

05

Environment Plan

Protecting greenways and blueways.
Growing vibrant communities in the watershed.

A clean and healthy environment is vital for everyone's quality of life. This includes the natural diversity of biological species and communities, and the ability of ecosystems to be resilient. The human impact on our environment often creates an imbalance in nature disrupting ecological integrity, and human enjoyment of our landscape. The Pioneer Valley Environment Plan strives to correct the imbalances created by humans to restore and or protect ecological integrity, and identify strategies for enhancing community character and quality of life.

"My community is sustainable when we improve the environment for all."

*Marcos Marrero,
Holyoke, MA*



Note: This is the executive summary of our plan. To obtain or view a copy of the full plan, visit pvpc.org.

OUR GOALS

- Eliminate or reduce bacteria, pathogen, and nitrogen loading from combined sewer overflows (CSOs).
- Eliminate toxins (including PCBs and pesticides) within the river to reduce human and wildlife exposure.
- Reduce nutrient loading and other nonpoint sources of pollution.
- Promote smart growth, land protection, and environmental conservation to support river health.
- Prevent habitat loss and restore degraded habitat.
- Promote improved flow and fish passage to ensure clean, free-flowing, and plentiful rivers for future generations.
- Prevent erosion and sedimentation induced by human activity.
- Promote greater public access for Connecticut River recreation and increased use of existing recreational facilities.

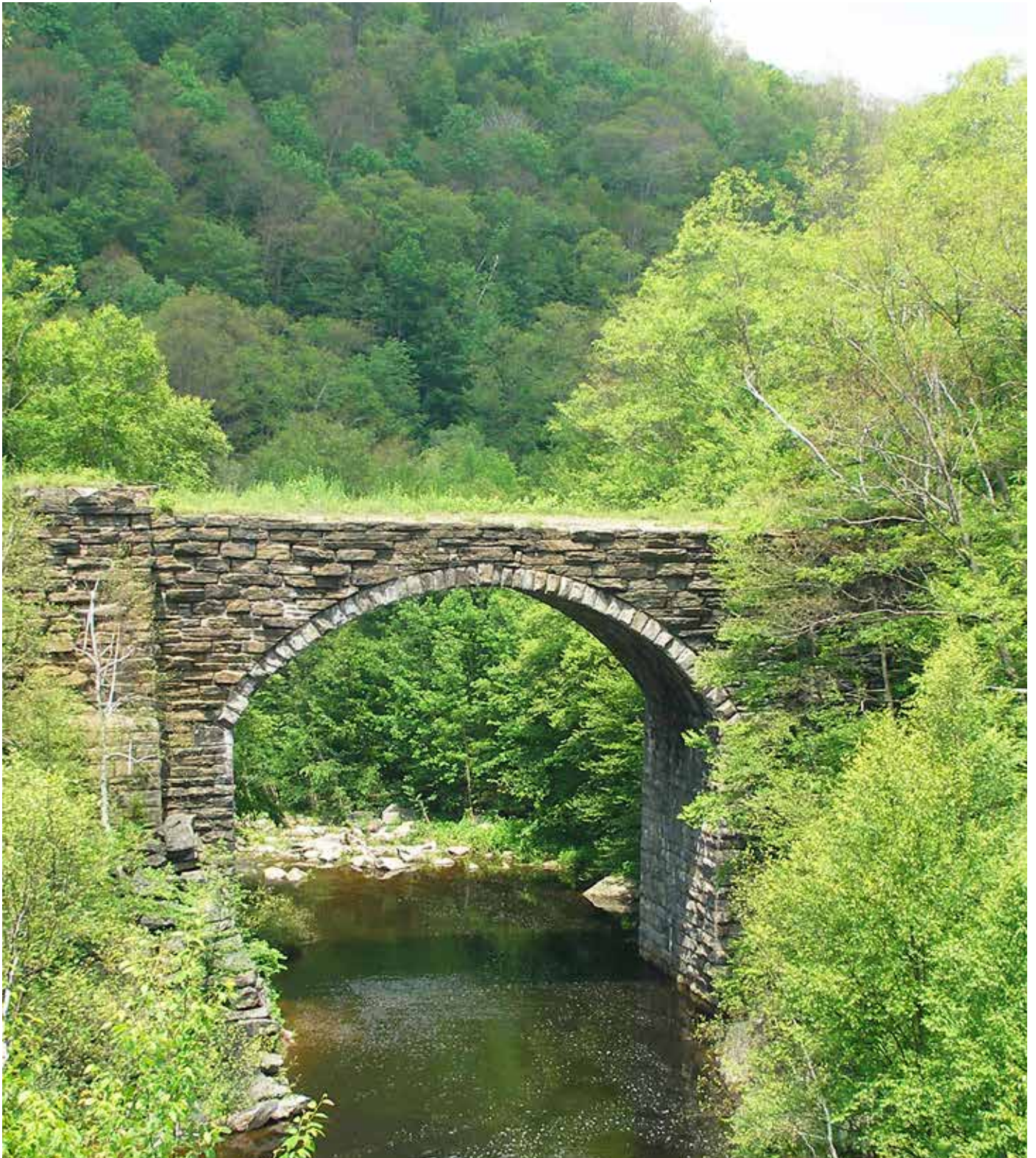


Westfield River in winter.

Photo: Chris Curtis

Core Environmental Values

- Swimmable and Fishable Rivers
- Clean Drinking Water
- Healthy Fisheries and Wildlife
- Vibrant Human-Riverfront Connections
- Sustainable Land Use and Agriculture



Historic keystone arch bridge over Westfield River, a designated National Wild and Scenic River.

Photo: Chris Curtis





The Connecticut River.

Photo: Chris Curtis

Water quality in the Connecticut River is improving.

The Connecticut River is a natural and scenic resource of great regional and interstate importance, and is a key element in the bi-state area's quality of life and economic prosperity. The water quality in some sections of the Connecticut River in Massachusetts and Connecticut is not currently meeting fishable and swimmable standards due to water pollution discharges which include combined sewer overflows and urban stormwater runoff. The high cost of river clean-up is creating financial hardships for many river communities. In addition, there are other sections which are suffering from impaired water quality due to stream bank erosion and non-point source pollution. Significant federal, state and local resources have been spent on river improvements however, limitations on access to the river and public information about river recreation are hampering the public's opportunity to enjoy these improvements. The Environment Plan evaluates water quality from the perspective of quality of life and how it affects recreational use, habitat integrity and resiliency, and greenways.

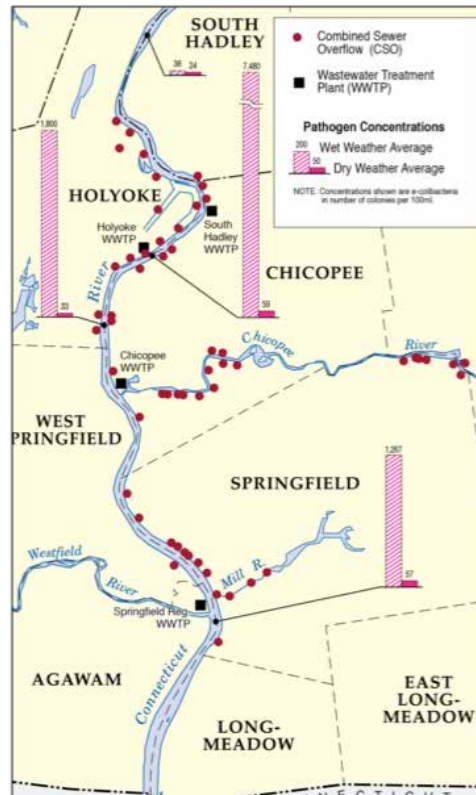


Combined sewer overflows continue to be a problem.

Inner city areas such as the canals of Holyoke suffer from a lower quality of water

Combined Sewer Overflows (CSOs) are the primary reason the Connecticut River continues to fail to meet federal fishable-swimmable water quality standards for bacteria. CSOs are a major financial burden in older urban communities, particularly Springfield, Chicopee and Holyoke, MA and Hartford, CT. 50% of the CSO volume, or 99 CSOs, have been eliminated to date with assistance in over \$20 million in federal funding through the Connecticut River Cleanup Committee, and over \$200 million total spent. There are still 64 remaining CSOs in Springfield, Chicopee and Holyoke with \$446 million estimated cost for the remaining CSO remediation. Stormwater is a major problem and represents about 25% of the bacteria loading to the Connecticut River.

Connecticut River Combined Sewer Overflow Locations and Bacteria Levels - show huge increases in bacteria after rainstorms.



Bacteria levels are elevated during wet weather.

In Massachusetts, from South Hadley to Springfield, average bacteria concentrations at locations downstream of CSOs during wet weather events indicate impaired water quality during wet-weather events in excess of Primary (swimmable) and/or Secondary (boating) Recreational Contact Standards. In 2006, the cities of Chicopee, Holyoke, and Springfield, together with the Pioneer Valley Planning Commission, published a study on bacteria levels in the Connecticut River in MA during dry and wet weather. Water quality during dry weather generally met Class B standards (swimmable, fishable). During wet weather, the single upstream sample site, near Northampton, met standards, but downstream all of the combined sewer overflows (CSOs), water quality was significantly impaired. The report determined that during rain storms, 50% of the bacteria in the river in that area came from CSOs, 25% came from stormwater, and 25% came from upstream sources.

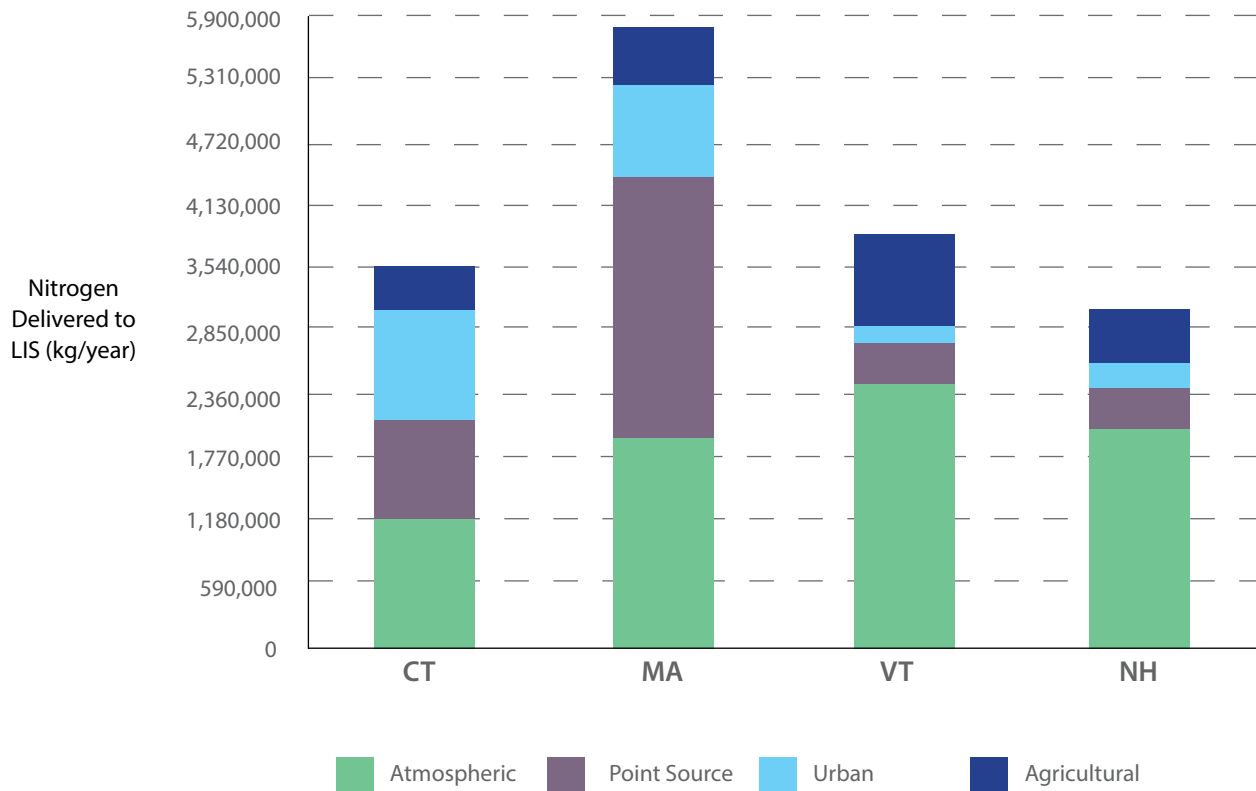


Quabbin Brook.

Photo: Chris Curtis

Efforts to clean up the Connecticut River have been coordinated on a regional basis, under an intergovernmental compact which formed the Connecticut River Clean-up Committee in 1993. The Connecticut River Clean-up Committee, under the direction of the Pioneer Valley Planning Commission, has secured over \$20 million in federal funding support and matching funds to help address this regional problem.

Predicted Nitrogen Load Delivered to Long Island Sound from Connecticut River Watershed States



Nitrogen loading from the Connecticut River to the Long Island Sound continues to be a source of impairment.

Nitrogen loading from the Connecticut River to the Long Island Sound continues to be a source of impairment. Nonpoint source pollution is the greatest source of nitrogen pollution (64.7%), of that, 15.5% derives from agricultural sources and 10.6% from urban sources. Best Management Practices (BMP) implementation or agricultural and other non-urban BMPs may be the most cost effective approach for improving water quality. Stormwater continues to be major contributor of NPS pollution as evidenced by water quality data collected on dry versus wet days.

Exposure to toxins cause impacts to fish, wildlife, and humans.

A statewide fish consumption advisory for mercury exists. In 2008, the U.S. EPA issued a TMDL for mercury load reduction to meet federal and state water quality standards. The mercury TMDL coupled with the results of the Connecticut River Fish Tissue Study in 2000 (US EPA) have resulted in expanded fish advisories for the Connecticut River for additional toxins including PCBs, DDT, and dioxin. At risk populations are children under 12, women who are pregnant or may become pregnant, women of child-bearing age, or breast-feeding women and should pay extra attention to the advisories.

The natural flow regime of the Connecticut River watershed is highly altered.

The natural flow regime of the Connecticut River and its tributaries has been highly altered. This altered flow regime is a primary threat to floodplain forests, estuarine communities, migratory and resident fish, and aquatic invertebrates. The fragmentation by dams and poorly designed culverts is one of the primary threats to aquatic species in the United States. In the Connecticut River basin in MA and CT, there are 1,422 dams (224 regulated by the Massachusetts Office of Dam Safety), which translates to densities of one dam per 6.6 km of river. Impacts on aquatic species involve loss of access to quality habitat for one or more life stages of a species, including limiting the ability of anadromous fish species to reach preferred freshwater spawning habitats from the sea, and preventing brook trout populations from reaching thermal refuges.

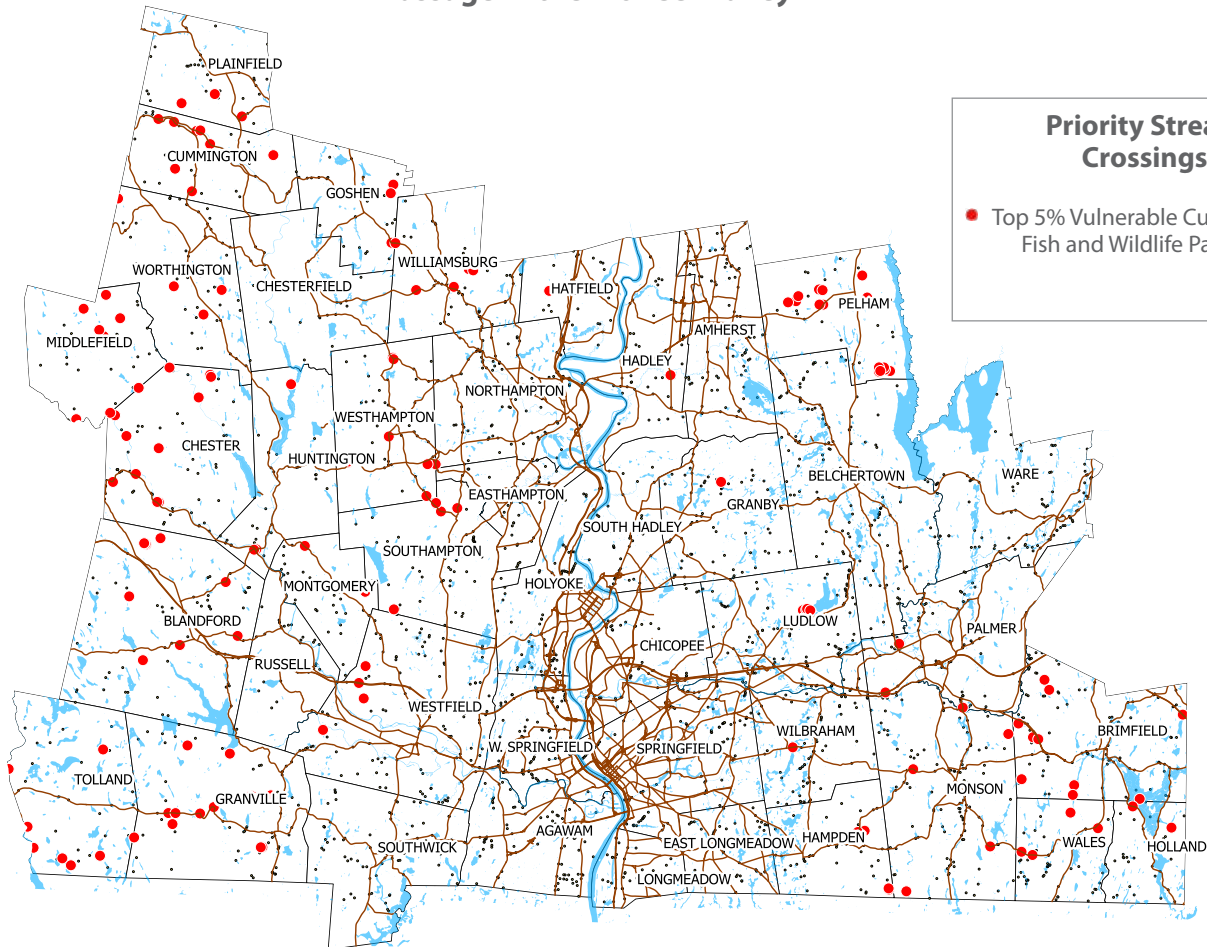
In addition to dams, culverts can create alterations in the natural hydrology of a river, create impediments for wildlife passage, and create blockages during extreme storm events that lead to localized flooding. There are 2,885 culverts in the region and 673 bridge stream crossings. The top 5% deemed most vulnerable to extreme weather and heavy rainfall are shown in red in the following. Fragmentation of dams and poorly designed culverts is a primary threat to aquatic species.



Westfield River in Autumn

Photo: Chris Curtis

Critical Culverts for Fish and Wildlife Passage in the Pioneer Valley



There are 2,885 culvert crossings of roads in the region. This map shows the culverts that are most critical to maintaining stream flow and related ecological functions that support fish, animal, and plant life.

Source: University of Massachusetts River and Stream Continuity Project, 2012

There are 235,908 acres in the Pioneer Valley suitable for open space protection that are currently unprotected.

Just over 15% of the Pioneer Valley is protected open space and/or parks. In Environmental Justice Areas, only 5.8% of the land area is protected open space and parks.

Mapping the parks and open space priority protection areas.

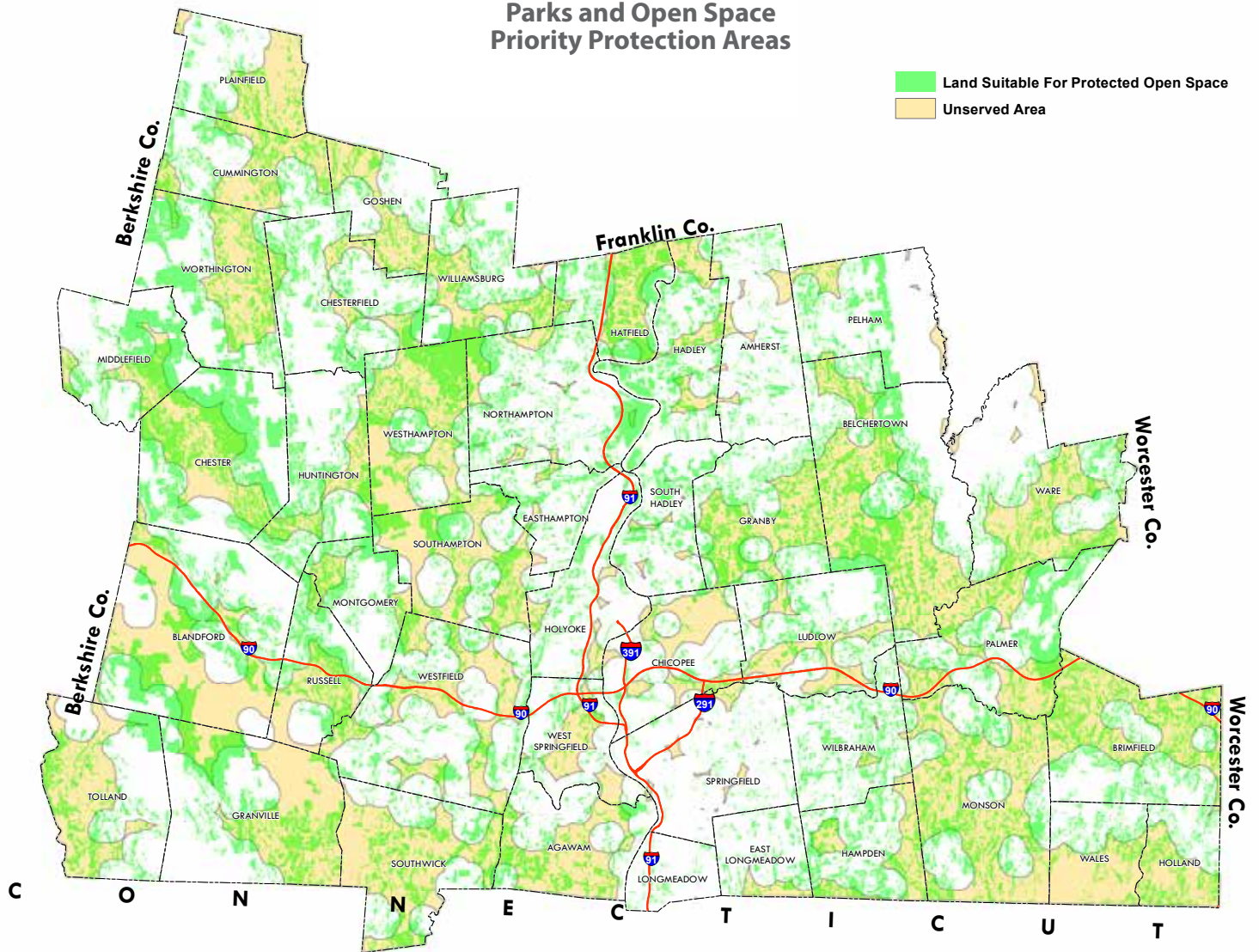
PVPC mapped a one mile accessibility buffer around the protected open space and parks and identified 'unserved' areas as those areas that are not within a one mile walking distance of protected open space or a park. This data layer was overlayed with "Land Suitable for Protected Open Space." The Pioneer Valley Regional Land Use Plan *Valley Vision* identifies Priority Protection Areas for the region as Land Suitable for Open Space Protection. MassGIS natural resource datalayers used to map this layer include: watersheds for public water supplies reservoirs and Zone II aquifer recharge areas, 100-year flood plains, wetlands and 100' buffer zones, steep slopes over 15%, and active farmland. Existing developed land and permanently protected land were then extracted from the natural resource datalayer. The remaining land is identified as "land suitable for open space protection" totaling 235,908 acres in the Pioneer Valley. The overlapping 'unserved' and 'suitable for protected open space' are identified as Parks and Open Space Priority Protection Areas to target funding and resources in the coming years.



Skinner State Park, South Hadley

Photo: Chris Curtis

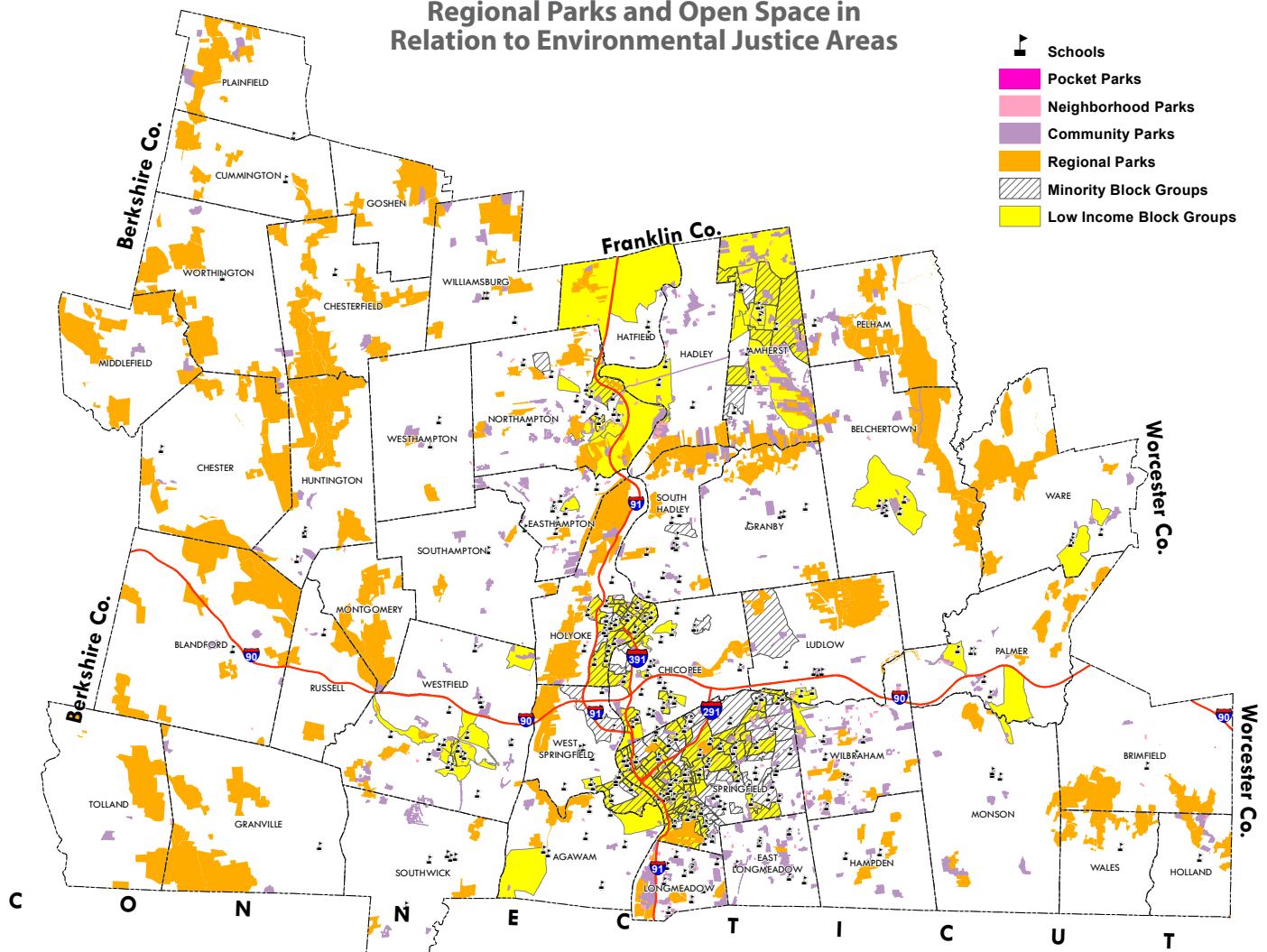
Parks and Open Space Priority Protection Areas



There is a lack of protected open space and parks within Environmental Justice areas.

The region has a wealth of protected open spaces and parks, (as shown in the map below), however, only 5.8% of this parkland is located within the Environmental Justice areas.

Regional Parks and Open Space in Relation to Environmental Justice Areas





The Connecticut Riverwalk, Springfield
Photo: Chris Curtis

Vibrant human-riverfront connections are needed.

The Connecticut River has been cleaned up considerably over the past two decades and is now far more attractive for recreation. In many areas, however, the river has been fenced by highways, railroads and incompatible commercial development, which has reduced opportunities for public access. Some areas of the river are heavily used for recreation, while other areas are neglected. Communities need to reconnect with the river, and find ways to bring people back to the river. To reverse the longstanding cycle of riverfront neglect and abandonment, and to bring urban riverfront areas to life, it is critical to invest in riverfronts. Priority projects for achieving this goal include:

- Complete design and construction of proposed Connecticut Riverwalk and Bikeway sections in Agawam, West Springfield, and Chicopee;
- Complete construction of the Holyoke Canalwalk;
- Link the Connecticut Riverwalk in Springfield to Forest Park and Agawam;
- Create new hiking trails along Connecticut River Byway;
- Establish a new trailhead for the New England National Scenic Trail Access in Hadley, MA;
- Create a Ferry Road Canoe/Kayak access in North Hadley, MA; and,
- Create trail linkages along the Jacob's Ladder Trail and Route 112 Scenic Byways;

The Environment Plan includes strategies to improve water quality in our rivers, support sustainable land use and farmland, protect drinking water supplies, create vibrant human-riverfront connections, protect fisheries and wildlife, and build a regional trail network.

Protect & Promote Swimmable & Fishable Rivers

MAINTAIN

Connecticut River website www.ConnecticutRiver.us

90

Maintain website broadly used by the public for information about recreational access to the Connecticut River, water quality for swimming and boating, fish consumption advisories, and other recreational news and information.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:



PLAN

Bi-state CT River Corridor Management

91

Develop a bi-state “report card” on indicators of CT River watershed health, including pollution (nitrogen, bacteria), percent of land which is impervious, number of CSOs, acres of land protected, miles of bike paths, and host annual event to release report card.

PARTNERS:
PVPC; CRCOG; FRCOG

CROSS-CUTTING STRATEGIES:



CONTINUE

Connecticut River Bacteria Monitoring Program

92

Seek funding for continued water quality monitoring and collaboration with local watershed organizations to monitor water quality at sites in Franklin County, MA, VT and NH.

PARTNERS:
PVPC; Connecticut River Watershed Council

CROSS-CUTTING STRATEGIES:



CONTINUE**Remediation of Combined Sewer Overflows**

93

Seek bi-state collaboration to secure federal funding for CSO remediation including establishment of bi-state legislative coalition to direct funding to CT River; seek funds from Environmental Bond Bill for CT River in MA; and create Green Infrastructure Small Grants funding program.

PARTNERS:
PVPC; CRCOG

CROSS-CUTTING STRATEGIES:

**DEVELOP****A Pilot for Zero Net Energy Wastewater Treatment Plant on Connecticut River**

94

Identify a Connecticut River community to serve as pilot study for implementing Zero Net Energy Wastewater Treatment Plant. Consider Integrated Resource Management of water, wastewater, and energy as part of pilot study.

PARTNERS:
PVPC, Municipalities

CROSS-CUTTING STRATEGIES:

**ADOPT****Stormwater Utilities**

95

Assist communities to adopt stormwater utilities. A local Stormwater Utility can generate revenue for stormwater infrastructure operation and maintenance.

PARTNERS:
Public Works Departments, Planning Boards, CEO

CROSS-CUTTING STRATEGIES:

**IMPLEMENT****Local Stormwater and Erosion Control Standards**

96

Implement or amend local stormwater bylaw/ordinances to comply with NPDES MS4 Permit requirements including Stormwater Pollution Prevention Plans, best management practices for on-site control and treatment of stormwater, and post-construction operation and maintenance requirements and enforcement.

PARTNERS:
Planning Boards

CROSS-CUTTING STRATEGIES:

**IMPLEMENT****Green Infrastructure Zoning Incentives**

97

Create zoning incentives for green roofs, permeable parking lots, on-site stormwater recharge and other green infrastructure.

PARTNERS:
Planning Boards

CROSS-CUTTING STRATEGIES:



Support Sustainable Land Use & Agriculture

EXPAND

The Compact for Pioneer Valley Conservation

98

Continue land conservation, stewardship and wetland permitting assistance offered through the Compact. Seek funding to capitalize a Revolving Loan Fund for land conservation bridge funds.

PARTNERS:
PVPC, Conservation Commissions,
Open Space Committees
CROSS-CUTTING STRATEGIES:



IMPLEMENT

Priority Protection Areas / Critical Lands Acquisition Program

99

Build on Hampden County Farmland Mapping Project and protect prioritized farmland and other Priority Protection Areas from willing sellers through fee acquisition, transfer of development rights, APR/CR, and zoning mechanisms mentioned herein.

PARTNERS:
PVPC, Agricultural Commissions,
Open Space Committees
CROSS-CUTTING STRATEGIES:



IMPROVE

Access to Parks and Open Space in Environmental Justice Areas

100

Expand healthy recreational opportunities by creating and/or expanding opportunities for access to open space and parks in EJ Areas.

PARTNERS:
PVPC, Municipalities
CROSS-CUTTING STRATEGIES:



ADOPT

The Community Preservation Act (CPA)

101

Assist additional Pioneer Valley communities in adopting the CPA. The CPA provides dedicated funding for historic preservation, low and moderate income housing, and open space protection including recreational development.

PARTNERS:
Conservation Commissions, Open
Space Committees, Planning Boards,
Historic Commissions
CROSS-CUTTING STRATEGIES:



USE

CPA funds to leverage state and federal funds for land conservation projects

102

Use CPA funds as match for state and federal land acquisition funding and/or Conservation Restrictions, and Agricultural Preservation Restrictions.

PARTNERS:
Municipalities, PVPC
CROSS-CUTTING STRATEGIES:



ESTABLISH**Local Conservation Funds**

103

Establish local Conservation Funds to accept donations, town meeting appropriations, and other funding sources for land conservation and stewardship projects.

PARTNERS:
Conservation Commissions

CROSS-CUTTING STRATEGIES:

**CREATE AND MAINTAIN****Active Agricultural Commissions**

104

Active Agricultural Commissions can sponsor Right-to-Farm Bylaws, inventory and identify local agricultural properties, create marketing programs and materials, and host community events.

PARTNERS:
Planning Boards, Conservation Commissions, Open Space Committees

CROSS-CUTTING STRATEGIES:

**ADOPT****Right to Farm Bylaws**

105

Assist communities to adopt Right to Farm bylaws which encourage the pursuit of agriculture, promotes ag-based economic opportunities, and helps protect farmland by reducing conflict with abutters.

PARTNERS:
Agricultural Commissions, Planning Boards, Conservation Commissions, Open Space Committees

CROSS-CUTTING STRATEGIES:

**ADOPT****Environmental Protection Bylaws**

106

Seek to implement environmental protection bylaws, including river protection, Green Development Performance Standards, Low Impact Development, and Floodplain Regulations, including addressing climate change impacts

PARTNERS:
Planning Boards, Conservation Commissions

CROSS-CUTTING STRATEGIES:

**CREATE****Transfer of Development Rights Zoning (TDR)**

107

Implement TDR Bylaws that allow development rights to be purchased in designated Sending Areas and transferred to Receiving Areas for use in more compact residential or commercial development projects.

PARTNERS:
Planning Boards, Agricultural Commissions, Conservation Commissions, Open Space Committees

CROSS-CUTTING STRATEGIES:



ADOPT**Scenic Upland Protection Zoning**

108

Scenic upland protection zoning can regulate alterations to the land which may negatively affect the scenic and environmental quality of these areas.

PARTNERS:
Planning Boards, Commissions,
Conservation Commissions, Open
Space Committees
CROSS-CUTTING STRATEGIES:



Protect Clean Drinking Water Supplies

COMPLETE**Supply and Demand Forecasts for Public Water Supplies**

109

In conjunction with Hazard Mitigation Plans development and updates, complete 5-year supply and demand projections for public water supplies

PARTNERS:
PVPC

IMPLEMENT**Bi-State Approach to Water Supply Protection in Westfield and Farmington River Watersheds**

110

Promote contiguous land protection in southwest Hampden County, MA to Hartford, CT through Forest Legacy Designation for the area, and water supply protection overlay zoning.

PARTNERS:
PVPC; CRCOG

CROSS-CUTTING STRATEGIES:

**COMPLETE****Vulnerability Assessments and Protect Critical Infrastructure**

111

Inventory, update and conduct vulnerability assessments of critical infrastructure to flooding and other weather impacts, including energy generation, electrical transmission and distribution, communication networks, drinking and wastewater facilities, roads and highways, railways, dams and flood dikes and healthcare facilities. Take needed steps to improve resilience.

PARTNERS:
Municipalities

CROSS-CUTTING STRATEGIES:

**CREATE****Storm-proofed infrastructure**

112

Increase resilience of water/ wastewater infrastructure, streets and roads, flood dikes, sewer and water lines, to severe storm events and flooding. Take action to harden and raise the level of infrastructure, as funds become available.

PARTNERS:
Municipalities

CROSS-CUTTING STRATEGIES:



CREATE**Emergency Intermunicipal Water Connections**

113

Identify options for creating emergency water supply inter-connections with neighboring communities, and seek formal agreements to purchase water in emergencies. Physical, piped emergency connections, and agreements to purchase water, should be put into place in advance of emergencies.

PARTNERS:
Municipalities

CROSS-CUTTING STRATEGIES:

**UPGRADE****Stream Crossings, Bridges and Culverts**

114

Pro-actively replace underperforming culverts and bridges with structures designed to meet the MA Stream Crossing Standards to accommodate floods and promote wildlife passage. Identify and prioritize culverts for replacement. Prepare for disaster replacement by designing generic plans for different types of stream crossings to implement in emergency repairs. Integrate replacements into road and utility infrastructure projects to off-set costs and access funding opportunities.

PARTNERS:
**Public Work Departments,
Conservation Commissions**

CROSS-CUTTING STRATEGIES:



Protect & Promote Healthy Fisheries and Wildlife

SUPPORT**Removal of Poor Condition Dams in Stressed Basins**

115

Work with municipalities to design dam removal projects at poor condition dams in stressed basins to improve river continuity and flow.

PARTNERS:
PVPC, MA DER, Municipalities

CROSS-CUTTING STRATEGIES:

**UPDATE****Flood Maps**

116

Work with FEMA to raise priority for update of flood insurance maps in the region, using LiDAR elevation surveys and climate models, and identify at-risk facilities, and flood zones in need of protective zoning.

PARTNERS:
PVPC, Municipalities

CROSS-CUTTING STRATEGIES:

**IMPROVE****Flood Zoning**

117

Adopt improved zoning to prevent new development in flood zones, increase flood resilience of buildings, and provide protection of basement and first floor levels.

PARTNERS:
Municipalities

CROSS-CUTTING STRATEGIES:



IMPLEMENT**Northeast Regional Mercury Total Maximum Daily Load (TMDL)**

118

In order to reduce mercury deposition in rivers and levels in fish, implement the Northeast Regional Mercury Total Maximum Daily Load (TMDL) for successful control of in-state and regional reductions in mercury sources

PARTNERS:

MA DEP

CROSS-CUTTING STRATEGIES:

**CONDUCT****Fishing Survey and Fish Consumption Advisory Outreach**

119

Conduct a study to determine level of subsistence fishing on CT River; Conduct outreach to these communities about fish consumption advisories to protect public health.

PARTNERS:

PVPC

CROSS-CUTTING STRATEGIES:



Create Vibrant Human-Riverfront Connections

CONDUCT**Bi-State Trail Linkages Study**

120

Conduct a bi-state trail linkages study to identify opportunities for linking trails, such as the Connecticut Riverwalk and Farmington Canal Heritage Trail, between Massachusetts and Connecticut.

PARTNERS:

PVPC

CROSS-CUTTING STRATEGIES:

**CREATE****Greenway System of Trails and Parks**

121

Design and construct missing trail links between states and regions focusing on Priority Protection Areas and protect missing links in the regional greenway system.

PARTNERS:

PVPC, Municipalities

CROSS-CUTTING STRATEGIES:

**EXPAND****Connecticut River Paddlers Trail**

122

Expand the Connecticut River Paddlers Trail southward from Vermont and New Hampshire into Massachusetts and Connecticut.

PARTNERS:

VT River Conservancy, AMC, TPL

CROSS-CUTTING STRATEGIES:



SUPPORT**Pioneer Valley Regional Trails Coalition**

123

Participate in the development and implementation of a Pioneer Valley Regional Trails Coalition to increase local/regional capacity for developing and stewarding regional trail networks.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:

**IMPLEMENT****Zoning for Bike and Pedestrian Amenities to Support an Intermodal Pedestrian and Bicycle Network**

124

Help communities adopt zoning bylaws to require sidewalks, bike path connectors, bike parking and amenities in new developments, and internal pedestrian linkages in large projects.

PARTNERS:
Planning Boards, Public Works Departments, PVPC, MDOT

CROSS-CUTTING STRATEGIES:

**CONTINUE****To Enhance www.ConnecticutRiver.us To Support Recreational Use of the River**

125

Connect 'Live Well Springfield' and Pioneer Valley Asthma Coalition's initiatives with the website to promote use of riverwalk and river access sites in Springfield; promote river user groups such as PV Rows; encourage linkage with the CT River Blueways web atlas (under development) and ConnecticutRiver.us.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:

**SEEK****Funding for New England National Scenic Trail Access**

126

Advance design and construction of a new trailhead, including improved trailhead signage, interpretive information and safe, attractive parking for the New England National Scenic Trail (NENST) near its crossing of the Connecticut River Byway.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:

**SUPPORT****Connecticut Riverwalk and Bikeway Build-Out**

127

Work with Chicopee, Agawam, West Springfield and Holyoke to complete the design and build-out of Connecticut Riverwalk segments

PARTNERS:
PVPC, municipalities
CROSS-CUTTING STRATEGIES:



Build a Regional Trail Network

DESIGN AND CONSTRUCT

Connecticut River Byway Trail System

128

Seek funding too design and construct four trails and river access areas along Connecticut River Byway:

- Red Rocks River Trail along the riverbank in North Hadley, MA,
- Porter Phelps Huntington House to Mount Warner Trail in Hadley;
- Connecticut River to Mount Holyoke Range Trail in South Hadley;
- Connecticut River Car-top Boat Access at Ferry Road in North Hadley, MA.

PARTNERS:
PVPC; MA DCR

CROSS-CUTTING STRATEGIES:



CREATE

Connecticut River Greenway Park and Trail, Northampton, MA

129

Support the City of Northampton's efforts to develop river access for CT River Greenway riverfront park and multi-use trail along CT River from Norwottuck Rail Trail on Damon Road to Elm Court, Hatfield.

PARTNERS:
City of Northampton

CROSS-CUTTING STRATEGIES:



CREATE

Linkages to Chicopee River Delta Park

130

Promote linkage with the Connecticut Riverwalk at the Chicopee River delta, and connection to the Chicopee Riverwalk in downtown Chicopee.

PARTNERS:
City of Chicopee; PVPC

LINK

The Connecticut Riverwalk to Forest Park and Agawam

131

In Springfield, increase use of the Connecticut Riverwalk for mobility and exercise, by linking it to Forest Park and Agawam.

PARTNERS:
PVPC, municipalities
CROSS-CUTTING STRATEGIES:



CROSS CUTTING STRATEGIES ICONS: The following icons are used in reference to issues and strategies related to other element plans of this report.



TRANSPORTATION



ENVIRONMENT



GREEN INFRASTRUCTURE



LAND USE



ECONOMIC DEVELOPMENT



CLIMATE ACTION



HOUSING



FOOD SECURITY



BROWNFIELDS



Canoeing lessons at Pioneer Valley Riverfront Club,
Connecticut River, Springfield MA Photo: Chris Curtis



Lake Warner, Hadley
Photo: Chris Curtis

06

Green Infrastructure Plan

Promoting clean water.
Greening our streets and neighborhoods.

This Green Infrastructure Plan is meant to assist communities in the region as they continue the journey toward a more environmentally sustainable stormwater management program. The plan identifies the three existing infrastructures (stormwater, combined sewers, and roads) where green infrastructure might best be integrated; describes useful criteria for mapping potential green infrastructure facility locations; explores important opportunities and challenges; and proposes workable strategies for local and regional actions that will help to address polluted stormwater flows and meet forthcoming stormwater permit requirements.

"My community is sustainable when we recognize the Connecticut River and its tributaries for the tremendous assets they are – for recreation, tourism, business, health, and more..."

*Kathleen Anderson,
Holyoke, MA*

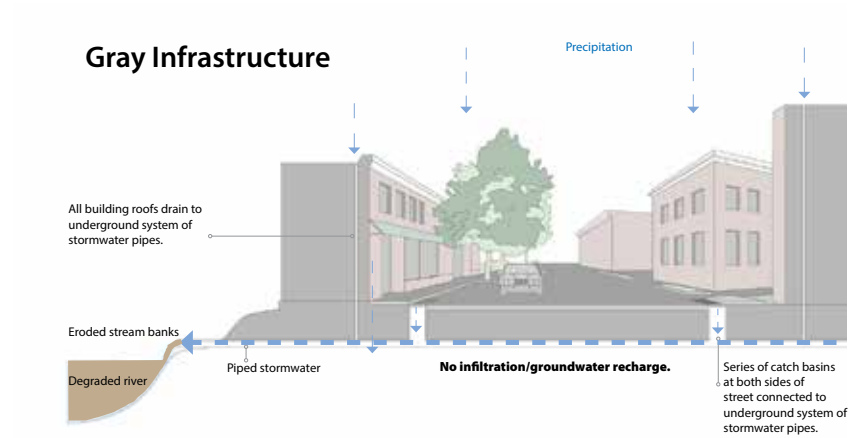


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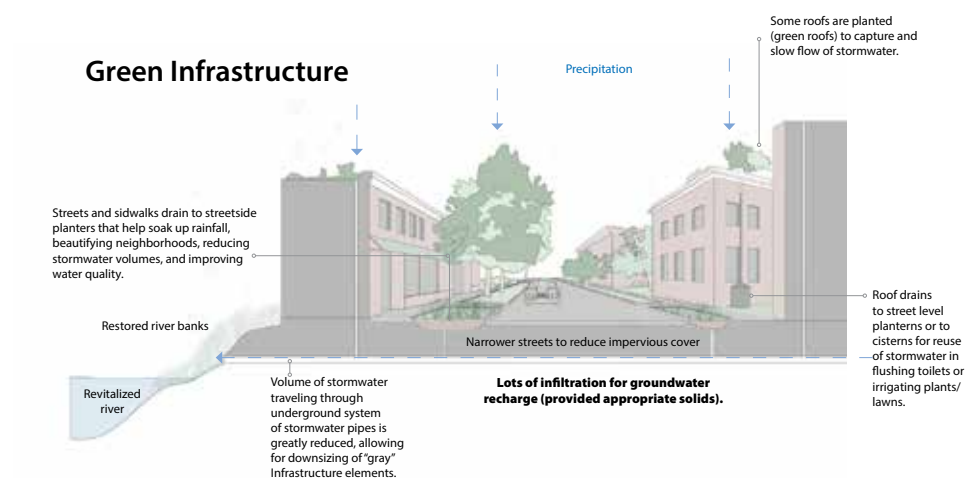
OUR GOALS

The goal of the Green Infrastructure Plan is to promote and support the use of green infrastructure as a cost-effective and sustainable practice for stormwater management in current and future projects wherever possible. This includes:

- Road reconstruction and new road development projects;
- Combined sewer separation projects; and
- New development and redevelopment projects



Traditional stormwater collection is built to convey rainfall from roofs, parking lots, and streets into catchbasins and underground tanks, and then travels in pipes to outlet at the nearest river.



Green Infrastructure: keeps rain close to where it falls, using structures to improve on-site infiltration, such as rain gardens and permeable pavements. These facilities can be used in combination with gray infrastructure to promote cleaner, slower, and smaller storm flows to nearby rivers and streams.



Examples of Existing Green Infrastructure Facilities in the Pioneer Valley

A handful of green infrastructure projects are leading the way for the region, providing both inspiration and instructive lessons. Clockwise from top left: Newly planted green roof at the Jones Ferry River Access Center, Holyoke; rain garden/bioretention area, Northampton Senior Center; porous paved parking lot, grass pavers, and rain garden at New England Environmental Inc. in Amherst; and porous asphalt parking lot at Columbia Greenway Rail Trail in Westfield.

Northampton photo courtesy of Doug McDonald; NEE, Inc. photo courtesy of Kuhn Riddle Architects; and Westfield photo courtesy of Joseph Giffune.



*The Connecticut River in Hadley.
Photo: Chris Curtis*

Stormwater flows pollute our waterways.

Green Infrastructure 'grēn 'in-frə-strək-char | n | defined

Green infrastructure entails the use of natural or engineered facilities that capture rainfall near to where it falls. These can include green roofs, rain gardens, as well as cisterns, which “harvest” rainwater for reuse. Green infrastructure also includes non structural approaches such as better site design, and policies and incentives that promote better development practices.

While there have been vast improvements in water quality since passage of the federal Clean Water Act 40 years ago, there are many Pioneer Valley streams, rivers, and lakes that do not meet fishable, swimmable standards:

- 76 waters in the Pioneer Valley are “impaired” for a variety of pollutants, including phosphorus, total suspended solids, and pathogens;
- The lower Connecticut River in Massachusetts is impaired for bacteria (E-coli) and total suspended solids largely from combined sewer overflows and stormwater;
- Throughout the region many lakes and ponds are choked by plants due to excessive nutrients delivered by stormwater flow;
- Stormwater from the Pioneer Valley also contributes to the estimated three million pounds of nitrogen flowing into the Connecticut River to Long Island Sound annually.

Key factors are driving the need for green infrastructure.

There are two major regulatory drivers under the Clean Water Act that require improved control of stormwater pollution and clean-up of overflows from combined sewer systems.

Forthcoming new U.S. Environmental Protection Agency (EPA) Municipal Separate Storm Sewer System (MS4) stormwater permits

- 22 Pioneer Valley communities with “urbanized areas” are currently regulated to control the amount of stormwater discharged from the MS4s to rivers, streams, lakes, ponds, and wetlands and a forthcoming new EPA permit will expand stormwater management requirements.

Federal Administrative Orders for combined sewers - Our 3 urban core cities - Chicopee, Holyoke, and Springfield – are all under federal Administrative Orders to clean up CSOs (Combined Sewer Overflows) polluting the Connecticut River. City officials are in the process of finalizing long term control plans that set timelines and goals for abating combined sewer overflows. In the meantime, however, they have worked to clean up 50 percent of our CSO problem. A total of 99 of the 163 CSO outfalls in the Pioneer Valley region have been eliminated to date, but 64 CSOs remain.

The cost of sewer separation is another major factor driving us toward green infrastructure. Chicopee, Holyoke, and Springfield still face more than an estimated \$446 million in costs to eliminate or abate flows coming from the 64 remaining CSO outfalls. Implementation of green infrastructure strategies could provide an important way to reduce costs in meeting CSO requirements. Cities like Philadelphia, New York City, and Portland, Oregon, have led the way. Portland, for example, significantly reduced inflow to its combined system with green streets facilities retaining and infiltrating 8 billion gallons annually or 40 percent of the city’s runoff. In one area where the city implemented a program called “Tabor to the River,” such green infrastructure improvements helped to avoid \$86 million in sewer separation costs.



The Connecticut River in Hadley

Photo: Chris Curtis

Investments are needed in existing infrastructure.

Needed investments in the region for existing infrastructures—roads, combined sewer systems, and stormwater management systems—tally in the hundreds of millions of dollars. These investments are essential to fixing serious deficiencies within these systems, as well as to achieving regulatory compliance. Integration of green infrastructure within these projects can reduce the environmental impacts of these existing systems and provide important cost savings in many cases.

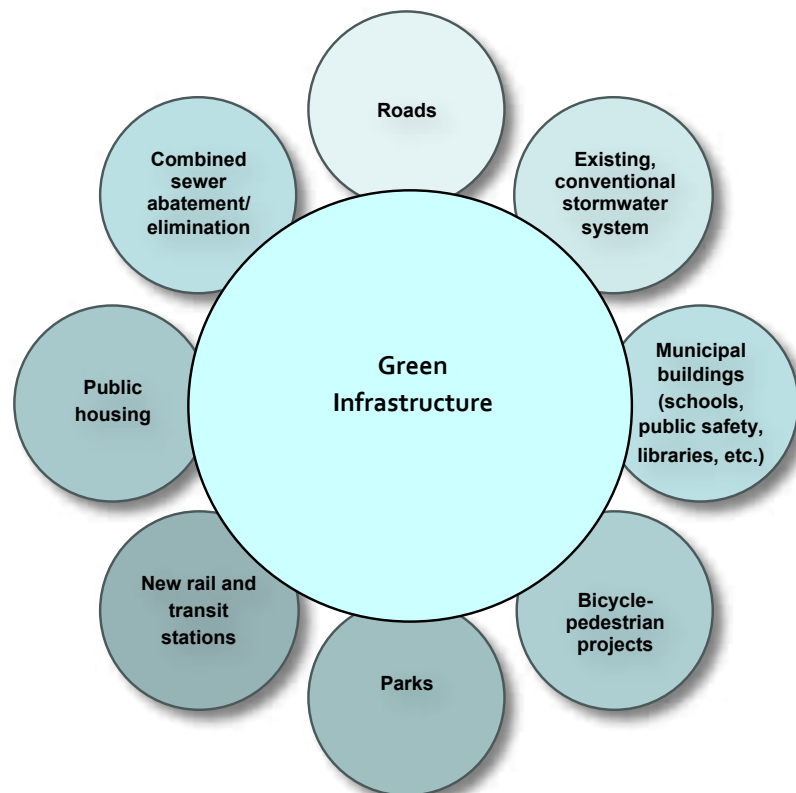


Green roof installation in Holyoke.

Photo: Chris Curtis

Green infrastructure can integrate with other projects.

Green infrastructure does not need to be built as a stand-alone project, it can be readily integrated into the design of many new projects. This can include incorporating green street design into roadway reconstruction projects or integrating on-site stormwater retention into a combined sewer overflow abatement project.



Example of green infrastructure integrated into North Street Reconstruction, Pittsfield, MA



Before: Street drains to catch basins and storm drains



After: Street drains through curb cuts to bioretention planters.

Photos courtesy of Vanasse Hangen Brustlin, Inc.

Green infrastructure can be a cost effective solution.

The use of green infrastructure in stormwater management promises several important benefits that produce cost savings, including:

- reduced costs for combined sewer separation projects
- decreased demand for expanded “gray” infrastructure stormwater facilities
- reduced polluted stormwater flows into nearby rivers and streams
- mitigation of flooding
- reduced energy use and costs

Compared to gray infrastructure work, which is underground and invisible, green infrastructure is typically above ground, and aesthetically pleasing. As a result, green infrastructure projects provide a far more visible result of public investments.

Tools are of value in promoting green infrastructure.

As part of our place-based planning process, our plan took a look at 22 Pioneer Valley communities that have municipal separate stormwater systems (MS4). These communities will be subject to new federal stormwater permitting requirements, and consequently have the greatest need for green infrastructure. The tools and ideas within the plan, however, can also be deployed for use in other communities to resolve stormwater management issues, including flooding, erosion, and/or improved protection of an important water resource.

Mapping to support decision making for green infrastructure

To support decision making about where to locate green infrastructure, we produced working maps that show eight key criteria. These criteria are mapped for the 22 MS4 communities on a set of two maps.

Working map #1 shows four criteria for consideration in decision making about green infrastructure:


- EPA stormwater permitted area
- roads eligible for federal aid
- areas served by combined sewers (if any)
- soils and their capacity to absorb stormwater.

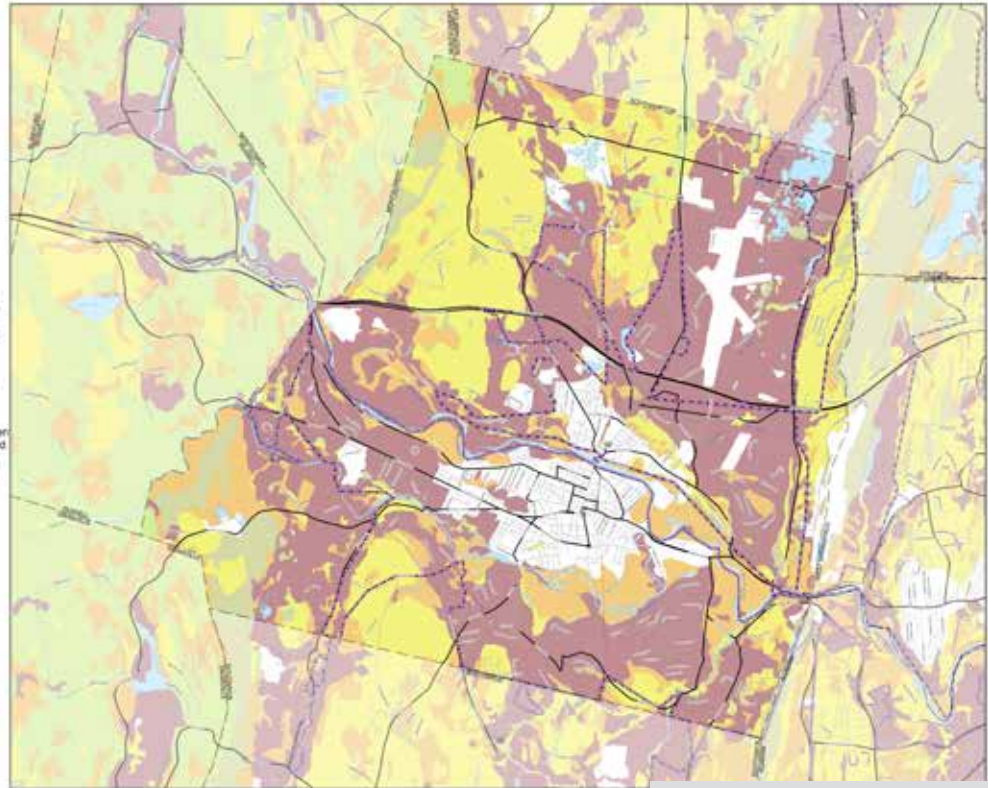
Working map #2 shows four additional criteria:

- impervious surfaces
- drainage watersheds
- environmental justice areas
- rivers, streams, and lakes with existing water pollution problems.

WESTFIELD, MA Green Infrastructure Planning Work Map 1 of 2

Legend

-  EPA-Permitted Area
-  Roads eligible for federal aid
-  Combined Sewer Overflow Drainage Basin (Chicopee)
-  Combined Sewer (Springfield, Holyoke)
- Hydrologic Soils Group**
-  Unknown
-  Group A: Low runoff potential when thoroughly wet. Water is transmitted freely through the soil.
-  Group B: Moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.
-  Group C: Moderately high runoff potential when thoroughly wet. Water transmission is somewhat restricted.
-  Group C/D: Moderately high runoff potential when drained and high runoff potential when undrained.
-  Group D: High runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.



0 2,000 4,000 6,000 Feet

Working Map #1 for Westfield

WESTFIELD, MA Green Infrastructure Planning Work Map 2 of 2

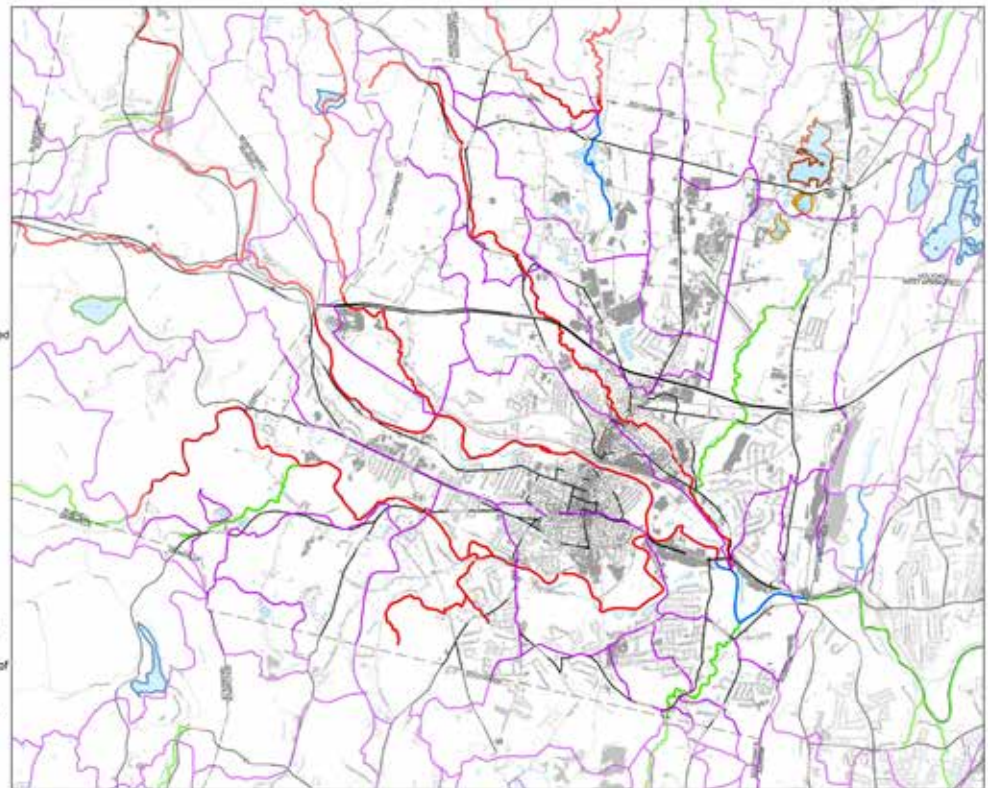
Legend

-  Impervious Surface
-  Drainage Subbasins/Watersheds
-  Environmental Justice Area

2010 TMDL Status- Lakes and Streams

-  2 - Attaining some uses; other uses not assessed
-  3 - No uses assessed
-  4A - TMDL is completed
-  4C - Impairment not caused by a pollutant
-  5 - Waters requiring a TMDL

* Environmental Justice Area - Based on 4 criteria from the 2000 Census block groups, including: where population is 25 percent or more minority; where median household income is less than 65% of the statewide median household income; where 75% or less of households have proficiency with the English language, indicating linguistic isolation; where 25 percent or more of the population is foreign-born.



0 2,000 4,000 6,000 Feet

Working Map #2 for Westfield



Bioretention/rain garden facilities capture stormwater from parking lots and drives at Community Field in Holyoke.

Photos courtesy of Vanasse Hangen Brustlin, Inc.

Mapping shows existing and potential green infrastructure locations

Our planning process included working with municipal officials to map existing and potential locations for green infrastructure. Seven communities responded to our invitation to join us for this mapping effort, including Chicopee, Holyoke, Springfield, Westfield, Huntington, Northampton and South Hadley.

The City of Chicopee, for example, noted that they have already completed two green infrastructure projects, including installing stormwater infiltrators as part of a road reconstruction project, and building a rainwater harvesting system as part of the design of a CSO facility. They also identified 13 other locations where green infrastructure could be incorporated as part of other upcoming projects across the City. The Chicopee green infrastructure map, illustrating existing and potential green infrastructure locations, is shown to the right.

Other tools

Other green infrastructure tools of interest within this plan include:

- Matrix of known existing green infrastructure locations in the region with in-depth descriptions for several of these projects.
- A checklist for reviewing local municipal regulations and the degree to which they allow/facilitate green infrastructure development.
- A listing of existing design resources and identification of which green infrastructure practices are addressed within the documents.

Chicopee, MA - Green Infrastructure Locations

★ Existing Green Infrastructure Locations

- 1 Rainwater Harvesting, Jones Ferry Combined Sewer Treatment Facility
- 2 Stormwater Infiltrators, Upper Granby Road

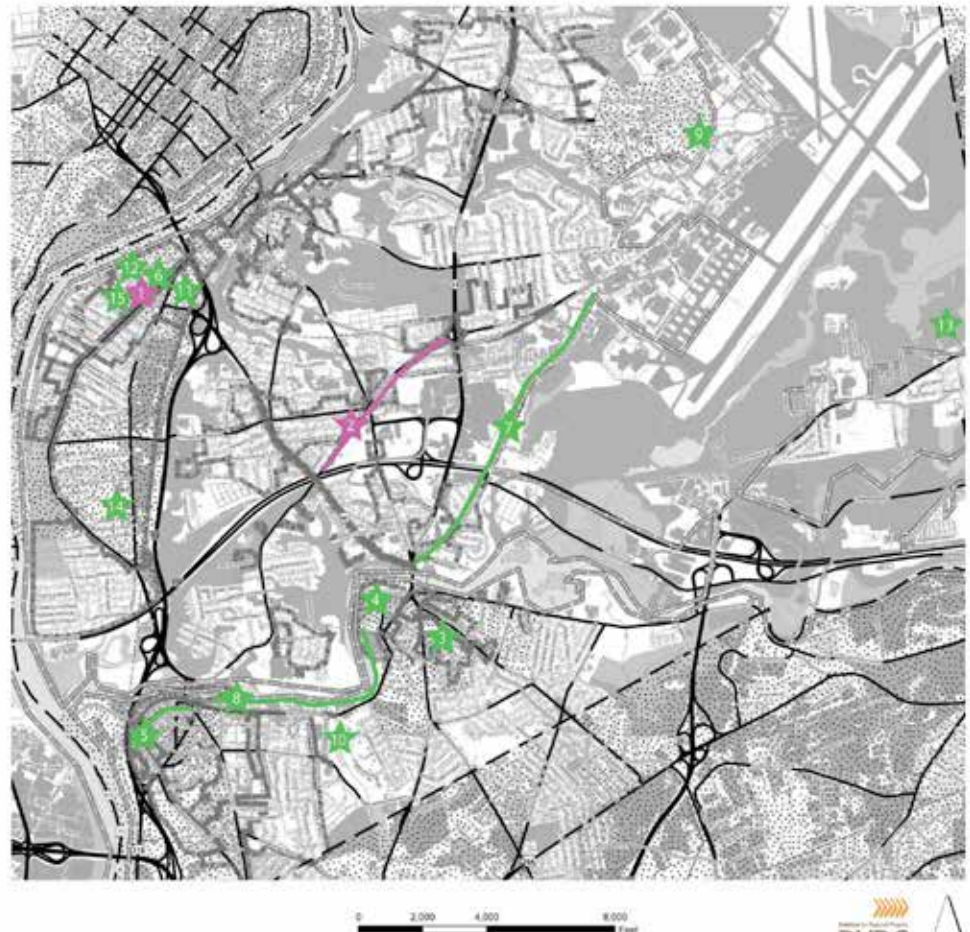
★ Potential Green Infrastructure Locations

- 3 River Mills Redevelopment
- 4 Biofiltration, Infiltration, and Rainwater Harvesting, Older Adult Community Center
- 5 Tree Filter Boxes, Exchange Street
- 6 Call Street Area
- 7 Sheridan Street Area
- 8 Downtown Canal Walk
- 9 Navy Housing Redevelopment
- 10 Szot Park
- 11 Rivers Park
- 12 Nash Field
- 13 Chicopee Municipal Golf Course
- 14 Sarah Jane Sherman Park
- 15 Wastewater Treatment Plant

— Roads Eligible for Federal Aid

⊞ Environmental Justice Areas

*Potential locations identified by site assessments, soil maps, and conversations with city officials





Rain garden at Valley Bike and Ski Werks,
Hadley, MA
Photo: Berkshire Design Group, Inc.

Sustainable financing options are needed.

Answering the question of how to pay for green infrastructure is critical to advancing this plan. Options for sustainable financing of green infrastructure include:

- **Integration in public projects** - Green infrastructure can be included as cost effective components of roadway reconstruction and repair, combined sewer overflow abatement, and other stormwater projects associated with parks, public housing, civic buildings, and bike and pedestrian projects.
- **Stormwater Utilities or Fees** - Dedicated municipal funds can be created to pay for stormwater management derived from fees based on amounts of impervious surface.
- **Private development projects** - Communities can establish stormwater permit or connection fees and/or regulatory incentives for including green infrastructure components in new projects.
- **Betterments and Management Districts** - Assessments can provide for the cost of public improvements by municipalities.
- **Sponsorships** - Local businesses may provide donations or sponsorships for green infrastructure projects in public locations.



Rain gardens, porous pavers and asphalt are featured in this parking lot at New England Environmental, Amherst.

Photo: Chris Curtis

Sustainable financing: the example of Lenexa, Kansas.

The City of Lenexa, Kansas, established three financing mechanisms to help cover the various costs associated with stormwater management.

To help cover the **capital costs** of upgrading and repairing the existing stormwater system, voters approved in 2000 a 1/8th cent sales tax that would sunset within 5 years. The sales tax generated \$7.2 million dollars and voters were apparently so pleased with the stormwater upgrades that they approved an extension for another 5 years.

To cover the **long term operation and maintenance** of the stormwater system, the City Council in 2000 approved a stormwater utility that collects approximately \$66 annually from residential properties and a fee from commercial and non residential properties that is based amount of stormwater runoff generated by the property. The fee is collected as a special assessment on the Johnson County property tax bill.

To cover the costs for **increasing services and capacity** in the stormwater system, the City in 2004 implemented a one time fee “capital” development charge that developers pay when they apply for a permit. The idea is that “growth pays for growth.”

Sources: http://www.lenexa.com/raintorecreation/about_us.html and December 6, 2012 presentation by Jennifer Cotting, Environmental Finance Center, University of Maryland.

Near-term implementation strategies:

There are 14 green infrastructure strategies for near-term implementation that capitalize on important opportunities and respond to immediate needs within the region. (For the full slate of strategies recommended for the region, see Chapter 5 of the full Green Infrastructure Plan.) These near-term strategies are designed to expand understanding of green infrastructure through existing and new projects, promote change in current approaches, and provide useful tools for moving forward. The intent is to help accelerate movement toward the use of green infrastructure so that municipalities and the region can more quickly begin to realize the benefits of these practices, including: reduced polluted stormwater flows, less flooding in developed areas, and lower costs for major combined sewer separation projects, among others.

Finance & Fund Green Infrastructure

SEEK

Funds for Pilot/Demonstration Projects that Transform “Gray” Streets Into “Green” Streets

132

Seek funds to support and promote pilot projects that demonstrate the potential for cost savings in avoiding costly gray infrastructure projects, and showing effectiveness, benefits, and lessons learned.

PARTNERS:
Municipalities and MassDOT with help from PVPC

CROSS-CUTTING STRATEGIES:



EXPLORE

A New State Green Infrastructure Grant Program

133

Explore use of State Revolving Loan Funds (SRF) to establish a new green infrastructure grant program, in accordance with EPA’s Green Project Reserve Program, that targets projects in Combined Sewer Overflow (CSO) and Municipal Separate Storm Sewer System (MS4) areas. The State of Illinois has such a program for green infrastructure.

PARTNERS:
Mass DEP, EPA, PVPC, other stakeholders

CROSS-CUTTING STRATEGIES:



PROMOTE

Changes to the Clean Water State Revolving Fund (SRF) to Support Green Infrastructure

134

Include points for green infrastructure stormwater management strategies in ranking SRF projects, including the preponderance of projects financed through the use of the program’s “recycled” funds.

PARTNERS:
MassDEP, EPA, PVPC, other stakeholders

CROSS-CUTTING STRATEGIES:



CONDUCT**Green Infrastructure Workshops for Municipal Officials, Design Professionals, and Others**

135

Provide workshops to help expand understanding about green infrastructure stormwater management approaches and engagement with green infrastructure planning. Collaborate with EPA on a series of workshops aimed at addressing common barriers to green infrastructure. Projects from within the region should be featured to help build peer to peer relationships on learning from existing projects.

PARTNERS:
PVPC, Municipalities, EPA

CROSS-CUTTING STRATEGIES:



Build Understanding & Promote Engagement

PROMOTE**Citizen-Built Rain Gardens**

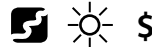
136

Support local efforts to build rain gardens. This work can include:

- Collaborating with EPA and city partners to conduct a rain garden workshop in Springfield Technical High School that results in a constructed facility;
- Facilitating rain garden trainings in other parts of the region for other young people to develop these skills.

PARTNERS:
PVPC in collaboration with EPA and coordinating with citizen groups and municipalities

CROSS-CUTTING STRATEGIES:

**DESIGN AND INSTALL****Interpretive Signage at Key Existing Green Infrastructure Facilities in the Region**

137

Highlight existing green infrastructure projects in the region to promote awareness and build greater understanding and appreciation for these types of facilities. This could begin at the Jones Ferry River Access Center where there is a green roof that is largely invisible to the many people who use the Center throughout the rowing season. This is an especially good location because the rowers who use the facility will immediately get the connection between the green roof and water quality in the Connecticut River.

PARTNERS:
PVPC with willing landowners

CROSS-CUTTING STRATEGIES:

**ASSESS****Existing Local Policies and Regulations that Impact Green Infrastructure and Make Recommendations for Improvements**

138

Use the PVPC Green Infrastructure Checklist to review to what extent local policies and regulations make green infrastructure practices allowable in communities.

PARTNERS:
PVPC with interested municipalities

CROSS-CUTTING STRATEGIES:



Develop Policies & Resources

DEVELOP

A Model Green Infrastructure Policy

139

Develop a model policy that includes various components that can be used by municipalities to promote green infrastructure. These components can include:

- Incentives for green infrastructure in private development to be included in stormwater, zoning, and subdivision regulations.
- A “Green Streets Policy” to ensure that green infrastructure is included in all new road and road reconstruction projects.
- Committing new municipal buildings to achieve certain stormwater criteria, perhaps those laid out in the LEED (Leadership in Energy and Environmental Design Green Building Certification) program or the Sustainable Sites Initiative developed by the American Society of Landscape Architects.

CROSS-CUTTING STRATEGIES:



PROVIDE

Technical Assistance to Develop Policies and Regulations that Promote Green Infrastructure

140

Work with municipalities to develop policies and regulations that include provisions to promote green streets, green civic buildings, as well as stormwater, zoning, and subdivision regulations that incentivize green infrastructure in private development.

PARTNERS:

PVPC with interested municipalities

CROSS-CUTTING STRATEGIES:



IDENTIFY

Funding to Develop a Green Infrastructure Stormwater Manual for the Region

141

Identify funding that would enable PVPC, an engineering firm, and a roundtable of municipal partners to work on the development of a green infrastructure stormwater manual for the region, drawing from existing manuals and additional research.

PARTNERS:

PVPC with guidance from interested municipalities

CROSS-CUTTING STRATEGIES:



Support Decision Making

COORDINATE

With MassDOT's Impaired Waters Program to reduce peak flow in CSO communities

142

Provide information to MassDOT's Impaired Waters Program about locations where runoff from MassDOT roads such as I-91 contributes to combined sewer over-flows and where municipalities have great interest in managing stormwater for peak flows. Conduct a follow-up meeting to talk about where these local interests may combine with MassDOT interests in managing flow to impaired waters.

PARTNERS:

Planning Boards, Conservation Commissions

CROSS-CUTTING STRATEGIES:



PROMOTE

Federal Highway Funding for Projects that Incorporate Green Infrastructure

143

Ensure that new project scoring criteria used by the Metropolitan Planning Organization in evaluating Transportation Improvement Program (TIP) projects include points for managing stormwater through green infrastructure.

PARTNERS:
PVPC and CROG with MassDOT, CTDOT, and Metropolitan Planning Organizations

CROSS-CUTTING STRATEGIES:



INCORPORATE

Green Infrastructure Practices Into the Design of Publicly Funded Projects Across the Region

144

Support local officials in their efforts to implement green infrastructure practices in publicly funded projects. These can include: the Connecticut Riverwalk Project and the Older Adult Community Center in Chicopee.

PARTNERS:
Interested municipalities with support from PVPC

CROSS-CUTTING STRATEGIES:



SEEK

To Advance Green Infrastructure Practices Within MassWorks Funded Projects

145

Work with MassWorks grant administrators, possibly in tandem with other interested regional planning agencies, to explore revisions in ranking criteria that would promote projects that incorporate green infrastructure.

PARTNERS:
PVPC with MassWorks administrators and perhaps other RPAs

CROSS-CUTTING STRATEGIES:



CROSS CUTTING STRATEGIES ICONS: The following icons are used in reference to issues and strategies related to other element plans of this report.



TRANSPORTATION



LAND USE



HOUSING



ENVIRONMENT



ECONOMIC DEVELOPMENT



FOOD SECURITY



GREEN INFRASTRUCTURE



CLIMATE ACTION



BROWNFIELDS

Proposed street improvements in
Westfield, MA from Re-thinking
Downtown Westfield project, 2009.



07

Sustainable Transportation Plan

Improving Mobility and Promoting. Alternative Modes of Transportation.

Sustainable transportation consists of the efficient use of existing resources to increase mobility while positively impacting economic development, quality of life, and the preservation of the natural environment. This document identifies the existing sustainable transportation initiatives in the region and develops strategies to improve the sustainability of the regional transportation system in the Pioneer Valley. The purpose of the plan is to identify how sustainability can be incorporated into the transportation planning process in order to meet existing needs without compromising the assets of future generations.

"My community is sustainable when we strive to create a continuous revenue stream to maintain and enhance mobility through the Region in a cost effective manner."

*Jim Czach,
West Springfield, MA*



Note: This is the executive summary of our plan. To obtain or view a copy of the full plan, visit pvpc.org.

OUR GOALS

Safety: To provide and maintain a transportation system that is safe for all users and their property.

Intermodal: To provide access between travel modes for people and goods while maintaining quality and affordability of service.

Multimodal: To provide a complete choice of adequate travel options that are accessible to all residents, visitors and businesses.

Sustainability: To incorporate the concepts of Sustainable Development in the regional transportation planning process and transportation improvements.



Holyoke transit center in Holyoke, MA
Photo: Chris Curtis



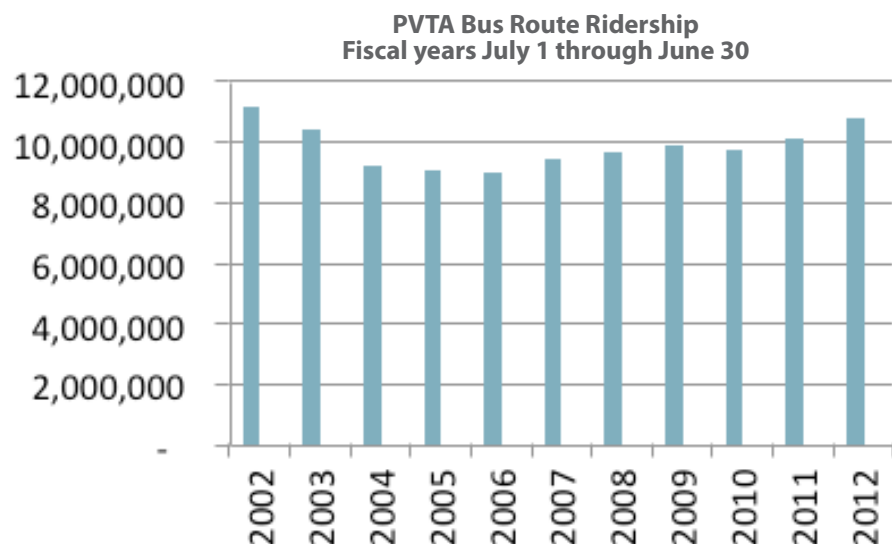
Interstate 91 at the Connecticut River Oxbow, Northampton, MA





Bus ridership is increasing.

Ridership is the number of trips provided in a given period (as distinguished from individual “riders,” who typically make multiple trips during the same period). Capital and service improvements implemented by the Pioneer Valley Transit Authority (PVTA) from 1970-1990 resulted in a ridership peak of nearly 13 million in 1985. However, state-imposed budget reductions in 2002 necessitated deep service cuts, eliminating nearly one-fifth of bus service, including many Sunday trips, resulting in a significant decrease in ridership. This trend has reversed over the last few years and nearly 11 million rides were provided in 2012.





We have an expanding network of off-road trails.

Blkeway in Springfield, MA

With over 80 miles of existing bicycle and pedestrian facilities in the Pioneer Valley Region, the popularity of multiple use trails in the Pioneer Valley has brought new challenges and opportunities to those that use and manage these facilities. In-line skates, push scooters, and baby joggers have been added to the mix with bicyclists and pedestrians on trails. While recreation use dominates trail activity many people also use the facilities for non-recreational trips such as commuting to work, school or shopping. Many of these trips replaced travel that would otherwise have been made with a motor vehicle. These facilities promote the benefits of walking and bicycling while minimizing conflicts with motorized traffic. Many facilities provide economic benefits as well through increased tourism in the Pioneer Valley.



Bus stop in Amherst MA.

We strive to promote an equitable transportation system.

The 43 communities of the Pioneer Valley Region are diverse in incomes and ethnicity. The Pioneer Valley Metropolitan Planning Organization (MPO) is required to certify to the Federal Highway Administration and the Federal Transit Administration that their planning process addresses the major transportation issues facing the region. The MPO also makes a special effort to seek out and consider the needs of individuals or neighborhoods with Limited English Proficiency. A three-step process was developed to assess the benefits and burdens of transportation system investments for low-income populations and minority populations. These steps are:

1. Identification of transportation investments programmed through the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP).
2. Scoring and prioritization of programmed TIP projects.
3. Analysis of programmed TIP project locations in relation to census block groups (defined as by the percentage of low-income and/or minority residents that exceed the regional average) to determine the relative distributional equity of programmed transportation investments.

Mass DOT's New Green DOT Plan

"The Plan focuses upon sustainability practices under the direct control of MassDOT, concentrating on system operations and transportation project development. These strategies may also offer opportunities to address our long term fiscal challenges through energy and maintenance cost savings. At the same time, many of these sustainability goals require investments that may be challenging to make given the current situation related to transportation funding. The Divisions and their partners will implement the sustainable activities identified in this plan with sensitivity to how minority, low-income, and limited-English proficient populations are impacted, both in relation to benefits and burdens."

GreenDOT Implementation Plan

Massachusetts has set ambitious sustainability initiatives.

MassDOT launched its GreenDOT initiative on June 2, 2010. GreenDOT was developed to assure a coordinated approach to sustainability and to integrate sustainability into the responsibilities and decision-making of all MassDOT employees. The following three mutually-reinforcing goals form the foundation of GreenDOT:

- Reduce greenhouse gas (GHG) emissions
- Promote the healthy transportation modes of walking, bicycling, and public transit
- Support smart growth development

The initiative is a comprehensive response to a range of state and MassDOT laws, policies and initiatives including: the Global Warming Solutions Act, the Green Communities Act, the Healthy Transportation Compact, Leading by Example, YouMoveMassachusetts, and Complete Streets. The Global Warming Solutions Act requires Massachusetts to reduce economy-wide GHG emissions: 10% -25% below 1990 levels by 2020 and an 80% reduction below 1990 levels by 2050. The transportation sector is the largest GHG emitter, producing 31% of 1990 emissions and projected to produce 38% of 2020 emissions. GreenDOT also incorporates a statewide mode shift goal to triple the percentage of trips made by bicycling, transit and walking.



The Norwottuck Rail trail is a key east-west bicycle and pedestrian linkage in the region



*Proposed Union Station project,
Springfield, MA*

*Source: Springfield Redevelopment
Authority*

We are advancing many
sustainable transportation projects.

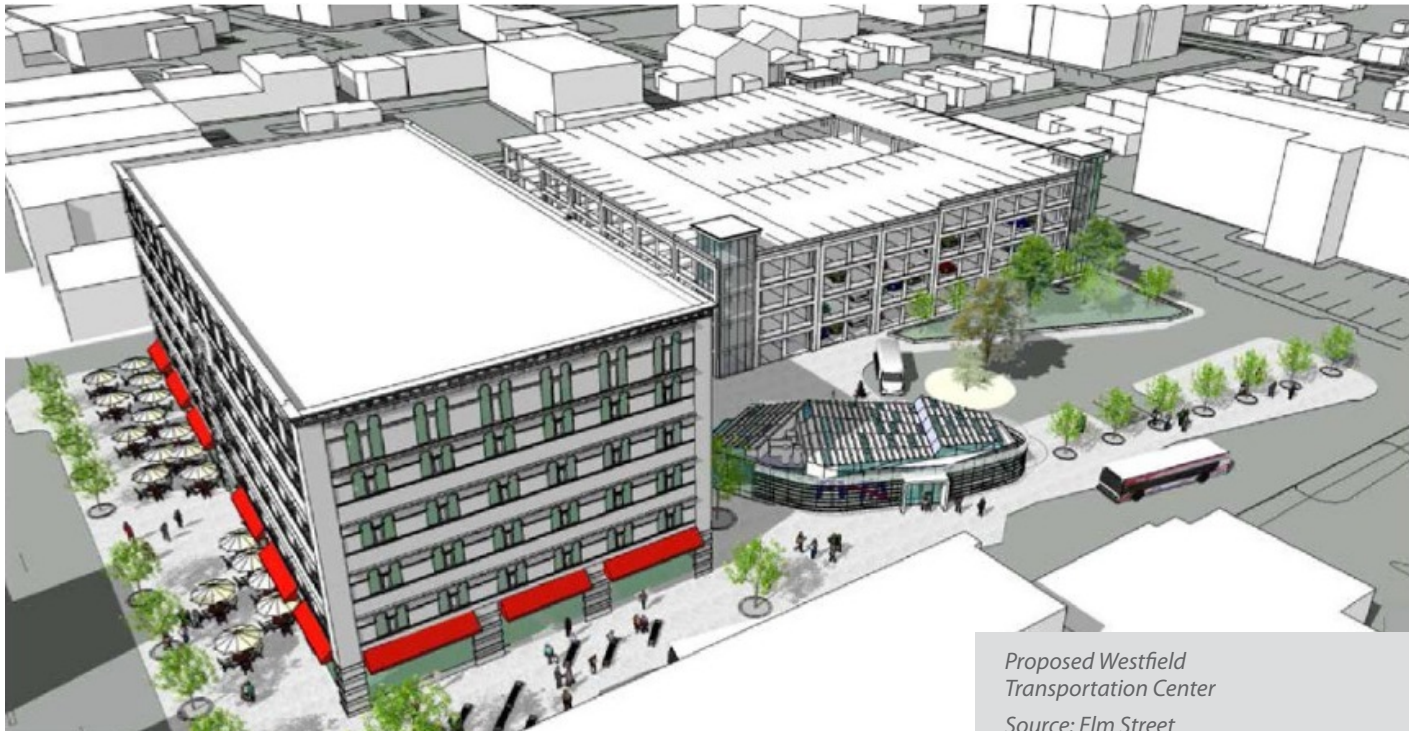
“This (Springfield Union Station Project) will make transportation easier, more convenient, and more efficient for travelers in the region. This will be a hub, a place where passengers can catch a bus or hop a train whether it’s Amtrak or a bus operated by the Pioneer Valley Transit Authority. Improving this facility will encourage more people to try public transit. That’s a big win for everybody. Through public transit we reduce highway congestion, improve air quality, and give people options.”

Raymond H. LaHood, U.S. Secretary of
Transportation, 2012

The Pioneer Valley has actively incorporated sustainability planning practices to improve the regional quality of life. These projects improve the livability of neighborhoods, provide alternate modes of transportation, and reduce environmental impacts. These projects typically enhance access for pedestrian, bicycle and transit use. Increased access to these alternative modes reduces individual’s reliance on automobiles and can improve the local environment by using a cleaner and healthier mode of transportation.

Regional performance measures consistent with the Moving Ahead for Progress in the 21st Century Act (MAP-21) will be incorporated into the transportation planning process. These measures will assist in tracking the progress made towards attaining regional goals such as Sustainability as a result of investments in the transportation system.

The PVTA has actively pursued planning and construction efforts of intermodal and transportation centers within the region to improve connectivity and increase rider experience. These transportation centers enhance sustainability by improving transit access, increasing livability and promoting healthy transportation options.



Proposed Westfield
Transportation Center

Source: Elm Street
Urban Renewal Plan, Westfield

The Union Station Regional Intermodal Transportation Center will revitalize the long-vacant Springfield landmark into a comprehensive multimodal facility with business, entertainment, cultural and retail operations. The Union Station Project will consolidate the different transportation terminals of Springfield into one location. The multimodal center will include the Springfield Hub for PVTA routes, Intercity Buses, and Amtrak. The downtown Springfield location has convenient access to the Interstate Highway System, ample parking at local garages, as well as convenient pedestrian access. When complete, the project will provide a 24-bay bus terminal (with 4 additional bus bays on an adjacent site) and a 146-space parking garage. A pedestrian tunnel linking the station with train boarding platforms will also be restored.

PVTA and the City of Westfield are collaborating on the development of the Westfield Transportation Center to be located on Elm Street between Church and Arnold Streets in downtown Westfield. The facility will include bus berths for local and intercity buses, bicycle facilities, and vehicular parking. The project, included as part of the city's Elm Street Urban Renewal Plan, will help anchor new urban and commercial redevelopment in the vicinity and support additional transit ridership related to both the downtown and Westfield State University.

“Communities benefit when decisions about transportation and land use are made at the same time. Deciding to build houses, schools, grocery stores, employment centers, and transit stations close to one another—while providing a well-connected street network and facilities for walking or biking—provides more transportation choices and convenient access to daily activities. It also ensures community resources and services are used efficiently.”

FHWA Livability Fact Sheet



Intelligent transportation systems.

An intelligent transportation system enables systems to operate more efficiently, saving resources and energy, and improving rider experience. These systems use high tech solutions to allow the system to communicate information instantaneously. This information improves the ability of transit operators to react to daily challenges and allows more in depth data on route usage. All PVTAs buses are equipped with equipment to perform automatic audio and visual stop announcements, automatically count passengers, and locate the position of the vehicle. Passenger experience will improve, as bus arrival and departure times will be more easily attainable for customer service agents.

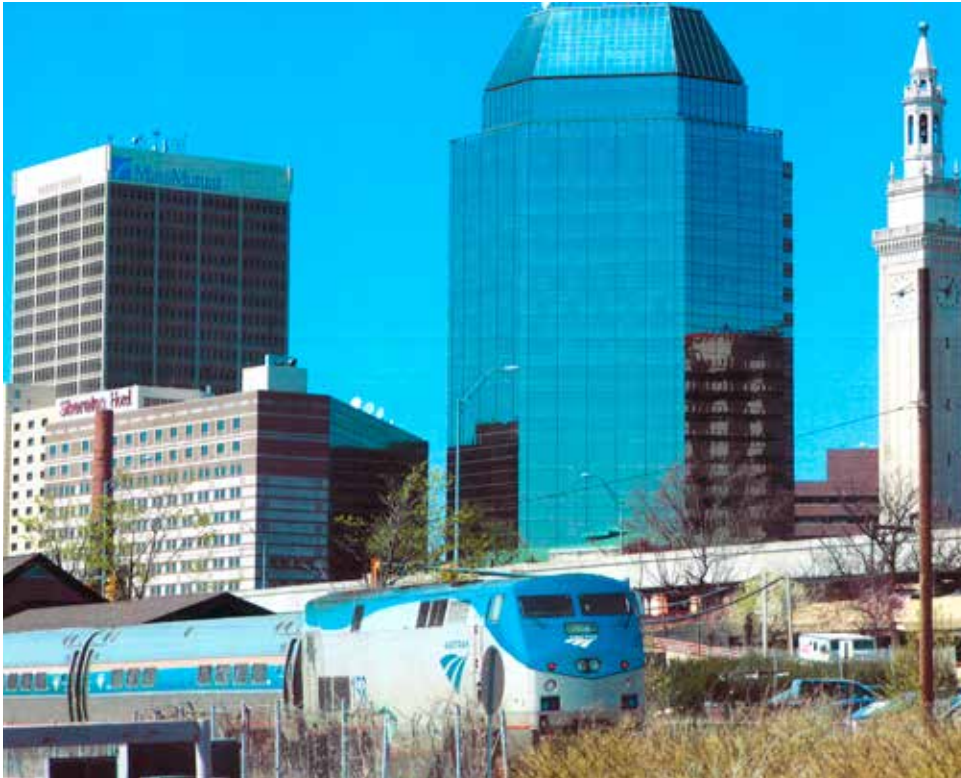
Similarly, MassDOT has installed closed circuit television cameras and variable message signs along the entire length of Interstate 91 and portions of Interstate 291. This equipment provides real-time travel information that can be disseminated to increase safety, improve travel efficiency, and reduce congestion.



Promote bike travel.

The Pioneer Valley region possesses high quality bike lanes and bike trails that connect people to neighborhoods, shopping, recreational areas, major places of employment, and schools. These trails and lanes allow users to travel safely and quickly to accomplish daily activities. The extensive network of bike lanes and the areas they serve makes the bicycle a viable transportation option. PVTAs bikes on bus program "Rack and Roll" has dramatically improved access for bicyclists to transit and given thousands of people another choice in their mode of travel. Bicycle racks have been provided on all fixed route buses since 2010.





Existing Amtrak Passenger Rail Service in downtown Springfield, MA.

Source: PVPC

The future is bright for passenger rail.

As demand continues to grow for transportation options for intercity travel, passenger rail has gained support in both popularity and funding to become a viable alternative mode of travel in the Pioneer Valley in the near future. Expanded passenger rail service results in increased ridership, a potential travel time savings, a reduction in emissions, the potential for reduced highway maintenance costs, and improved highway safety.

The Vermonter service runs one train/day in each direction between Washington D.C. and St. Albans, Vermont via Amherst and Springfield, MA. Recently, improvements to the region's Connecticut River line were funded allowing the Vermonter to be rerouted to better serve the region's urbanized area with stops in Greenfield, Northampton and Holyoke, MA. The project will upgrade the existing railroad ties and track along the line, improve the safety of at-grade crossings, and build a bicycle and pedestrian tunnel under the active rail line to connect the Norwottuck Rail Trail to the Manhan Rail Trail in Northampton, MA. Construction on this line is underway and service is anticipated to return to the line in 2014.



Rendering of proposed Holyoke Amtrak train station at Depot Square.

“Expanding passenger rail is directly connected to economic recovery, and the revitalization of Union Station is a powerful step in revitalizing downtown Springfield”

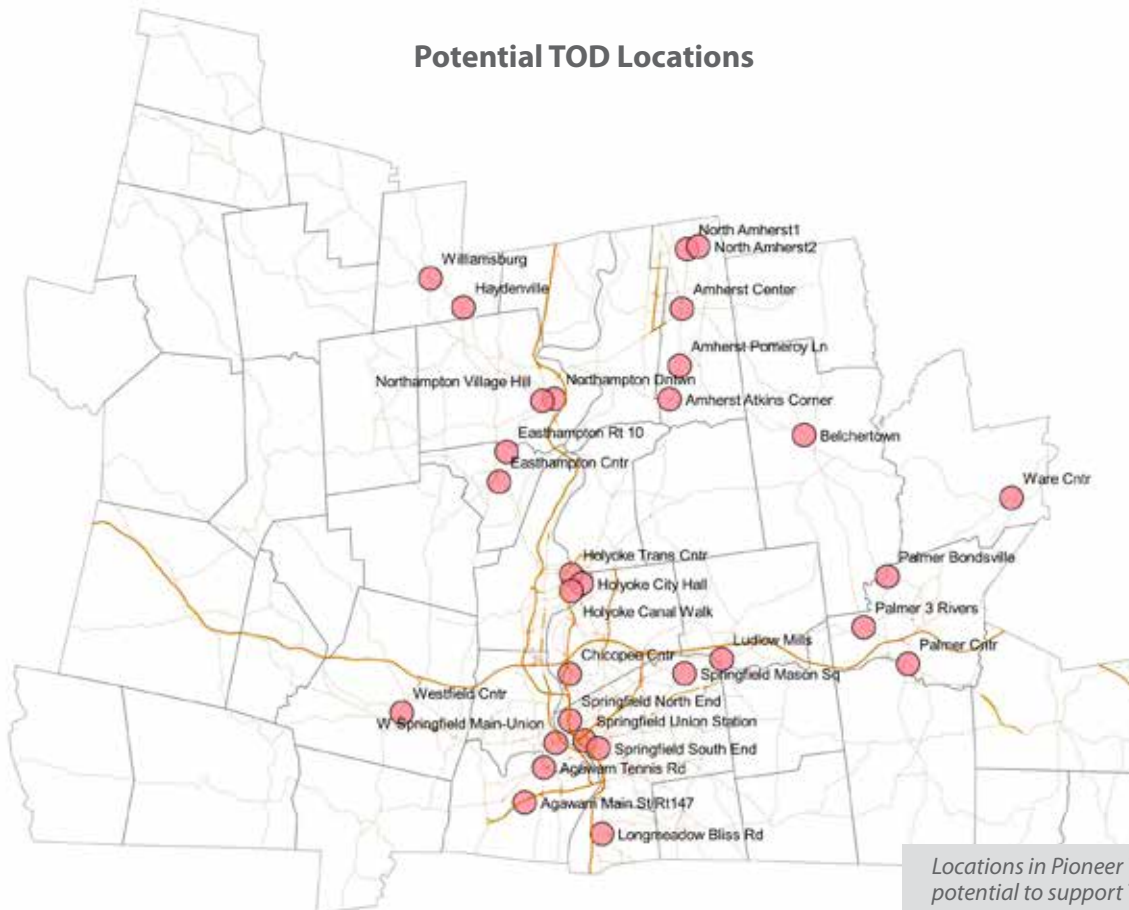
Massachusetts Governor
Deval Patrick, 2012

The New Haven-Hartford-Springfield Rail project represents a broad partnership between the State of Connecticut, Amtrak and the Federal Railroad Administration (FRA), as well as the states of Massachusetts and Vermont. The goal is ambitious – to provide those living, working or traveling between New Haven, CT, Hartford, CT and Springfield, MA with high speed rail service equal to the nation’s best rail passenger service. Since 1999, the Pioneer Valley Region and Connecticut have been working toward the implementation of passenger rail service between the three cities.

Intercity Rail service is expected to have a significant impact on the 13 railroad station areas serving the 17 communities along the rail corridor. The service will connect the third, fourth and fifth largest metropolitan areas in New England and provide a connection to both Amtrak and Metro North Service into the New York Region. The project will also result in a coordinated connection to Bradley International Airport in Windsor Locks, CT providing another option for air travelers to access the airport. When the project is complete, service will expand from the existing six trips daily between New Haven and Springfield, to 25 trips per day.

In its 2005 Transportation Appropriations Bill, Congress designated the Boston, MA – Springfield, MA to New Haven, CT as well as the Springfield, MA to Albany, NY corridors as part of the Northern New England High Speed Rail Corridor. Congress further provided funds to study the feasibility of High Speed Rail Service in the Boston – Springfield - New Haven Corridor. MassDOT is advancing a study of the corridor to explore opportunities for passenger rail service and provide a scalable, incremental plan for the implementation of new or expanded services.

Potential TOD Locations



Locations in Pioneer Valley with the potential to support TOD.

A number of locations in the region have the potential to support TOD.

Transit Oriented Development (TOD) promotes a balance of jobs and housing, and encourages the use of bus and other transit opportunities, while reducing single occupant vehicle trips and discouraging suburban sprawl. TOD is a land development strategy that seeks to concentrate more homes, jobs and shopping within a 5-10 minute walking distance (usually $\frac{1}{4}$ to $\frac{1}{2}$ mile) of a well-used transit station or bus stop. TOD attempts to limit sprawl, improve air quality, and provide access to goods, services and jobs in close proximity to residential areas.

A critical component of the Sustainable Knowledge Corridor project was the development of a methodology to analyze the level and type of development transit can support and identify key areas to begin TOD demonstration projects. A matrix analysis was conducted for thirty sites found to have the potential to support TOD. A quantitative methodology was then developed to rank each of the sites based on their transportation merit and prioritize the locations best suited for further analysis. This analysis will be used to assist in the identification of transportation improvement projects that could assist in the implementation of TOD.

The strategies included in this element plan are based on those recommended in the 2012 Pioneer Valley Regional Transportation Plan (RTP). The RTP focuses on the attainment of a safe and dependable transportation system. A total of five emphasis areas were identified to assist in the development of the regional transportation strategies required to assist in the achievement of the RTP vision and goals. These emphasis areas are not intended to be a replacement for the regional transportation goals. Instead they were established with the recognition that many of the transportation improvement strategies included as part of the RTP Update can meet multiple regional transportation goals. The five emphasis areas are:

- Safety and Security
- The Movement of People
- The Movement of Goods
- The Movement of Information
- Sustainability

At the same time, we need strategies to prepare for, and adapt to, our already changing climate. For more details about any of the strategies listed in this plan, please see the 52 total strategies in the full Transportation Plan.

Safety & Security

PROMOTE

The Safe Routes to School Program

140

Promote the Safe Routes to Schools Program and assist in identifying potential candidate locations for inclusion in the program.

PARTNERS:
MassDOT, PVPC

PROVIDE

Accommodations for Pedestrians, Transit Users, and Bicyclists in Roadway, Bridge Design and the Maintenance of Existing Facilities

141

Identify and prioritize transportation improvement projects that promote the safety of bicyclists, pedestrians, and transit riders to assist in developing a balanced transportation system.

PARTNERS:
MassDOT, Municipalities

CROSS-CUTTING STRATEGIES:
\$

Movement of People

DEVELOP

A Comprehensive Commuter Rail Network

142

Work with officials from the Commonwealth of Massachusetts, the State of Connecticut, local communities, and other interested parties to advance the development of a viable Commuter Rail network.

PARTNERS:
MassDOT

CROSS-CUTTING STRATEGIES:



MAINTAIN

Equity in Providing Transportation Services and Access Throughout the Region

143

Incorporate an assessment of transportation equity as part of transportation planning studies as appropriate. Work with local communities to identify neighborhood groups and local organizations to include in ongoing public participation activities.

PARTNERS:
PVPC, PVTA, MassDOT, FHWA,
FTA, local communities
CROSS-CUTTING STRATEGIES:



PROMOTE

The Implementation of Bicycle Lanes Where Practical

144

Identify areas where bicycle lanes could be included as part of ongoing transportation improvement projects.

PARTNERS:
MassDOT, Municipalities
CROSS-CUTTING STRATEGIES:



CREATE

Green Streets Policies

145

Work with DPWs and Mass DOT to adopt Green Streets policies to promote on-site stormwater runoff and installation of tree box filters, rain gardens, sheet flow runoff and permeable pavements in road construction or re-construction projects.

PARTNERS:
PVPC, DPWs, MassDOT
CROSS-CUTTING STRATEGIES:



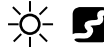
REPLACE

Under-sized Culverts and Stream Crossings

146

Promote replacement of under-sized culverts and stream crossings to accommodate increased storm flows and wildlife passage, through changes in MassDOT and FEMA policies.

PARTNERS:
PVPC, MassDOT, FEMA
CROSS-CUTTING STRATEGIES:



REDUCE

Combined Sewer Overflow (CSO) Impacts

147

Work with MassDOT to reduce combined sewer overflow (CSO) impacts from highway runoff, including I-91, through MassDOT's GreenDOT initiative.

PARTNERS:
PVPC, MassDOT
CROSS-CUTTING STRATEGIES:



Sustainability Strategies

INVEST**In the Repair and Maintenance of Existing Transportation Infrastructure.**

148

Utilize pavement management to identify roads in need of repair before they reach critical conditions. Maintaining a state of good repair results in more cost effective projects that enhance the safety and efficiency of all modes

PARTNERS:
MassDOT, DPW

CROSS-CUTTING STRATEGIES:

**DEVELOP****Transportation Facilities to Support and Promote Smart Growth in and Around Existing City and Town Centers**

149

Transportation hubs and multimodal centers that provide services such as showers, lockers, bike shelters, and information centers attract residents and customers. They can also assist in increasing the viability of high density development initiatives for town centers.

PARTNERS:
PVTA, Municipalities

CROSS-CUTTING STRATEGIES:

**WORK****With Major Employers to Develop Incentives to Decrease Single Occupant Vehicle Use**

150

Continue to work with MassRides to reduce the percentage of single occupant vehicles that commute to work. Incorporate strategies as appropriate into ongoing transportation planning studies.

PARTNERS:
Municipalities

CROSS-CUTTING STRATEGIES:



Movement of Goods

DEVELOP**Incentives to Encourage Businesses to Utilize a Mix of Freight Transportation Alternatives**

151

The movement of goods in the Pioneer Valley is dominated by trucking, which has 98 percent of the market. Identify measures to encourage a wider mix of freight transportation uses.

PARTNERS:
Local Government

CROSS-CUTTING STRATEGIES:

**IDENTIFY AND MITIGATE****Vertical Clearance Issues at Underpasses**

152

Low clearance underpasses restrict the efficient movement of freight in the Pioneer Valley region. Identify locations with vertical clearance issues and advance transportation improvements that enhance freight movement.

PARTNERS:
MASSDOT

REFINE AND IMPROVE

The Regional Project Prioritization System as Necessary

153

Work with MassDOT and the Pioneer Valley MPO to identify enhancements to the regional project prioritization system. Specifically, develop a separate prioritization system for transit and freight improvement projects.

PARTNERS:
MassDOT, PVPC

CROSS-CUTTING STRATEGIES:



ENCOURAGE

Telecommuting and Video Conferencing

154

Develop initiatives to encourage major employers to offer options for tele-commuting. Promote video conferencing to reduce the rise in vehicle miles traveled in the region.

PARTNERS:
Major Employers

CROSS-CUTTING STRATEGIES:



CROSS CUTTING STRATEGIES ICONS: The following icons are used in reference to issues and strategies related to other element plans of this report.



TRANSPORTATION



ENVIRONMENT



GREEN
INFRASTRUCTURE



LAND USE



ECONOMIC
DEVELOPMENT



CLIMATE
ACTION



HOUSING



FOOD SECURITY



BROWNFIELDS



Holyoke computing center on Appleton St.
(new construction on existing brownfield site)

Photo: Chris Curtis

08

Brownfields Plan

Cleaning up our industrial legacy.
Building stronger neighborhoods
and communities.

The purpose of the Pioneer Valley Regional Brownfields Plan is to facilitate assessment, cleanup, and redevelopment of contaminated and blighted properties in our region. EPA defines a brownfield site as real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Thus, brownfields are sites with known or perceived contamination. The Pioneer Valley Regional Brownfields Plan identifies 20 neighborhood scale Areas of Brownfield Interest (ABI) where brownfields are pervasive, and resources to address them are most needed. The plan provides an analysis of the disproportionate number of brownfields within low income and minority block groups and offers a series of strategies for each ABI relative to site-specific environmental assessment, cleanup and/or redevelopment planning.

Note: This is the executive summary of our plan. To obtain or view a copy of the full plan, visit pvpc.org.

"My community is sustainable when we work together to re-vision and willingly re-invest in abandoned, contaminated but historically significant properties—to once again productively contribute to the current needs of our cities"

Lee Pouliot
Chicopee, MA



OUR GOALS

To identify Areas of Brownfield Interest, the pervasiveness of brownfields was determined by the number of Massachusetts Department of Environmental Protection reported open or closed 21E sites at the clustered Census Designated Places and/or Block Group scale. A scoring model was developed that assigns points based on land use history, proximity to 21E sites, density of 21E sites, inclusion in an environmental justice mapped area, and proximity to brownfield assisted sites. Neighborhood-sized areas with a score of 16 points or more were considered ABIs. The 20 ABIs identified in this plan include:

- Amherst Center
- Belchertown Center
- Chicopee Center and Chicopee Falls
- Willimansett, Chicopee
- Downtown Easthampton
- Downtown Holyoke
- Downtown Northampton
- Downtown Springfield
- East Springfield
- Forest Park, Springfield
- Hill-McKnight and Six Corners, Springfield
- Indian Orchard, Springfield
- North End, Springfield
- South End, Springfield
- Ludlow Center
- Downtown Ware
- Downtown Westfield
- Merrick and Riverdale, West Springfield
- Monson Center
- Palmer Villages



Brownfields site, Easthampton

Photo: Chris Curtis



The thriving Eastworks mixed-use development, including housing, commercial and light industrial use on a former Brownfield site

Photo: Chris Curtis



Open Square in Holyoke is an example of a successful re-use of a historic former mill complex for mixed use.

Photo: Chris Curtis

A disproportionate number of poor and minority people live in neighborhoods with brownfields.

The effect of brownfields at the neighborhood scale is well documented. As city residents and businesses with access to capital migrated to outer suburbs in the decades after 1960, many working class neighborhoods were left with a legacy of contaminated and vacant facilities, deteriorating infrastructure, and abandoned homes. The remaining residents of these blighted communities, often poor and/or minorities, were left to bear the burden of this wholesale disinvestment and its physical remnants. Environmental health risks are the most acute problem faced, but in neighborhoods with concentrations of brownfields, there are more insidious challenges to everyday quality of life, employment accessibility, and housing supply and affordability.

Pioneer Valley Areas of Brownfield Interest (ABI) Population, Race, Ethnicity and Age

Demographic Indicators	All ABIs	PV Region
Total Population	247,841	621,570
% White or Caucasian	68.9%	79.6%
% People of Color	31.1%	20.4%
% Latino or Hispanic	26.1%	16.8%
% under Age 18	24.2%	21.9%
% Age 65 or above	10.8%	13.8%
Source: 2010 US Census		

Pioneer Valley ABI Economic Indicators

Demographic Indicators	All ABIs	PV Region
% of households under \$10,000 in income	15.8%	9.0%
% of households under \$30,000 in income	46.0%	22.7%
% of households in rental housing	57.4%	34.0%



Former Uniroyal Brownfield Site, Chicopee
Photo: Chris Curtis

Public health indicators such as lead paint and air pollution are concentrated disproportionately in older industrial neighborhoods.

Public health indicators show links between disease and brownfields-related environmental factors such as lead paint and air pollution, which are concentrated disproportionately in older industrial neighborhoods like the ABIs. Aging housing stock accounts for much of the lead hazard. About 55% of housing units in the Pioneer Valley were built prior to 1960 – this measure exceeds 90% in former mill worker neighborhoods like the West End of downtown Chicopee. With less than 10% of the state’s population, the Pioneer Valley contains 18% of the state’s high-risk municipalities for childhood lead poisoning. In places like the West End of Chicopee, the prevalence of abandoned brownfields keeps property values low and deters investments, such as lead paint abatement, by landlords and property owners due to concerns that the cost of abatement activities will not be recouped in resale value and/or rental income. Overall, the ABIs – nearly all of which are old mill neighborhoods – are home to relatively high percentages of minority residents, raising the issue of environmental justice.

Air quality is a concern due to the region’s major highways (I-90 and I-91), power plants and remaining mills. With the region’s transit-accessible downtowns burdened by brownfields and largely replaced as employment centers, car dependence will continue to impact air quality. In Hampden County, which contains more than three-quarters of the Pioneer Valley’s population, hospitalizations for asthma are 53% higher than the state rate, with especially high rates for Hispanics (91% higher than the state rate), who are about 5 times more likely to need hospitalization than non-Hispanic whites .



Brownfield Site, Holyoke
Photo: Chris Curtis

Tier Classified Oil and Hazardous Material Reported Releases, MassDEP 21E Sites (Mapped by MassDEP)

	# Sites in ABIs	# Sites in PVPC Region	ABI %
DEP tier-classified 21E sites	524	855	61.2%
Open tier-classified 21E sites	148	230	64.3%
<i>Source: MassDEP, GIS mapped sites</i>			

Brownfields are clustered in areas of brownfield interest (ABIs).

Brownfields are sites with ‘known’ or ‘perceived’ contamination. Known contamination can be tracked through the Massachusetts Department of Environmental Protection’s (MassDEP) 21E Database. This is also referred to as the Voluntary Control Program or VCP. The 21E database tracks sites with reportable quantities of petroleum or hazardous material contamination in what is called the 21E Database. 21E is in reference to the Massachusetts General Laws Chapter 21E which is the Oil and Hazardous Material Release Prevention Response Act. This database does not include sites perceived to be contaminated based on past land use or a generally blighted condition. It is only for sites with actual releases, at levels considered reportable under MGL 21E.

For the purposes of this plan, we utilized the Tier Classified 21E sites that were mapped as a GIS datalayer. Therefore, the mapped datalayer represent only a subset of the total reported Chapter 21E sites. Chapter 21E sites that have not yet been Tier Classified, or are not required to be Tier Classified, are not mapped, and thus were not used as part of the metrics calculated for determining the Areas of Brownfield Interest (ABIs). For example, there are 855 tier-classified sites in the Pioneer Valley region in DEP’s 21E database, out of a total of 4,089 21E sites (in the Pioneer Valley region).

Impacts of ABIs on Region

	Total in ABIs	Total in PVPC Region	ABI %
Population (source: Census 2010)	247,841	621,570	34.6%
21E Sites (source: MassDEP mapped sites GIS layer)	524	855	61.2%
Total Land Area (acres) (source: MassGIS)	62,720	754,560	8.3%
Industrial Land Area (acres) (source: MassGIS)	4,896	9,910	49.4%

Brownfields erode downtowns and drive sprawl.

Brownfields also have pernicious indirect environmental effects. They occupy a sizable proportion of commercial- and industrial-zoned land in most regional downtowns. Over several decades, in part because of obstacles to cleanup and redevelopment related to liability, the area's retail sector and surviving large commercial and industrial employers have gradually relocated from downtowns to greenfield sites in former agricultural parts of the Valley. These new employment centers have attracted commuters and residential development to outlying areas. Between 1970 and 2000, the Valley's population grew less than 5%, while developed land increased 49%. This migration has caused habitat loss and has created a car-based culture, wasting energy, adding to carbon emissions, and contributing to documented air pollution.



Chicopee West End Brownfield Strategy

The City of Chicopee's Downtown West End was the focus of an EPA funded Area Wide Brownfield Planning Grant to reinvigorate and spark reinvestment in the West End by mitigating local environmental conditions at brownfields and re-branding the area as an attractive, green neighborhood where people can live, work, learn and play. Through realistic strategies and market-driven initiatives, it particularly aims to assess, clean up and return key West End Brownfields to productive use over the next three to five years. It provides an overall market assessment that identifies potential demand for industrial/commercial space and rental housing units, potential niche market commercial users and appropriate target segments for mill building residences. It further addresses limitations in the neighborhood's infrastructure and recommends public improvements that will facilitate private property redevelopment in the West End.

For each Area of Brownfields Interest, (ABI), this plan identifies key brownfields and site-specific actions to address current conditions at the site. These actions ranged from initiating or completing assessment to determine the extent of contamination and a remediation plan, initiating or completing cleanup to ready a site for redevelopment, and/or redevelopment planning to determine the highest and best use of the site relative to community plans and visions for the neighborhood.

Assessment, Cleanup & Redevelopment Strategies

CONDUCT

Petroleum and Hazardous Material Site Assessments Under PVPC's EPA Brownfield Site Assessment Grant

155

PVPC received \$400,000 in site assessment funds from EPA in 2012. Municipalities will be solicited to apply for site assessments under this program by March 2013.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:



CONTINUE

Operation of PVPC's Brownfield Revolving Loan Fund (RLF)

156

Applications for brownfield cleanup assistance through the RLF are accepted on a rolling basis, with roughly \$1.7 million available as of November 2012. Loans are available to eligible private parties, while eligible municipalities, redevelopment authorities and nonprofits can receive assistance through loans, subgrants, or a combination of the two.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:



CONTINUE

Quarterly Meetings of the Regional Brownfield Advisory Committee

157

Facilitate regional coordination of technical assistance for brownfield assessments, cleanup and redevelopment.

PARTNERS:
PVPC

CROSS-CUTTING STRATEGIES:



SUPPORT

Transit Oriented Development

158

Advance Transit Oriented Development (TOD) in urban centers to support redevelopment

PARTNERS:
PVPC, Municipalities
CROSS-CUTTING STRATEGIES:



COMPLETE**Site Clean-up at Amherst Sites**

159

Conduct site clean-ups at the following Amherst ABI sites:

- Pelham Road at Fort River Crossing/ former Manufactured Coal Gasification plant

PARTNERS:

Amherst Planning Department

CROSS-CUTTING STRATEGIES:



Amherst Center & North Amherst

BEGIN**Phase I Site Assessments at Amherst Sites**

160

Begin Phase 1 site assessments at the following Amherst sites:

- College Street at Fort hill auto and other auto sites on College Street;
- WMECO site on College Street;
- Main Street – Depot Site;
- North Amherst – various automotive sites;
- Several South Amherst farms.

PARTNERS:

Amherst Planning Department

CROSS-CUTTING STRATEGIES:

**COMPLETE****Site Cleanup at Belchertown Sites**

161

Conduct site clean-ups at the following Belchertown ABI sites:

- Belchertown State School – asbestos removal

PARTNERS:

Belchertown Planning Department

CROSS-CUTTING STRATEGIES:



Belchertown Center

DEVELOP**Brownfield Inventory in Belchertown**

162

Conduct inventory of potential brownfield sites in Belchertown for Phase I Site Assessments

PARTNERS:

Belchertown Planning Department

CROSS-CUTTING STRATEGIES:

**START****Site Redevelopment in Chicopee**

163

Advance hazardous building material abatement and demolition of remaining Uniroyal structures. Apply for Cleanup Grants after site assessments, as needed. Advance assessment and cleanup at Delta Park and former Hampton Steam Plant properties.

PARTNERS:

Chicopee Office of Community Department; Planning Department

CROSS-CUTTING STRATEGIES:



Chicopee Center & Chicopee Falls

ADVANCE

Site Redevelopment in Chicopee

164

- Advance Phase I redevelopment at Facemate including Senior Center Construction and private mixed use redevelopment.
- Initiate Uniroyal Phase II redevelopment as appropriate;
- Advance redevelopment at Cabotville and Lyman Mills including needed infrastructure improvements.
- Advance site acquisition, assessment, and any required cleanup to develop proposed canal walk fronting mills;
- Develop and implement a marketing plan for Downtown and West End.
- Advance discussions about access to the delta properties including the train viaduct crossing;
- Support infill projects throughout neighborhoods.

PARTNERS:

Chicopee Office of Community Department; Planning Department

CROSS-CUTTING STRATEGIES:



CONDUCT

Site Assessment in Chicopee

165

Continue working with Michelin N.A. to complete environmental assessment and required cleanup. Prioritize Downtown West End brownfields for assessment under EPA Community –Wide Assessment Grant.

PARTNERS:

Chicopee Office of Community Department; Planning Department

CROSS-CUTTING STRATEGIES:



Willimansett Chicopee

DEVELOP

Brownfield Inventory in Willimansett

166

Develop brownfield inventory for Willimansett neighborhood and Chicopee Street.

PARTNERS:

Chicopee Office of Community Development; Planning Department

CROSS-CUTTING STRATEGIES:



CONDUCT

Site Assessment and Clean-up Planning in Willimansett

167

Conduct Phase I site assessments on inventories sites. Perform Phase II assessments and cleanup planning as needed.

PARTNERS:

Chicopee Office of Community Development; Planning Department

CROSS-CUTTING STRATEGIES:



UNDERTAKE**Redevelopment Planning in Willimansett**

168

Complete Redevelopment planning for RAO sites.
Apply for EPA Area-wide Planning Grant for prioritized sites.

PARTNERS:
**Chicopee Office of Community
Development; Planning Department**
CROSS-CUTTING STRATEGIES:

**UNDERTAKE****Redevelopment Planning in Easthampton**

169

Complete redevelopment planning for 154-158 Everett
Street in Easthampton.

PARTNERS:
Easthampton Planning Department
CROSS-CUTTING STRATEGIES:

**COMPLETE****Site Clean-up in Easthampton**

170

Complete the building hazardous material cleanup at 1
Ferry Street, Hampton Mills

PARTNERS:
**Site Owner; Easthampton Planning
Department**
CROSS-CUTTING STRATEGIES:

**CONDUCT****Site Assessment in Easthampton**

171

Complete a Phase II site assessment at Easthampton
Wastewater Treatment Plant and undertake cleanup as
needed.

PARTNERS:
Easthampton Planning Department
CROSS-CUTTING STRATEGIES:

**UNDERTAKE****Redevelopment Planning in Holyoke**

172

Close out 84 Sargeant Street and make ready for
redevelopment, which may include demolition.
Assess vacant lots for potential community garden
construction in partnership with Nuestras Raices.

PARTNERS:
**Holyoke Planning Department;
Nuestras Raices**
CROSS-CUTTING STRATEGIES:

**Downtown
Easthampton****Downtown
Holyoke**

COMPLETE**Site Clean-up in Holyoke**

173

Complete site clean-up at the following Holyoke sites.

- Initiate cleanup at 37 Appleton Street.
- Hazardous material removal at train station.
- Removal of fire damaged material from 277 Main Street.
- Complete remediation at 191 Appleton Street.
- Perform cleanup at Former Mountain Road Firing Range.

PARTNERS:

Holyoke Planning Department

CROSS-CUTTING STRATEGIES:

**CONDUCT****Site Assessment in Holyoke**

174

- Site assessment and cleanup at 216 Appleton Street, which may include partial demolition.
- Complete Phase II site assessment at 689 Main Street, and site cleanup.

PARTNERS:

Holyoke Planning Department

CROSS-CUTTING STRATEGIES:



Downtown Northampton

CONDUCT**Site Assessment in Northampton**

175

Conduct site assessments at the following Northampton sites.

- Roundhouse Parking Lot- continued site assessment, cleanup and redevelopment planning.
- Hampton Avenue Parking Lot – continued site assessment, cleanup and redevelopment planning.
- Hampton Avenue Parking Lot – continued site assessment, cleanup and redevelopment planning.
- 459 Pleasant Street – Continued site assessment, cleanup and redevelopment planning.
- King Street (former Honda Auto Dealership) – site assessment, cleanup and redevelopment planning.

PARTNERS:

Northampton Planning Department

CROSS-CUTTING STRATEGIES:



Downtown Springfield

UNDERTAKE**Union Station Site Clean-up**

176

- Complete site cleanup, including partial demolition (baggage warehouse).
- Site cleanup at adjacent vacant lot (former Hotel Charles);
- Complete Phase I construction of bus terminal and parking garage.
- Restore pedestrian tunnel linking the station with train boarding platforms and Lyman Street.
- Advance Phase II construction including addition of more office and retail space in the terminal building.

PARTNERS:

Springfield Planning Department

CROSS-CUTTING STRATEGIES:



PROMOTE**1600 Main Street Redevelopment**

177

Support City of Springfield efforts to seek a private developer for 1600 Main Street site.

PARTNERS:
Springfield Planning Department

CROSS-CUTTING STRATEGIES:

**REDEVELOP****Memorial Industrial Park II**

178

Support Springfield Redevelopment Authority's efforts to redevelop 650,000 sq. ft. of industrial, commercial, general office space, or combination of these uses (new Memorial Industrial Park II)

PARTNERS:
Springfield Redevelopment Authority; Springfield Planning Department

CROSS-CUTTING STRATEGIES:

**SUPPORT****1003 St James Street Site Assessment**

179

Support private property owner on-going site assessment at 1003 St James Street

PARTNERS:
Springfield Planning Department

CROSS-CUTTING STRATEGIES:

**COMPLETE****Phase I Site Assessment in East Springfield**

180

Complete Phase 1 site assessments at the following East Springfield sites.

- ES Hobson Street (near 59)
- NS Rear Bay Street
- 632-636 Page Blvd
- NS and ES Page Blvd and Roosevelt Ave
- NS Boston and Albany Railroad

PARTNERS:
Springfield Planning Department

CROSS-CUTTING STRATEGIES:

**COMPLETE****Phase I Site Assessment in Forest Park**

181

Complete Phase 1 site assessments at the following Forest Park Springfield sites.

- SS Belmont Ave (near 30-34)
- SS Locust Street (206-212)
- WS Longhill Street (18-20)
- 121 Oakland Street & WS Lansing Place
- WS Randall Place (near 56-68)

PARTNERS:
Springfield Planning Department

CROSS-CUTTING STRATEGIES:



East Springfield

Forest Park Springfield

Hill, McKnight & Six Corners, Springfield

COMPLETE

Phase II Site Assessment, and Clean-up as Needed

182

Complete Phase II site assessments at the following Hill, McKnight, and Six Corners, Springfield sites.

- 846 Bay Street
- 155 Hickory Street
- Walnut Street sites

PARTNERS:
Springfield Planning Department
CROSS-CUTTING STRATEGIES:



Indian Orchard, Springfield

COMPLETE

Phase I Site Assessment in Indian Orchard

183

Complete Phase 1 site assessments at the following Indian Orchard, Springfield sites.

- 241 Main Street
- NS Cardinal Street (near 139)
- NS Corthell (near 184)
- 284 Rear Main Street
- WS Moxon Street
- NS Worcester Street (near 950) -
- Support site assessment and cleanup on privately owned portion of site.

PARTNERS:
Springfield Planning Department
CROSS-CUTTING STRATEGIES:



North End, Springfield

COMPLETE

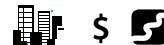
Phase II Site Assessment and Clean-up in North End, Springfield

184

Complete Phase II site assessments and clean-up at the following North End, Springfield sites.

- Chandler Street (29, 30, 61)
- WS Main Street (2580-2582)
- 2505-2495 Main Street

PARTNERS:
Springfield Planning Department
CROSS-CUTTING STRATEGIES:



CONDUCT

Site Redevelopment Planning in North End, Springfield

185

Promote site redevelopment on Dwight Street properties; Identify redevelopment options for:

- ES Main Street (2353-2365)
- ES Main Street (2931-2947)

PARTNERS:
Springfield Planning Department
CROSS-CUTTING STRATEGIES:



COMPLETE**Phase I Site Assessment in North End, Springfield**

186

Complete Phase 1 site assessments at the following North End, Springfield sites.

- 14 Grosvenor Street
- 11 Grosvenor Street and 1061 Dwight Street
- Rear End Napier Street
- NS 40 Napier Street
- 12 Sheldon Street
- NS Carew Street (136)
- Rear 2702-2708 Main Street

PARTNERS:

Springfield Planning Department

CROSS-CUTTING STRATEGIES:**UNDERTAKE****Redevelopment Planning in South End, Springfield**

187

- Support implementation of the South End Urban Renewal Plan to promote private investment throughout the neighborhood.
- Identify redevelopment options for the Gemini Site;
- Support Springfield Redevelopment Authority's efforts to seek Gemini site developer.

PARTNERS:

Springfield Redevelopment Authority; Springfield Planning Department

CROSS-CUTTING STRATEGIES:**South End,
Springfield****COMPLETE****Site Assessment in South End, Springfield**

188

Prioritize site assessment and cleanup at inventoried sites.

PARTNERS:

Springfield Planning Department

CROSS-CUTTING STRATEGIES:**CONDUCT****Site Clean-up in Ludlow**

189

Ludlow Mills – newly designated Brownfield Support Team (BST) site; continued site clean-up and removal of hazardous building materials

PARTNERS:

Westmass Area Redevelopment Corporation; MassDEP BST

CROSS-CUTTING STRATEGIES:**Ludlow Center****COMPLETE****Site Assessment and Clean-up in Ware**

190

Monroe Street MCP site – Phase II site assessment and clean-up

PARTNERS:

Ware Planning Department

CROSS-CUTTING STRATEGIES:**Downtown
Ware**

Downtown Westfield

CONDUCT

Site Clean-up in Westfield

191

Perform cleanup at proposed intermodal site (Elm, Arnold and Church Streets) and prepare for mixed use redevelopment

PARTNERS:
Westfield Planning Department
CROSS-CUTTING STRATEGIES:



COMPLETE

Redevelopment Planning in Westfield

192

Advance redevelopment at School Street site (former City Cleaners);
Advance redevelopment of 41 Jefferson Street (former machine shop);
Advance redevelopment of Columbia site on Cycle Street

PARTNERS:
Westfield Planning Department
CROSS-CUTTING STRATEGIES:



Merrick & Riverdale West Springfield

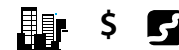
ASSESS

Trade Center on Union Street

193

Complete phase I and II site assessments; cleanup as needed;

PARTNERS:
West Springfield Planning Department
CROSS-CUTTING STRATEGIES:



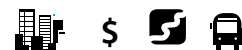
ASSESS

Nondo Tire, Route 5 (north)

194

Complete phase I site assessment; Phase II site assessment and cleanup as necessary; redevelopment planning (planned terminus for proposed CT Riverwalk and Bikeway)

PARTNERS:
West Springfield Planning Department
CROSS-CUTTING STRATEGIES:



Monson Center

COMPLETE

Site Clean-up in Monson

195

Complete Site Cleanup at 2&3 South Main Street

PARTNERS:
Monson Planning Department
CROSS-CUTTING STRATEGIES:



CONDUCT

Site Assessment in Monson

196

Complete site assessments at the following Monson sites.

- Omega Processing – Phase II site assessment and cleanup as needed
- Hillside School, 29 Thompson Street – Phase I and II site assessments, cleanup, and redevelopment planning

PARTNERS:

Monson Planning Department

CROSS-CUTTING STRATEGIES:



ESTABLISH

Site Assessments in Palmer

197

Complete a Phase I and II site assessments; cleanup as needed

PARTNERS:

Palmer Planning Department

CROSS-CUTTING STRATEGIES:



Palmer Villages

CROSS CUTTING STRATEGIES ICONS: The following icons are used in reference to issues and strategies related to other element plans of this report.



TRANSPORTATION



ENVIRONMENT



GREEN
INFRASTRUCTURE



LAND USE



ECONOMIC
DEVELOPMENT



CLIMATE
ACTION



HOUSING



FOOD SECURITY



BROWNFIELDS



Hadley Farmlands and Mount Holyoke Range

Photo: Chris Curtis