
- c. Implement phased green infrastructure strategies to reduce stormwater runoff and ultimately mitigate CSOs impacts, to comply with New York State water quality standards, and Clean Water Act requirements. Potential strategies include new street trees, underground cisterns, green roofs, green streets, and rainwater capture.

WS-2 Strategy: Encourage water conservation to reduce volume in sewers and to save energy on heating, pumping, and treating water. (Interrelated Strategies: Natural Resources WW-6, Utilities and Infrastructure EN-2, EN-4)

**Actions:**

- a. Set city-wide department targets for reducing water use in public facilities and buildings.
- b. Partner with public schools, universities, other institutions, and businesses to reduce water use through conservation measures (e.g., reduce the need for landscape watering through native landscaping or rain gardens; replace older toilets and bathroom fixtures to improve efficiency).
- c. Develop a marketing campaign and/or incentives to encourage residents to reduce water consumption, install high-efficiency fixtures and appliances, and shift high water use activities (e.g., washing clothes, dishwashing) to non-peak hours.

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- d. Work with New York State to revise the building code to allow the use of greywater recycling systems (i.e., untreated household wastewater from showers, bathroom sinks, washing machines) for irrigation and other non-potable uses.
- e. Develop standards for new construction and rehabilitation projects to require the use of high-efficiency toilets and low-flow fixtures.
- f. Work with the Albany County Sewer District and Albany Water Board to explore the potential for a Reclaimed Water Program. Reclaimed water is wastewater that is treated and distributed for non-potable use and is commonly known as gray water (safe for uses other than drinking water). This water is often available at a significantly lower rate than potable water.
- g. Work with the Cornell Cooperative Extension or the city's Department of General Services to provide a discount to residents to purchase rain barrels.
- h. Investigate the feasibility of utilizing the City's gravity fed water and sewer system for renewable energy generation.
- i. Develop a citywide comprehensive drought management plan, including the monitoring of water supply storage levels.

**WHAT IS GREEN INFRASTRUCTURE?**

Green infrastructure is a storm-water management technique that preserves, restores, enhances, or mimics natural hydrology. A green infrastructure system integrates the built environment with soil, water, and plant systems that intercept stormwater, infiltrate a portion of it into the ground, evaporate a portion of it into the air, and in some cases release a portion of it slowly back into the sewer system, resulting in reduced and cleaner discharge into surface waters.



In 2011, the City received a \$361,000 grant from the New York State Environmental Facilities Corporation for a green infrastructure demonstration project on Sate Street.

### BEST PRACTICE: PHILADELPHIA WATER DEPARTMENT OFFICE OF WATERSHEDS

Philadelphia has a stormwater system that is 60% Combined Sewer and 40% Municipal Separate Storm Sewer System (MS4). To manage stormwater runoff more efficiently, the Philadelphia Water Department (PWD) is institutionalizing green infrastructure across the city through demonstration and restoration projects, a new stormwater fee system, and a new stormwater management ordinance with stringent stormwater regulations for all new construction and redevelopment projects.

The new ordinance focuses on a performance-based approach, requiring developers to manage the first inch of stormwater on-site. The Philadelphia Stormwater Management Guidance Manual was created to assist developers in meeting the requirements of the regulations and includes guidelines for meeting requirements through innovative green infrastructure techniques such as bioswales, green roofs, filtration strips, and porous pavement, etc.

[http://phillywatersheds.org/what\\_were\\_doing/green\\_infrastructure](http://phillywatersheds.org/what_were_doing/green_infrastructure)  
<http://www.phillyriverinfo.org/WICLibrary/PSMGM%20V2.0.pdf>

WS-3 Strategy: Control other sources of impact on waterways (construction runoff, illicit discharges, nonpoint pollution, etc.). (Interrelated Strategies: Natural Resources WW-1, WW-2, TS-1; Utilities and Infrastructure SW-4)

#### Actions:

- a. The City of Albany, along with other New York communities, will soon be required by the federal Clean Water Act to enact new local ordinances to regulate activities that discharge to municipal separated storm sewer systems (MS4s). These regulations will address illicit discharges of wastewater and toxic chemicals, construction site runoff control, and pollution prevention. The new ordinances should include strengthened development standards to minimize site disturbance during construction near water sources.

WS-4 Assess the feasibility and market for selling excess drinking water to regional towns and municipalities. (Interrelated Strategies: Utilities and Infrastructure WS-2; Institutions RP-6, RP-2)

#### Actions:

- a. Quantify excess capacity in City of Albany water reserves to determine feasibility of distribution.
- b. Identify potential market for excess water distribution.
- c. Identify infrastructure needs to facilitate distribution.

### STORMWATER

Stormwater management is a critical issue in urbanized areas like Albany. When stormwater collects pollutants such as road salt, petroleum products, pesticides, and litter from impervious surfaces and carries them into surface waters, sensitive resources, including drinking water supply, wildlife habitat, and surface water quality, are all impacted. In Albany, the stormwater management system consists primarily of engineered facilities that collect and discharge stormwater via outlets. In the case of combined sanitary and storm sewers, stormwater is discharged into the South Plant wastewater treatment facility. As previously mentioned, when the system is overwhelmed during heavy rain events, excess water containing untreated sewage is discharged to the Hudson River. Separated sewers, referred to as municipal separated storm sewer systems, or MS4s, discharge stormwater directly into natural watercourses such as the Krum Kill, the Normans Kill, the Patroon Creek and the Hudson River.

Stormwater management in Albany is regulated by the City's Stormwater Management and Erosion Control regulations (Article 14 of the City Code). The Code cites the New York State Stormwater Management Design Manual as an official guide and specifications for stormwater management. The Design Manual includes recommendations for green infrastructure techniques in development projects to reduce urban runoff.

**Goal:**

Use stormwater management best practices to reduce impacts on water quality and mitigate costs of engineered stormwater systems.

**Strategies and Actions:**

SW-1 Create a green infrastructure system.

SW-2 Incorporate green infrastructure practices in the Long Term Control Plan for CSO's.

SW-3 Reduce impermeable surfaces through land development regulations.

SW-4 Create Low Impact Development Design Guidelines.

SW-1 Strategy: Create a green infrastructure system as an alternative and complement to "grey" (engineered) infrastructure in order to better absorb stormwater runoff and filter pollutants. (Interrelated Strategies: Natural Resources WW-1, WW-2; Utilities and Infrastructure WS-1, SW-2, SW-3, SW-4)

**Actions:**

a. Develop a green infrastructure plan that sets targets for reductions in impervious surfaces and stormwater sewer inputs. As part of the plan, establish a "toolbox" of green infrastructures techniques (green streets, permeable pavers, green roofs, bioswales, riparian buffers, tree plantings, etc.) that can be implemented to achieve targets, and other techniques identified in the New York State Stormwater Management Design Manual. Quantify the potential fiscal benefits of a green infrastructure system.

See Figure 2 for examples of green infrastructure techniques.

b. Develop stormwater management demonstration projects (e.g., "green streets" with new street trees, tree trenches, permeable pavers, and modified stormwater inlets) in target locations such as parking lots, residential streets, and parks and measure performance in absorbing runoff.

c. Identify and pilot a "green neighborhood" utilizing a comprehensive green infrastructure system built as part of public and private redevelopment activities.

<sup>3</sup> Cities of Albany, Cohoes, Rensselaer, Schenectady, Watervliet; the Villages of Altamont, Voorhesville, and Green Island; and the Towns of Berne, Bethlehem, Coeymans, Guilderland, Knox, New Scotland, Rensselaerville, and Westerlo.

Figure 2 Examples of Green Infrastructure Techniques



Bioswale | Philadelphia Water Department Stormwater Manual



Pervious Paving | PWD Stormwater Manual



Green Street Design | WRT



Rain Barrel | PWD Stormwater Manual

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Riparian Buffer | Designed for Manchester, CT | WRT

SW-2 Strategy: Incorporate green infrastructure strategies in the Long Term Control Plan to mitigate the water quality impacts of combined sewer overflows (CSO's). (Interrelated Strategies: Natural Resources WW-1, WW-2; Utilities and Infrastructure SW-1)

**Actions:**

- a. Implement New York State Best Management Practices (BMPs) for combined sanitary and storm sewers. Include BMPs that reduce stormwater runoff, restore wetlands, improve riparian corridors, and reduce costs associated with CSO solutions.
- b. Implement phased strategies to reduce stormwater runoff and ultimately mitigate CSOs impacts to comply with New York State water quality standards, and Clean Water Act requirements. Potential strategies include new street trees, underground cisterns, green roofs, and rainwater capture.
- c. Retrofit existing impermeable surfaces as feasible.

SW-3 Strategy: Reduce impermeable surfaces through land development regulations. (Interrelated Strategies: Transportation MM-1; Natural Resources WW-2; Utilities and Infrastructure WS-3, SW-1, SW-4)

**Actions:**

- a. Allow for permeable pavements to be used in low-volume traffic areas, such as sidewalks, driveways, parking lots, alleys, and when feasible, roadways.
- b. Establish impervious coverage limits for buildings and pavement.
- c. Where appropriate, allow reduced road widths and reduced and alternative parking strategies, such as shared parking, off-site parking, and allow on-street parking to count toward parking space requirements.
- d. Explore the potential for a fee structure for stormwater management that determines fees by calculating the amount of impervious cover on a given property, providing a financial incentive to develop or retrofit properties with green infrastructure practices that reduce impervious cover.

SW-4 Strategy: Create Low Impact Development Design Guidelines (Interrelated Strategies: Community Form UD-1, Utilities and Infrastructure WS-3, SW-1, SW-3)

**Actions:**

- a. Develop a technical manual that includes Low Impact Development Design Guidelines to meet targets for reduced impervious surfaces and stormwater sewer inputs



based on a green infrastructure plan and Long-Term Control Plan. The Low Impact Development (LID) approach promotes the use of techniques that filter water and infiltrate water into the ground rather than sending it into conveyance systems. It promotes the use of natural plant and soil systems with roofs of buildings, parking lots, and other horizontal surfaces to convey water to either distribute it into the ground or collect it for reuse. Examples of LID techniques include rain barrels, rain gardens, green roofs, bioswales, permeable pavement, etc. LID Guidelines should include clear guidelines for low-impact development in construction and reducing runoff.

### **SOLID WASTE MANAGEMENT**

Solid waste management includes the collection, transport, processing, recycling disposal, and monitoring of waste materials, or trash, produced by human activity.

The City of Albany, acting as lead agent for the Capital Region Solid Waste Management Partnership Planning Unit, operates a regional solid waste management system that includes the city-owned and operated Rapp Road Landfill as well as recycling operations.

The Capital Region Recycling Partnership is a committee of The Capital Region Solid Waste Management Partnership and is made up of 14 municipalities<sup>3</sup>, including the City of Albany, that work together to improve waste reduction practices in their communities.

The Planning Unit has recently completed an update to the region's solid waste management plan (SWMP Modification) to address goals and objectives for waste reduction, reuse and recycling as well as issues regarding expansion of the Rapp Road Landfill, which is expected to reach capacity by 2016, and related impacts on the adjacent Pine Bush Preserve. The City is addressing goals and objectives for solid waste management, including a target to divert 65% of Albany's waste from the landfill by 2030.

#### **Goal:**

Increase recycling and reduce the solid waste stream.

#### **Strategies and Actions:**

[SWM-1 Maintain and expanding waste reduction, reuse and recycling efforts.](#)

[SWM-2 Explore alternatives for solid waste reduction and disposal.](#)

**SWM-1 Strategy:** Maintain and expand waste reduction, reuse and recycling efforts, including recommendations set forth in the SWMP Modification<sup>15</sup>. (Interrelated Strategies: Utilities and Infrastructure EN-1, SWM-2)

**Actions:**

- a. Appoint a Planning Unit Recycling Coordinator (PURC) as an area-wide resource to promote waste reduction and recycling, monitor compliance with municipal recycling ordinances, provide assistance in applying for available grant funding, and compile annual information about recycling program achievement in each municipality.
- b. Enhance education and enforcement to increase reduction and recycling in all sectors.
- c. Continue to conduct commercial waste inspections to determine presence of excess recyclables.
- d. Encourage backyard composting, organic waste recycling and yard waste management throughout the Planning Unit.
- e. Work with the Cornell Cooperative Extension or the city's Department of General Services to provide a discount to residents to purchase composters.
- f. Work with institutions, waste haulers, and Planning Unit partners to reduce waste, increase recycling, and improve reuse.

**SWM-2 Strategy:** Explore alternatives for solid waste reduction and disposal.

**Actions:**

- a. Create incentives for reducing solid waste disposal. As recommended in the SWMP, explore the effectiveness and feasibility of pay-as-you-throw programs, or volume-based disposal charges to create financial incentives for waste reduction and recycling.
- b. Expand yard waste composting programs and pilot a neighborhood composting and organics diversion program.
- c. Adopt policies to reduce office waste in municipal offices (e.g., double sided printing, electronic filing).
- d. Expand alternatives which recover energy from waste, such as the current methane power generation at the Rapp Road Landfill.

<sup>15</sup> Solid Waste Management Plan Modification for the Capital Region Solid Waste Management Partnership Planning Unit: <http://www.capitalregionlandfill.com/documents/SWMP-Modification-final.pdf>

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- e. Develop a building and construction material reuse and recycling program. Currently, the Town of New Scotland is the only community in the Planning Unit to provide for recycling of construction debris.
- f. Increase the percentage of demolition material diversion required as part of demolition permit approval and develop a compliance tracking system.
- g. Implement single-stream recycling for residents.
- h. Develop a pilot building deconstruction or green demolition program.

**BEST PRACTICE: BUFFALO REUSE GREEN DEMOLITION – BUFFALO, NY**

Buffalo ReUse is a green demolition and salvage company that reuses construction materials and recycles materials that can't be reused (metal, wood waste, concrete). Buffalo ReUse also accepts donated construction materials and offers a tax deduction letter for the value of donated items.

<http://www.buffaloreuse.org/Green-Demolition/GreenDemolition>

**COMMUNICATIONS**

Technology has changed the way people communicate, and a variety of communications options are necessary to keep community voices engaged and connected to local and global networks. As communications technologies continue to grow and innovate, the provision of high-quality and accessible services plays an increasingly important role in economic development and community planning.

The world is becoming a wireless society, and access to wireless networks is not just a luxury, but a necessity for educational and economic competitiveness. Through its Universal Broadband Initiative, the State of New York has committed to having affordable, high-speed internet service available in all parts of the state, and to have a citizenry that is capable of using it. Albany currently provides wireless service through Albany FreeNet, which, although free, has download limits and generally cannot be accessed from homes. The challenge is to affordably expand wireless service to improve educational and economic competitiveness, and to close the “digital divide” by increasing internet access and usage in throughout Albany’s diverse neighborhoods.

**Goal:**

Provide equitable communication opportunities for communities throughout the City.

**Strategies and Actions:**

- COM-1 Improve, develop and maintain communications infrastructure.
- COM-2 Improve access to communications technology for all residents.

COM-1 Strategy: Improve, develop and maintain communications infrastructure. (Inter-related Strategies: Housing and Neighborhoods NI-5; Utilities and Infrastructure COM-2; Institutions RP-6)

**Actions:**

- a. Partner with the New York State Office of Technology, communications service providers, the school district, and major institutions to expand wireless internet service for commercial, institutional and residential use throughout Albany and the Capital Region.
- b. Work with utilities and communications service providers to develop a long-term plan to address the projected climate change impacts on the existing communications infrastructure.
- c. Expand low/no-cost access to high speed internet access across the City.

COM-2 Strategy: Develop strategies to improve access to communications technology for all residents. (Interrelated Strategies: Social ED-5; Housing and Neighborhoods NI-5; Institutions RP-6)

**Actions:**

- a. Partner with Tech Valley Communications on an educational campaign to inform residents in targeted neighborhood about available options for high speed internet access, including locations for free computer access in libraries, schools and community centers, and low cost service plans for in-home use.



The Albany Public Library branches provide public computers with free access to the internet.

## Sustainability Building Blocks: The Comprehensive Plan Systems

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- b. Expand high-speed internet access in public locations, including libraries, senior centers, community centers, and schools.
- c. Expand low/no-cost access to high speed internet access across the City.



R.B. WING & SON

STATIONERY, BOOKS, FINE PAPERS

MILL SUPPLIES

MACMILLAN