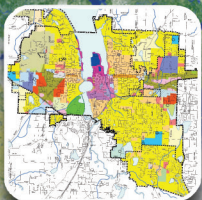
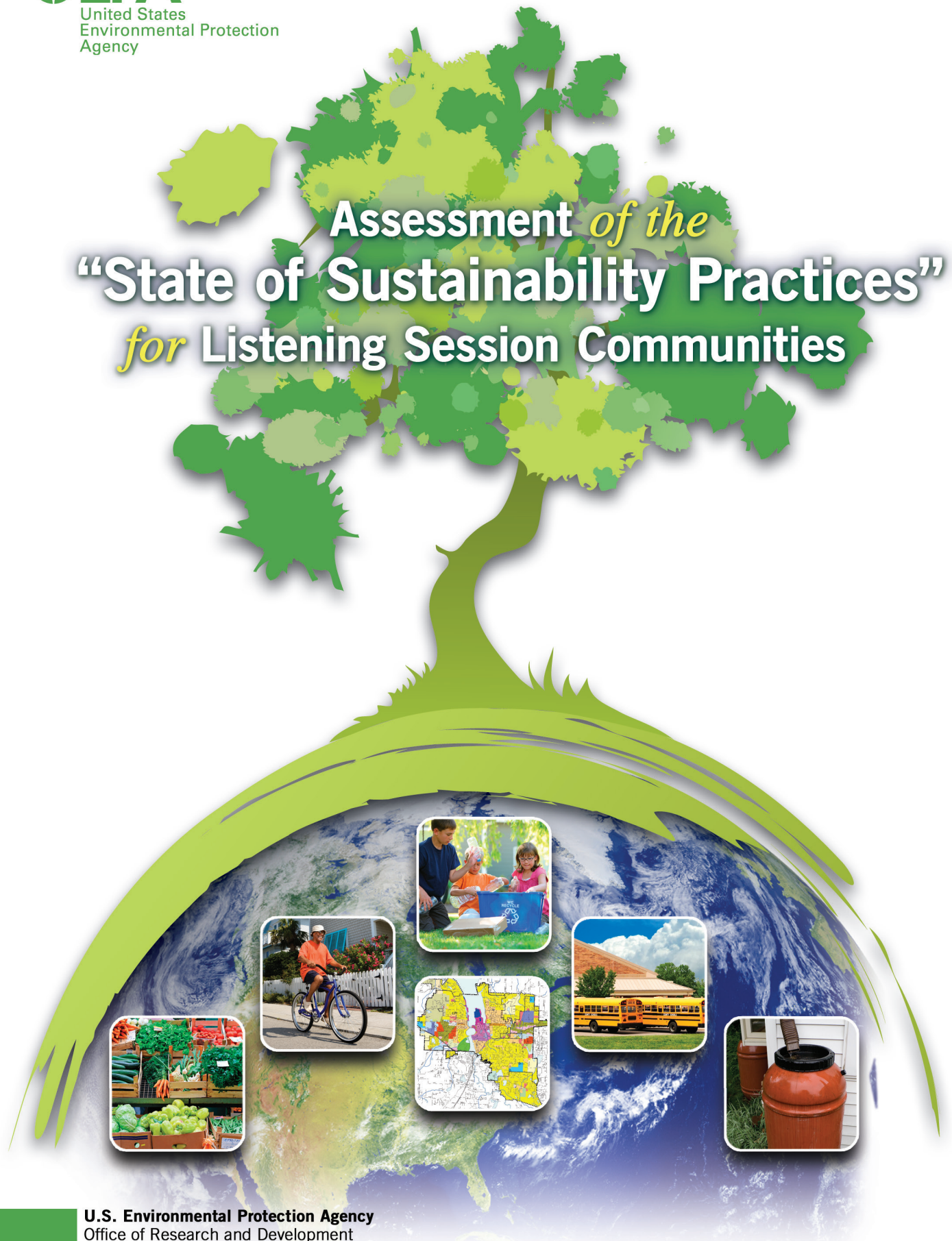


Assessment *of the* “State of Sustainability Practices” *for* Listening Session Communities



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Executive Summary

The U.S. Environmental Protection Agency (EPA) recognizes that communities want to become more sustainable and are moving in this direction. Recently, the Office of Research and Development (ORD) integrated and redesigned their research programs to focus on sustainability and utilize systems-based approaches to conduct research that is transdisciplinary and in close partnership with stakeholders. EPA established six new research areas in ORD, including the Sustainable and Healthy Communities Research Program (SHC), which conducts research to empower communities in addressing sustainability issues and provide scientific tools and information that can help communities make sustainability-based decisions. To support their endeavors, ORD conducted Listening Sessions to listen and learn what communities are doing to become more sustainable.

What communities were used?

In 2011, EPA held Listening Sessions in seven communities to identify the sustainability challenges faced by communities, evaluate the decisions that provide the foundation for the communities' sustainability planning efforts, and inform the design of the SHC. These communities were identified by EPA regional representatives as communities that are progressive in working toward becoming more sustainable. The Listening Session communities represent a mixture of rural and urban communities with different economic livelihoods as well as local and regional issues. Attendees represented a wide range of members across the community, such as elected officials from local and state government as well as staff from nonprofit organizations, utilities and universities.

EPA has produced two reports resulting from the Listening Sessions. The first report describes the sustainability challenges and opportunities identified for each Listening Session community, as well as the common themes that these communities face as they implement sustainable practices, which are documented in the report titled, *Community Listening Sessions for the Sustainable and Healthy Communities Research Program* (EPA 675/R-11/001 2011). This current report, *Assessment of the "State of Sustainability Practices" for Listening Session Communities*, presents a framework of decisions within the context of the community planning process based on the analysis of Listening Session community information. Because no other study of this kind had been conducted,

the purpose of the effort was to conduct an initial, qualitative assessment of how communities make decisions as a collective body rather than by separate types of decision makers (e.g., government, business) or specific fields (e.g., municipal waste operators). It is not intended to be a scientific analysis.

How was the information analyzed?

The analysis for the "State of Sustainability Practices" report was conducted on the Listening Session communities within the context of the community planning process. Communities generate plans and projects to address local challenges and prepare for a sustainable future. The community planning process is comprised of multiple steps, all of which are supported by available Policies, Approaches and Scientific Tools. Communities develop policies, such as executive directives, to implement sustainable practices. They utilize approaches (e.g., Complete Streets) and scientific and other tools. Partnerships are important because they leverage the expertise, interest and abilities of other entities to assist communities in achieving their sustainability goals. Community planning is more successful as a collaborative process performed within the context of counties, regional planning organizations and states.

To understand the collective "State of Sustainability Practices" for the Listening Session communities, communities' reports, websites and other documents were analyzed to generate a framework of the major and secondary decisions that communities make. The information was analyzed to gain a better understanding of how communities, in general, make their collective decisions for their place—"community lens"—and to identify the science that communities use in their decision making as well as their needs for additional scientific tools. The result is a common framework of major and secondary decisions, and their priorities, that are currently being addressed by communities toward becoming sustainable. The framework represents a practical model that is rooted in the community planning process and the decisions that communities make. By knowing how communities make decisions and what science communities are using, ORD will be able to compare the "State of Sustainability Practices" with its research efforts (e.g., tools and models) and integrate the science that will further assist communities into future research.

What were the results?

All of the community decisions were analyzed to identify the decisions that are relevant to sustainability efforts, prioritized into primary (or major) and secondary decisions, and then evaluated to determine the relationship between the decision topics. The results of this analysis are described in this report. The areas where many communities make the primary or majority of their decisions that are fundamental to their existence are labeled Community Decision Sectors for a total of six areas ([Table E1](#)). Secondary decisions that generally influence

more than one Community Decision Sector are labeled Cross-Cutting Issues for a total of eight areas ([Table E2](#)). Although not the primary area for decision making, Cross-Cutting Issues are important topics for communities. For each of the Community Decision Sectors and Cross-Cutting Issues, Sustainability Priorities—specific areas of importance for decision making—were identified. The Sustainability Priorities described are not exhaustive, but rather specific issues that target a challenge that communities are addressing to become more sustainable.

Table E1. Community Decision Sectors and Associated Sustainability Priorities

Land Use <ul style="list-style-type: none"> • Land-Use Planning • Zoning and Regulations • Building Density • Green Space • Parks and Recreational Areas • Preservation of Historic Places • Urbanization • Urban Sprawl • Redevelopment of Abandoned Urban Areas • Aesthetics 	Local Food Systems <ul style="list-style-type: none"> • Community Gardens • Farmers Markets • Farms to Restaurants and Schools • Agricultural Partnerships • Diversified Foods
Buildings and Infrastructure <ul style="list-style-type: none"> • Green Building Architecture • Affordable Housing • Deteriorated Housing • Downtown Revitalization • School Improvements • Community Infrastructure • Technology Access for Rural Areas 	Water Management <ul style="list-style-type: none"> • Water Conservation • Water Quality • Water Rights • Stormwater Concerns • Managerial Concerns
Transportation <ul style="list-style-type: none"> • Increase Public Transportation • Provide Multi-Modal Transportation Options • Adopt New Technologies • Encourage Acceptance 	Waste Management and Site Revitalization <ul style="list-style-type: none"> • Waste Management • Waste Removal • Recycling • Brownfields and Superfund Site Remediation • Regulation

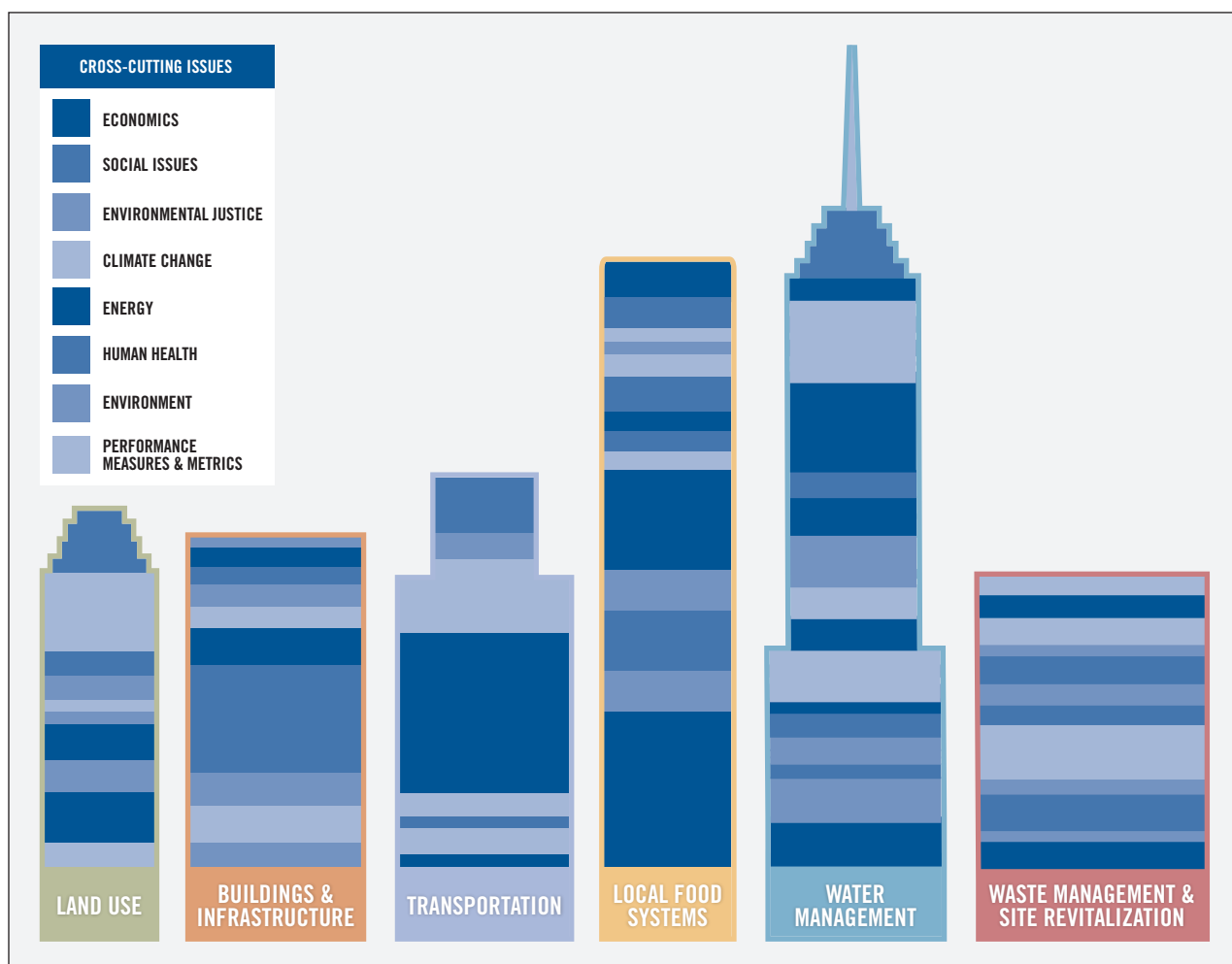
Table E2. Cross-Cutting Issues and Associated Sustainability Priorities

Economics <ul style="list-style-type: none"> • Jobs • Economic Development • Resources • Initial Cost • Grants • Funding for Small Communities • Decision Making • Tourism • Prioritization 	Climate Change <ul style="list-style-type: none"> • Climate Change Adaptation • Reduce Greenhouse Gases
Social Issues <ul style="list-style-type: none"> • Leadership • Attitudes Toward Sustainability • Preservation of Local Culture and Traditions • Community Engagement • Participation • Collaboration • Capacity Building • Public School Education • Communication • Decreasing Populations • Crime • Social Science Research 	Energy <ul style="list-style-type: none"> • Energy Independence • Alternative Energy Sources • Energy Efficiency
Environmental Justice <ul style="list-style-type: none"> • Awareness • Adopt Environmental Justice Principles 	Human Health <ul style="list-style-type: none"> • Reduce Disease • Integrate Public Health in Decisions • Improve Health Data Accessibility
	Environment <ul style="list-style-type: none"> • Conservation of Natural Resources • Biodiversity • Appreciation • Environmental Hazards
	Performance Measures and Metrics <ul style="list-style-type: none"> • Develop Indicators • Apply Metrics • Environmental Reporting

Moreover, the analysis found that the Cross-Cutting Issues are entwined with the Community Decision Sectors and can influence more than one sector. It is important to understand which factors influence or are influenced by decision-making sectors and to what extent. Every important decision by a community leader must be evaluated for the potential influence by or on issues as diverse as social issues, performance metrics and the environment. Social acceptance of sustainability principles, for example, affects the adoption of green building practices, use of public transit, and consumption of local foods and products. The availability of community parks is important for land-use planning, conservation of natural resources, maintenance of biodiversity, and promotion of human health and well-being. The universal consideration of economics has a significant

impact on every sustainability topic within each of the six Community Decision Sectors. As such, issues should be addressed using a matrix management approach where issues, rather than being addressed individually, are addressed collectively both across the Community Decision Sectors and Cross-Cutting Issues, as illustrated in [Figure E1](#).

Furthermore, communities have demonstrated creativity and resourcefulness in identifying and implementing available Policies, Approaches and Scientific Tools, which are methods or tools to help achieve sustainability goals. EPA, other governmental organizations and outside advocacy groups produce many tools to help communities assess their current sustainable status, evaluate and prioritize options for action plans, and appraise

Figure E1. Matrix Management of Community Issues

Cross-Cutting Issues are interconnected with Community Decision Sectors and can influence multiple sectors. Community issues should be addressed in a matrix management approach where issues, rather than being assessed individually, are addressed collectively both across the Community Decision Sectors and Cross-Cutting Issues to identify the optimal sustainability solution.

the results of a sustainability initiative. Although there may be many tools available, they are not always used by communities. In addition, specific community needs may not be met by currently available tools and methods. These gaps provide an opportunity for ORD research to produce tools to assist communities in achieving their sustainability goals. A sampling of these methods is provided in [Table E3](#); a comprehensive list is available in [Appendix II](#); and related tools are listed at the end of each Sustainability Priority section.

How can the information be utilized?

Fundamentally, this analysis has brought to light a better understanding of the decisions being made by communities toward becoming more sustainable as an entity. Many evaluations or studies have documented various industry sectors (e.g., waste water operators); however, this study is unique. It has evaluated how communities

operate holistically with all of the partners together—municipal, nongovernmental organizations (NGOs) and industry, from local to regional. This study represents all of the decisions at various levels being made collectively—in an integrated fashion—for a given location. It shows where communities, especially in an era of limited budgets, are focusing their attention.

By navigating a series of important decisions relevant to communities, we have identified their primary decisions (labeled as Community Decision Sectors), secondary decisions (labeled as Cross-Cutting Issues), and their relationship to one another as a framework. For these important decision areas, the high-priority sustainability issues addressed by communities have been identified from the long list of potential issues that could be addressed within the context of the Community Planning Process. For each Sustainability Priority, the report describes Community Challenges that have been

Table E3. Examples of Policies, Approaches and Scientific Tools Used by Communities

Sustainability Priority	Tool	Description	Communities Using Tools
Land Use: Land-Use Planning	Community Viz	Three-dimensional land use and visualization tool used to evaluate land-use changes.	Asheville, NC
Buildings and Infrastructure: Affordable Housing	Green Affordable Housing Program	The program provides training and other tools to the affordable housing sector to promote energy efficiency, green building techniques and healthy homes strategies.	Boston, MA
Transportation: Provide Multi-Modal Transportation Options	Passenger Rail Initiative	Per the Western North Carolina Passenger Rail Initiative, Asheville plans to add passenger rail to the existing freight service. The passenger rail station will serve as a multimodal hub for passenger rail, route bus transit, commercial inter-city bus transit, bike, car and on foot. In addition, the Station will tie into the Asheville Greenway System.	Asheville, NC
Local Food Systems: Community Gardens	HOME GR/OWN	Milwaukee's innovative HOME GR/OWN plan incorporates foreclosed properties, urban farming and entrepreneurial spirit to revitalize neighborhoods and improve public health. The city owns nearly 4,000 vacant lots and foreclosed homes and will designate a significant portion of them for other creative uses, including urban agriculture and urban homesteading.	Milwaukee, WI
Water Management: Water Conservation	Groundwater Availability Assessment Tools	Tools to measure the amount of water currently available, determine changes in water levels and evaluate correlations with increased withdrawals. The tools also measure impacts to adjacent users, surface water impacts and long-term aquifer sustainability.	Spokane, WA
Waste Management and Site Revitalization: Brownfields and Superfund Site Remediation	Agency for Toxic Substances and Disease Registry (ATSDR) Brownfields/Land Revitalization Action Model	A grassroots, community-level model designed to foster dialogue, communication and vision among the "Development Community" to achieve positive, sustainable improvements in overall community health by revitalizing abandoned, idled or underused industrial and commercial sites complicated by real or perceived contamination.	Milwaukee, WI
Economics: Economic Development	Milwaukee E3 (ME3) Program	ME3 is a no-cost program to help manufacturers cut costs while at the same time helping to minimize negative environmental impacts of their manufacturing processes and practices through sustainable manufacturing processes and technologies.	Milwaukee, WI
Social Issues: Preservation of Local Culture and Traditions	Tribal Cultural Center	The Spokane Tribe Economic Project (STEP) development plan includes careful preservation of an existing wetlands area located on the Tribe's West Plains property. It also includes a 10,480 square foot Cultural Center to highlight the importance of preserving the wetlands and its wildlife, as well as the importance of preserving the rich, diverse heritage of the Tribe's people.	Spokane, WA
Environmental Justice: Adoption of Environmental Justice Principles	Environmental Impact Analysis	The French Broad River Metropolitan Planning Organization (FBRMPO) Environmental Impact Analysis used maps and census data to identify minority, low-income, disabled and elderly communities to create "Environmental Justice Maps."	Asheville, NC
Climate Change: Reduce Greenhouse Gases	Clean Air and Climate Protection Software (CACAP)	EPA funded the creation of Clean Air Climate Protection (CACAP) software by the International Council for Local Environment Initiatives (ICLEI). CACAP is designed to help local governments formulate climate action plans and is used by the U.S. Conference of Mayors to compute emissions numbers and calculate cost savings.	Asheville, NC
Energy: Alternative Energy Sources	Renew Boston Solar	Boston launched Renew Boston Solar to encourage the widespread adoption of solar energy in Boston.	Boston, MA
Human Health: Reduce Disease	The Strategic Alliance for Health (SAH)	The SAH is a 4-year initiative whose purpose is to create healthier communities through sustainable, innovative, evidence and practice-based community health promotion and chronic disease prevention programs that promote policy, systems and environmental change.	Boston, MA
Environment: Environmental Hazards	Buncombe County Multi-Hazard Risk Tool	A risk tool to plan for disaster mitigation and response for Buncombe County, NC; other versions also developed for Macon and Watauga counties.	Asheville, NC
Performance Measures and Metrics: Apply Metrics	Boston About Results	A tool for city officials and residents to know what Boston, MA, agencies are doing, how well they are doing it and where they can improve.	Boston, MA

recognized as barriers; Success Stories highlighting practical solutions adopted by communities; and Research Questions that will help ORD to address each community challenge. Each of the Community Decision Sectors and Cross-Cutting Issues provides a platform on which ORD Research Programs can focus research and tool development to address community sustainability issues.

Importantly, the report identifies the Policies, Approaches and Scientific Tools that are being used by communities to support the decision-making process. Communities use a variety of tool types to address their issues. The report describes the community state of the practice. It represents the knowledge that communities have about available tools from the vast number of tools that are available. It shows the resources for support—who is providing the technical support and expertise. Ultimately, it demonstrates what communities have decided to use or develop. As such, it provides a context for how ORD can potentially help—where new tools may be needed, tools could be integrated and areas for technical support. In addition, the “framework” of the Community Decision Sectors and Cross-Cutting Issues could be used as a way to organize and distribute tools that would be consistent with the way that communities make decisions.

The Appendices contain a wealth of information for each of these communities. The community sustainability resources listed in [Appendix I](#) include websites that contain information about specific city policies, regulations and initiatives. Planning products, including comprehensive sustainability plans as well as plans relevant to specific Community Decision Sectors or Cross-Cutting Issues, also are provided. [Appendix II](#) contains all the Policies, Approaches and Scientific Tools that the seven Listening Session communities are using to generate their sustainability plans and projects. As shown by the volume of the Appendices, there is a great deal of information available for a given community.

Collectively, the information in this report on the “State of Sustainability Practices” for communities will better inform the ORD Research Programs to conduct research and provide scientific information, methods and tools that will better meet the needs of community decision makers in evaluating and implementing the best sustainable practices within the context of the environmental, social and economic issues that the community is facing. The information will help ORD determine how tools can be integrated into the community process and identify what new tools are needed. Providing sustainability analysis tools and procedural documents within the framework for how communities make their decisions ultimately will help community leaders understand the significance of their decisions and the potential impact on the natural and built environments.

How is the report organized?

This report is organized into three major components: the narrative for the report is presented in [Part I](#), the results of the analyses are contained in [Parts II](#) and [III](#), and the sources of information used in the analyses are available in the Appendices.

[Part I](#) is the narrative. [Chapter 1](#) provides the background on the ORD Research Programs, including the reorganization toward sustainability, and describes the Community Listening Sessions that were conducted. [Chapter 2](#) focuses on the analysis for the “State of Sustainability Practices” of communities. It provides an overview of the community planning process covering the planning products, decision makers and stakeholders, planning stages, scale and tools. This chapter also provides a case study of Asheville, North Carolina, to illustrate the concepts presented. Additionally, it describes the process for how the information was analyzed to identify the Community Decision Sectors and Cross-Cutting Issues and their Sustainability Priorities as well as the relationship between the sectors and issues. This chapter also explains what is meant by Policies, Approaches and Scientific Tools. [Chapter 3](#) provides an overview of the results for the analysis of Community Decision Sectors and Cross-Cutting Issues.

[Part II](#) and [Part III](#) provide the results for the Decision Sectors and Cross-Cutting Issues, respectively. After a brief introduction, each topic is followed by a detailed explanation of Sustainability Priorities. Individual Sustainability Priorities contain information extracted from each Listening Session about specific community sustainability issues. The end of each section displays a table containing specific Policies, Approaches and Scientific Tools that are being implemented by the Listening Session communities. The tables provide a useful reference for other communities that are making important decisions as they navigate the community planning process.

The Appendices provides the resources that were mined to conduct the analysis. They identify the body of information presented during the Listening Sessions, as well as sustainability plans, websites, documents and projects implemented by various community organizations that were compiled and analyzed for a better understanding of the communities’ “State of Sustainability Practices.” Specifically, [Appendix I](#) list all of the relevant organizations (e.g., municipalities, NGOs) and documents for each Listening Session community. [Appendix II](#) contains a wealth of information that the communities are using to help them become more sustainable, including Policies, Approaches and Scientific Tools. Indeed, [Appendix II](#) identifies 915 tools.

PART I

NARRATIVE



Chapter 1.

Background

ORD Research Programs

Science provides the basis for the U.S. Environmental Protection Agency (EPA) programs and is an integral part of EPA's actions. The EPA's Office of Research and Development (ORD) is committed to scientifically identifying and evaluating the best practices for issues dealing with environmental sustainability concerns. ORD supports EPA's mission through: (1) research and development; (2) providing technical support; (3) partnering with academic institutions; and (4) exercising leadership in addressing emerging issues.

In 2011, ORD integrated and redesigned its research agenda from a risk-based approach to focus on sustainability and utilize systems-based approaches to conduct research that is transdisciplinary and in close partnership with stakeholders. EPA established six new Research Programs in ORD, including Air, Climate and Energy; Safe and Sustainable Water; Chemical Safety for Sustainability; Human Health Risk Assessment; Homeland Security; and the Sustainable and Healthy Communities (SHC). Although EPA has made great strides in the past few decades in implementing measures to protect the environment and human health, it is clear that future policies need to address the long-term sustainability of human communities and their actions on the environment.

Sustainability is the guiding principle for each of the six new ORD Research Programs, and aspects of each of the programs are integrated to create a holistic, transdisciplinary approach. This synergy is effective in addressing today's complex, interconnected environmental problems. Collectively, the Research Programs conduct research to empower communities in their own decision-making process for addressing sustainability issues. EPA recognizes that communities want to be more sustainable and are moving in this direction. The Research Programs provide scientific tools and information to help communities make sustainability-based decisions.

EPA's Sustainability Paradigm

EPA's progress toward implementing a holistic sustainability approach encourages consideration of the integration between human health, economic prosperity and ecological integrity. For several years, EPA has been implementing former EPA Science Advisor Dr. Paul Anastas' "Path Forward" toward accomplishing sustainability goals. The Path Forward encourages scientists



to build upon traditional risk-based approaches to align research efforts with the goal of sustainability. Previous EPA sustainability activities were implemented at the regional or program office level; although these efforts were successful, cross-Agency coordination of and support for sustainability initiatives was identified as a critical need.¹ EPA commissioned the National Academy of Sciences (NAS) to develop a report on how EPA can better incorporate sustainability into its practices and decision making, titled the "Green Book." EPA's current paradigm is based on risk; the Green Book recommends adoption of an Agency-wide sustainability approach.

Engaging the people who are striving to address sustainability concerns will help to address the NAS recommendation. Stakeholder engagement is an essential element of a sustainability approach² and, as such, EPA should involve stakeholders at appropriate times. EPA has been involved in state-of-the-environment and environmental assessments, but such efforts could readily miss sustainability concerns not typically considered in past environmental assessments, including social, economic and environmental justice issues. Stakeholder interviews allowed EPA to capture these concerns, determine how widespread they are, and thereby assess the need for data organization and tools to help decision makers address them. The *Assessment of the State of Sustainability Practices for Listening Session Communities* report will

¹ EPA. 2007. *Perspectives on Sustainability: Summary of Interviews Across EPA*. Washington, DC: Office of Research and Development and Office of Policy, Economics and Innovation.

² Feldman, I. 2002. The Stakeholder Convergence: Public Participation and Sustainable Business Practices. In C. Bruch, ed. *The New "Public": The Globalization of Public Participation*. Washington, DC: Environmental Law Institute. Available at: <http://www.eli.org/pdf/PPP/part1chap3.pdf>.

help EPA determine the steps it should take to align its actions and partnerships to achieve sustainability.

EPA's Triple Value Model for Sustainability

EPA's adoption of a systems approach to problem solving includes a holistic methodology for understanding the interactions between economic, ecologic and societal systems. The Triple Value Simulation Model (3VS), an integrated systems approach for strategic policy simulation developed by Dr. Joseph Fiksel, is used to illustrate the flow of causes and effects between the three pillars of sustainability. One successful example of a collaborative systems approach involved stakeholders concerned with the health of the Narragansett Bay Watershed in EPA Region 1. The Bay is the largest estuary in the region, and its health and vitality are jeopardized by excessive release of nutrients (e.g., nitrogen and phosphorus) from agricultural sources, wastewater treatment and stormwater runoff. Together, partners developed a 3VS to explore the effects of nutrient mitigation policies and interventions throughout the watershed, leading to better informed policy decisions. Modeling the full nutrient cycle through triple value model simulations identified solutions to protect ecosystem integrity while providing the water resources that are essential for continued economic prosperity.

Listening Session Communities

The Community Listening Sessions, held in 2011, were conducted to gain insight into the issues that communities are facing as they implement sustainable practices and inform the design of ORD Research Programs. Each community chosen had a demonstrated history of sustainability thoughts and actions (e.g., hiring urban planners, forming sustainability coalitions and securing funding from a multitude of sources). Additionally, many of the communities that participated in the Listening Sessions have developed official sustainability plans that are being used to guide their actions and direct specific projects. The identification and evaluation of issues faced by communities provides an understanding of the “*community lens*” for how issues are addressed collectively.

Listening Sessions were held in Asheville, North Carolina; Boston, Massachusetts; Milwaukee, Wisconsin; Ogden, Iowa; Spokane, Washington; Woodbine, Iowa; and Wyandanch, New York. These communities represent a diversity of rural and urban communities with different economic livelihoods and local/regional issues. Each Listening Session community was represented by elected officials, nonprofit organizations, businesses, universities and other members of the community. The seven

communities represented a broad range of size, geography, economy and issues, including environmental justice. A brief overview of each community involved in the SHC Listening Sessions is described in **Box 1**.

The challenges faced and approaches to addressing these issues were vastly different, yet many issues emerged as common themes during these conversations. Thus, the common themes that emerged are generally adaptable to communities across the United States, independent of the population density, typography or economic trends. Although they were diverse in size, location and growth, communities of similar demographics experience specific sustainability concerns. For example, the small and rural communities of Ogden and Woodbine are concerned with population decline and supporting the local agricultural-based economy. Urban areas such as Milwaukee and Boston are plagued by Brownfields sites and urban sprawl. Other communities, including Asheville and Boston, are focused on climate change adaptation in preparation for the associated consequences. Identification of common needs between communities will encourage collaboration between communities with similar goals and promote the dissemination of relevant information to communities that are likely to benefit.

Listening Session Common Themes

The Listening Sessions were conducted to obtain insight into community sustainability priorities and needs. Although the challenges experienced and approaches to addressing sustainability concerns varied among the communities, several topics emerged as collective issues affecting most of the locations. The 14 Common Themes extracted from the seven Listening Session discussions are described in **Box 2**, in order of priority from highest to lowest. The *Community Listening Sessions for the Sustainable and Healthy Community Research Program* document (EPA 675/R-11/001 2011) describes each common theme in depth, identifying collective issues as well as specific challenges to communities related to each theme.

Although these community sustainability common themes have been presented separately, they are interconnected. For example, the *performance measures and metrics* theme also relates to the *planning* theme along with *communicating, educating and framing* to the public. Furthermore, many environmental and human health outcomes are impacted by many of these issues; therefore, the research conducted to find solutions to these issues should be developed collectively.

Box 1. Listening Session Communities

Asheville and its surrounding counties have been trying to achieve a balance between the tourist economy and a green economy. The community values renewable energy use to lessen dependence on imported fuel and encourages energy conservation to reduce the municipal carbon footprint and energy spending. Asheville seeks to preserve local culture and traditions while striving for a more sustainable future.

Boston is poised as a leader in environmental awareness and action because of its economic and cultural impact on surrounding communities. The city government is organized around sustainability and is trying to be more systematic in addressing sustainability. At this Listening Session, Boston was joined by representatives from Cambridge, Providence and Medford.

Milwaukee is Wisconsin's largest city. Once known as a brewing and manufacturing powerhouse, Milwaukee's image has changed with the decline of industry in the region. Milwaukee is facing no single major challenge but has an aggregate of problems from its industrial past and declining manufacturing base: Brownfields sites, old housing stock, loss of jobs, high unemployment, vacant lots, low educational attainment, and high asthma rates and blood lead levels in children.

Ogden is a small town that used to be surrounded by many small farms. Urbanization has caused people to move away to the city, and farm consolidation has created a few large farms where there once were many. Ogden's population is decreasing, and businesses are closing.

Spokane is the center of service, education and retail in eastern Washington. The "baby boomers" are interested in active lifestyles, and many young people who leave for college return to the city to raise their families. It is important to the community that local culture and traditions are preserved. The Spokane Tribe of Indians also was represented at the Listening Session.

Woodbine is historically agrarian and continues to have an agricultural-based economy; however, the citizens of the small rural town also seek different types of jobs. Thirty years ago, the community was composed mostly of small farms, but these have become incorporated into large agricultural operations. The local poverty rate is below the state and county median, and local jobs are plentiful.

Wyandanch is centrally located on Long Island, in the town of Babylon, New York. Wyandanch is the most economically distressed community on Long Island and has dozens of Brownfields sites. The high water table, lack of sewer infrastructure, four-lane highway through the downtown, high crime and poverty rates, and dilapidated storefronts are some of the major challenges being faced by the community. The community has decided to address these problems and implemented a comprehensive, community-based revitalization project.

Box 2. Listening Session Common Themes

Economics is the strongest driver for sustainability decisions in communities, yet communities do not have a good understanding of the linkages between jobs, economic development and sustainability.

Communicating, Educating and Framing the sustainability discussion with the public is essential for understanding and addressing local needs.

Performance Measures and Metrics are critical to measure or predict the economic, environmental and social effects of a sustainable action in a community.

Planning can allow communities to factor sustainability into their future development plans.

Schools are a core part of many communities' basic structure and provide a platform for educating children about the importance of sustainability.

Housing, a pivotal component of communities, needs to be available, affordable and constructed with green building principles.

Resources (financial, time, technical expertise) to support sustainable projects are limited in all communities.

Practical Sustainable Practices are lacking and hard to implement.

Climate Change is a concern in many communities that struggle with the best way to adapt.

Transportation availability and options are limited in many communities.

Local Food Systems provide a sustainable way for communities to provide healthy food.

Stormwater Management is recognized by communities as an important service, but often there is uncertainty about how to install or update sewer systems sustainably.

Health and Healthy Lifestyles reach across all facets of a community and are strong drivers for decisions.

Natural Resources and environmental issues (e.g., water quality, water quantity and biodiversity) are recognized as issues, but have not been the key motivators for most community sustainable actions.

Chapter 2.

“State of Sustainability Practices” Analysis



The Community Planning Process

In general, communities generate plans and projects to address local challenges and prepare for a sustainable future. The community planning process is comprised of multiple steps, all of which are supported by available Policies, Approaches and Scientific Tools. Communities develop policies, such as executive directives, to implement sustainable practices. They utilize approaches (e.g., Complete Streets) and scientific and other tools developed and supported by EPA and outside organizations. These partnerships are important because they leverage the expertise, interest and abilities of other entities to assist communities in achieving their sustainability goals. Community planning is more successful as a collaborative process performed within the context of counties, regional planning organizations and states. An ideal sustainability planning process uses the most effective tools to develop comprehensive plans and projects that are easy to understand, implement and evaluate.

The typical planning process first identifies and prioritizes issues related to the community. The creation of a unified vision addressing the prioritized topics is an important step. Decision makers then develop and evaluate various options or scenarios related to each topic as well as apply the available tools to support the best choice between possible options related to a community's Sustainability Priorities. Following the evaluation, plans and projects are developed in a process that involves all relevant stakeholders and considers their feedback. Most communities have advisory Boards that review the plans and projects and recommend action or modifications. Finally, plans and projects are accepted with formal Board or Council approval.

Key considerations of the decision-making process include:

- What are the desired products of the planning process (e.g., sustainability plans or projects)?
- Who are the decision makers and stakeholders involved in the decision and how can they be engaged (e.g., community leaders and citizens)?
- What stage of the planning process requires a decision (e.g., information gathering or implementation)?
- What is the scale of the decision (e.g., regional or neighborhood)?
- What Policies, Approaches and Scientific Tools are available to inform the decision?

Planning Products

Planning products (e.g., sustainability plans and projects) must be supported and justified by scientific data and include clear implementation details to describe the funding, responsibilities and timeline of the objectives. Goals identified within the plan should be achievable and metrics should be included to evaluate the success of the objective over time. Importantly, a sustainability plan needs to be appropriate for the given community based on resources available and citizen's priorities. The plan also must be transparent, accessible and easy to understand.

Decision Makers and Stakeholders

Those making decisions regarding sustainability policies can be affiliated with the public or private sector; often, representatives from both sectors are required to generate workable solutions to community challenges through public-private partnerships. In addition to the community decision makers responsible for directing the path toward sustainability, multiple stakeholders need to be involved in the sustainability planning process. Stakeholders include community citizens, local business owners, utility operators and others. Engaging stakeholders in the decision-making process is very important to provide an outcome that best addresses the priorities of local community citizens. Stakeholder engagement can be facilitated through numerous tools, such as interactive planning support systems that allow multiple individuals to respond to queries in real time during public meetings. Identified preferences can then be input into scenario

planning tools in an iterative process to arrive at a solution that is acceptable to the greatest number of people.

Planning Stages

In general, sustainability planning comprises five stages: information gathering, interpretation, collaborative design and policy formulation, implementation, and monitoring and evaluation, as illustrated in [Figure 1](#), Community Planning Process. Specific tools are targeted to one or more of the planning stages described below:

- **Information gathering.** The initial stage requires the gathering of data pertinent to the topic and various options available.
- **Interpretation.** The interpretation stage involves an analysis of the data collected regarding the various options.
- **Collaborative Design, Planning and Formulation.** The design stage is supported by the collected information and evaluation. This can be an iterative process and should include a wide variety of decision makers and stakeholders.
- **Implementation.** The implementation stage occurs as the plans are carried out by appropriate groups to achieve the desired objectives.
- **Monitoring and Evaluation.** The final planning stage applies metrics to assess whether sustainability objectives have been met or additional efforts are required.

Scale

Sustainability planning can occur at a regional, city-wide or neighborhood scale. Regional plans, including vision plans, long-range plans, capital plans and other projects, can be complicated by the diversity of stakeholders but often provide the most efficient means to address cross-jurisdictional issues (e.g., watershed quality). City-wide plans include general plans, capital plans, small area plans and policy re-evaluation. Plans at the neighborhood level include small area plans, neighborhood design or redevelopment plans and local projects.

Many communities, including Listening Session communities, have created sustainability plans that address many Sustainability Priorities. The most comprehensive sustainability plans address multiple topics, including land use, buildings and infrastructure, and environmental and human health. In general, a community's sustainability plan is designed to address a set of social, environmental and economic goals that are specific to the challenges experienced by that particular community. Some communities might be prompted to engage in sustainability planning because of poor air quality, while others might be

more concerned with the economic impacts from revitalizing a deteriorated downtown.

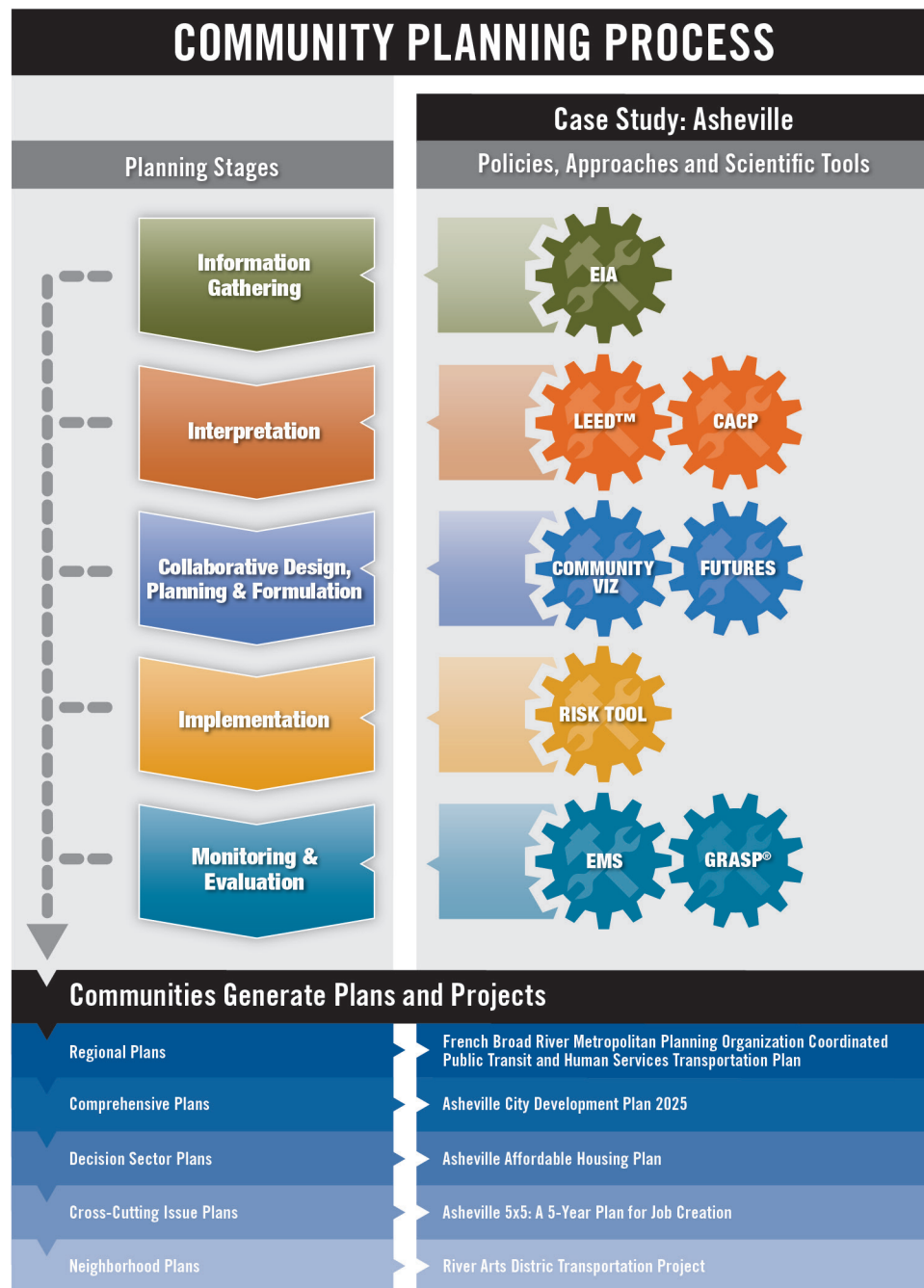
Policies, Approaches and Scientific Tools

Communities use Policies, Approaches and Scientific Tools (generically referred to as "tools") to evaluate and prioritize sustainability concerns, collect relevant data concerning various options, make important decisions, and assess the success of their efforts. Many tools address one or more of the following outcomes: fiscal impacts, health indicators, community amenities, transportation choices and environmental impacts. Fiscal impacts, for example, can include new tax revenue or utility rate changes. Scientific Tools assist communities with making important decisions, such as selecting the best outcome for a given set of parameters that scenario planning provides. Tools also help communities guide citizens to incorporate sustainability thinking and actions through Policies (e.g., formal techniques to encourage bicycle use) and Approaches (e.g., development of city parks to preserve open space and facilitate exercise).

The tools used by Listening Session communities in pursuit of sustainability goals were identified by analyzing the communities' reports, plans, websites and other documents. One of the main objectives for the report was to better understand how communities make decisions by evaluating, organizing, and categorizing their efforts, as understanding community needs will help ORD better integrate tools into the community decision-making process. The assessment resulted in the classification of tools into three categories: Policies, Approaches and Scientific Tools.

- **Policies** are formal government directives that ensure the adoption of sustainability practices in specific situations. Examples of sustainability policies implemented by Listening Session communities include resolutions, ordinances and executive orders, as well as documents describing official standards, guidelines and regulations.
- **Approaches** are less formal methods employed by communities to encourage the implementation of sustainability practices and include programs, initiatives, management concepts and projects that inspire sustainable actions and improve community livability. Approaches are developed by a myriad of local or national organizations that are dedicated to improving environmental, social and/or economic facets of sustainability (e.g., EPA, International Council for Local Environment Initiatives [ICLEI], Milwaukee Economic Development Corporation). When adopted at a local level, sustainability approaches can have a large effect on the health and well-being of individual communities, but the

Figure 1. Community Planning Process



The community planning process consists of various stages that begin with the gathering of information, progress through collaborative project design and implementation, and end with the evaluation of chosen objectives. Practices, Approaches and Scientific Tools inform the community planning process by providing information (e.g., data) and mechanisms (e.g., visualization tools) that help to improve the decision-making process and plans. The planning process results in the generation of plans and projects, ranging from large-scale regional plans to small-scale neighborhood projects, that address local challenges and prepare communities for a sustainable future. As a case study, Asheville, NC, has employed numerous Practices, Approaches and Scientific Tools to inform its decisions throughout all stages of the planning process to generate numerous sustainability-related products, including a comprehensive sustainability plan and the Riverfront Development Project.

Legend: Environmental Impact Analysis (EIA), Leadership in Energy and Environmental Design (LEED™), Clean Air and Climate Protection Software (CACP), Community Viz, Future Urban-Regional Environment Simulation Model (FUTURES), Multi-Hazard Risk Tool (Risk Tool), Environmental Management System (EMS), Geo-Referenced Amenities Standards Program (GRASP®).

greater impact is realized when proven and effective approaches are shared between communities and widely implemented.

- **Scientific Tools** include quantitative instruments, surveys, maps and assessments designed to identify areas of concern, model local trends, assist with the implementation of sustainability efforts and measure progress. Generally, seven types of tools are available to help communities in community planning³: visualization tools, asset mapping, impact analysis, scenario analysis, performance-based planning, predictive modeling and community process tools. Sustainability toolkits containing several related tools are available to address topics ranging from habitat connectivity to historic preservation.

The correct decision support tool is rigorous and detailed, but user-friendly and easy to maintain. The capacity for visualization is important to engage the greatest number of people in the decision-making process. Transparency is another important consideration, as decisions need to be justifiable. The right tool to inform a given decision must be tailored to the scale of the project. For example, some tools are best applied to planning projects on the district, municipality or regional level. Choosing the right tool also requires consideration of the stage of the project. Scenario planning tools provide support for community decisions at an early stage in the process, and geographic information system (GIS)- or spreadsheet-based tools allow visualization of various decision outcomes. Innovative scenario planning tools are developed each year, ensuring a continuous improvement in the tools available to community decision makers.

Case Study: Asheville

Asheville, North Carolina, is being utilized as a case study to illustrate the concepts presented in this section for the community planning process and the Policies, Approaches and Scientific Tools.

Asheville is a forward-thinking community that has invested a lot of effort into sustainability planning. Asheville and its surrounding counties have been trying to achieve a balance between the tourist economy and a green economy. Several key areas of vulnerability are: groundwater availability; food and energy security; and unsuitable land-use patterns that contribute to urban sprawl, increase the risk of landslides and disrupt biodiversity. One of the major dynamics of the region is its interface between urban and rural communities and the ensuing dispersed population pattern. The economy

is dominated by small businesses, and jobs in education and health care are the only sectors seeing an increase in employment opportunities. Many of the jobs are low paying (minimum wage or slightly higher), the local poverty rate is high and there is a shortage of affordable housing. Public transportation is limited and connectivity with other communities is low. The Asheville region is relatively healthy, compared with the rest of North Carolina, but obesity, heart disease, kidney disease and teen pregnancy are issues.

Over the past few years, municipal and local organizations have been working together to develop solutions that will address these challenges. Community participation has been important in identifying collective sustainability priorities and implementing plans to achieve the objectives. Asheville is trying to create a niche with its green economy that will benefit the area. The community values renewable energy use to lessen dependence on imported fuel and encourages energy conservation to reduce the municipal carbon footprint. Environmental protection is another priority; Asheville plans to preserve drinking water quantity and quality, protect ecosystem diversity, improve air quality, and preserve agricultural and forested land. Asheville plans to improve transportation and infrastructure by developing passenger rail service and improving technology access to surrounding rural areas. To increase housing options, the community is developing sustainable neighborhoods with mixed use/mixed income housing and facilities. The community will encourage economic development by developing green technology, revitalizing the downtown community, redeveloping the riverfront, and reusing Brownfield sites. Finally, Asheville seeks to preserve local culture and traditions while striving for a more sustainable future.

Community Planning Process Illustration

Figure 1 utilizes Asheville as a case study to illustrate the community planning process. In general, the left side of the figure depicts the generic process and the right side provides examples for Asheville.

The top left side of the figure shows the various stages of the community planning process (e.g., information gathering). The planning process culminates in the creation of specific plans and projects intended to improve economic, social and environmental sustainability for the community, as shown at the bottom left (e.g., regional plans, sustainability plans, neighborhood projects).

The right side of **Figure 1** provides examples of what Asheville has accomplished. At each stage of the planning process, Asheville applies many Policies, Approaches and Scientific Tools to make decisions that

3. Snyder, K. 2003. Tools for Community Design and Decision Making. In Geertman and Stillwell, eds. *Planning Support Systems in Practice*. Heidelberg: Springer Verlag.

inform the development of their sustainability planning products. Examples of tools that Asheville has used that correlate with the steps in the community planning process include:

Information Gathering Tools

- **EIA:** The French Broad River Metropolitan Planning Organization (FBRMPO) Environmental Impact Analysis (EIA) uses maps and census data to identify minority, low-income, disabled and elderly communities to create “Environmental Justice Maps.” This information helps Asheville identify areas of highest concern within the community.

Interpretation Tools

- **LEED™:** The LEED™ Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. Asheville uses this tool to better understand the implications of various building possibilities.
- **CACP:** Asheville uses the Clean Air and Climate Protection Software (CACP), which was designed by the ICLEI, to compute emissions numbers and calculate cost savings of various decision options.

Collaborative Design, Planning and Formulation Tools

- **Community Viz:** Asheville uses this three-dimensional land use and visualization tool to evaluate land-use changes.
- **FUTURES:** Asheville employed the Renaissance Computing Institute’s (RENCI) Future Urban-Regional Environment Simulation (FUTURES) model to project land development up to 2040 to identify future challenges and shape land-use decision making during the planning process.

Implementation

- **Risk Tool:** Asheville uses the Buncombe County Multi-Hazard Risk Tool to plan for disaster response. Developed by RENCi in response to a 2004 flood, this online application provides map layers for hazards to facilitate decision making during disaster mitigation.

Monitoring and Evaluation

- **EMS:** Asheville uses an Environmental Management System (EMS) as a set of formal strategies that describe how the community will evaluate, manage and track its environmental impacts.
- **GRASP®:** In planning for parks, recreation, culture and greenways, Asheville measured the current delivery of service using the Geo-Referenced Amenities Standards Program (GRASP®) Level of Service Analysis.

As a result of utilizing these tools throughout the community planning process, Asheville and its partners in the surrounding region have developed many plans and projects for addressing their community challenges. Examples are:

- **Regional Plan:** French Broad River Metropolitan Planning Organization Coordinated Public Transit and Human Services Transportation Plan
- **Comprehensive Plan:** Asheville City Development Plan 2025
- **Decision Sector Plan:** Affordable Housing Plan for Asheville
- **Cross-Cutting Issue Plan:** Asheville 5X5: A 5-Year Plan for Job Creation
- **Neighborhood Project:** River Arts District Transportation Project

For complete lists for all the communities, see [Appendix I](#) for plans and [Appendix II](#) for Policies, Approaches and Scientific Tools.

Analysis of Community Decision Sectors and Cross-Cutting Issues

The body of information provided from each Listening Session community (e.g., reports, websites and other documentation listed in [Appendix I](#)) was analyzed to determine the “State of Sustainability Practices” of communities with regard to the science that they use to inform their decisions. The purpose of the analysis was to use a “community lens” to better understand how communities make their decisions, including the science that communities implement in their decision making and their need for scientific tools. The result of the analysis was a framework of major and secondary decisions that communities address in the pursuit of sustainability. ORD will compare the “State of Sustainability Practices” with what researchers are developing (e.g., tools and models) and can consider addressing any gaps when planning future research. Communities identified as one

of their greatest challenges the consideration of multiple issues simultaneously, including economic and social issues. As a result, communities will benefit by improved access to analytical sustainability tools and methods, decision-making guidance and opportunities for collaboration within the context of how they make decisions.

The volume of data available during planning presents a challenge to decision makers; the key is to determine how to select and present data in a useful way. The analysis in this report resulted in organizing the information into a framework of the major and secondary decisions that communities make: Community Decision Sectors and Cross-Cutting Issues. The Community Decision Sectors are areas where many communities make the majority of their decisions that are fundamental to their survival. The Cross-Cutting Issues are generally secondary decisions and influence more than one Community Decision Sector. Cross-Cutting Issues are important issues to communities; however, they are generally not the primary area for decision making. For each of the Community Decision Sectors and Cross-Cutting Issues, the sustainability priorities that identify specific areas of importance being addressed by these communities are listed.

Although the data represent approximately seven communities, they embody diverse typologies, including a range of community sizes, settings and economies. Despite the variation of the communities, the issues they were tackling were surprisingly similar; as such, the results can be extrapolated to other communities nationwide. The SHC is interested in understanding how communities make their decisions and identifying the most important sustainability issues for many communities to inform research efforts. Gathering information from a variety of large, small, urban and rural communities helps to direct ORD's efforts in addressing the issues that significantly influence local sustainability initiatives and assist with the decision-making process. Importantly, it helps the program in determining where and how their research can be integrated within the community process to assist in achieving better outcomes.

Community Decision Sectors

The analysis of the body of information provided for the communities identified six fundamental Community Decision Sectors. Each sector represents a general topic where communities often are faced with decisions that have important consequences on the community and its longevity. Framing issues correctly is important so that communities work through the implications of choosing between short-term versus long-term outcomes and understand the tradeoffs of those decisions. Community

Decision Sectors represent critical areas for decision making, and often affect the allocation of funding between different projects.

The Community Decision Sectors are:

1. Land Use
2. Buildings and Infrastructure
3. Transportation
4. Local Food Systems
5. Water Management
6. Waste Management and Site Revitalization

Cross-Cutting Issues

Cross-Cutting Issues, although important to communities, are broad issues that traverse multiple sectors. These topics are often considered in the context of the Community Decision Sectors. Social acceptance of sustainability principles, for example, affects the adoption of green building practices, use of public transit, and consumption of local foods and products. The development of performance indicators will facilitate the planning and assessment of sustainability actions and results across many topics. The process of making decisions in complex sociopolitical environments (i.e., the real world) is different than decisions that are based exclusively on scientific information. The approach is to integrate science to inform the sociopolitical decision making. The identification of Cross-Cutting Issues is important to understand which factors influence or are influenced by decision-making sectors and to what extent.

The Cross-Cutting Issues are:

1. Economics
2. Social Issues
3. Environmental Justice
4. Climate Change
5. Energy
6. Human Health
7. Environment
8. Performance Measures and Metrics

Relationship of Community Decision Sectors to Cross-Cutting Issues

Moreover, the analysis found that the Cross-Cutting Issues are entwined with the Community Decision Sectors and can influence more than one sector. It is important to understand which factors influence or are influenced by decision-making sectors and to what extent. Every important decision by a community leader must be evaluated for the potential influence by or on

issues as diverse as social issues, performance metrics and the environment. The availability of community parks, for example, is important for land-use planning, conservation of natural resources, maintenance of biodiversity, and promoting human health and well-being. The universal consideration of economics has a significant impact on every sustainable topic within each of the six Community Decision Sectors. As such, the Community Decision Sectors and Cross-Cutting Issues form a framework whereby issues are addressed in a “matrix management” approach. Rather than being addressed individually, they are addressed collectively, as illustrated in **Figure 2**.

Sustainability Priorities

Each Community Decision Sector and Cross-Cutting Issue has several Sustainability Priorities that represent the most important current issues being addressed by communities. For example, a Sustainability Priority for the Community Decision Sector of Buildings and Infrastructure is Green

Building Architecture. The Sustainability Priorities denote the most important subtopics as informed by the Listening Session communities and do not represent a comprehensive list of possible issues.

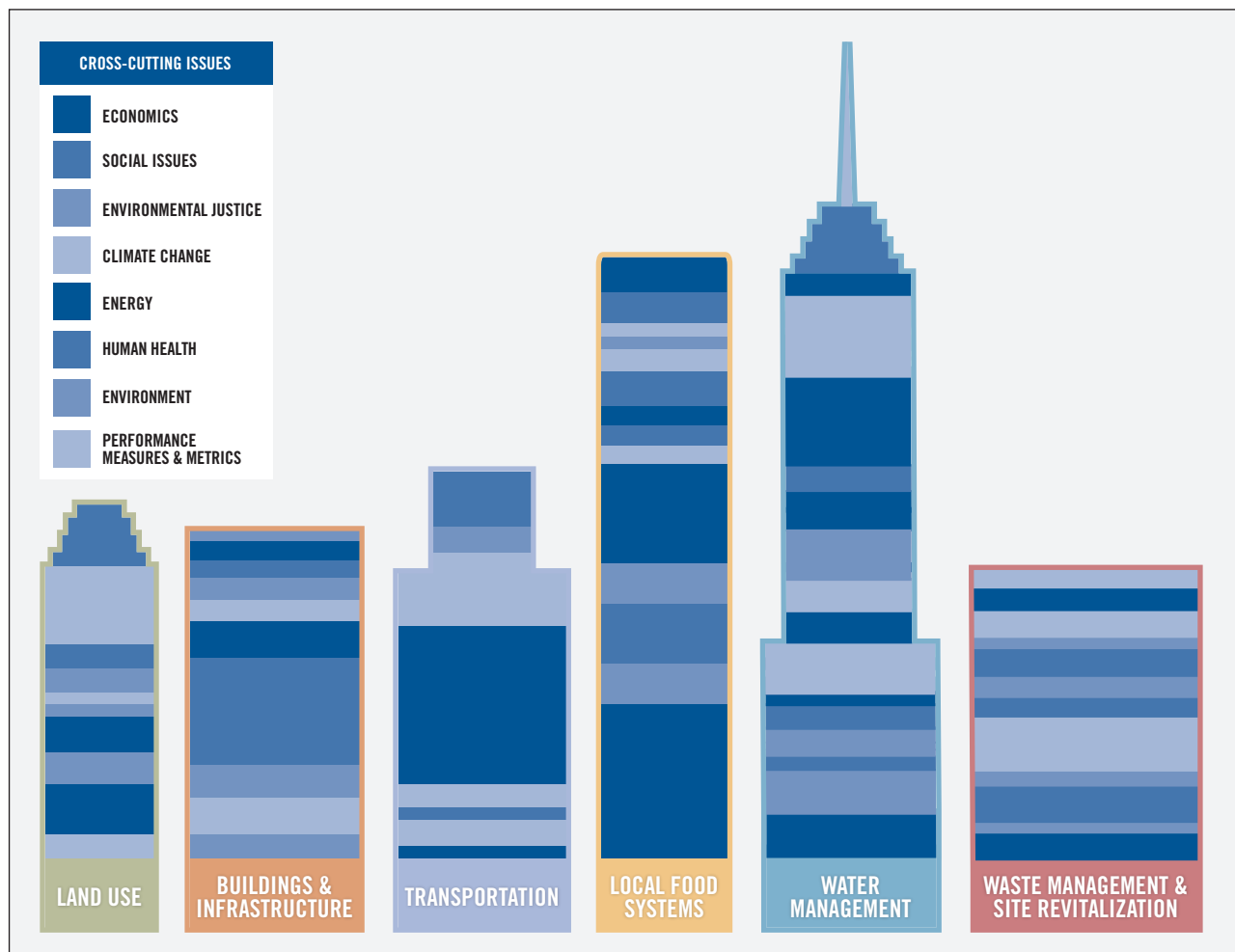
Each Sustainability Priority provides information about:

- Community Challenges
- Success Stories
- Research Questions

Community Challenges. Communities across the country face a variety of sustainability challenges. The seven Listening Session communities provided a wealth of information detailing specific sustainability barriers and issues, as well as practices that they have initiated to achieve a healthier and more sustainable natural and built environment. The Community Challenges detail examples provided by Listening Session communities.

Success Stories. Listening Session communities have been successful in accomplishing sustainability

Figure 2. Matrix Management of Community Issues



Cross-Cutting Issues are interconnected with Community Decision Sectors and can influence multiple sectors. Community issues should be addressed in a matrix management approach where issues, rather than being assessed individually, are addressed collectively both across the Community Decision Sectors and Cross-Cutting Issues to identify the optimal sustainability solution.

practices and goals, and Success Stories highlight practical solutions adopted by communities. Many of these successes are a result of funding from the EPA or other local and national government programs, nongovernmental organizations (NGOs) and private enterprises. Examples of community Success Stories are detailed within the relevant Sustainability Priorities.

Research Questions. Research Questions provide examples of future topics warranting future study to address community challenges. ORD will draw on its strengths in research areas such as assessment and decision science, environmental engineering, and the health and environmental effects of chemicals and materials to develop research products that are relevant and actionable for decision makers. To better address the social-science aspect of sustainability, ORD also will conduct research into human behavior and effective communication and decision making. In addition, ORD will collaborate with other federal agencies that address issues of concern to communities; for example, housing, transportation, and waste and materials management. Importantly, ORD will continue the dialogue started with the Listening Session communities to engage them throughout the research process to develop and distribute products that are more useful to communities.

Tools and products produced from the research conducted in response to the research questions will provide innovative approaches to support community decision making and promote community sustainability. Research products must be relevant and actionable for decision makers and employ integrated approaches using multivariable assessments. Tools must be appropriate, useful and practical; readily adapted by communities to particular situations; and user-friendly with simple interfaces. Solutions must be economically and socially acceptable. Collaborating with pilot communities will be critical to the development and evaluation of these products. Communities often make decisions about one issue in isolation, without evaluating the consequences on other issues and processes. For example, transportation planning occurs separately from waste-management decisions, leading to solutions that can be counterproductive, ineffective, inefficient or unjust. The research products will help empower communities to leverage EPA guidance to improve community health and well-being holistically and protect the integrity of ecosystem.

Policies, Approaches and Scientific Tools

Communities have demonstrated creativity and resourcefulness in identifying and implementing Policies, Approaches and Scientific Tools that are available to

conduct assessments and consider sustainable options. The Policies, Approaches and Scientific Tools tables contain methods or tools that Listening Session communities have used to help evaluate and achieve sustainability goals. EPA provides many tools to help communities assess their current sustainable status, evaluate and prioritize options for action plans, and appraise the results of a sustainability initiative throughout the process and after completion. Additional sources of decision-making tools include other government agencies, private businesses and community advocacy groups. For example, many communities promote the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) building practices for municipal buildings and provide incentives for independent businesses to apply LEED™ and related principles. The International Council for Local Environment Initiatives (ICLEI)—Local Governments for Sustainability is another rich source of tools to assist with sustainability decision making. Many community needs, however, are not met by currently available tools and methods. These gaps provide an opportunity for ORD research to produce tools to assist communities in achieving their sustainability goals.

The assessment of the Listening Sessions communities identified almost 1,000 Policies, Approaches and Scientific Tools used by the Listening Session communities. **Table 1** provides examples of the policies, approaches and scientific tools used by the communities. Approximately three-quarters of the tools are Approaches—informal methods, programs and initiatives designed to encourage the adoption of sustainability principles. Some tools are commonly used by many communities (e.g., LEED™, Smart Growth, infill development), while the majority of tools are specific to just one Listening Session community based on the information analyzed. The development of a better mechanism for communities to share sustainability strategies and tools would facilitate widespread adoption of successful practices. Certain trends are apparent in the analysis of Community Decision Sectors and Cross-Cutting Issues: almost all of the tools within the Performance Measures and Metrics Cross-Cutting Issue are Scientific Tools, while the Land Use Community Decision Sector contains many formal Policies. Notably, documented evidence of use by the Listening Session communities was not found for many existing tools available from EPA, NGOs and others (e.g., EPA's National Ecosystem Assessment Toolkit), suggesting that tool dissemination to and education for communities should be an SHC priority. Many of the tools developed the look and feel as though they were built for analysis by professionals, and then adapted to use as tools for engagement with the community audience (e.g., scenario planning tools). Scientific Tools are often too complex for most communities to use except the professional.

Table 1. Examples of Policies, Approaches and Scientific Tools Used by Communities

Sustainability Priority	Tool	Description	Communities Using Tools
Land Use: Land-Use Planning	Community Viz	Three-dimensional land use and visualization tool used to evaluate land-use changes.	Asheville, NC
Buildings and Infrastructure: Affordable Housing	Green Affordable Housing Program	The program provides training and other tools to the affordable housing sector to promote energy efficiency, green building techniques and healthy homes strategies.	Boston, MA
Transportation: Provide Multi-Modal Transportation Options	Passenger Rail Initiative	Per the Western North Carolina Passenger Rail Initiative, Asheville plans to add passenger rail to the existing freight service. The passenger rail station will serve as a multimodal hub for passenger rail, route bus transit, commercial inter-city bus transit, bike, car and on foot. In addition, the Station will tie into the Asheville Greenway System.	Asheville, NC
Local Food Systems: Community Gardens	HOME GR/OWN	Milwaukee's innovative HOME GR/OWN plan incorporates foreclosed properties, urban farming and entrepreneurial spirit to revitalize neighborhoods and improve public health. The city owns nearly 4,000 vacant lots and foreclosed homes and will designate a significant portion of them for other creative uses, including urban agriculture and urban homesteading.	Milwaukee, WI
Water Management: Water Conservation	Groundwater Availability Assessment Tools	Tools to measure the amount of water currently available, determine changes in water levels and evaluate correlations with increased withdrawals. The tools also measure impacts to adjacent users, surface water impacts and long-term aquifer sustainability.	Spokane, WA
Waste Management and Site Revitalization: Brownfields and Superfund Site Remediation	Agency for Toxic Substances and Disease Registry (ATSDR) Brownfields/Land Revitalization Action Model	A grassroots, community-level model designed to foster dialogue, communication and vision among the “Development Community” to achieve positive, sustainable improvements in overall community health by revitalizing abandoned, idled or underused industrial and commercial sites complicated by real or perceived contamination.	Milwaukee, WI
Economics: Economic Development	Milwaukee E3 (ME3) Program	ME3 is a no-cost program to help manufacturers cut costs while at the same time helping to minimize negative environmental impacts of their manufacturing processes and practices through sustainable manufacturing processes and technologies.	Milwaukee, WI
Social Issues: Preservation of Local Culture and Traditions	Tribal Cultural Center	The Spokane Tribe Economic Project (STEP) development plan includes careful preservation of an existing wetlands area located on the Tribe's West Plains property. It also includes a 10,480 square foot Cultural Center to highlight the importance of preserving the wetlands and its wildlife, as well as the importance of preserving the rich, diverse heritage of the Tribe's people.	Spokane, WA
Environmental Justice: Adoption of Environmental Justice Principles	Environmental Impact Analysis	The French Broad River Metropolitan Planning Organization (FBRMPO) Environmental Impact Analysis used maps and census data to identify minority, low-income, disabled and elderly communities to create “Environmental Justice Maps.”	Asheville, NC
Climate Change: Reduce Greenhouse Gases	Clean Air and Climate Protection Software (CACP)	EPA funded the creation of Clean Air Climate Protection (CACP) software by the International Council for Local Environment Initiatives (ICLEI). CACP is designed to help local governments formulate climate action plans and is used by the U.S. Conference of Mayors to compute emissions numbers and calculate cost savings.	Asheville, NC
Energy: Alternative Energy Sources	Renew Boston Solar	Boston launched Renew Boston Solar to encourage the widespread adoption of solar energy in Boston.	Boston, MA
Human Health: Reduce Disease	The Strategic Alliance for Health (SAH)	The SAH is a 4-year initiative whose purpose is to create healthier communities through sustainable, innovative, evidence and practice-based community health promotion and chronic disease prevention programs that promote policy, systems and environmental change.	Boston, MA
Environment: Environmental Hazards	Buncombe County Multi-Hazard Risk Tool	A risk tool to plan for disaster mitigation and response for Buncombe County, NC; other versions also developed for Macon and Watauga counties.	Asheville, NC
Performance Measures and Metrics: Apply Metrics	Boston About Results	A tool for city officials and residents to know what Boston, MA, agencies are doing, how well they are doing it and where they can improve.	Boston, MA

Chapter 3.

Overview of Results

Community Decision Sectors Overview

The analysis identified six pivotal Community Decision Sectors by evaluating the most critical and actionable sustainability topics articulated by each Listening Session community. Since the seven communities represent diverse typologies, the results then can be extrapolated to other communities nationwide. Each of these topics provides an opportunity to target research and tool development to address community sustainability issues.

The Community Decision Sectors are topics that represent essential areas that are important to support day-to-day living, and decisions in these areas have large impacts. For example, how communities structure the use of their land has a significant impact on the health of their citizens and the environment. Many communities are experiencing a shortage of high-quality yet affordable

housing. The lack of affordable housing in cities leads to rural migration, which contributes to sprawl. Although individual transportation preferences center on private automobile transit, many communities would like to provide citizens with alternative modes of public transit to reduce vehicular emissions and traffic congestion. Many communities are exploring ways for supporting various systems to provide local foods to their residents, including through farmers markets, summer camps and schools, as a sustainable way to provide healthy food for healthier lives. Making these types of decisions requires extensive analysis of the long-term consequences for many facets of human and environmental health.

A brief summary for each of the six Community Decision Sectors and their Sustainability Priorities that were identified are listed below.

Land Use

Land Use considerations can allow communities to factor sustainability into their future development plans. Many planners lack knowledge about sustainable options, and most communities have limited time and resources to devote to planning. The Land Use Decision Sector is comprised of the following Sustainability Priorities:

- Land-Use Planning
- Zoning and Regulations
- Building Density
- Green Space
- Parks and Recreational Areas
- Preservation of Historic Places
- Urbanization
- Urban Sprawl
- Redevelopment of Abandoned Urban Areas
- Aesthetics

Transportation

Transportation in rural communities is used to connect residents with job centers and services, often located in nearby urban areas. Most rural communities have a very limited public transportation infrastructure. The Transportation Decision Sector is comprised of the following Sustainability Priorities:

- Increase Public Transportation
- Provide Multi-Modal Transportation Options
- Adopt New Technologies
- Encourage Acceptance

Buildings and Infrastructure

Buildings and Infrastructure, such as housing, are a pivotal component of communities. Housing shortages have some communities focused on building and renovating homes, and rising energy costs have made energy efficiency a top priority for communities looking to cut costs. The Buildings and Infrastructure Decision Sector is comprised of the following Sustainability Priorities:

- Green Building Architecture
- Affordable Housing
- Deteriorated Housing
- Downtown Revitalization
- School Improvements
- Community Infrastructure
- Technology Access for Rural Areas

Local Food Systems

Local Food Systems represent a sustainable way for communities to provide healthy food. Partnerships with nearby agricultural areas offer the opportunity for businesses to use local produce, thereby increasing economic activity in the region and fostering sustainability. The Local Food Systems Decision Sector is comprised of the following Sustainability Priorities:

- Community Gardens
- Farmers Markets
- Farm to Restaurants and Schools
- Agricultural Partnerships
- Diversified Foods

Water Management

Water Management is recognized by communities as an important service, but often there is uncertainty about how to install or update sewer systems sustainably. These projects also are very expensive and might stretch beyond the jurisdiction of the community. The Water Management Decision Sector is comprised of the following Sustainability Priorities:

- Water Conservation
- Water Quality
- Water Rights
- Stormwater Concerns
- Managerial Concerns

Part II contains the complete results for the Community Decision Sectors. It presents a brief Overview of the topic, followed by a detailed explanation of community Sustainability Priorities. Each Sustainability Priority contains information about Community Challenges, extracted from each Listening Session; Success Stories highlighting practical solutions adopted by communities; Research Questions that will help address each community challenge; and Policies, Approaches and Scientific Tools already implemented by communities

The Appendices provides the resources that were mined to conduct the analysis. They identify the body of

Waste Management and Site Revitalization

Waste Management and Site Revitalization are important to sustainability efforts. Communities are realizing that efficiently managing waste and materials requires creative approaches. Redeveloping Brownfields and Superfund sites is a priority to reclaim usable land within communities. The Waste Management and Site Revitalization Decision Sector is comprised of the following Sustainability Priorities:

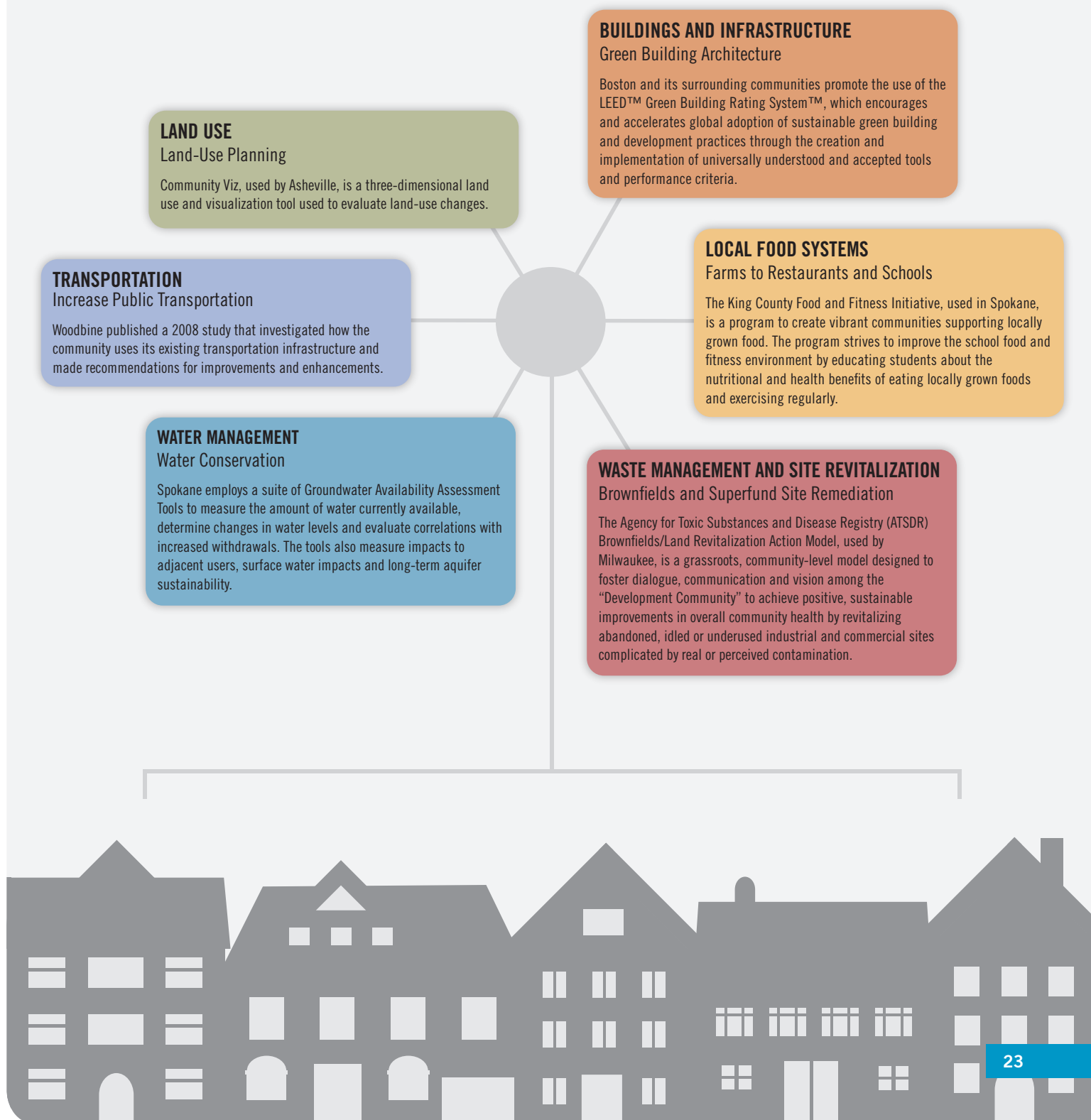
- Waste Management
- Waste Removal
- Recycling
- Brownfields and Superfund Site Remediation
- Regulations

information presented during the Listening Sessions, as well as sustainability plans, websites, documents and projects implemented by various community organizations that were compiled and analyzed for a better understanding of the communities' "State of Sustainability Practices." Specifically, **Appendix I** lists all of the relevant organizations (e.g., municipalities, NGOs) and documents for each Listening Session community. **Appendix II** contains a wealth of information that the communities are using to help them become more sustainable, including Policies, Approaches and Scientific Tools. Indeed, Appendix II identifies 915 tools.

Policies, Approaches and Scientific Tools for Community Decision Sectors

Below are some examples of community Policies, Approaches and Scientific Tools affecting Community Decision Sector Sustainability Priorities.

Additional examples of Policies, Approaches and Scientific Tools are described in each Sustainability Priority section. For a full list of community sustainability approaches, please consult Appendix II.



Cross-Cutting Issues Overview

Cutting across each Community Decision Sector are sustainability issues that influence more than one topic. Cross-Cutting Issues are broad sustainability issues that, while important to communities, are usually not the first and foremost issue in their decision making. They are often considered in the context of the Community Decision Sectors and impact more than one sector. However, when communities are in the process of implementation to address an issue, a document may be developed that will describe a strategy or project with specific activities. For example, Asheville has developed the “5X5” Plan, which is a 5-year program in which public and private sector businesses invest in local economic development efforts to help create approximately 5,000 new jobs in the Asheville area. As identified in this report, jobs are a sustainability priority under the Cross-Cutting Issue of Economics.

Economics is the most important and universally considered cross-cutting issue that has a significant impact on every Community Decision Sector. At times, decisions seem to be exclusively linked to an economic benefit (e.g., higher levels of employment, lower utility bills, increased tax revenue, health care savings and so forth) without consideration for sustainable benefits and outcomes. Communities need a way to measure and describe a connection to sustainability that makes economic sense and encourages job creation.

Despite the driver of economics, every important decision by a community leader must be evaluated for the potential influence by or on all the diverse Cross-Cutting Issues, such as social issues, performance metrics and the environment. For example, social acceptance of sustainability principles affects the adoption of green building practices, use of public transit, and consumption of local foods and products. Likewise, the availability of community parks and recreational areas (Land Use Community Decision Sector) is important for opportunities for tourism, public school education, engaging the community, reducing greenhouse gases, conserving natural resources, and promoting human health and well-being.

A brief summary for each of the eight Cross-Cutting Issues and their Sustainability Priorities that were identified are shown in the boxes that follow.

Economics

Economics is the strongest driver of sustainability decisions in communities, yet communities lack a good understanding of the linkages between jobs, economic development and sustainability. Sustainability must be measured and described in a way that makes good economic sense and connects with jobs and economic development. The Economics Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Jobs
- Economic Development
- Resources
- Initial Cost
- Grants
- Funding for Small Communities
- Decision Making
- Tourism
- Prioritization

Social Issues

Social Issues considerations are crucial in communicating, educating and framing the sustainability discussion with the public and are essential for understanding and addressing local needs. Creative and culturally relevant ways to communicate sustainability issues that resonate with different audiences will be necessary to promote a better understanding of sustainability issues and change behaviors. The Social Issues Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Leadership
- Attitudes Toward Sustainability
- Preservation of Local Culture and Traditions
- Community Engagement
- Participation
- Collaboration
- Capacity Building
- Public School Education
- Communication
- Decreasing Populations
- Crime
- Social Science Research

Environmental Justice

Environmental Justice considerations cut across nearly all sustainability themes. Sustainable solutions need to be practical, effective and apply principles of environmental justice to protect disproportionately impacted low-income, minority and tribal communities. The Environmental Justice Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Awareness
- Adoption of Environmental Justice Principles

Climate Change

Climate Change is a concern in many communities. Many are struggling with how to draw political attention to an impending threat that has no visible consequences at this time (e.g., compared with dirty air or polluted rivers). The Climate Change Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Climate Change Adaptation
- Reduce Greenhouse Gases

Energy

Energy cost and availability is a topic that resonates with many communities. The rising cost of oil combined with the steadily increasing greenhouse gas emissions has prompted communities to implement green energy policies. Some communities are incorporating energy conserving features into new and retrofitted buildings, while others are interested in developing ways to produce energy from novel sources such as landfill waste and biomass. The Energy Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Energy Independence
- Alternative Energy Sources
- Energy Efficiency

Human Health

Human Health is very important to communities, and improvements are needed to install green spaces, trails and clean up the environment (air, water, land). Second to economics, health reaches across all facets of a community and is a strong driver of decisions. The Human Health Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Reduce Disease
- Integrate Public Health in Decisions
- Improve Health Data Accessibility

Environment

Environment and natural resources (e.g., water quality, water quantity, biodiversity) are recognized as issues, but have not been key motivators for most communities' sustainable actions. With limited resources, decision makers focus on meeting the basic needs of community members (e.g., housing, health, jobs) and address environmental issues such as climate change tangentially. The Environment Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Conservation of Natural Resources
- Biodiversity
- Appreciation
- Environmental Hazards

Performance Measures and Metrics

Performance Measures and Metrics are critical to measure or predict the economic, environmental and social effects of a sustainable action in a community. Communities must capture economic outcomes as well as others that are valued by the community (e.g., social, environmental, health). The Performance Measures and Metrics Cross-Cutting Issue is comprised of the following Sustainability Priorities:

- Develop Indicators
- Apply Metrics
- Environmental Reporting

Part II contains the complete results for each Cross-Cutting Issue. A brief Overview of the topic is followed by a detailed explanation of community Sustainability Priorities. Individual Sustainability Priorities contain information about Community Challenges, extracted from each Listening Session; Policies, Approaches and Scientific Tools already in practice by communities; Success Stories highlighting practical solutions adopted by communities; and Research Questions that will help address each community challenge.

The Appendices provide the resources that were mined to conduct the analysis. They identify the body of information presented during the Listening Sessions, as well as sustainability plans, websites, documents and projects implemented by various community organizations that were compiled and analyzed for a better understanding of the communities' "State of Sustainability Practices." Specifically, **Appendix I** lists all of the relevant organizations (e.g., municipalities, NGOs) and documents for each Listening Session community. **Appendix II** contains a wealth of information that the communities are using to help them become more sustainable, including Policies, Approaches and Scientific Tools. Indeed, **Appendix II** identifies 915 tools.

Communities employ creative and elegant approaches to achieve their sustainability goals. Sharing these approaches between communities improves the collective knowledge of sustainability efforts and encourages adoption of successful practices.

Policies, Approaches and Scientific Tools for Cross-Cutting Issues

Below are some examples of community Policies, Approaches and Scientific Tools affecting Cross-Cutting Issue Sustainability Priorities.

Additional examples of Policies, Approaches and Scientific Tools are described in each Sustainability Priority section. For a full list of community sustainability approaches, please consult Appendix II.

ECONOMICS

Economic Development

The Economic Development Coalition (EDC) Map Viewer, used by Asheville, is an online tool for exploring businesses located in the four-county Asheville Metropolitan Statistical Area (Buncombe, Haywood, Henderson and Madison Counties in NC), including county and city borders, roads, railroads, rivers, business locations, flood plains, property parcel boundaries and aerial photos.

PERFORMANCE MEASURES AND METRICS

Apply Metrics

Ogden performed a Community Asset Analysis that evaluated the revitalization potential of many downtown parcels along with an abandoned gas station that serves as the gateway to the community and a recreational destination park.

SOCIAL ISSUES

Communication

Sustainable Energy, Education and Communication (SEEC) is a Web-based educational program that offers broad sustainability information and practical solutions through 10 modules. Milwaukee has used this program to communicate environmental information.

CLIMATE CHANGE

Reduce Greenhouse Gases

Asheville used the Clean Air and Climate Protection Software (CACPS), which was designed by the International Council for Local Environment Initiatives (ICLEI) to help local governments formulate climate action plans and is used by the U.S. Conference of Mayors to compute emissions numbers and calculate cost savings.

ENERGY

Alternative Energy Sources

The Database of State Incentives for Renewable Energy (DSIRE) was used by Asheville and Medford in evaluating alternative energy options and incentives. DSIRE is a comprehensive source of information on state, local, utility and selected federal incentives that promote renewable energy and energy efficiency.

ENVIRONMENTAL JUSTICE

Adoption of Environmental Justice Principles

Wyandanch has benefited from ERASE Racism, a Long Island advocacy organization dedicated to eliminating barriers to racial equity in housing, public health and community development.

HUMAN HEALTH

Reduce Disease

Milwaukee promotes an educational tool to reduce asthma attacks, developed by the EPA and Ad Council. The Asthma Action Plan educates users about asthma triggers that can be found inside and outside the home.

ENVIRONMENT

Environmental Hazards

Asheville has used the Buncombe County Multi-Hazard Risk Tool, which is a risk tool to plan for disaster mitigation and response for Buncombe County, NC.

Chapter 4. Conclusions

Communities are making strides to address the complex environmental challenges present in the 21st century to improve human health and environmental well-being toward becoming more sustainable. Limited natural resources, increasingly severe natural disasters, and air and water pollution are examples of regional, national or global problems that are experienced and must be confronted on a community level to achieve social, environmental and economic sustainability of current and future generations. EPA, along with state and local governments, develops policies to protect human health and the environment, but it is the responsibility of each community and each individual within the community to implement the policies and comply with the regulations. The needs, decisions, social norms and lifestyles of individuals within a community often contribute to environmental and health problems, underscoring the need to address sustainability concerns on a local scale. Collectively, the culture, behavior and perspectives of diverse groups, unique environmental issues, and impacts from regional impacts are best addressed at the local, community level.

This report, *Assessment of the “State of Sustainability Practices” for Listening Session Communities*, presents a framework of decisions within the context of the community planning process based on the analysis of Listening Session community information. Because no other study of this kind had been conducted, this effort presents an initial, qualitative assessment of how communities make decisions as a collective body rather than by separate types of decision makers (e.g., government, business) or specific fields (e.g., municipal waste operators). The analysis provides information to gain a better understanding of how communities, in general, make their collective decisions for their place—“community lens”—and to identify the science that communities use in their decision making as well as their needs for additional scientific tools.

The common framework has major and secondary decisions, and their priorities, that are currently being addressed by communities toward becoming sustainable. The framework represents a practical model that is rooted in the community planning process and the decisions that communities make. The analysis identified areas where many communities make the primary or majority of their decisions that are fundamental to their existence as Community Decision Sectors. In addition, it identified secondary decisions, as Cross-Cutting Issues, that



generally influence more than one Community Decision Sector. Although not the primary area for decision making, Cross-Cutting Issues are important topics for communities. The analysis identified the Sustainability Priorities for each of the Community Decision Sectors and Cross-Cutting Issues—specific areas of importance for decision making. The Sustainability Priorities described are not exhaustive, but rather depict a few specific issues that target a challenge of high importance that communities are addressing to become more sustainable.

It is important to understand which factors influence or are influenced by decision-making sectors and to what extent. Every important decision by a community leader must be evaluated for the potential influence by or on issues as diverse as social issues, performance metrics and the environment. The universal consideration of economics has a significant impact on every sustainability topic within each of the six Community Decision Sectors. Social acceptance of sustainability principles, for example, affects the adoption of green building practices, use of public transit, and consumption of local foods and products. The availability of community parks is important for land-use planning, conservation of natural resources, maintenance of biodiversity, and promotion of human health and well-being. As such, issues should be addressed using a matrix management approach where issues, rather than being addressed individually, are addressed collectively both across the Community Decision Sectors and Cross-Cutting Issues.

Communities have demonstrated creativity and resourcefulness in identifying, developing, and implementing available Policies, Approaches and Scientific Tools. Various groups across the community partner to work

together to identify or develop various tools. Indeed, there were 915 tools identified for these seven communities as listed in [Appendix II](#).

EPA, other governmental organizations and outside advocacy groups produce many tools to help communities assess their current sustainable status, evaluate and prioritize options for action plans, and appraise the results of a sustainability initiative. Although there might be many tools available, they are not always used by communities. In addition, specific community needs might not be met by currently available tools and methods. These gaps provide an opportunity for ORD research to produce tools to assist communities in achieving their sustainability goals.

By knowing how communities make decisions and what science communities are using, EPA will be able to compare the “State of Sustainability Practices” of communities with its research efforts (e.g., tools and models) and integrate the science that will further assist communities into future research. This information will help EPA to

conduct research that ultimately will provide information, methods and tools to help community decision makers evaluate and implement the best sustainable practices depending on the environmental, social and economic issues that they are facing.

This analysis of the body of information for these Listening Session communities has resulted in a better understanding of the “State of Sustainability Practices.” The analysis provides the data that will help inform EPA research. The identification of the major and secondary decision areas framework as well as the decision-making process provides an opportunity to target research and tool development that will better address community sustainability issues. By organizing and designing the research and tool development by these topics that communities leaders use, it can help to enhance decision making. Ultimately, providing sustainability-related scientific information will help community leaders to understand the significance of their decisions and the impact on the natural and built environment.

PART II
RESULTS FOR
COMMUNITY DECISION
SECTORS



Introduction to Community Decision Sectors

The analysis identified six pivotal Community Decision Sectors by evaluating the most critical and actionable sustainability topics articulated by each Listening Session community. Since the seven communities represent diverse typologies, the results can be extrapolated to other communities nationwide. Each of these topics provides an opportunity for the SHC to target research and tool development to address community sustainability issues. The Community Decision Sectors include:

1. Land Use
2. Buildings and Infrastructure
3. Transportation
4. Local Food Systems
5. Water Management
6. Waste Management and Site Revitalization

The Community Decision Sectors are topics that represent essential areas that are important to support day-to-day living, and decisions in these areas have large impacts. For example, how communities structure the use of their land has a significant impact on the health of their citizens and the environment. Many communities are experiencing a shortage of high-quality yet affordable housing. The lack of affordable housing in cities leads to rural migration, which contributes to sprawl. Although individual transportation preferences center on private automobile transit, many communities would like to provide citizens with alternative modes of public transit to reduce vehicular emissions and traffic congestion. Many communities are exploring ways for supporting to various systems to provide local foods to their residents, including through farmers markets, summer camps and schools, as a sustainable way to provide healthy food for



healthier lives. Making these types of decision requires extensive analysis of the long-term consequences for many facets of human and environmental health.

Every Community Decision Sector is described in more detail in the following sections. A brief Overview of the topic is followed by a detailed explanation of community Sustainability Priorities. Individual Sustainability Priorities contain information about Community Challenges, extracted from each Listening Session; Success Stories highlighting practical solutions adopted by communities; Research Questions that will help address each community challenge. Importantly, each Sustainability Priority has a list of the Policies, Approaches and Scientific Tools that are being implemented by these seven communities. Each tool is identified as being a Policy (P), Approach (A) or Scientific (S) tool. In addition, the page number for each tool is identified where more information can be located in [Appendix II](#).

Land Use

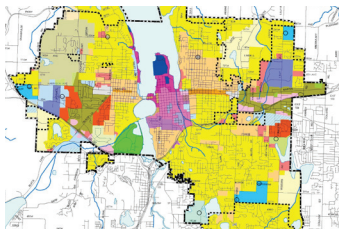
Community Decision Sector

Overview

How communities structure the use of their land has a significant impact on the health of their citizens and the environment. Land-use planning can allow communities to factor sustainability into their future development plans and enable optimal land use. Many planners lack knowledge about sustainable practices, and most communities have limited time and resources to devote to planning. A lack of knowledge by community citizens also obstructs a transition to sustainability. Although communities are working hard to initiate sustainability projects, little effort is made to promote collective decision making by allowing for public dialogue and discourse. Many communities have developed sustainability plans, and most are driven largely by more traditional, long-standing planning practices that have produced mixed results. Rural communities are especially interested in identifying ways to conduct planning that maintains their individual identities. Given their small size, these communities usually do not have the professional staff/technical capabilities to apply sustainability principles and techniques. In addition, communities often focus on their local needs and do not consider the interaction and benefits between urban and rural areas or the dynamics of changing geographical (regional) areas or demographics. Furthermore, planning often takes place without incorporating inclusive, well-informed discussions with community members and key stakeholders, thereby involving local businesses, neighborhood associations and others in decision making.

Sustainability Priorities

Land-Use Planning



land-use codes, ordinances and comprehensive plans that

Lack of town planning that incorporates inclusive, well-informed discussion followed by collaborative decision making is a barrier to sustainability. This scenario can lead to



incorporate sustainable development requirements but lack full support, enforcement, and, importantly implementation, compared to communities that have used inclusive, well-informed, collaborative decision making. Suitable land-use planning questions should address fiscal responsibility and choosing the most effective and efficient alternative growth options can be the more fiscally responsible choice. Most communities do not know that growth decisions will directly commit current residents and taxpayers to pay in support of growth that might not be well planned, and most communities lack the tools to make these informed growth decisions. Land-use and infrastructure scenario planning/modeling is an important tool. For example, the U.S. Department of Agriculture (USDA) and the agricultural industry could assist rural communities in understanding land-use planning options. Currently, ecosystem function does significantly influence local land-use decision making.

Community Challenges

Asheville. A lack of effective land-use planning, coupled with transportation and land-use regulations, is an issue. One of the major dynamics of the region is its interface between urban and rural communities and the ensuing dispersed population pattern. About 430,000 people live in the area with about 80,000 residing in Asheville.

Boston recognizes that urban ecology, relevant to land-use planning, is becoming an issue as green infrastructure expands. The consequences of the presence of more wildlife in urban areas are unknown. The public's opinion varies greatly, with some people encouraging wildlife corridors and others wanting to shoot coyotes.

Spokane has a plan to enable optimal land use, encouraging compact communities by eliminating barriers and incentivizing mixed-use, natural landscaping, transit-oriented development, fuel and energy efficiency, community composting, and preservation of the Spokane Valley-Rathdrum Prairie Aquifer and its watershed. The plan is expected to preserve open space, reduce greenhouse gas emissions from transit, and encourage additional transportation options, including transit and biking access. The community will manage growth and development by building affordable housing and using land optimally. The Spokane Tribe also wants to produce a zoning code to prevent further sprawl.

Woodbine plans to manage growth and development by revitalizing the downtown business district, upgrading Main Street building facades, planning historic preservation of key buildings and initiating a community planting project at the city gateway.

Wyandanch manages growth and development by promoting infill development, increasing housing diversity, zoning for transit-oriented development (TOD) and planning a future mixed-use development project.

Success Stories






















Wyandanch has been nationally recognized for its urban renewal efforts. Wyandanch hired a world-class urban planner to redesign the downtown area. A strict planning code is being adopted and will include a mandate that developers hire local people to do the work. The community invited three developers from a pool of 15 to submit full proposals for the downtown project.

Research Questions

- What are the impacts of activities from the surrounding areas (e.g., local versus distant agriculture, chemical use, crops and rotations, timber harvest) on the environmental, economic and social health of a community or more urban core?
- What are the intended and unintended consequences of land-use, building and infrastructure, transportation, and waste and materials handling, and how can this information be used in planning, management and decision making to support

sustainable communities through enhancing human health and ecosystem services?

- How can the economic effects of different land-use patterns and benefits of conservation be identified?
- Can a new economic valuing system for land use (e.g., clear cutting, forests, agriculture, urban development) be invented that demonstrates the value of sustainability?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Community Viz		A-19
Future Urban-Regional Environment Simulation (FUTURES) Model		A-19
Comparative Risk Assessment Framework and Tools		A-19
ArcHydro		A-19
Land Development Plan Guidelines for North Carolina Local Governments		A-19
Design Review Techniques		A-19
Mountain Landscapes Initiative Toolbox		A-19
Transit Oriented Development (TOD)		A-19
Land Cover Maps		A-20
Future Land Use and Transportation Plan Map		A-20
NC OneMap		A-20
Living Maps: From Cosmos to Community		A-20
Buncombe County GIS datasets		A-20
Voluntary Agriculture Districts		A-20
Priority Corridor Planning		A-20
Sewer Service Extension Policy		A-20
New Urbanism		A-20
Bel-Red Subarea Plan and Land Use Code Incentive System		A-21
Preserve All Future Uses (PAFU)		A-21
Performance-Based Management		A-21
Getting to Smart Growth: 100 Policies for Implementation Report		A-21

Zoning and Regulations



The consequences of regulations should be carefully explored by government agencies because they can have disproportionate effects on small communities. For example,

developers who build housing near farms automatically trigger regulations about wells and waste. For small farmers, housing developments can render much of their agricultural land useless. Regulations also can impede some sustainable developments (e.g., banning clotheslines and windmill towers). Many communities struggle with community ordinances that preclude the use of practices that are more environmentally beneficial or that promote healthier communities.

Community Challenges

Asheville. Regulations are a concern. For example, developers who build housing near farms trigger regulations about where wells can be located and the minimum distance that animal waste can be located from the wells, rendering much agricultural land useless.

Wyandanch. It can be difficult to make residents understand the connections between certain actions and improvements to their community. The planning codes that are being developed for Wyandanch's revitalization are somewhat removed from the tangible outcomes that are expected to occur. It is important to help residents make the link between changes in the code and the expected community improvements. Wyandanch has had considerable community involvement, so community members feel that many local residents understand the proposed changes to the codes.

Research Question

- What social and judicial levers or emerging information technology could compel behavior change related to land use at the individual and community levels?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Greenway- and Trail-Specific Design Standards	⚙️	A-21
Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)	⚙️	A-21
Unified Development Ordinance (UDO)	⚙️	A-21

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Buncombe County Zoning Ordinance	⚙️	A-21
Annexation Plan Map	⚙️	A-22
Extraterritorial Jurisdiction (ETJ) and Joint Planning Area Map	⚙️	A-22
Development Standards for Central Business District Ordinance	⚙️	A-22
Form-Based Code Mechanisms	⚙️	A-22
Self-Financing Bonds	⚙️	A-22
Land Value Taxation Approach	⚙️	A-22
Land Use Incentive Policy	⚙️	A-22
Window and Door Architectural Style	⚙️	A-22
Awnings	⚙️	A-22
Internal Site Illumination	⚙️	A-23
Signage	⚙️	A-23
Sidewalk Style	⚙️	A-23
Parking Facility Style	⚙️	A-23
Underground Utilities	⚙️	A-23
Street Lighting	⚙️	A-23
Street Furniture	⚙️	A-23
Sculptural Art	⚙️	A-23
Kiosks	⚙️	A-23
Water Craft	⚙️	A-23
Slope Stabilization	⚙️	A-23
Well Location Regulations	⚙️	A-24
Septic Requirements	⚙️	A-24
System Vision™	⚙️	A-24
Review Codes and Ordinances	⚙️	A-24

Building Density



Planning inclusive, integrated, mixed-use neighborhoods with a high building density is an environmentally sound choice for communities. This choice of land use reduces the distance that people must travel for basic necessities such as

groceries, dining and entertainment. Neighborhoods with mixed-use high building density also foster a sense of community and personal well-being, as neighbors interact more often as they do local errands.

Community Challenges

Asheville is concerned with creating density in urban areas while maintaining a high quality of life. The community prioritizes developing sustainable neighborhoods with mixed-use and mixed-income housing and facilities. Infill development is another priority.

Milwaukee seeks to manage growth and development by redeveloping the 30th Street Industrial Corridor, promoting green infrastructure, working on the Menomonee Valley Industrial Center and Community Park and participating in Smart Growth.

Research Questions

- What are the impacts of building density, mix (e.g., residential versus commercial/industrial) and location on the environmental, economic and social health of a community?
- What type and mix of housing best promotes the well-being of individuals and communities?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Smart Growth Policies		A-24
Transfer of Development Rights (TDR)		A-24
Urban Villages		A-24
Hub-Directed Development		A-24
Residential Development Density		A-24
Cottage Development Standards		A-24
Mixed-Use Development		A-25
Mixed-Use Buildings		A-25

Green Space



Preservation of open green spaces, agricultural lands and natural areas within communities is an important land-use priority. Some community areas

are connected closely to green space. These open green space areas protect the natural green infrastructure of a place, provide opportunities for recreation, preserve important environmental and ecological functions, and enhancing community quality of life. At times, communities have passed bond referendums as a reactive measure to help preserve the “last wetland” or the “last community farm.” While this can preserve critical lands, the combined effect is land that is unconnected and fragmented. Communities are also utilizing the green infrastructure approach to help in providing stormwater management, flood mitigation, healthy waters, and air quality management by weaving natural processes into the built environment.

Community Challenges

Asheville highly rates nature conservation however they battle urban sprawl and the result of people moving into the area for the environmental beauty. Traditionally, people limited their development to valleys, but now building is occurring on the sides of the mountains, causing instability and increased landslide risk. Furthermore, North Carolina’s public land draws many tourists, but is simultaneously being “loved to death” by the visitors. As a result, Asheville is experiencing numerous changes in natural resources as a result of land use changes: (1) the loss of biodiversity; (2) reduced groundwater availability; and (3) an increase of landslides.

Boston considers the use of green space to be a priority in making land-use decisions.

Spokane. Some city apartments built near North Central have very small backyards, which is not conducive to mental health.

Success Stories

Spokane’s nearby community of Liberty Lake has many open spaces, trail systems and affordable homes. Yards are small, but open areas are easily accessible (at most ¼ of a mile away). The community also has installed “purple piping” that transports treated wastewater to be used for irrigating parks, yards and agriculture.

Research Questions

- Can the benefits of various land uses (e.g., community agriculture, parks and urban services) contributions to community health and economic vitality be quantified?

- How can the values of ecosystem services provided by a landscape and be quantified and integrated with other social and economic parameters for improved decision making?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Green Toolbox		A-25
Working Lands Toolbox		A-25
Green Infrastructure		A-25
Greenways— Connect Buncombe		A-25
City Greenways		A-25
Asheville Riverfront Open Space Guidelines		A-25
Open Space		A-25
Linking Lands and Communities		A-26
Land Trusts		A-26
Governor's Million Acres Initiative		A-26
Land Conservancies		A-26
Development Requirements		A-26
Fee in Lieu		A-26
Open Space Regulations		A-26
Boston Natural Areas Network (BNAN)		A-27
Boerner Botanical Gardens		A-27
Harrison County Conservation Board (HCCB)		A-27

Parks and Recreational Areas



Communities are planning areas for parks and recreation for the multiple benefits derived especially for health. In some communities, areas are connected closely to green

space. There is a desire to have children playing outside, but some low-income neighborhood parks are not safe. Many parks in inner-city neighborhoods have been kept alive through community development funds and programs to encourage children to play outdoors. Even for people who do not have transportation to nearby state parks, recreational opportunities can be found through *ad hoc* and formal foot trails and bicycle paths in neighborhoods. Increased exercise has positive health benefits, including reduced obesity. To decrease obesity and

related diseases (e.g., diabetes), communities are providing increased access to aerobic recreational opportunities. Parks and trails encourage exercise, which could reduce the rates of obesity and diabetes in the community.

Community Challenges

Spokane's "baby boomers" are interested in active lifestyles, and many young people who leave for college return to the city to raise their families.

Woodbine is pursuing initiatives that include installing a handicap-accessible trail system through the levee district. Trails and walkability was selected as a key sustainability priority for the community.

Wyandanch has initiated projects to improve the healthy lifestyle of its citizens, including the beautification and realignment of the Straight Path (already underway and paid for with public funds) and creating a walkable, pedestrian-friendly downtown. Bicycle and walking trails also are being constructed to connect the community to Geiger Memorial Park; a botanical garden/conservatory; and a new health center. The outdoor improvements (e.g., garden, conservatory, trails) are expected to have a positive effect on many aspects of the community. Parks and trails encourage exercise and the botanical garden will be a destination for school field trips to help teach children about better ways to live (e.g., healthier eating, outdoor activities). A curriculum is being developed for the local schools, and internships also will be available for older students.

Success Stories

Milwaukee collaborates with schools to provide nature centers for the community and educational programs for neighborhood groups. Restoration projects within the parks are used as teaching demonstrations for schoolchildren. The Urban Ecology Centers have three sites in the Menomonee Valley. Two of their buildings are LEED™-certified and used as educational tools to teach about using surrounding natural resources, such as rivers, to complement the green function of the buildings.

Spokane. The Spokane Tribe recently received a U.S. Department of Housing and Urban Development grant to install bicycle trails throughout the community; it would be useful to learn how the community convinced its citizens of the benefits of cycling. Spokane's annual Blooms Day race speaks to the community's interest in running/walking and being outdoors, although this is not necessarily translated into daily activities (e.g., walking to the grocery store rather than driving).

Research Questions

- Does access to environmental amenities (e.g., parks, gardens) correlate with children in selecting their careers and environmental conscience?
- Does a correlation exist between access and involvement to (local) green spaces and crime or other related factors (e.g., incarceration rates)?
- If bicycle lanes are created or public transportation is made available, do people actually use them? If so, what impact does this use have on the sustainability of a community?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Parks, Greenways and Facilities Inventory		A-27
Buncombe County Parks and Recreation Services		A-27
City Parks		A-27
City Parks and Recreation Planning Division		A-27
French Broad River-Pigeon River Trails		A-27
French Broad River Paddle Trail		A-27
Greenways Resource Conservation Benefits		A-27
Zeugner Center		A-27
Outdoor County Pools		A-28
County River Parks		A-28
Whitewater Course		A-28
County Soccer Fields		A-28
County Playgrounds		A-28
Kids and Parks Program		A-28
Mayors' Cup Raft Race		A-28
River Access Signage		A-28
Teen Activities		A-28
Adult Activities		A-28
Sports Leagues		A-28
Special Olympics		A-28
City Recreation Program		A-29
Tree and Bench Donation Program		A-29
Emerald Necklace		A-29
Golf Courses		A-29

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Boston Park Rangers		A-29
Milwaukee County Parks		A-29
The Central Iowa Trail Association (CITA) Program		A-29
Seven Oaks Recreation		A-29
Don Williams Recreation Area		A-29
Spokane Park System		A-30
City of Spokane Parks & Recreation Department Recreation Program		A-30
Community Development Parks Projects		A-30
Manito Park		A-30
Riverfront Park		A-30
Golf Courses		A-30
Aquatic Centers		A-30
Dog Park		A-30

Preservation of Historic Places



Historic sites invite revenue from tourists and provide educational experiences. Historic places hold sentimental value to residents, provide a source of local pride and contribute to a sense of community.

Community Challenges

Woodbine prioritizes developing a sustainable downtown through historic preservation of key buildings.

Research Question

- How can the value of historic places be quantified in terms of intangible benefits such as community pride and resident well-being?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Preservation, Restoration and Rehabilitation		A-30
Historic District Design Review		A-31

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Downtown Design Review	⚙️	A-31
River District Design Review	⚙️	A-31
Historic Tax Incentives	⚙️	A-31
Inventory Studies and Surveys	⚙️	A-31
Historic Burying Grounds Initiative (HBGI)	⚙️	A-31
Grave Marker Conservation	⚙️	A-31
Historic Burying Grounds Surveys	⚙️	A-31
Educational and Interpretive Use	⚙️	A-32
Moore-Turner Heritage Gardens	⚙️	A-32
Façade Master Plan	⚙️	A-32
Century and Heritage Farm Programs	⚙️	A-32
Rebuilding Community: A Best Practices Toolkit for Historic Preservation and Redevelopment	⚙️	A-32

Urbanization



Urbanization is a threat to small towns in middle America. If the structure and values imparted by small and rural communities disintegrates, then the United States will

see a change in the worker who goes out into the world; children will no longer be “raised by a village.” Some communities appear to be an agrarian population, but most community members do not have a direct connection to the surrounding farms. The small farms of the agrarian past have become incorporated into large agricultural operations. The population in some communities has been decreasing. Children grow up in the community, leave for college and often do not come back. It is important to strengthen and support rural communities to preserve their culture and way of life.

Community Challenges

Asheville faces unique challenges in a rural/urban interface, including how to identify the role of a rural county when its border is very close to urban Asheville. The community is concerned with the viability of rural livelihoods (e.g., scattered factories, interfaces with natural resources, and distribution and use centers focused in the urban areas).

Woodbine’s population has been decreasing. Children grow up in the community, leave for college and often do not return. Woodbine is viewed by some as a “bedroom community,” where people commute to Omaha, Nebraska, or other more urban areas for their jobs, shopping or services.

Research Question

- How does the trend of people moving from rural areas into cities impact the sustainability of both types of communities, and what can be done to reduce any adverse impacts?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
New Urbanization	⚙️	A-32
Urban Villages	⚙️	A-32
Smart Growth	⚙️	A-32

Urban Sprawl



Since World War II, housing, land-use and transportation policies have contributed to environmentally unsustainable growth patterns and inequitable urban development.




Sprawl has been facilitated by zoning regulations that separate jobs, housing, and commerce, as well as low-density development that requires a car. A key question is how to apply the economics of “smart growth” development on a metro scale; in other words, to make it more cost-effective to do the “right” thing rather than sprawl. Many cities are attempting to attract additional economic development, but suburbs often have more resources and momentum than older, land-locked or smaller inner-ring neighborhoods, and therefore can offer more attractive incentives to developers. Cities often are competing with one another, and the winner often is the city with the Greenfields, relaxed zoning and resources, thus encouraging sprawl. “Big box” development appears to be the standard for the foreseeable future—what can be done to get these retailers into urban cores? There are vacant or nearly vacant city blocks in many locations. This might be a question of economics, architecture, perception or something else entirely; regardless, it is imperative to find a way to incorporate those retailers into the urban fabric.

Community Challenges

Asheville is encouraging infill development of vacant city areas and prioritizes limiting urban sprawl.

Research Question

- How do regional-scale processes (e.g., development of outside community boundaries, air pollution transport and shared water supplies) affect community-scale sustainability; and how can these processes be factored into community decision making?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Smart Growth Land Use Policies		A-32
Policy Guide to Smart Growth		A-33
Urban Growth Modeling		A-33
Resolution on Near-Nature Quality of Life Initiative		A-33

Redevelopment of Abandoned Urban Areas

Many urban communities contain areas that once were thriving businesses or malls but now lie abandoned. Rather than building new structures elsewhere and contributing to sprawl, these abandoned sites provide a good opportunity for redevelopment, breathing new life into once-prosperous locations.




Community Challenges

Ogden hopes that a new medical clinic will attract additional doctors and medical services into the city, such as the physical therapist who recently located her clinic just outside of the city boundaries because there was no suitable location within the city.

Wyandanch. Many land parcels are underdeveloped; this creates a burden (e.g., tax, social issues) on the whole community. Redevelopment is expected to reduce the burden by bringing in new residents and businesses.

Success Stories

Asheville is redeveloping the low-income area around Mission Hospital (the largest local employer) by adding low-income housing, building new commercial space, establishing urban agriculture and water management programs (e.g., trout, mushrooms, blueberries), and redeveloping Brownfields sites.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Adaptive Reuse		A-33
Infill Development		A-33
Vacant Lots and Buildings		A-33

Aesthetics











Standards of affluence dictate aesthetics and land-use design (e.g., impenetrable lawns and huge parking lots). Communities should explore options that are functional and sustainable, while containing an aesthetically pleasing structure acceptable to the community.

Community Challenges

Asheville is aware of the impact of aesthetics when renovating neighborhoods. The city is promoting mixed-use development based on aesthetically pleasing design standards.

Research Question

- What sustainable and functional, yet aesthetically pleasing, designs can be developed for communities to consider when land-use planning?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Ridgeline Development Guidelines		A-33
River Viewscapes Guidelines		A-34
Flood Plain Development Restrictions		A-34
Street Scaping		A-34
Urban Landscaping		A-34
Community Visioning Program		A-34
Uniform Streetscape		A-34
Beautification Projects		A-34

Buildings and Infrastructure

Community Decision Sector

Overview

Housing and the built environment provide many sustainability challenges, but also opportunities for communities to pursue sustainable practices. Housing is a pivotal component of communities. Housing shortages (e.g., middle- or low-income, accommodations for families of local employers) have some communities focused on building more homes to attract new members to the community and meet existing residents' needs. Other communities are driven by a desire to expand the tax base by renovating existing housing and commercial property. Rising energy costs have made energy efficiency a top priority for both communities looking to cut costs in their subsidized housing programs and buyers looking to make their money go further. An impediment is that the upfront cost of green homes is sometimes not competitive with the cost of standard homes. In addition, communities are making strides to revitalize their downtown areas but are challenged to address the cost and impact of sprawl caused by urban development.



green because green features are not incorporated into the appraised value of the home. Consequently, it is difficult for buyers to see a tangible benefit to buying a green home. Communities need to be educated about the long-term benefits of green building.

Community Challenges

Asheville prioritizes LEED™ certification of new and existing buildings.

Boston is focused on the nexus of green homes and healthy communities. Providing green housing and promoting sustainable building has been amended to the zoning code. Green homes should use green building materials and technologies to reduce maintenance and energy costs, advance resident health and well-being, and minimize environmental impacts through water conservation and greenhouse gas emission reduction.

Milwaukee recognizes that green building architecture is an undervalued research need. The city knows that economics play a big role in sustainable development. Before the recession, some developers in Milwaukee were adopting low-impact development practices because they cost less, yielded more units to sell and buyers were willing to pay higher prices.

Spokane has no immediate housing shortage, but different marketing techniques are needed to promote green housing. Greenstone Homes is a good example of a developer who has marketed green buildings. Generally, developers of low-income housing in Spokane are required to use green building practices. Additionally, the Spokane Tribe seeks to develop culturally relevant, energy-efficient design options for housing units.

Sustainability Priorities

Green Building Architecture



Consumer demand for more environmentally friendly building options (e.g., energy efficiency) needs to increase. Businesses and neighborhoods should strive to meet

the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED™) certification or ENERGY STAR standards for their buildings. Existing buildings and infrastructure need to be modernized, repaired and retrofitted. Buildings can utilize rain barrels, roof gardens, compact fluorescent bulbs and low volatile organic compound (VOC) paint to minimize their carbon footprint. Although people understand that sustainable solutions will save money over the long term, people in some communities are very concerned about costs and they are not necessarily willing to pay more for green houses. Many developers lose money when they build

Success Stories

Spokane. The McKinstry Construction Corporation has funded building improvements by allowing people to pay their utility bills at a fixed price for 10 years. The difference in energy savings covers the improvement costs. It would be beneficial to apply this concept at the neighborhood level and offer low-interest revolving funds. This lets people manage their costs over time and also creates a local industry of energy improvement work.

Research Questions

- What are the best green-building practices?
- How can homes and infrastructure be designed and built to be more resilient to climate change and major environmental events that can be exacerbated by climate change (e.g., flooding, hurricanes)?
- How does the distribution and type of built infrastructure affect the delivery of ecosystem services?
- What are the cumulative benefits of green building practices implemented at the individual level (e.g., rain barrels, roof gardens) in terms of improved health and well-being and increased delivery of ecosystem services? Which green practices contribute most to these benefits?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Leadership in Energy and Environmental Design (LEED™)	S	A-35
ENERGY STAR	S	A-35
Green Building Design	A	A-35
Land Use and Site Planning	A	A-35
Conservation of Resources and Materials	A	A-36
Operational Efficiency	A	A-36
Indoor Environmental Quality	A	A-36
Energy Use Index (EUI)	S	A-36
Energy Audits	S	A-36
Healthy Buildings, Healthy People: A Vision for the 21st Century Report	S	A-36
Permit Fee Incentive Program	A	A-36

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Residential Design Standards	P	A-36
Boston Stretch Energy Code Ordinance	P	A-37
Green Roof Demonstration Project	A	A-37
Brighton Branch Library	A	A-37
Sustainable Design Guidelines for the Menomonee River Valley	P	A-37
LEED™ Building Green Meeting Incentives	P	A-37
Center on Sustainable Communities (COSC)	A	A-37

Affordable Housing



Many communities are experiencing a shortage of high-quality yet affordable housing. The lack of affordable housing in cities leads to rural migration, which contributes to sprawl.

Safe, affordable and healthful housing must be distributed such that communities are better integrated and individuals have equitable access to the benefits associated with such housing, like access to transportation, education, healthy food, medical services and cultural amenities. Communities need affordable developments that are safe and provide a quality of life that integrates cultural and health issues.

Community Challenges

Asheville. Within town, there is a shortage of affordable housing, and many people cannot afford to rent a one-bedroom apartment.

Boston is concerned with providing sustainable, affordable housing for its residents.
























Spokane. The Spokane Tribe's housing plan will identify areas for new affordable housing on the reservation that will not concentrate poverty housing or require infrastructure expansion.



Wyandanch. To ensure that as many people as possible benefit from the community improvements, Wyandanch is encouraging home ownership and legislation is being considered that would encourage home ownership; property values are expected to rise. Some people are not interested in buying a home in town because the community's school is not as good as schools in neighboring communities. The developed tax parcels

are expected to bring new money to the school district and other tax entities. Wyandanch is applying affordable housing income-based incentives to drive housing growth.

Research Questions

- How can the need for affordable housing be addressed while protecting the environment?
- How can green homes be constructed and financed to be competitive with standard homes?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Sustainable Development Projects Bonus Evaluation Form		A-37
Encourage Affordable Housing		A-37
Asheville Housing Sales Statistics		A-37
Housing Needs Assessment and Market Study		A-37
Educational Materials for Renters and Landlords		A-38
HOME Investment Partnerships Program		A-38
Low Income Housing Tax Credit Programs		A-38
Housing Trust Fund Policy		A-38
Townhouses in Urban Districts		A-38
Water Line Cost Sharing		A-38
Gated Community Prohibition		A-38
Homelessness Prevention Programs		A-38
Housing First Programs		A-38
Rapid Rehousing Programs		A-38
The Boston Home Center (BHC)		A-39
Homebuying 101: How to Buy a Home		A-39
Homeowner 201: Tips for New Homeowners		A-39
Financial Education Training for Homebuyers and Homeowners		A-39
Foreclosed Property Acquisition Training for Homebuyers		A-39
Foreclosure Prevention Counseling Program		A-39
Bulk Acquisition of Bank-Owned Foreclosed Properties		A-39
Direct Down Payment and Rehabilitation Assistance to Homebuyers Acquiring Foreclosed Properties		A-39
Turnkey Homeownership		A-39

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Rental Development		A-39
Green Affordable Housing Program		A-39
3D Program		A-40
Homebuying Financial Assistance		A-40
Neighborhood Stabilization Program (NSP)		A-40
Foreclosure Prevention Initiative		A-40
Rental Housing Center		A-40
Boston Redevelopment Authority (BRA)		A-40
Don't Borrow Trouble Foreclosure Prevention		A-40
Online Affordable Opportunities List		A-40
Foreclosure Intervention Team (FIT)		A-40
Below-Market Housing Units		A-41
Stabilize High-Foreclosure Areas		A-41
Expand and Enhance Homeownership Programs and Services		A-41
City-Owned Affordable Rental Units		A-41
Metropolitan Boston Housing Partnership (MBHP)		A-41
Shelter Diversion Program		A-41
Homelessness Early Warning System		A-41
Stabilization Services for Newly Unemployed		A-41
Homeless Housing Production		A-41
Monitoring and Early Warning		A-41
Enforcing Agreements		A-41
Financial and Physical Restructuring		A-42
Buyouts		A-42
Non-Eviction Policy		A-42
Emergency Repair Funds		A-42
Tenant Education		A-42
Landlord Assistance		A-42
Rental Housing Conversion Assistance		A-42
Spokane Low Income Housing Consortium (SLIHC)		A-42
Comprehensive Housing Counseling		A-42
Multifamily Housing		A-42

Deteriorated Housing



Deteriorated housing conditions are a challenge. Existing housing stock in some neighborhoods has declined during the last two decades; in some places, the process was accelerated by

hurricanes and other natural disasters. Older housing stock might contain environmental hazards such as high levels of asbestos or lead paint; these hazards can put inhabitants at risk of developing health problems.

Community Challenges

Providence is concerned with housing issues (e.g., mold, lead, weatherization) and is initiating a conservation project for municipal buildings.

Milwaukee is concerned about the abundance of old housing stock.

Success Stories

Spokane has addressed its shortage of low-income housing over the past few years by building more homes and renovating older housing. In the process, the city has improved the environment by removing lead paint, weatherizing and making homes energy efficient. Spokane Community Development Block Grant funds have been important in supporting renovations in older homes. Spokane's housing stock dates from the early 1900s and the 1950s. About 60 occupant rehabilitations are performed each year and include upgrading the heating system (e.g., replacing wood or oil stoves with efficient gas heat), weatherizing and removing lead paint. The owners of these houses usually are on fixed incomes, and they repay the loans with energy savings from the renovations. More than \$2 million per year have been spent on the program for the past 30 years. The program is one of the best managed in the country, but it is in danger of losing its funding. Such programs that integrate environment, health, transportation and housing are vital to local communities.

Research Question

- What are the best practices and products that communities can employ to minimize health risks from indoor exposures to promote wellness?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Homebuying 103: How to Buy a Home That Needs Work		A-43
Distressed Buildings Reports		A-43
Online City-Owned Property Inventory		A-43
HOPE VI		A-43
Capital Fund Financing		A-43
Energy Performance Contracting		A-43
Redevelopment Through Public Private Partnership		A-43
Redevelopment Through Project-Based Vouchers		A-43

Downtown Revitalization



Many communities contain aging building infrastructure in their downtown neighborhoods. Empty stores and dilapidated storefronts make it difficult to recruit new busi-

nesses and can invite gang activity. Community initiatives to revitalize downtown areas have been successfully implemented to encourage economic development, curb street crime and promote healthy lifestyles.

Community Challenges

Ogden initiated efforts to identify market opportunities that could be incorporated into the downtown revitalization efforts. Downtown Ogden parcels, including an abandoned gas station, were targeted for redevelopment.

Milwaukee. Much of Milwaukee's port has become fallow industrial land. The Inner Harbor Effort is bringing a range of key academic disciplines and government agencies together to revitalize the area. The Effort has a strong vision, is place-based (making it easy for people to understand), and brings people together for a common purpose.

Woodbine. A challenge for Woodbine is the need for more housing in town. Local industry is looking for engineers and chemists; more rental units and single-family homes are needed for employees. Other community facilities (e.g., a recreation center) also may attract new residents.

Wyandanch is challenged by the prevalence of boarded-up buildings and dilapidated storefronts. Wyandanch wants to create a thriving downtown area with an attractive community design that is pedestrian friendly, well lit at night and attractive to businesses.

Success Stories


Asheville artists have been very active in renovating and transforming rundown neighborhoods into thriving art districts.













Woodbine secured a Community Development Block Grant for Main Street building façade revitalization to develop a sustainable downtown through historic preservation of key buildings.

Wyandanch succeeded in an effort to bring new businesses to its downtown. The initial plans for the U.S. Postal Service to replace the existing post office building called for a new building to be set far back from the street and surrounded by a barbed wire fence. The post office is in a prominent location along the main street, and this design was unacceptable to the community. After initial efforts to work with the USPS to change the design, Wyandanch banded together, filed suit and won. Now, the community has a very nice post office that heralds the beginning of the revitalization to the downtown area. The community has a great desire to improve Wyandanch. A community organization emphasized that Wyandanch's success is because of: (1) authentic community engagement from the beginning and throughout the process; (2) commitment from community leadership; (3) the focus on implementation from the beginning; and (4) the will to persevere despite great odds.

Research Question

- Given limited budgets, what are the most cost effective and beneficial implementation for revitalization of various areas (e.g., Brownfields, buildings) and communities, especially low-income and disadvantaged families?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Downtown Asheville Design Guidelines		A-43
Asheville East of the Riverway Sustainable Multi-Modal Neighborhood Program		A-44

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Character Buildings		A-44
Building Façades		A-44
Façade Materials		A-44
Site Plan		A-44
Boston Main Streets		A-44
ReStore Boston		A-44
Downtown Crossing Economic Improvement Initiative (DCEII)		A-44
Housing on Main Streets		A-45
Ogden Downtown Revitalization Portal		A-45
Downtown Market Assessment Study		A-45
Community Development Block Grant Façade Master Plan		A-45
Consistency of Design		A-45

School Improvements



Schools are a core part of many communities' basic structure. The poor quality of public schools in many urban areas forces families to live in suburban communities that offer a

higher quality of education, which contributes to urban sprawl. Many aging school buildings need to be modernized and evaluated for safety to ensure that schoolchildren are not exposed to indoor toxics.

Community Challenges


Medford is working toward entering into a power purchase agreement to enable the municipality to install solar panels on six of its schools, which will provide 6 to 8 percent of the energy needed to operate the schools. Medford also is implementing other improvements to the high school, such as replacing hot water heaters, boilers and chillers.

Woodbine is very proud of their school (preschool through 12th grade)—the only stand-alone school district in the county. Their approach is to raise their kids by involvement of the entire community. As a result, the drop-out rate is low and the school produces

well-rounded students. Students who choose to leave the community often go out into the world and make a difference. The school has a strong student volunteer program and high parent participation in activities. The school a child attends is an important part of one's identity; the school gives the community strength and sustainability. There is a great fear that economic pressures will cause the school to be combined with others in the county. Some of the repercussions may be lower test scores, farther distance to school, greater peer pressure, and loss of identity.

Research Question

- What are the effects of deteriorating public schools and school systems on sustainability of communities, particularly rural or small communities, that impacts their budgetary considerations (e.g., spending, taxes, budget) and especially the differences and benefits of various levels/types of "student learning" as a function of the community at-large involvement in conveying their values and knowledge in the students?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Reading, Riding and Retrofit		A-45

Community Infrastructure



Complete and functional infrastructure is vital to community operations. Planning for new roadways, however, often does not include consideration of the need to install

water, waste, electricity, cable, information technology and other appurtenances, and the associated long-term maintenance costs for a community. This is inefficient and often underestimates impacts on communities and the environment.

Community Challenges










Spokane. The planned redevelopment of Spokane Tribe land parcels to promote economic development will necessitate evaluation of existing infrastructure

and producing a comprehensive plan integrating infrastructure, building and environmental needs.

Boston. Deteriorated groundwater levels are gradually destroying underground wood pilings, the foundation of structural support for Boston buildings. This is an environmental condition unique to metropolitan Boston that threatens neighborhoods, homes, and other historic buildings. Monitoring of water levels, long advocated by geo-technical engineers familiar with deteriorating below-grade condition of these buildings, now has begun under auspices of the Boston Groundwater Trust.

Research Question

- What are the ecosystem impacts, community taxes and economic benefits of various community infrastructure plans?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Pipeline Assistance Project (PAP)		A-45
Pipe Rating Program		A-45
Boston Green Building Standard		A-45
Department of Neighborhood Development (DND)		A-46
Executive Order Relative to Greening City Building Maintenance and Operations		A-46
Groundwater Trust		A-46
New Roxbury Neighborhood Police Station		A-46
South Sixth Street Green Corridor		A-46
Community Development Fund		A-46


Technology Access for Rural Areas. Improved access to technology is important, especially in rural areas. Increased access to the Internet can promote telecommuting instead of driving. Many jobs can be performed remotely, thereby reducing energy use and road wear and providing other cost-saving measures. From an ecological perspective, expanding broadband is one of the least detrimental actions that can be taken to improve access to the workplace. At the same time, physical barriers (Internet access) and negative views toward telecommuting must be addressed.

Community Challenges

Asheville is surrounded by rural areas. Rather than creating new roads, Asheville would prefer to improve broadband Internet access in surrounding communities to promote telecommuting and limit vehicle miles traveled. The fact that Internet access is available to only 30 to 40 percent of the Madison County population highlights the challenges of embracing alternative work options (e.g., telecommuting) in rural areas.

Research Questions

- How can technology access be extended to rural communities with minimal impact on the environment?
- What are the best practices to encourage telecommuting, including developing other ideas telecommuting in small towns/rural areas to have social interaction?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Expand Broadband Access		A-46

Transportation Community Decision Sector

Overview

Although individual transportation preferences center on private automobile transit, many communities would like to provide citizens with alternative modes of public transit to reduce vehicular emissions and traffic congestion. Transportation in rural communities is used to connect residents with job centers and services, often located in nearby urban areas, yet most rural communities have a very limited public transportation infrastructure. Although cities recognize the value of public transportation from a sustainability perspective, it is a lower priority for rural communities because of its cost, limited ridership, the complexity of setting up regional partnerships with neighboring counties/cities and the car-centric preferences of community members.

Sustainability Priorities

Increase Public Transportation



Access to public transit in rural areas is limited. Communities must accept that personal vehicles will be part of the transportation infrastructure, while simultaneously trying to improve and promote public transit. Increasing public transit options within urban areas improves convenience and might influence additional citizens to utilize more sustainable options.

Community Challenges

Asheville's transportation sector has many challenges. Public transportation from urban to rural areas is limited, and connectivity with other communities is low.

Cambridge and *Providence* also are concerned about transportation policies.


















Success Stories

Cambridge began focusing on transportation issues 15 years ago because of air pollution and traffic congestion. The municipality has much data documenting the success of the effort.

Research Questions

- What new and existing community, state and national policy options, incentives, interventions or communication strategies can be used to improve transportation effects on community sustainability and resilience?
- How can we communicate the full costs and benefits of transportation choices in a way that effectively informs decisions and changes behavior?
- What are the effects of vehicle miles traveled in rural communities?
- Can a model be developed to predict vehicle miles traveled in urban areas?
- What is the best way to compile rural/urban transportation models?
- What are the costs and benefits of telecommuting or other practices that reduce the need for transportation and strengthen local communities?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Future Development Pattern for Transit		A-47
Job Access/Reverse Commute (JARC)		A-47
Downtown Shuttle Route		A-47
Location of Public Agencies		A-47
Emergency Ride Home (ERH)		A-47
Share the Ride NC		A-47
Ridesharing Facilitation		A-47
Ridesharing and Carpooling Incentives		A-47
Fairmount Indigo Planning Initiative		A-47
Massachusetts Bay Transportation Authority (MBTA) Key Route Improvements		A-47
Roadway Design		A-48
The Moccasin Express		A-48
Transportation Benefit District		A-48
Designing Livable Communities: A Transportation Enhancement Study		A-48
Transit Solutions for Long Island		A-48
Improve Connectivity		A-48

Provide Multi-Modal Transportation Options



It is important for communities to explore multi-modal transportation options (e.g., walk, bike, transit) that are inclusive of people of all demographics, thereby reducing depen-

dency on cars. Planning for “complete streets” that support walking, biking and riding buses as well as driving is imperative. Many communities believe that a public rail system would be a useful method to improve access to workplaces while reducing individual automobile use.

Community Challenges

Asheville. Successful transportation models from other areas of the country of similar size would help small businesses to develop new transportation or alternative work options (e.g., telecommuting) in the Asheville area. Asheville intends to improve transportation by developing passenger rail service, and it would like to

use the existing urban rail infrastructure to benefit the community (e.g., import biofuels).

Boston would like to improve its modes of alternative transportation, noting that near-highway and near-traffic light vehicle emissions have a large effect on air quality in cities. The community understands that determining the vehicle miles traveled in urban areas is applicable to creating an inventory of greenhouse gases and policies to reduce them. Financing public transportation with pay-for-use fees or other mechanisms is essential for supporting transit infrastructure.

Spokane’s priority is to improve transportation infrastructure by promoting clean mobility, reducing car use, improving public transit (e.g., improving local bus service) and placing multiways in cities.

Wyandanch views transportation as a critical element of the community’s revitalization. The downtown area will be organized around the train station. The Intermodal Transit Facility (ITF) under development will help with the goal of improving transportation and infrastructure and promoting non-car transit options such as buses, walking and biking. Additionally, the ITF plaza may be used for ice skating in the winter and concerts in the summer. The railroad has been a tremendous supporter of the effort and has given the community a letter of intent to convey some of the train station property to the community. The railroad is critical to the redevelopment concept because it allows people to access Manhattan (50-minute train ride). There are plans to open the next train station in the future, which would connect Wyandanch with the main employers in the area. Wyandanch bus routes will be altered slightly to fit the new design of the downtown area and will be coordinated seamlessly with the Suffolk County bus system to provide better regional transportation. A concern is that older trucks and buses on the main road through town produce considerable exhaust. Wyandanch plans to reduce the four-lane highway through the downtown to three lanes with a planted median and parking on both sides of the street. Reducing the size of the highway through town will improve safety.

Research Questions

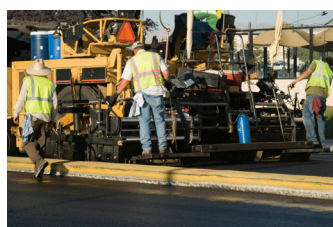
- How can a full accounting of the environmental, economic and social effects of alternative transportation modes be assessed to fuel decisions on the sustainability and resilience of communities?
- What suite of transportation options improves community sustainability and resilience most effectively and economically?

- What associated land-use and development designs can increase the use of public transportation systems?
- How can more environmental issues be considered when developing more complete or revitalized streets?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Complete Streets	A	A-48
Complete Streets Policy	P	A-48
Complete Streets Planning and Design Guidelines	P	A-48
Asheville Transit Services (ATS)	A	A-49
Land-of-Sky Rural Planning Organization (LOSRO)	A	A-49
Blue Ridge Commuter Connections	A	A-49
Transit Design Guidance	P	A-49
Transportation System Management (TSM)	A	A-49
Travel Demand Management (TDM)	A	A-49
Travel Demand Model	S	A-49
Improved Connectivity	A	A-49
On-Board Transit Survey	S	A-50
Household Travel Survey	S	A-50
Access Management	A	A-50
Design Elements	A	A-50
Congestion Management Process (CMP)	A	A-50
Road Diets	A	A-50
Traffic Calming Policy	P	A-50
Interstate Highway Expansion and Design	A	A-50
Bike Policy	P	A-50
Urban Bikeway Design Guide	A	A-51
Bike on Bus Program	A	A-51
Bicycle Racks and Lockers	A	A-51
Bicycle Route Accommodations	A	A-51
Safe Routes to School (SRTS) Program	A	A-51
League of Certified Instructors (LCI)	A	A-51
Asheville on Bikes	A	A-51
Bicycle-Mounted Law Enforcement Officers	A	A-51

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Asheville Bicycle and Pedestrian Task Force	A	A-51
Share the Road Signs	A	A-51
Bicycle Shoulders	A	A-52
Crash Data Tool	S	A-52
Sidewalk Improvement Program	A	A-52
Sidewalk Specifications and Details Manual	P	A-52
Preferred Street Design Cross-Sections	A	A-52
Passenger Rail Initiative	A	A-52
South East High Speed Rail (SEHSR) Corridor	A	A-52
Commercial Rail Service	A	A-52
Boston Complete Streets	A	A-52
Boston Bikes	A	A-53
Hubway Bikeshare System	A	A-53
Bicycle Safety Plan	A	A-53
Melnea Cass Boulevard Design Project	A	A-53
Walk Boston	A	A-53
Pedicabs	A	A-53
South Station Expansion	A	A-53
Transportation Access Plan Agreement (TAPA)	P	A-53
Off-Street Bicycle Parking Guidelines	P	A-53
Bicycle Lanes	A	A-53
Central State Park Bike Route (CSPBR)	A	A-53
Futurewise: Transit-Oriented Communities, A Blueprint for Washington State	S	A-54
National Transportation Enhancements (TE) Clearinghouse	A	A-54
Intermodal Transit Facility Feasibility Study (2008)	S	A-54
Street Design	A	A-54

Adopt New Technologies



The technology to create permeable surfaces for roads is available, and demonstration projects exist, but the practice has not been widely adopted in the










United States. People do not necessarily adopt new principles on their own, and they need to understand that their decisions should address multiple problems (e.g., a new road should improve transportation and water permeability). Ordinances, permits and model design approaches could facilitate a transition to sustainable thinking and decisions regarding transportation options.

Community Challenges

Medford. The city is separating its stormwater systems, but is having a difficult time convincing the Department of Public Works to use permeable pavement, which would help mitigate stormwater effects.

Research Question

- What is the best way to convince local decision makers on the range of benefits (e.g., economics, social, environmental) of new technologies and encourage their adoption?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Clean Vehicles Coalition		A-54
Intelligent Transportation Systems (ITS)		A-54
Asheville Area Electric Vehicle (EV) Committee		A-54
EVBoston Initiative		A-54
Electric Vehicle Charging Station Grant		A-54
Boston Diesel Retrofit Program		A-54
Alternative Fuel and Hybrid Vehicles		A-54
Alternative Vehicles		A-54
Alternative Fuel Vehicles Program		A-55

Encourage Acceptance



Public transportation services often are used only by those who have no other options. Socio-economic class plays a role, as some communities (urban and rural) find that low-income

residents are unwilling to use public transportation if they have other options because of the economic status associated with owning a car. Middle-income residents are more open to using public transit. Some cities have developed incentives to encourage commuters to leave their vehicles at home.

Community Challenges









Asheville. Nearby rural Madison County faces transportation challenges (no public transportation to Asheville—a job hub), but many people would choose the independence of their personal vehicles even if public transportation options were available.

Spokane. Paradoxically, middle-income people may use bicycles and mass transportation more than people with low incomes. A community organization pointed out that people with low incomes usually are affected the most by environmental factors, yet they often are not concerned about them. Many view having their own car and not having to rely on public transportation as a key step in achieving economic success. It can be difficult to convince people of the merits of using public transportation; a strong public relations campaign is needed. When gasoline costs reach \$5 per gallon, people likely will be more willing to go green, and public transportation might become the norm.

Wyandanch would like to correct both pedestrian and vehicular safety conditions at the intersection of Long Island Avenue and Straight Path, where the complexity of the current railroad crossing presents many dilemmas and opportunities.

Research Questions

- How do transportation choices made in suburban and exurban areas affect overall community sustainability and resilience and the distribution of costs and benefits?
- What are the effects of transit on economic development?
- How can outreach and marketing practices change society norms?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Strive Not to Drive Campaign		A-55
Public Education Campaigns		A-55
Effective Route Management and Attractive Transit Facilities		A-55
Targeted Intersection Improvements		A-55
Local Street Network Connections		A-55
Attractive and Convenient Transit Shelters		A-55
Safety Plan		A-56
Improving the Transit-Riding Experience		A-56

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Preferred Parking		A-56
Park and Ride Lots		A-56
Traffic Signal Upgrades		A-56
Access Management		A-56
Low-Greenhouse Gas Taxis		A-56
Parking Freezes		A-56
Metered On-Street Parking		A-56
Organization's Clean Air and Mobility Program		A-57
Transportation Management Association (TMA)		A-57
Car-Sharing		A-57
Bicycle Racks		A-57
Locker Rooms		A-57
Green Parking Permit		A-57
Develop a Signature Event		A-57
Commute Trip Reduction (CTR) Program		A-57
Sitting Places		A-57

Local Food Systems

Community Decision Sector

Overview

Production of local foods is characteristic of resilient communities, and local food systems provide a sustainable way for communities to provide healthy food. Many communities support various efforts to provide such local foods to their residents, including through farmers markets, summer camps and schools. In urban areas, community gardens can provide healthy and easily accessible food options to local residents. Communities recognize the economic, environmental and health benefit of local foods, which use less transportation and create more jobs. Most cities have only 3 days of food available. Redesigning food systems and studying urban agriculture are important components for city resiliency and sustainability. The challenge for most communities is how to develop a system to provide local foods throughout the community that may cost more and is more complex to implement.

Community Gardens



Gardening and local foods are sustainable and bring many health benefits to a community (e.g., nutrition, exercise, stress reduction). Community gardens provide healthy

foods directly to families that might not otherwise have access to farms or farmers markets. Many community programs are available to assist families and communities with designing and caring for an urban garden. Gardening also reduces energy costs through green roofs and urban cooling effects. Gardens can be centered on food as well as other products (e.g., native plant nurseries, algae, worms), and alternative agricultural opportunities could be developed for urban communities. There has been concern about the reuse of Brownfields for urban gardens, which might expose the public to contamination via the harvested food. This may limit the movement toward community gardening. Many communities also have siting, permit or ordinance-related barriers to the establishment of urban gardens. Another barrier related to community gardens is the lack of understanding among the public and political leaders/decision makers of the health benefits of urban gardens.



Community Challenges

Milwaukee is interested in defining the connections between public policies, urban gardens and access to local food.



Success Stories

Milwaukee formed a partnership with EPA Region 5, the Milwaukee Food Council and other organizations to analyze the growing demand for urban gardens and evaluate policies that would promote improved access to healthy foods. The city has converted a former Brownfields property to urban gardens, which are leased to organizations or neighborhood groups.

Research Questions

- Can Brownfield sites be made safe for community gardening?
- What is the best way to conduct studies and compile information about environmental concerns that are relevant for developing urban agriculture sites?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
School Garden Programs	⚙️	A-58
Registries	⚙️	A-58
Master Urban Gardener (MUG)	⚙️	A-58
HOME GR/OWN	⚙️	A-58
Growing Power, Inc.	⚙️	A-58
Alice's Garden	⚙️	A-58
Community Garden Program	⚙️	A-58
Earth Turners Community Garden	⚙️	A-58

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Plant Hardiness Zone Map		A-58
Woodbine Community Schools (WCS) Latchkey Community Garden		A-58

Farmers Markets



Communities are embracing the concept of fresh produce and are increasingly supporting local farmers markets. These markets also provide a venue for social interaction

between community members, and some offer other types of locally produced sustainable goods. Many farms offer Community Supported Agriculture (CSA) programs to provide local residents with seasonal produce and goods throughout the growing season.







Success Stories

Wyandanch is establishing a 21- to 24-week farmers market.

Spokane. The demand for fresh organic produce in Spokane is increasing. Local farmers together created the Spokane Farmers' Market Association to operate an independent farmers market in the downtown area.

Research Question

- What incentives will promote the establishment of farmers markets within communities?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Asheville City Market		A-58
Mountain Tailgate Market		A-59
Boston Bounty Bucks		A-59
Office of Food Initiatives		A-59
Sustainable Food Leadership Award		A-59
Farmers Markets Map		A-59
Spokane Farmer's Market Website		A-59
Puget Sound Fresh Website		A-59
Welcome Center Farmers Market		A-59
Shiloh Community Farmer's Market		A-59

Farms to Restaurants and Schools



People are flocking to restaurants that source local ingredients in their dishes because the ingredients are fresher, more nutritious and taste better. Some communities partner




with the local culinary institute, local food growers and restaurants to offer fresher, healthier meals. Partnerships between farms of any variety—urban, rural or aquaculture—and restaurants can be critical to the success of a project. A related focus of “Farms to Schools” is gaining traction in communities. Childhood nutrition is of vital importance because nutrition directly affects development. Because of this, communities are pushing for fresher ingredients in school lunches. Partnerships between local farmers, agricultural cooperatives, government and NGOs can assist the schools in providing healthy, sustainable lunch options.

Success Stories

Asheville has initiated extensive efforts to integrate local foods into the diets of residents. In particular, restaurants are well known for menus that promote local agricultural efforts.

Milwaukee provides produce to community citizens and schools through the Growing Power, Inc., program. Growing Power is a nonprofit that implements its mission by providing training, demonstrations, outreach and technical assistance to local schools. The urban agriculture and aquaculture program also raises perch in a system that utilizes the ecological symbiosis of plants and fish.

Ogden is located near the Des Moines River Valley, which is the location of a number of camp programs during the summer. A couple from Ames is interested in supplying locally grown foods for the quarter-million meals that are served at these camps through the development of a local agriculture aggregator business.

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Farm to Institution Program		A-59
Growing Minds Farm to School		A-59
King County Food and Fitness Initiative		A-59

Agricultural Partnerships



Partnerships with nearby agricultural areas offer the opportunity for businesses to use local produce in their livelihoods, increasing economic wealth to the region

as well as being sustainable. Many communities have voiced interest in receiving assistance to establish food systems that involve local agriculture (e.g., urban or community gardens, farmers markets).

Community Challenges

Asheville has a large agriculture base valued between 6 and 24 percent of the local economy. Local foods are grown and used in the Asheville area. Historically, local food production has brought industry into the area (e.g., Gerber), but many businesses have left the area as the agricultural focus has shifted to other industries. The census of agriculture data are difficult to work with because production, consumption and food security measurements are not co-located.

Ogden is a small town that used to be surrounded by many small farms. Urbanization has caused people to move away to the city, and farm consolidation has created a few large farms where there once were many.

Success Stories

Ogden. An ongoing project is the installation of an agriculture aggregator business, which will be located in Ogden in part because of the goodwill that the town has extended to the entrepreneurs. Ogden has been working with them to identify a suitable location within the city. The most likely candidate is a fore-closed gas station on the edge of town. It already has a kitchen facility and walk-in coolers onsite. The bank has agreed to remove the abandoned fuel tanks and clean up the property. The new business may create a few jobs, but its main advantage is creating a market for local produce that will allow locals to build wealth in their families. Many local people have farms, but work one or two extra jobs to make ends meet. With the agriculture aggregator business, this may allow some people to farm full time.

Research Question

- What are the best business practices to encourage agricultural partnerships?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Growing Farm and Forest Economies Project		A-60
Appalachian Sustainable Agriculture Project		A-60
Appalachian Grown™ Certification Program		A-60
Blue Ridge Food Ventures Program		A-60
Mary Boyer Sustainable Food and Agriculture Grant		A-60
The Boston Collaborative for Food and Fitness		A-60
Local Producer Ordinance		A-60
Cooperatives		A-60

Diversified Foods



Increasing the number of food crops grown in any given area decreases transportation costs, encourages a varied diet within the local population and promotes sound agricultural practices.

Community Challenges











Asheville. More opportunities with agriculture should be considered, including nontraditional crops like herbs (e.g., ginseng).

Milwaukee understands the importance of food systems as an emerging field of study in sustainability.

Wyandanch. Suffolk County is the largest agricultural county in New York, and this can be exploited to improve local food systems in the area.

Research Question

- How can externalities that should be considered in sustainable systems (e.g., the role of diversity in the food system) be identified?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
MANNA Food Bank		A-61
Growing Local: Expanding the Western North Carolina Food and Farm Economy		A-61
Local Food Guide		A-61
Electronic Benefits Transfer (EBT) Card Use at Farmers Markets		A-61
Meat Packing Facility		A-61
Healthy Cooking Education		A-61
Food Trucks		A-61
Milwaukee Food Council		A-61
Spokane Tribe Senior Center Meal Program		A-61
Farmers Market Nutrition Program		A-61

Water Management

Community Decision Sector

Overview

Water conservation and management is a high priority for many communities. Some communities already experience a lack of quality water, whereas others currently are fine but recognize the importance in acting now to ensure continued access to quality water in the future. Public water plants are challenged with a deficiency of skilled labor. Water facilities contain potential for generating hydro-electricity; new technologies need to be developed, evaluated and embraced by communities. Stormwater management is recognized by communities as an important service, but often there is uncertainty about how to install or update sewer systems sustainably.



Spokane is concerned with water conservation and the preservation of the Spokane Valley-Rathdrum Prairie Aquifer and its watershed. Spokane's aquifer is large and of high quality, but demand on the water source has grown as it has been called upon to serve needs from areas outside of Spokane where resources are in decline. Water conservation is the surest way to preserve the resource for future generations, and to enable the city to grow and prepare for possible climate-related changes to water availability.

Sustainability Priorities

Water Conservation



Although some communities have plentiful aquatic resources, others are faced with water supply problems. Population growth increases the strain on already overburdened

water sources. In the arid southwest, communities are growing at such high rates, despite their knowledge that they do not have sufficient water supplies to support the estimated growth. Many communities also are concerned with the allocation of water rights.

Community Challenges

Asheville residents are concerned about water resources and having enough drinking water for the future. North Carolina's groundwater supply is limited. Flooding now occurs in places that historically did not flood, and increased sedimentation and stream bank cutting are affecting trout and other local wildlife. Much of the surface water is of high enough quality to warrant more protection than is currently practiced.

Boston. Grey water reuse is not an immediate concern in Massachusetts because water is plentiful, but municipalities see it as a consideration for the future.

Research Question

- What are the best practices for conserving natural resources, such as water?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Water Supply Stress Index	⚙️	A-62
Best Management Practices (BMP)	⚙️	A-62
The Irrigation Association	⚙️	A-62
Water Measurement Manual	⚙️	A-62
Rate Structuring	⚙️	A-62
Industrial/Commercial Water Efficiency Audits	⚙️	A-62
Sustainability Wheel	⚙️	A-62
Water Efficiency Manual for Commercial, Industrial, and Institutional Facilities	⚙️	A-62
Groundwater Conservation Overlay District (GCOD)	⚙️	A-62
City-State Groundwater Working Group	⚙️	A-62
Groundwater Trust	⚙️	A-63
Water Conservation and Efficiency Program	⚙️	A-63

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Groundwater Availability Assessment Tools	⚙️	A-63
Spokane Water Stewardship Program	⚙️	A-63
Conservation-Based Water Rate Structure Policy	⚙️	A-63
Water Star	⚙️	A-63

Water Quality



Communities are challenged by poor water quality, not only for drinking but also for recreation and sustenance. Some low-income people rely on the rivers to provide

sustenance, but many rivers across the country have limits on the number of fish that can be eaten because of concerns about toxic levels of contaminants. Water bodies such as lakes provide excellent opportunities for outdoor recreation, but an abundance of pollution and trash limit the use of popular sites.

Community Challenges

Asheville. The Asheville region united to significantly clean up the French Broad River, but during floods, the river remains at risk from contamination from the businesses along its banks (e.g., car salvage shops, oil storage and landfill facilities).

Boston and surrounding municipalities expressed concern for nonpoint sources of water pollution, which remain an environmental issue.

Milwaukee strives to be a world hub for freshwater research, economic development and education. The city also would like to explore synergistic relationships. For example, in Milwaukee, stormwater management interests overlap with urban gardening, which overlaps with growing worms for food production, and that overlaps with using food wastes for methane production.

Woodbine's largest environmental resource problem is nitrate contamination in its drinking water. The Iowa Department of Natural Resources (IDNR) has implemented a well protection investigation to determine the source of the nitrates. A treatment plant may be needed, but this would cost \$5 million that the community does

not have. The community has not been successful in locating a new field that would yield enough water to support the town. An interceptor well has been constructed to intercept the plume of nitrates, but the community will not know until the spring runoff occurs whether this strategy has been successful.

Success Stories

Spokane. The river has been polluted by the mining industry upstream in Idaho; water should not be swallowed, and people should rinse off after swimming in the river. Some community members commented that when they were children, the river was so polluted that it was brown and contaminated with sewage. Today, despite the pollution from mining, the river is much cleaner.

Research Questions

- What mechanism can communities use to identify the local causes and cost-effective solutions to prevent high levels of nitrate in drinking water?
- How can contaminated groundwater best be detected, characterized, modeled and treated to prevent human exposure via drinking water and to prevent deterioration of water quality?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Watershed Perpetual Conservation Easement	⚙️	A-63
Water Resources Department ISO 14001	⚙️	A-63
North Carolina (NC) Source Water Collaborative	⚙️	A-63
Fertilizer Use	⚙️	A-63
Water Quality Educational Outreach	⚙️	A-63
Waterway Buffer Zones	⚙️	A-64
River Cleanup Program	⚙️	A-64
Integrated Water Supply Improvement Program	⚙️	A-64
Boston Harbor and Massachusetts Bay Water Quality	⚙️	A-64
Milwaukee Estuary Area of Concern (AOC)	⚙️	A-64
Surface Water Quality Standards	⚙️	A-64
Spokane Valley-Rathdrum Prairie (SVRP) Aquifer Atlas	⚙️	A-64
Water and Fish Program	⚙️	A-64
Source Water Protection Resources	⚙️	A-64
Water Quality Portal (WQP)	⚙️	A-65

Water Rights



Water quality and water allocation are local issues. The allocation of water sources is a contentious issue for many communities.

Community Challenges

Spokane. Parts of the water system are beyond the control of Spokane residents. Spokane invested many resources to clean the Spokane River. One of the challenges is convincing neighboring communities that they need to take these actions as well; it is expensive, and funding is scarce. Even though Spokane's aquifer produces abundant, high-quality water, the community is beginning to recognize that water rights are becoming more important. The city is working with Idaho on interstate issues involving water rights, quality and river flow. Idaho is cataloguing water rights for the whole state; Washington is very disorganized. As water rights issues are decided in court, Spokane may not be taken seriously because of the disorganization.

Stormwater Concerns



Stormwater management is recognized by communities as an important service, but often there is uncertainty about how to install or update sewer systems sustainably.

These projects also are very expensive and may stretch beyond the jurisdiction of the community. The use of green infrastructure practices such as rain gardens or permeable pavement is an unknown in most communities due to the perception that it is expensive to construct and maintain.

Community Challenges

Boston is concerned with stormwater management. Cambridge also has been focused on stormwater management because of an aged infrastructure, combined systems and combined sewer overflow events. The city is separating the system and trying to incorporate rain gardens and other green elements into the new design. Medford is separating its stormwater systems, but is experiencing difficulty convincing the Department of Public Works to use permeable pavement.

Milwaukee wants to reduce stormwater runoff and improve cleanliness. The region needs a range of strategies to more effectively manage stormwater and reduce the risk of future overflows.

Wyandanch has a very high water table, and it is unclear how to safely and sustainably address stormwater runoff. Its priorities include installing a sanitary sewer system. Wastewater and sewage produce bad odors because the community does not have a sewer infrastructure. Many variables must be considered when building sewers on Long Island—climate change, sea level rise, storm surges. Wyandanch is a community of springs, and many people in the surrounding areas still use cesspools and groundwater for drinking water. Developing the sewer system is a catalyst for other developments within the community. The Suffolk County legislature waived the sewer connection fees for downtown Wyandanch. This is an \$11 million savings and creates an incentive for developers to risk their capital on Wyandanch.

Success Stories

Spokane's aquifer is large (2,500 square miles of tributaries), is of high quality and provides drinking water for the local and surrounding communities. The aquifer recharges from the Spokane River annually, so it is important to handle wastewater in a manner that does not negatively affect the aquifer. The city recently installed rain gardens as part of its low-income development projects and is experimenting with permeable pavement. Community Development Block Grants have been used to remove septic tanks and replace them with sewage systems.

Woodbine has secured a Rain Garden grant from Keep Iowa Beautiful to create a rain garden behind the Main Street Station to capture stormwater runoff on hillsides, incorporate labor from high school industrial arts students, and potentially use the project for community education.

Research Questions

- What are affordable sustainable stormwater management options and technology?
- What stormwater management activities can be integrated into other revitalization efforts?
- What sustainable methods and technologies can be developed for stormwater management in urban areas with high water tables?

Policies, Approaches and Scientific Tools	Tool	Page Number for Additional Information
Stormwater Best Management Practices (BMPs)	A	A-65
Stormwater Ordinance	P	A-65
Drought Management Model and Two-Part Flood Model	S	A-65
WaterRICH	A	A-65
Floodwater Protection Ordinances	P	A-65
Stormwater Management Program	A	A-65
Milwaukee Waters: The Lowdown on Runoff Pollution Booklet	A	A-65
Friends of Milwaukee's Rivers	A	A-65
Bioretention Facilities	A	A-66
Onsite Stormwater Management	A	A-66
Green Roofs	A	A-66
Green Streets	A	A-66
Green Street Screening Criteria	S	A-66
Bioswales	A	A-66
Porous Blocks	A	A-66
Planters	A	A-66
Permeable Pavement	A	A-66
Green Roof Subsidies	A	A-66
Deep Tunnel	A	A-66
Greenseams	A	A-67
Stormwater Management Program	A	A-67
Household Rain Barrels	A	A-67
Rain Garden Plant Program	A	A-67
Green City Parking Lots	A	A-67
Stormwater Fee	A	A-67
Downspout Disconnect	A	A-67
Greenways Design	A	A-67
Prioritize Stormwater Improvement Investments	S	A-67
Plant Trees	A	A-68
Incorporate Native Plantings	A	A-68
Postpone Laundry When It's Raining Campaign	A	A-68
Spokane Urban Runoff Greenway Ecosystem (SURGE) Program	A	A-68
Spokane Regional Stormwater Manual	P	A-68
Rainscaping Iowa	A	A-68
Iowa Storm Water Education Program	A	A-68
Workshops on Rain Barrels	A	A-68
Rain Barrel Source	A	A-68

Managerial Concerns



More than 50 percent of the certified water treatment plant operators nationally will be eligible to retire in the next 5 years, and there are not enough certified operators avail-

able to take their place. Within the past few years, some states have begun to address this concern and implement programs, but the majority of systems will have difficulty hiring an operator certified at or above the level of the system because there are none to hire. There is high turnover in employment in Tribal Water programs. Regional EPA drinking water branch chiefs, focused on implementing an approach for equitable consideration for small systems, identified three top priorities or actions on which the national drinking water program should focus its efforts: (1) Improve managerial and financial assessments and measurements. The EPA should develop a good, consistent tool to measure how small communities have improved managerial or financial capacity. In other words, adequate measures to define sustainability do not exist. The main tool that is used is whether systems are in compliance. Typically, that is only a symptom of the larger problem. (2) Educate potential and existing Public Water System owners on the roles and responsibilities of owning a system. Ongoing problems and changeovers happen frequently. (3) Increase collaboration across funding streams and programs.

Community Challenges

Spokane. Hydroelectric power and dams have created a mixed debate. Salmon populations have declined, in part because of the barriers that dams create during salmon's annual trip up the rivers to spawn. Although people are concerned about the salmon population, they are concerned about their electricity rates if the dams are removed; these issues are in court. Vista is the local electric company and provides most of its power hydroelectrically. In Spokane, people valued the falls on the Spokane River and were upset that one of the Vista's dams decreased the water flow, thus creating smaller falls. In response, Vista agreed to open the dam's floodgates more during the day and to close them at night when people were not around.

Waste Management and Site Revitalization

Community Decision Sector

Overview

Communities are realizing that efficiently managing waste and materials will require creative approaches. Recycling efforts have been initiated across the country, but many communities believe that there still is room for improvement. There is substantial potential to produce energy from “waste” materials. When managed correctly, this can be done with minimal risk to human health, ecosystems, and water and air resources. Communities are interested in evaluating and implementing these alternative methods of energy generation to supplement and reduce dependence on nonrenewable energy sources. Brownfields and Superfund sites also provide opportunities for communities to put forth effort to reclaim usable land. The EPA provides ample funding options to revitalize these sites.



Sustainability Priorities

Waste Management



Waste is a resource, yet communities do not utilize a materials management approach. Communities need to strive for zero waste; some communities are pursuing innova-

tive energy generation from waste (e.g., bioreactors) and diverting waste streams.

Community Challenges

Milwaukee. The city has set a goal to divert 40 percent of the city’s waste streams by 2020 (e.g., by using recycling programs). A specific plan for organics has not been developed, but one option is increased energy production (e.g., methane). If this route is selected, the city may need to buy or build its own organic digester, which is an expensive undertaking. Partnerships and grants can make these plans a reality.

Success Stories








Asheville’s regional landfill is installing a generator so that it can sell energy from landfill gas to the local power company; the site is a test case for using bioreactors (leachate from the landfill) to speed the degradation (and production of methane and other gases) of landfill refuse.

Providence is initiating a system for composting food scraps.

Research Questions

- What are the most important decisions facing communities in the area of waste disposal, materials management and site remediation?
- What are the direct, indirect and cumulative effects of the most commonly faced decisions about waste disposal, materials management and site remediation options on human health (including children and the elderly) and ecosystem services?
- How can environmental releases from oil spills and leaking underground storage tanks be managed to minimize environmental damage and human exposures?

- What improvements can be made to design operation guidelines for disposal facilities to enhance performance, recover energy and reduce impacts?
- What tool can be used to verify the performance of new waste-to-energy technologies and provide cost analyses?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
WasteWise Program		A-69
Integrated Solid Waste Management for Rural Areas Planning Tool Kit		A-69
Pay-As-You-Throw (PAYT) Programs		A-69
Environmentally Preferable Purchasing (EPP)		A-69
Eco-Industrial Zone		A-69
Green Information Technology Roadmap		A-69
Green Procurement Policy		A-69
Hazardous Waste Recycling		A-69

Waste Removal



Communities lack resources to pay for trash removal services and recycling, which often results in litter and illegal dumping. This trash then impacts water quality and

causes other environmental problems (e.g., rodents).

Research Question

- How can the decision-making process be improved to assist communities in managing debris after extreme weather events?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Sewer Map		A-69
Construction Specifications		A-69
Sewer Extension Manual for Developers		A-69
Enforcement Response Plan (ERP)		A-70
Policy and Procedures for Right of Way Acquisition		A-70
Policy and Procedures for Extension of Sewer Service		A-70
Sewer Use Ordinance		A-70
Reporting Illegal Dumping		A-70

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Solar-Powered Trash Compactors		A-70
Household Hazardous Waste Collection		A-70
Police Department Medicine Collections		A-70
Community Cleanup Initiative		A-70

Recycling



Advances in recycling technology have facilitated individual participation because of the ease of collecting and mixing recyclable products. Many communities would like

to improve their recycling efforts through education and instruction.

Community Challenges

Milwaukee's Green Team, a group of community leaders commissioned by Mayor Barrett in 2004 to oversee the Milwaukee's Sustainability Plan development, recommended that the city develop a construction site recycling initiative and waste management policy to address the generation of construction and demolition debris, which totals 30 percent of the non-municipal waste stream.

Providence wants to increase recycling rates.






Woodbine wants to improve curbside recycling programs.

Success Stories

Asheville launched a comprehensive recycling program in 70 percent of city facilities and implemented a recycling outreach program with community centers in 2010.

Research Question

- How can waste streams be reduced utilizing sustainable materials management and life cycle management (e.g., separation of waste streams and targeted reuse or minimization steps)?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Zero Waste AVL Recycling Guide		A-70
LEED™ Points for Recycling		A-71
Earth911 Recycling Directory		A-71
Small Household Residential Recycling		A-71
Recycling in Large Buildings		A-71
Mandatory Residential Recycling		A-71
Leaf and Yard Waste Collection		A-71
Organic Waste Recycling		A-71
Green Festivals Initiative		A-71
Single-Sort Recycling		A-71
Construction Site Recycling Initiative		A-72
Harrison County Landfill		A-72
Composter Source		A-72

Brownfields and Superfund Site Remediation



Brownfields properties threaten public health and the environment in a number of ways, including contaminants in the soil, air and water, as well as

rodent infestations, trash dumping and unsafe buildings. Communities require technical support to identify reuse strategies for Brownfields sites within downtown districts. Redevelopment is useful to improve the downtown appearance and attract new businesses. There has been concern about the reuse of Brownfields for urban gardens, which might expose the public to contamination via the harvested food. This may limit the movement toward urban gardening. Addressing Brownfields can add 2 to 3 percent to a nearby property's value. Communities also are concerned with remediating Superfund sites, which are abandoned hazardous waste sites.

Community Challenges

Asheville plans to clean Superfund sites and reuse Brownfields sites.

Boston's priorities include Brownfields site remediation and waste reduction.

Milwaukee is facing an aggregate of problems from its industrial past and declining manufacturing base, including Brownfields sites and vacant lots.

Ogden plans to revitalize the downtown community, including three parcels in the middle of downtown and

the abandoned gas station that serves as the gateway to the community and a recreational destination park.

Woodbine is focused on Brownfields site redevelopment.

Wyandanch's priorities include acquiring blighted properties and remediating dozens of Brownfields sites. Land parcels remain underdeveloped, and this creates a burden on the whole community. Redevelopment is expected to reduce the burden by bringing in new residents and businesses.

Success Stories

Milwaukee, as part of EPA Region 5, has a long and productive history with the Wisconsin Department of Natural Resources (WDNR), especially in the area of Brownfields. As a result of this partnership, the ATSDR conducted a baseline characterization of the 30th Street Industrial Corridor, a major Brownfields and redevelopment area in Milwaukee. There are 200 known Brownfields properties in need of remediation. In 2008, the city received \$1.3 million from the EPA to assess and remediate contaminated properties in the Corridor. WDNR, in partnership with the city of Milwaukee, has successfully competed for four Brownfields assessment grants, totaling \$800,000 for the Corridor. WDNR also has targeted federal stimulus funds for leaking underground storage tanks to properties in the Corridor.

Woodbine has secured Green Pilot Community funding from the Iowa Department of Economic Development (IDED) to enable the community to redevelop Brownfields sites (e.g., an old gas station, a conference building), launch an energy audit and upgrade a follow-up program for the business and residential districts, and pilot a curbside recycling program.

Wyandanch received an EPA Brownfields grant in 2009 to redevelop an underutilized property into a Community Health Center.

Research Questions

- How can bioaccumulation models for predicting long-term changes in contaminant accumulation following remediation be improved and simplified?
- What laboratory, field data and models are necessary to assess risk from coal combustion residues?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Regional Brownfields Initiative (RBI)	⚙️	A-72
North Carolina Brownfields Program	⚙️	A-72
Underground Storage Tank (UTS) Section	⚙️	A-72
Agency for Toxic Substances and Disease Registry (ATSDR) Brownfields/Land Revitalization Action Model	⚙️	A-72
Environmental Law Institute Workshop: Overcoming Barriers to the Redevelopment of Petroleum Brownfields and Other Vacant Properties: The Wisconsin Approach	⚙️	A-73
Brownfield/Grayfield Tax Credit Program	⚙️	A-73
Brownfields Technical Support	⚙️	A-73
Brownfields to Greenfield\$, A Manual on Brownfields Redevelopment	⚙️	A-73

Regulations



Smaller communities are challenged by the “one size fits all” nature of governmental regulations for waste management facilities. Regulations should be tailored to the size

and needs of the community and the size of its facilities. For example, regulated policies for landfills might make sense for large facilities, but small landfills can be stymied by the requirements. Before implementing a regulation, the EPA should consider the consequences it will have on small communities. A balance is needed between community regulations and individual mandates. The rationale behind government regulations must be clearly communicated to improve acceptance and adherence by the general public.

Community Challenges

Woodbine. A business owner noted that landfill regulations are designed to accommodate very large facilities. Woodbine’s landfill is small, and some regulations do not make sense. Regulations need to be downsized for smaller operations. Many of the government-mandated solutions are cheaper to implement at an individual level (e.g., reverse osmosis).

PART III

RESULTS FOR CROSS-CUTTING ISSUES



Introduction to Cross-Cutting Issues

Cutting across each Community Decision Sector are sustainability issues that influence more than one topic. Cross-Cutting Issues are broad sustainability issues that, while important to communities, are usually not the first and foremost issue in their decision making. They often are considered in the context of the Community Decision Sectors and impact more than one sector. However, when communities are in the process of implementation to address an issue, a document might be developed that will describe a strategy or project with specific activities. For example, Asheville, North Carolina, has developed the “5X5” Plan, which is a 5-year program in which public and private sector businesses invest in local economic development efforts to help create approximately 5,000 new jobs in the Asheville area. As identified in this report, jobs are a sustainability priority under the Cross-Cutting Issue of Economics. The eight Cross-Cutting Issues include:

1. Economics
2. Social Issues
3. Environmental Justice
4. Climate Change
5. Energy
6. Human Health
7. Environment
8. Performance Measures and Metrics

Economics is the most important and universally considered cross-cutting issue that has a significant impact on every Community Decision Sectors. At times, decisions seem to be exclusive linked to an economic benefits (e.g., higher levels of employment, lower utility bills, increased tax revenue, health care savings and so forth). without consideration for sustainable benefits and outcomes. Communities need a way to measure and describe a connection to sustainability that makes economic sense and job creation.

Despite the driver of economics, every important decision by a community leader must be evaluated for the potential influence by or on all the diverse Cross-Cutting



Issues, such as social issues, performance metrics and the environment. For example, social acceptance of sustainability principles, for example, affects the adoption of green building practices, use of public transit, and consumption of local foods and products. Likewise, the availability of community parks and recreational areas (Land Use Decision Sector) is important for opportunities for tourism, public school education, engaging the community, reducing greenhouse gases, conserving natural resources, and promoting human health and well-being.

Each Cross-Cutting Issue is described in more detail in the following sections. A brief Overview of the topic is followed by a detailed explanation of community Sustainability Priorities. Individual Sustainability Priorities contain information about Community Challenges, extracted from each Listening Session; Success Stories highlighting practical solutions adopted by communities; and Research Questions that will help address each community challenge. Importantly, each Sustainability Priority presents a list of the Policies, Approaches and Scientific Tools that are being used by these seven communities. Each tool is identified as being a Policy (P), Approach (A) or Scientific (S) tool. In addition, the page number for each tool is identified where more information can be located in [Appendix II](#).

Economics

Cross-Cutting Issue

Overview

Economics is the strongest driver for sustainability decisions in communities, yet communities do not have a good understanding of the linkages between jobs, economic development and sustainability. Economic considerations cut across nearly all other sustainability concerns. In some communities, people are wary of how sustainable practices will affect their livelihoods and are unwilling to implement green practices without understanding their link to an economic benefit (e.g., higher levels of employment, lower utility bills, increased tax revenue, health care savings and so forth). Sustainability must be measured and described in a way that makes economic sense and connects to jobs and economic development. Many communities currently focus on reducing energy bills by implementing energy efficiency improvements and promoting alternative energy sources that are expected to lower energy costs. These strategies are expected to attract more residents and businesses to the community, providing economic wealth.



families who are left without the option to leave. What then exists is a town that: (1) most people have abandoned to find work elsewhere; (2) no longer has appeal due to deterioration; (3) no longer provides a realistic chance of job creation; and (4) the surrounding environment suffers through neglect. How are these types of communities sustained, or should they be? Native American tribes report a lack of jobs on the reservation, and the nationwide economic recession has resulted in few available jobs outside of their reservations. The unemployment rate on a reservation can be as high as 67 percent, with a primarily unskilled labor force. In general, a large portion of working-age residents experience high levels of unemployment/under-employment and widespread job skill deficiencies.

Sustainability Priorities

Jobs



Communities are challenged with a lack of jobs; the biggest challenge lies in rural America. Job loss and creating new jobs often is discussed, but it might no longer

be possible to create jobs in some rural communities. When jobs disappear, so do people, and left behind are dilapidated ghost towns that dot the country, filled with collapsing and deteriorating buildings and infrastructure that have little to no chance of ever becoming revived, not to mention sustainable. This affects not only the environment, but also curb appeal, and interspersed throughout these towns remain impoverished

Community Challenges

Asheville. There is a lot of rural area surrounding Asheville, and people need jobs. The economy is dominated by small businesses, and jobs in education and health care are the only sectors seeing an increase in employment opportunities. Traditionally, jobs were mostly in the agriculture or forestry sectors, but this has shifted to jobs in the service, health, education and tourism industries. Many of the jobs are low paying (minimum wage or slightly higher), and the local poverty rate is high.

Boston's economic priority is to encourage economic development by expanding the number of green jobs and by providing fuel and food assistance to the community.

Milwaukee was once known as a brewing and manufacturing powerhouse, but the city's image has changed with the decline of industry in the region. Milwaukee has experienced a loss of jobs, high unemployment and low educational attainment. The city seeks to create "green collar" jobs.

Wyandanch wants to increase job availability.

Success Stories

Boston began the Green Tech Initiative to attract green businesses to the area, which will provide jobs.

Wyandanch's successful redevelopment process has involved developing a job training program for local residents to anticipate the needs of the developer.

Research Questions

- How can sustainability concepts be linked directly to jobs (e.g., number, type, location)?
- How can the creation of (green) jobs help make environmental improvements?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Economic Development Coalition (EDC) Map Viewer		A-74
Rural Jobs Accelerator Challenge		A-74
GroWNC		A-74
AgriVentures		A-74
Green Opportunities (GO) Training		A-74
Greenways Training Program		A-74
Mountain Area Workforce Development Board (WDB)		A-74
Life Works		A-74
Childcare		A-74
Private Industry Council (PIC)		A-75
Green Jobs Boston		A-75
Boston Urban Mechanics Program		A-75
Empowerment Zone Grant		A-75
Green Infrastructure Project Jobs		A-75
Re-Localized Production		A-75
Tribal Scholarship Higher Education and Adult Vocational Training		A-75
Washington State's Green Economy: A Strategic Framework		A-75
Advanced Manufacturing Jobs and Innovation Accelerator Challenge		A-75

Economic Development



Communities are searching for sustainable and innovative methods to improve their economy. A range of activities are under consideration: some communities are promoting tourism, while others believe that remediating Brownfields and Superfund sites will encourage new business development.

Community Challenges

Asheville. Although the city is the economic engine that draws people and capital, the resulting higher prices for houses, road construction and environmental changes are not always welcomed by those who live in adjacent areas. Asheville plans to encourage economic development by developing green technology, revitalizing the downtown community, redeveloping the riverfront and reusing Brownfields sites. The growth and development will be managed by promoting infill development, increasing access to affordable and available housing to end homelessness, preserving agricultural and forested land, and bringing other rural products into the area for processing.

Milwaukee plans to develop smart energy policies and encourage economic development to foster a green economy, develop a green workforce, improve environmental justice and reduce poverty.

Ogden is working to revitalize its business district, especially Main Street. There are two projects underway: building a community health center, and installing an agriculture aggregate business. Specifically, city officials are trying to identify all of the businesses within the community, their actions/enterprises and the challenges they face. Zoning also limits the city's ability to offer businesses a place to grow. Ogden's priority is to work with the existing conditions, stabilize the population and businesses and then try to build them up.

Spokane wants to encourage economic development through gaming, jobs, the Grand Coulee Dam settlement and other forms of economic stimulation. Sustainability is an economic driver in the community. Spokane is trying to capitalize on energy efficiency and find incentives to motivate businesses to implement sustainable practices. New government regulations will

stifle development. Placing some of the burden of sustainable development on local businesses is a way to make progress.

Wyandanch is the most economically distressed community on Long Island. The city wants to encourage economic development by revitalizing the downtown community, building the ITF, promoting local businesses and encouraging tourism. All residents would benefit from an expanded tax base, new local jobs, a new downtown center and a safer main road. The community is trying to create something for everyone: Geiger Park and active recreation options, the botanical garden and conservatory, its proximity to Manhattan, a thriving downtown area and an attractive community design. It is not one thing that would attract people from other parts of the region but 20 things that would re-brand Wyandanch. The affordable housing and other income-based incentives also will be a driver of growth.

Success Stories

Spokane is supporting the Spokane Tribe Economic Project (STEP) to convert ancestral lands into a sustainable mixed-development area. The project is designed to improve the region's economy by creating new jobs and providing new resources for community members.

Wyandanch's successful redevelopment process has involved constant outreach to seek input from the community; finding creative ways to obtain funding (e.g., New York State Brownfields Opportunity Areas, EPA Grant for Sewers, EPA Brownfields Grant); hiring a world-class urban planner to redesign the downtown area; acquiring blighted properties; and developing a job training program for local residents to anticipate the needs of the developer.

Research Question

- What are the likely economic consequences of community revitalization, including economic multipliers and lost resources, as well as changes in property valuation, economic stability and job creation?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Riverfront Redevelopment Commission	A	A-75
Economic and Community Development Programs	A	A-76
Greenways Economic Benefits	A	A-76

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Business Satisfaction Survey	S	A-76
Blue Ridge Advanced Manufacturing Initiative	A	A-76
Blue Ridge Entrepreneurial Council (BREC)	A	A-76
Western North Carolina Film Commission	A	A-76
Building Massachusetts' Economy Through Transportation Investment	S	A-76
Fraunhofer Center for Sustainable Energy Systems	A	A-76
Boston Innovation District	A	A-76
Green Corridor Eco-Industrial Park	A	A-76
Milwaukee Economic Development Corporation (MEDC)	A	A-77
Milwaukee E3 (ME3) Program	A	A-77
Inventory Existing Green Technology/Services/Market	S	A-77
Wisconsin Technology Council	A	A-77
Green Manufacturing	A	A-77
Green Technology Triangle	A	A-77
Green Business Events	A	A-77
Implementing Trail-Based Economic Development Programs Handbook	A	A-77
Local Synergy	A	A-77
Iowa Microenterprise Assistance Project (IMAP)	A	A-77
Business Alliance for Local Living Economies (BALLE)	A	A-78
Collective Marketing	A	A-78
Education and Training	A	A-78
Spokane Tribe Economic Project (STEP)	A	A-78
Spokane Neighborhood Action Program's (SNAP) Small Business Development Website	A	A-78
Certified Sites Program	A	A-78
Academic Health Science Center, Riverpoint Campus	A	A-78
Indian Gaming	A	A-78

Resources



Financial, time and technical expertise resources to support sustainable projects are limited in all communities. Most of the sustainable solutions implemented by

communities occur in partnership with federal, state or local governments; nongovernmental organizations; utility companies; private industry; or others. Creative funding options (e.g., grants, partnerships, government subsidies, performance contracts) are required. Governments can be particularly effective in implementing sustainable projects because of its easy access to capital and long timeline for the recovery of funds. Communities also are in need of individuals to manage the various sustainability efforts. Some of the larger communities have dedicated sustainability staff or have reorganized to integrate sustainability into their government structure. In addition, communities need access to technical expertise. Although states are providing some assistance, some higher education systems are taking a more active role in advancing sustainable practices in the community by revitalizing neglected or abandoned areas in the community with new campuses. These higher education systems also are addressing community issues by using students to conduct pilot projects and using the projects as a teaching tool for their students, leading to future job development. Although rural communities are especially vulnerable to a lack of resources, many communities are seeking to share resources through regional efforts for more cost-effective solutions.

Community Challenges

Providence and ***Medford*** lack money for research and implementation.

Ogden has a foundation, established by a former resident of the community, which has supported initiatives such as improvements to the school, city hall and the fire station. However, Ogden lacks a business-foundation funding base as is found in other nearby communities.






Spokane's primary economic challenge is securing funding to implement the projects of the sustainability action plan that has been in place for 3 years.

Woodbine has expertise in ethanol research and development that can be shared.

Wyandanch. One of the biggest challenges so far has been credit for homebuyers. Efforts to offer down payment assistance are underway. It is expected that people will want to move to the community because of its rebirth.

Research Questions

- What is the best way to share technical expertise between communities?
- What data-sharing practices are the most accessible?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Tax Incremental Financing Districts		A-78
Milwaukee Sustainability Fund		A-78
Demand-Driven Business Development		A-79
Local Purchasing Policies		A-79
Incubators		A-79

Initial Cost



Many sustainable options initially are more expensive than unsustainable options. Local governments struggle to find startup funds for sustainable projects that might





require a larger upfront investment to realize long-term cost savings. In an effort to save money, many communities often select the initial low-cost option because it is familiar and fiscally easier, without considering the longer term maintenance costs (longer term costs often are lower for sustainable solutions). Of course, initial costs should be lower once knowledge improves and adoption increases; understanding this would help communities make smarter, long-term decisions. Sustainable approaches sometimes are perceived as too costly to implement. It can be difficult for low-income communities to garner investment dollars because they are less accessible and may not be seen as safe, viable options for vendors or businesses.

Community Challenges

Spokane. Many sustainable options initially are more expensive than unsustainable options. For example, people in Spokane are very concerned about costs, and they are not necessarily willing to pay more for green houses.

Research Question

- If an individual builds an energy-efficient home, what are the long-term benefits to a community?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Soft Match		A-79
General Obligation Bonds		A-79
Project Development Financing		A-79
Land Transfer Tax		A-79

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Short-Term Tax Deferral Program	A	A-79
Fees/Charges	A	A-79
Ticket Sales/Admissions	A	A-80
Membership and Season Pass Sales	A	A-80
Inter-Modal Transportation and Efficiency Act	P	A-80
Land and Water Conservation Fund	A	A-80
Inter-Local Agreements	A	A-80
Cost Avoidance	A	A-80
Corporate Sponsorships	A	A-80
Reservations	A	A-80
Volunteerism	A	A-81
Equipment Rental	A	A-81
Dedication/Development Fees	A	A-81
Foundation/Gifts	A	A-81
Friends Associations	A	A-81
Merchandising Sales	A	A-81
Land Trust	A	A-81
Naming Rights	A	A-81
Surplus Sale of Equipment by Auction	A	A-81
Security and Clean-Up Fees	A	A-82
Land Swaps	A	A-82
Concession Management	A	A-82
Patron Cards	A	A-82
Life Estates	A	A-82
State and Federal Governmental Loans/Financial Programs	A	A-82
Green Permit	A	A-82
Community Supported Enterprise	A	A-82
Public Seed Financing	A	A-83

Grants



Although grants (e.g., Community Block Development Grants, Main Street Challenge Grants) are essential to financially support sustainability projects, many communities

do not have the technical and financial means to conduct outreach, gather and synthesize data, utilize data to update or create new ordinances/policies and generate competitive grant applications. Some communities are concerned that they will no longer receive funding or the

attention of the federal government once environmental restoration has taken place. This is an indication of a larger paradigm shift that needs to occur—focusing on the future versus correcting the past.

Community Challenges

Woodbine indicated that cost is a major impediment to green initiatives. Many of its community improvements could not have been accomplished without Main Street Challenge Grants and other government contributions. Unfunded government mandates affect the funds available for the community's sustainability projects.

Success Stories

Wyandanch has found finding creative ways to obtain funding (e.g., New York State Brownfields Opportunity Areas, EPA Grant for Sewers, EPA Brownfields Grant) to promote economic development.

Research Question

- How can the grant application process be simplified and standardized across funding agencies to make it easier for communities to apply for grants?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Economic Development Incentives Policy	P	A-83
Community Development Block Grant (CDBG) Program	A	A-83
Grants for Parks and Recreation	A	A-83
Sustainability Project Grant Application	P	A-83

Funding for Small Communities



Smaller communities have a difficult time competing for grants both because of their size (meeting grant criteria needs or impact) and limited staff or time to devote to the



application process, which can be particularly bureaucratic and cumbersome. Small communities sometimes are bypassed for funding because of their size. Often, funding is awarded to the biggest cities with the highest pollution levels, yet these same funds are important for smaller community efforts.

Community Challenges

Woodbine. The Green Team observed that being a rural community is an obstacle to being sustainable. With a population of 1,500, Woodbine is often overlooked for grants and pilots because the impact of the program would not be as large as in a more urban setting.

Research Question

- What are the economic drivers for small-town survival?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Community Wealth Building		A-83
Community-Development Financial Institutions		A-83

Decision Making



Community decision makers (mostly local and state officials) need the “business argument” data to convince themselves and others that sustainable decisions can be economically possible in the short and/or long term. Incorporating economics into decision making is a challenge. Dollars speak to people and motivate them to make changes. For example, the cost of flood protection and other ecological services is lower when relying on natural systems than when using people to provide such services. The economic benefits of selling more products and developing more land can cause ecological costs associated with these actions to be more easily dismissed. Public lands are susceptible to overuse and trails may need to be closed—causing a difficult decision to be made. Decision making also is influenced by politics and lobbying efforts by stakeholders.

Research Questions

- What are the long-term benefits of sustainable decisions?
- What are the synergistic effects; how does one decision affect other decisions in a community?
- What is the best way to create toolkits (full range from card games to Web-based decision support tools) that help communities understand the consequences of decisions?

- Can a tool be developed to quantify the trade-offs for decisions among all of the different sectors (e.g., energy, health, agriculture, environment)?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Coastal and Marine Spatial Planning (CMSP)		A-84

Tourism

Tourism brings money to the region but also causes ecological degradation. Paradoxically, some communities improved air quality to attract tourists; however, an influx of tourists results in an increase in cars brought to the area, which worsens the air quality. Regional scenarios need to balance tourism, jobs and the environment.








Community Challenges



Asheville contends with achieving a balance between the tourist economy and the green economy. North Carolina’s public land draws many tourists, but is simultaneously being “loved to death” by the visitors. Approximately 1 million people visit the Biltmore Estate annually; energy and environmental effects from the visitors must be taken into account.

Wyandanch sits in the middle of Long Island—50 minutes from Manhattan, 90 minutes from skiing and 40 minutes from the seashores and wineries. As it is developed, people will stop and shop in the community while en route to other destinations.

Research Question

- How can tourism-related practices advance sustainability goals?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Explore Asheville		A-84
Agritourism Office		A-84
Green Destinations: Sustainability Assessments for North Carolina Tourism-Based Industries		A-84
NC GreenTravel Initiative		A-84
Trolley System		A-84

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
RiverMusic		A-84
Greater Boston Convention and Visitors Bureau (GBCVB)		A-84
Visit Milwaukee		A-84
Community Attraction and Tourism Program		A-84
Visit Spokane		A-84
Apple Festival		A-84

Prioritization



With local economies suffering and sales/property taxes reduced, many governments are scaling back on services previously considered “necessary” (e.g., libraries, pub-

lic swimming pools, full city government employment). Some government leaders are concerned that planning to spend on “sustainable measures” in such an economic environment will be considered frivolous by many citizens. For example, cities have terminated sustainability coordinator positions and merged environmental protection offices with those of other functions.

Research Questions

- Who benefits and who pays, especially in environmental justice communities?
- How can technical and social innovation be employed to prioritize community issues and capture community knowledge?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Request for Proposal (RFP) Criteria		A-85

Social Issues

Cross-Cutting Issue

Overview

Communicating, educating and framing the sustainability discussion with the public is essential for understanding and addressing local needs. The most successful sustainability initiatives have had substantial public buy-in. Community engagement, social marketing of sustainability and the development of effective sustainability strategies is highly dependent on local demographics and culture. For example, the view of the “American Dream” (e.g., owning a car and a house in suburbia) may not immediately coalesce with the concept of sustainability (e.g., use of public transportation, higher density development) with residents whose low income necessitates that they ride the bus. Additionally, the values and priorities of people living in an urban environment often contrasts with those of rural residents. Creative and culturally relevant ways to communicate sustainability issues that resonate with different audiences will be necessary to better understand sustainability issues and change behaviors. Sustainability should not be pushed on a community but rather incorporated into its social fabric as trusting relationships are established. Citizens and local decision makers need to believe that sustainability makes sense for their community.



unavoidably cease to lead at some point. Whether through death, a career move, retirement, or personal difficulty, many efforts lose their sustainability when they lose their champion. Do codes successfully keep projects alive past the leader’s departure? Do they limit creativity or further efforts to grow in sustainable practices (i.e., Does establishing today’s best practice prevent tomorrow’s best practice from being considered)? There is a lack of time, governance structure and leadership at the neighborhood level. Local governments face the challenge of turnover in their governing bodies. As elected officials enter and exit the organization, political momentum can be altered or entirely lost. This momentum is critical for obtaining community buy-in to create changes towards environmental sustainability. Political leadership is a required element to realize sustainability, and the community must be able to weather political turnover and maintain momentum. Local governments must take the lead on sustainability issues for real community change to be successful, which includes taking risks. Often, community leaders do not see the long-term benefits of a short-term investment. Community leaders need to have access to practical examples of similar projects and resulting outcomes to aid in the decision-making process. In the past, some local governments, especially smaller communities, have worked predominantly in a crisis-management cycle, where resources, if available, are used to respond to crisis situations. A sustainable approach requires more upfront time to plan ahead, such as with infrastructure asset management. Breaking the crisis-management cycle by implementing a proactive approach without a pending crisis is not easy. Communities must be encouraged to start small and implement proactive initiatives over time to make lasting changes.

Sustainability Priorities

Leadership



Successful initiatives depend on strong local community involvement. Many communities do not have the ability to dedicate an individual(s) knowledgeable in and

capable of gaining support from citizens, city councils, community leaders and so forth to initiate and maintain a sustainable, healthy community program. There is an inherent weak link when a lot of the sustainability efforts are championed by a local leader who will

Success Stories




Milwaukee. Fifteen community leaders were appointed to serve on Milwaukee's Green Team to guide the Sustainability Plan development as a liaison between public stakeholders and the planning effort. The Green Team is collaborating to develop a systematic approach to gather city-wide public input on Milwaukee's sustainability priorities.

Spokane. The Spokane Chamber of Commerce and other business associations strongly support development. Targeting certain areas in the community can help focus local business and community efforts. For example, Spokane residents decided that they wanted to have a 4-year medical school in the city. The Chamber of Commerce funded a study to scope out the issue, and the city is taking steps to bring a medical school to the community.

Woodbine's municipal operations are decentralized. The city recently acquired a City Administrator dedicated to the day-to-day operations of the city. The city also has a temporary AmeriCorps volunteer who is acting as Woodbine's Sustainability Coordinator. In this respect, Woodbine could be a model community for other small towns; it is piloting many new projects. Other towns have appeared interested in some of its pilot projects. There is a strong drive for Woodbine to maintain its identity and take the lead if efforts are expanded to a more regional level.

Research Question

- How can community leaders help motivate (or impede) people to use their sidewalks, parks and neighborhoods?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Sustainability Advisory Committee on Energy and the Environment (SACEE)		A-85
Office of Sustainability		A-85
Ogden Legacy Community Development Corporation		A-85

Attitudes Toward Sustainability






Overall, the United States is considered a "disposable society" and has a very strong "consumption appetite." Attitudes must change if sustainability is to be accepted

on a broad scale. Low-income people in particular make choices based on the direct benefits they will receive. As such, they often do not make choices that are considered "green" simply because it makes them "feel good." Outreach should be focused on demonstrating that being green is saving money or improving their lives. Framing sustainability issues also is important. Often, members of the community do not understand what sustainability means, or what actions might result from a community initiative to promote sustainability. Sustainability, for many, is a "tree hugging" environmental term that has no impact on their lives. It is a complex topic that is challenging to fully grasp. Misconceptions include the idea that business interests and sustainability conflict with one another. For local governments and the community to work towards sustainability, they must engage key stakeholders to reach consensus about goals and articulate those goals to better engage a broader audience. Educating all stakeholders to expand a narrow focus takes time; it is needed to create a shared vision that recognizes the economic, environmental and societal value of sustainability. Many outreach and education issues relate to marketing information in a manner that accesses people's values. One of the challenges at the EPA is to frame environmental tools in terms of the economic and social issues that are affecting a community. The EPA should examine its work through the lens of communities and consider the community's priorities and how environmental issues can be integrated into them.

Community Challenges

Milwaukee is considering developing a logo or "brand" to quickly convey the message that Milwaukee is a green city. LEED™-certified buildings could display a symbol to encourage patronage by environmentally conscious citizens and increase awareness of environmentally sound practices.

Spokane understands that effective framing of sustainable decisions and initiatives is critical to promote acceptance. Citizens believe that a “Super Bowl” type advertising campaign would be useful to engage the community.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Green Wedding Program		A-85
Green Business Award		A-85
Green Residential Awards		A-85

Preservation of Local Culture and Traditions



Communities, especially those in rural areas, are very concerned about preserving their culture and traditions. Urbanization can “swallow” a community and result in the

loss of unique community identity. Issues must be communicated in ways that have relevance to community members and respect their values.








Community Challenges





Asheville seeks to preserve local culture and traditions while striving for a more sustainable future.

Spokane is challenged with ensuring that local culture and traditions are preserved.

Research Questions

- How can communities strive towards becoming more sustainable while preserving privacy and personal property rights?
- How can sustainable practices be applied in communities with different cultures?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Greenways Community Benefits		A-85
Tribal Cultural Center		A-86
Spokane Lilac Festival		A-86
Spokane Tribe of Indians Language Program		A-86
Spokane Tribal College (STC)		A-86
Spokane Indians Baseball		A-86
Chief Garry Park Monument		A-86

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Heritage Day Celebration		A-86
First Night Spokane		A-86
Spokane County Fair		A-86
Riverfront Park Powwow		A-86

Community Engagement



Efforts should be focused on educating people about an issue, not making the decisions for them. Many people, if they understand the concept of sustainability, would

endorse it. Especially in the rural areas, people place a high value on privacy and property rights. This needs to be a consideration in the actions taken by a community. Motivating people to be part of a movement that benefits everyone is challenging but necessary. Because many people may not choose the sustainable option, there is a role for government regulation to promote change (e.g., building code standards). It is important to frame environmental concerns in ways that resonate with communities; an impoverished community views the environment very differently than a middle-class community. It is vital that the public care about environmental issues as much as the “insiders” do.

Community Challenges

Asheville. Some community redevelopments have been implemented without the input of residents, and there is now mistrust of current sustainability projects. Interactions with the public should not necessarily focus on land-use planning or other technical concepts, but should promote using information to make better decisions for families. Asheville is an inquisitive community, and many people might be motivated to run their own “sustainable” experiments if they were excited about the concept.

Ogden. Efforts have to be focused because people’s daily jobs limit the volunteer time available for community initiatives. People are risk adverse and not always willing to take the needed risks (e.g., borrowing or requesting money) to implement a plan.

Woodbine. Size poses a challenge to initiating new projects because manpower is limited. The Woodbine Green Pilot Committee, which leads many of the city’s



















green projects, is composed of volunteers and meets only once a month.

Success Stories

Ogden. Revitalization planning has been difficult, but the city has found that when they do develop a plan, the community has made the effort to successfully implement it (e.g., successful fundraising and installation of a new track at the school).

Research Questions

- What models for community engagement exist? How can the best community-engagement practices be identified?
- What are the core values on which outreach can be based to most effectively engage people and change their behavior?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Annual Celebration		A-87
East of the Riverway Sustainable Communities Initiative		A-87
Burton Street Agricultural Fair		A-87
Burton Technology Center		A-87
Triangle Park Murals		A-87
Community Clean-Up Days		A-87
Master Plan Survey		A-87
Landowner Outreach Program		A-87
Focus Groups		A-87
Stakeholder Meetings		A-87
Board Meetings		A-88
Communitywide Public Meetings		A-88
Improve Milwaukee's Sustainability Survey		A-88
Milwaukee's Green Team		A-88
Spokane's Green Team		A-88
Friends of the Spokane Tribe		A-88
West End Community Center (WECC) Design Workshops		A-88
Community Visioning Event		A-88

Participation

















Citizen-based participation appears to be limited in ORD's project development and implementation processes. Many of the citizens knew that EPA was in their backyards sam-

pling the stream and gave permission to do so, but they were never fully educated on the results or importance of that work. These pilot projects remain worrisome because ORD continues to visit the areas for short periods of time and then leave. Some of the projects do not have measurable goals and have no early visible results. There are no institutional measures within EPA for staff to be evaluated on the sustainability of a project, or whether the community sees or has early visible results that directly impact the community. Small grants may be given to communities, but many projects cease when the grant monies have been depleted. The presence and absence of federal agencies in and out of the community makes building partnerships impossible in some cases.

Research Questions

- How can people's personal behaviors be changed to practice sustainability?
- How can an individual be sustainable on a personal level?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Public Participation Techniques		A-88
Volunteer Services Department		A-89
City Cultural Arts Division		A-89
Increase Voter Participation		A-89
Youth Program List		A-89
Educational Institution-Youth Programs Partnerships		A-89
English as a Second Language Programs		A-89
Boston Cares Volunteering		A-89

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Milwaukee Recreation		A-89
Annual Parade of Green Buildings		A-89
Corbin Art Center Programs		A-89
City of Spokane Community and Senior Center Programs		A-89
Trees Forever		A-90
Music on the Path Concert Series		A-90

Collaboration



Community organizations have found that building trust over time is important for the success of projects; all voices need to be at the table. Equally important as addressing

research needs is ensuring that agencies with overlapping or complementary jurisdictions work together. For example, a recent sustainability endeavor involved the EPA, the U.S. Department of Housing and Urban Development (HUD), and the Department of Transportation (DOT), but excluded the USDA. Through the Farm Bill and other food policies, the USDA has an integral role in any food security and sustainability issue. Another example is the Department of Energy's (DOE) Hirsch report, which addresses peak oil production and its societal ramifications. The findings in the report will affect the EPA's ability to clean up and protect the environment; the DOE and EPA must share information. The same principle is applicable at a local level; key players often are absent from the table. Knowledge and the capacity to collaborate with other communities at a regional level are lacking. Most communities believe that they have to be able to manage all of their own challenges. There may be advantages, however, especially with small- and mid-sized communities, to collaborate on a regional level. In many cities, there are many different departments with overlapping and confusing mandates. Departments of Housing, Streets, Water and Environment may compete with each other for funding for sustainability measures with little city-wide planning. Under such circumstances, funded projects tend to be isolated and unconnected with long-term goals. These ideas may reflect local elected officials' individual district concerns, rather than a sustained economic and environmental benefit to the city as a whole. There can be a great deal of divergence between the people who plan for better air quality and those who are

either implementing policies through permits/inspections or through treatment/remediation (e.g., indoor air quality assessments, health assessments). Listening Session communities appreciate the support from the EPA to reach out to them. This is a systematic change in how the agency does business, and it is recognized that a key way to advance the EPA's mission is to offer on-the-ground support to communities.

Community Challenges

Asheville. Some communities in the Asheville area have had negative experiences with governments, law enforcement and other "outsiders."







Boston's work on sustainability has been performed largely on a municipality-by-municipality basis; only recently, the municipalities have become more regionalized. Municipalities have partnered with some nearby universities, but not all of the universities are interested in working on local issues, even though they may have the expertise to do so.

Woodbine has experienced success with local sustainability initiatives but community members felt that in the future, they may have to think more regionally in their approach. The community has had frustrating interactions with the IDNR and other government organizations.

Success Stories

Milwaukee's community of organizations is very strong, and their involvement is essential because of their local insights and momentum to advance change. When making sustainability decisions, Milwaukee considers all sectors of the community, including the government, NGOs and corporations. Federal agencies are learning how to work with each other to better support communities, with each agency fulfilling certain niches.

Spokane. One of the more recent developments in the city is a program that places university students and faculty in the field to work on community projects. Many communities need help, and using students keeps costs down and provides them with a learning opportunity. Innovative ideas are needed to revitalize the old manufacturing facilities that surround the downtown area. It will take decades to reinvigorate these facilities in a sustainable and livable way, but this is an exciting opportunity for the university and community.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Community Mapping and Analysis for Safety Strategies (COMPASS)		A-90
Washington Park Partners		A-90
Cross-Sector Partnerships		A-90
Northwest Oregon Community Dialogue		A-90
Washington State Sustainable Communities Dialogue		A-91
Island Harvest Hunger Relief Programs		A-91

Capacity Building



Communities do not have the capacity to plan for a sustainable future. They do not have the staff resources (people or necessary knowledge) to provide leadership

for sustainable community planning. Community staffs already are overworked at maintaining essential services. Communities are stressed financially and even though payback periods for many “sustainable measures” may be relatively short, there is insufficient public capital to invest initially. Stimulus funding has relieved that stress somewhat, but many municipalities are delayed in spending those funds or are having to divert funding to cover other financial commitments. Communities lack the capacity to transform traditional community operations. There is a lack of structure to support change—most “good behaviors” can really only be executed by those who show extraordinary commitment, sacrifice and determination; early adopters are great, but sustainable means bringing something into common access.

Community Challenges

Providence. For Providence to move forward with sustainability, it needs to develop greater capacity within city hall and the government. The city is working on a proposal for FY2012 that includes a sustainability office and director.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
East of the Riverway Sustainable Communities Initiative		A-91

Public School Education



Education is tied closely to the economy and can be a significant barrier to sustainability. The role of public education usually is absent in discussions about sustainability,

but is critical for implementation, as many sustainability projects and environmental education outreach efforts are piloted in schools (e.g., community gardens, recycling). Schools are a core part of many communities’ basic structure and provide a venue for teaching students about sustainability concepts and firmly rooting it in the community. In many small rural communities, schools are the social centers of the community, and school consolidation with nearby communities often leads to the gradual disappearance of rural community identity (e.g., values and way of life). The primary reason people move from urban cores is the quality of education. The poor quality of public schools in many urban areas forces families to live in suburban communities that offer a higher quality of education, thus contributing to urban sprawl.

Community Challenges

Milwaukee is challenged by low educational attainment and recognizes the value of education.

Success Stories
















Ogden. The community has a healthy and progressive school system.

Spokane has experienced success with educational initiatives.

Woodbine is very proud of its school (preschool through 12th grade)—it is the only stand-alone school district in the county. The dropout rate is low, and the school produces well-rounded students. Students who choose to leave the community often go out into the world and make a difference. The school has a strong student volunteer program and high parent participation in activities. The school that one attends is an important part of one’s identity; the school gives the community strength and sustainability. There is a great fear that economic pressures will cause the school to be combined with others in the county. Some of the repercussions may be lower test scores, farther distances to school, greater peer pressure and loss of community identity.

Research Questions

- What models for schools support sustainable community development?
- What impact does rural school consolidation have on the sustainability of such communities?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Career and College Readiness Programs		A-91
Early Childhood Learning Opportunities		A-91
Listening to Our Teens Project		A-91
WriteBoston		A-91
Safe Schools/Healthy Students Initiative		A-92
Environmental Education		A-92
Comprehensive Literacy Plan		A-92
Comprehensive Mathematics and Science Plan		A-92
 (CUBS)		A-92
		A-92
		A-92
		A-92
		A-92
Read to the Zoo Program		A-93

Communication

Community leaders need to communicate sustainability principles and priorities effectively to achieve collective sustainability goals. The EPA also should communicate clear messages about how to inform the public about environmental issues (e.g., focus on economics, children, energy). Many communities are not familiar with the EPA's research and environmental finance center; improving the access to and communicating about these resources is important. Additionally, environmental regulations are complicated and not explained well to the public. Although public hearings are held, people generally do not have the skills to review changes to regulations or even know how or on what they should be commenting.

Community Challenges

Medford is concerned with education and outreach about sustainability to residents.

Milwaukee needs assistance in obtaining information to make good decisions. Making a choice in one area

might cause an unexpected result elsewhere. Sustainability is complex and often there are information gaps. One of the best value-added actions a federal agency could take is to fill in information gaps.

Spokane. The community also recognizes that sustainability messages (e.g., better gas mileage, energy savings, green building) must continue to be promoted.

Success Stories
















Asheville's North Carolina Arboretum could be a model for educating the public about sustainability because of its efforts to educate people about energy efficiency and water conservation in fun and engaging ways.

Spokane. Many low-income people like to fish and swim in the Spokane River. Several years ago, programs were developed to educate people about how to reduce their health risks from the river water.

Woodbine. There is interest in establishing a rural research center to educate developers about rural communities and green practices.

Research Question

- How can communication of existing information and tools be improved?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Better Energy Savings Today (BEST)		A-93
Government Access Channel		A-93
Climate Choices Project		A-93
Sustainability Toolkit		A-93
Sustainable Energy, Education and Communication (SEEC)		A-93
Green Milwaukee Website		A-93
Mayoral Speeches		A-93
Green Logo		A-93
Press Releases		A-93
Online Newsletter		A-94
Newspaper Publicity		A-94
The Rawhide Press		A-94
Spokane Sustainability Forum		A-94
Sustainable Communities Online		A-94
Downtown Promotional Materials		A-94

Decreasing Populations



Many small rural communities are not sustainable—they are losing residents as young people are leaving for larger population centers and older people have less financial capacity to support community services. These communities have reached or will eventually reach a point where they cannot support their water and power utilities, and they have not identified viable options for community renewal. Climate change, declining water tables, and surface and groundwater contamination remain challenges in rural areas, where new technologies are needed. Many declining cities recognize that their economic and population base will never return to their peak and that the costs and support required to maintain the infrastructure of their communities are fiscally unsustainable. “Shrinking” a city is obviously difficult, but moving whole communities and consolidating resources is complicated, especially when there are historical, emotional and economic ties.

Community Challenges

Ogden’s population is decreasing, and businesses are closing. Along Main Street, many of the business owners are near or past retirement age, putting businesses at risk for permanent closure. For example, the one restaurant in town was closed for 6 weeks because the owner’s wife is very sick. The town is hopeful that the restaurant will reopen, but the prospects are uncertain. At the same time, Ogden is important not only to city residents, but also the big farmers in the area who rely on its services (e.g., hardware store, doctor, pharmacy) and its school for their children.

Woodbine’s primary goal is to make its community sustainable; sustainability is defined as “community endurance.” As a result, it is initiating projects to revitalize the community, support local businesses and the school district, and recruit new residents by standing out from the other communities in Harrison County. The city wants to curb the population decline and reverse the trend.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Countryside and Town: Population in Iowa’s Counties Within and Outside of Incorporated Places, 1990–2010		A-94

Crime



Lack of safety is a barrier to some sustainability initiatives. Although people want to have children playing outside, however some low-income neighborhood parks are







not safe. Crime could be reduced by revitalizing downtown areas and abandoned buildings and sites. Planning tools (designing streetscapes, pedestrian-friendly environments and associated issues) exist to curb downtown violence.

Community Challenges

Wyandanch is afflicted with gangs, high crime and elevated poverty rates. Residents are concerned that connecting trails to Geiger Memorial Park may increase outdoor recreation, but it also could provide a place for gang activity.

Research Question

- Which community design principles (e.g., increased sidewalks, revitalized storefronts) decrease crime?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Crime Prevention Through Environmental Design (CPTED)		A-94
Text-a-Tip		A-94
Citizens Police Academy		A-94
Community-Based Youth Programs		A-95
Community Crime Prevention Programs		A-95
Substance Abuse Treatment Programs		A-95
Cleanup of Public Places		A-95
Economic and Cultural Issue Training		A-95
Alternative Sentencing		A-95
Boston Police Department (BPD) Checkpoint Newsletter		A-95
Truancy Abatement and Burglary Suppression (TABS) Program		A-95

Social Science Research



Capturing the social sciences dimension in the metrics is essential. The EPA would like to understand the information channels better and be actively involved in managing

them. Misinformation greatly impedes the advancement of sustainability. Academics responded that research is most effective when practitioners identify specific questions and then collaborate with academia to package and distribute the final information. A participant from academia commented on the challenges of sustainability research. Sustainability research relies heavily on the social sciences; the culture of social scientists is very different than that of natural scientists. The EPA could improve its interactions with the social sciences academic research community by: identifying specific questions; supporting journal articles, books, book chapters and other academic deliverables; co-authoring articles with

academics; creating journals focused on sustainability; bringing together academics in integrated research centers; and providing or helping communities to provide data for research. The EPA acknowledged the shortage of economists and social scientists within the agency. Social sciences are essential for studying and implementing sustainable practices. The EPA is considering options (e.g., outsourcing, temporary jobs, creating new positions) for tapping into this expertise. Partnerships with communities and universities might provide a solution.

Community Challenges

Milwaukee recognizes the important role of social science research in decision-making paradigms.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Community Demographics Profile	⚙️	A-95
Direct Mail Survey	⚙️	A-95
Sports Participation Trends and Statistics	⚙️	A-95
Arts Participation Trends and Statistics	⚙️	A-95

Environmental Justice

Cross-Cutting Issue

Overview

Environmental justice considerations cut across nearly all sustainability themes. Since World War II, housing, land use and transportation policies have all contributed to environmentally unsustainable growth patterns and inequitable urban development. Sustainable solutions need to be practical, effective and apply principles of environmental justice to protect disproportionately impacted low-income, minority and tribal communities. For example, Native American reservations across America are communities that do not have a sustainable and healthy lifestyle as experienced by the predominant society. Many reasons can be identified as contributing to these conditions: the educational level on the reservation is below state standards, while the rate of alcoholism and diabetes incidence is above the national average. Improving awareness of environmental justice principles and developing sustainable practices that limit disproportionate impacts on low-income or minority communities is crucial.



Research Question

- What strategies are the most effective to communicate the significance of environmental issues and health challenges facing a community?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Community Income Profile	⚙️	A-96
Maps and Neighborhood Profiles	⚙️	A-96
Demographic Analysis	⚙️	A-96

Sustainability Priorities

Awareness



Many low-income or minority communities are not well educated in environmental science and therefore may be less aware of or concerned about environmental issues and

health challenges that they could overcome. Regardless of income, most Americans do not have a firm understanding of the sustainable actions and options that are available right now. At least one community has hosted an energy efficiency open house to raise sustainability awareness.

Community Challenges

Woodbine would like to increase awareness of sustainable initiatives throughout the community. The city hosted an open house to raise awareness of smart energy policies.

Adoption of Environmental Justice Principles



Communities recognize that sustainability strategies need to be universally beneficial to all residents and limit harm to the greatest extent possible. The adoption of environmental justice

principles will help achieve this goal.

Community Challenges

Spokane prioritizes promoting equitable, affordable housing for all residents.

Milwaukee is concerned with infant mortality, sexually transmitted diseases and lead poisoning. To resonate with the public health sector, sustainable strategies should address the upstream factors in these problems, particularly race, income and education.

Wyandanch evaluated the proposed Intermodal Transit Facility project to ensure that it will not result in disproportionate adverse impacts on minority and low-income populations.

Success Stories








Boston and the surrounding municipalities seamlessly incorporate environmental justice into all of its projects and actions to make their communities more sustainable. For example, the Emerald Cities pilot focuses on employment equity, and the Green and Healthy Homes Initiative is improving living conditions, access to food and creating walkable neighborhoods. Renew Boston is a program that is designed to reach and connect low-income communities with existing resources and programs. Medford will be looking at the proximity of environmental justice communities to parks and open spaces.

Milwaukee was chosen as an Environmental Justice Showcase Community Project and has received Environmental Justice Small Grants.

Research Questions

- What is the best way to assess sustainability through the environmental justice lens: Who is paying the cost, and who is reaping the benefits?

- What methods of “paying” for the ecological benefits that people use can be developed without restricting the ability of low- or middle-income residents to live in an area?
- What are the likely social consequences of the disproportionate impacts on low-income or minority communities, including social acceptance of possible actions, effect on social capital and environmental justice of actions and outcomes?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Boston First Targeting		A-96
Center on Wisconsin Strategy (COWS)		A-96
Environmental Impact Analysis		A-96
Section 8 Subsidies		A-96
Lesbian, Gay, Bisexual and Transgender (LGBT) Elder Advocates of Western North Carolina (WNC)		A-96
Tribal Enterprise Rights Ordinance (TERO)		A-96
Weed and Seed		A-96

Climate Change

Cross-Cutting Issue

Overview

The changing climate is a concern in many communities, and climate change adaptation in communities is an essential part of sustainability. Some communities in New England have used climate change adaptation as a common theme to pull organizations together, and other communities are asking basic questions about how environmental changes from climate change will affect them. Many are struggling with how to draw political attention to an impending threat that has no visible consequences at this time (e.g., compared with dirty air or polluted rivers). Most are struggling to address existing individual issues and considering how to incorporate or adapt to the potential impacts of climate change (e.g., sea level rise, changing rainfall patterns). Cities and regions face many challenges when undertaking climate change adaptation analysis and planning, they often do not have access to assessments of climate change impacts on key sectors within the region (e.g., infrastructure, ecosystems, human health). Developing greenhouse gas emission inventories for communities might facilitate productive conversations about climate change.



sea level rises and rising temperatures. The Asheville region today is reaching a “tipping point” for its water resources and land use. The local population is expected to increase, mostly through migration to the area, and these impacts on natural resources and the community must be included in the discussion. Asheville is concerned that consistently elevated temperatures will lead to more heat-related deaths.

Boston. Climate change has been a common concern that has brought people from surrounding municipalities together to work on transportation, waste reduction and other issues. One of Cambridge’s main priorities is climate change adaptation. Measurement issues make it difficult to understand how emissions have changed.

Milwaukee is concerned with climate adaptation.

Sustainability Priorities

Climate Change Adaptation



Many communities acknowledge the changing climate and have initiated discussions about sustainable ways to prepare for the uncertainties of the future. Coastal

communities are concerned with rising sea levels, while increased incidence of heat-related illnesses is a concern in other areas.

Community Challenges

Asheville. Climate change is causing more frequent and longer periods of weather extremes in the mountains. Asheville may not be as vulnerable to the direct effects of climate change as other cities, but the region likely will receive people escaping coastal storms,

Success Stories

Cambridge is embarking on a climate change and adaptation vulnerability assessment. Beginning with an interdepartmental workshop, the group went through an exercise to understand the municipality’s vulnerabilities and resilience. From this exercise, Cambridge realized the importance of understanding the point at which the effects of environmental change (e.g., sea level rise, air pollution and heat) become serious issues for the community.

Research Questions

- What is the best way to research climate change adaptation, such as measuring and mapping urban heat islands, predicting the effects of adaptation/mitigation strategies, and mapping and measuring urban forests?

- What are ways (e.g., best practices document) to counter the potential impacts of climate change to communities?
- How can better data and tools on the consequences of adopting particular climate change strategies (e.g., Coast Model) be generated?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
International Council for Local Environment Initiatives (ICLEI) Membership		A-97
Climate Protection Agreement		A-97
Climate Portal and Dashboard		A-97
National Integrated Drought Information System (NIDIS)		A-97
Template for Assessing Climate Change Impacts and Management Options (TACCIMO)		A-97
Climate Change Executive Order		A-97
Sparking Boston's Climate Revolution		A-97
Boston Climate Action Leadership Committee		A-97
International Council for Local Environmental Initiatives (ICLEI) Municipal Climate Adaptation Workshop		A-97
Water and Sewer Infrastructure		A-97
Executive Order on Climate Change Challenge		A-98
Preparing for a Changing Climate: Washington State's Integrated Climate Change Response Strategy		A-98
Climate Change Clearinghouse		A-98
Work Group Decision Support Tool		A-98

Reduce Greenhouse Gases










Emission of greenhouse gases is an underlying cause of climate change. Recognizing the importance of decreasing greenhouse gas emissions, some communities are concentrating on reducing fuel consumption and limiting industrial processes that contribute to the levels.

Community Challenges

Boston seeks to reduce greenhouse gas emissions to limit climate change.

Research Question

- What is the most effective policy to reduce greenhouse gas emissions?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Clean Air and Climate Protection (CACP) Software		A-98
Greenhouse Gas Resolution		A-98
Greenovate Boston		A-98
A Climate of Progress: Update Report		A-98
ICLEI—Cities for Climate Protection		A-98
U.S. Conference of Mayors Climate Protection Agreement		A-99
Develop a Climate Protection Plan		A-99

Energy

Cross-Cutting Issue

Overview

The rising cost of oil combined with the steadily increasing greenhouse gas emissions has prompted communities to implement green energy policies. Some communities are incorporating energy conserving features into new and retrofitted buildings, while others are interested in developing ways to produce energy from novel sources such as landfill waste and biomass. Increasing demand and limited supplies have resulted in fuel scarcity for communities located at the end of gasoline pipelines.



Sustainability Priorities

Energy Independence



Progressing toward energy independence is a pivotal issue for many communities, as community resiliency results from energy conservation and the diversification of fuel

products and vehicles. Many communities expressed interest in developing alternative energy sources, such as nuclear energy. Energy service contractors (ESCOs) have been widely employed as a way to realize energy and cost savings. However, many communities remain uncomfortable with the ESCO arrangement. Some local communities have opted to forego very low-interest loan programs for energy efficiency because they hope to receive additional federal grant money.

Community Challenges

Asheville and other western North Carolina organizations are focused on energy and a more natural environment. The community values renewable energy to lessen dependence on imported fuel, and encourages energy conservation to reduce the municipal carbon footprint and its energy spending. Asheville is located beyond the regional gasoline pipeline, and its fuel is transported into the city by truck. In 2008, the city experienced a gasoline shortage because it was at the end of the supply chain. Western North Carolina is vulnerable to gasoline shortages through its limited storage capacity, local stations purchasing the fuel and small local governments buying from those stations. These circumstances have not been integrated into the emergency management planning process either.

Boston wants to promote affordable, efficient, reliable and safe energy systems for residents. The city is placing an emphasis on encouraging energy conservation through green building and setting standards for energy efficiency.

Milwaukee aims to develop smart energy policies and stimulate a green economy.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Energy Technology Cluster		A-99

Alternative Energy Sources



nuclear, wind and solar energy.

Increased utilization of renewable and alternative energy sources is a goal for many communities. Alternative energy sources under consideration include biofuels as well as

Community Challenges

Asheville. North Carolina imports most of its energy, but there is an enormous potential for alternative energy sources within the state. Asheville needs options for alternative fuel production in the short-, mid- and long-term timeframes. Production cost is an important issue with alternative fuels; local biodiesel costs more (in dollars and energy) to produce than its selling price. Asheville is considering nuclear energy (and its waste disposal) as an alternative energy source.

Boston is promoting renewable energy use through alternative fuels and technologies. The nearby community of Medford would like to create a renewable energy park that includes educational information about wind turbines and solar panels.

Spokane is concerned with renewable energy and maximizing energy efficiency.

Wyandanch. Energy costs are high on Long Island (21 cents per kWh). The community is looking at methods for delivering heating and cooling to residents using geothermal or other alternative energy options.

Success Stories

Boston increased solar electricity production through the Solar Boston program, which encourages solar adoption throughout the city.

Medford has an environmental action plan and has undertaken a number of sustainable activities, including: installing LEDs in traffic lights; building a 100 kWh wind turbine (which provides a nearby school with 10 percent of its energy); incorporating alternative energy lessons into school curricula (wind turbine, solar panels); implementing a single stream recycling program; and converting cemetery vehicles to run on biodiesel. Currently, Medford is working toward entering into a power purchase agreement to enable the municipality to install solar panels on six of its schools, which will provide 6 to 8 percent of the energy needed to operate the schools.

Spokane is distinguishing itself with its work in energy efficiency. Vista is the local electric company and provides most of its power hydroelectrically. The company is active in the community—especially on environmental issues—and helps connect the private sector to the government. Politically, Washington is not acknowledging hydroelectric power (and other sources such as burning vegetative wastes) as green energy. The result is higher energy costs, although Spokane's energy costs remain low at 4.5 cents per kWh.

Research Questions

- What is the best way to research and develop alternative energy options (geothermal, wind)?
- How can advanced biofuels (e.g., microalgae) be developed with lower production costs?
- What are alternative fuel production options for the short-, mid- and long-term timeframes?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
EvolveEnergy Partnership	A	A-99
Clean Energy: Opportunities for Western North Carolina	A	A-99
Proposed Solar Energy State Law	P	A-99
Feasibility Studies	S	A-100
Database of State Incentives for Renewable Energy (DSIRE)	S	A-100
Solarize Mass	A	A-100
Renew Boston Solar	A	A-100
Renew Boston Innovation District Solar Challenge	A	A-100
Renew Boston Solar Interactive Map	S	A-100
Renew Boston Solar Permitting Guide	P	A-100
DOE SunShot Initiative	A	A-100
Boston Harbor Islands Renewables Planning Guide	A	A-100
Commonwealth Solar II	A	A-100
Massachusetts Residential Guide To Solar Power	A	A-101
Solar America Cities	A	A-101
Camp Harbor View	A	A-101
Dudley Village	A	A-101
Boston Public Schools Solar Energy Units	A	A-101
Article 88, Wind Energy Facilities	P	A-101
Boston Public Schools Wind Turbines	A	A-101
Massachusetts Water Resources Authority (MWRA) Wind Turbines	A	A-101
Logan Airport Wind Turbines	A	A-101
Fenway Park Solar Hot Water System	A	A-102
Solar Evacuation Route	A	A-102
Purchase Renewable Energy Blocks	A	A-102
Milwaukee Shines	A	A-102
Electric Vehicle Charging Stations	A	A-102
Port of Milwaukee Wind Turbine	A	A-102
Report on the Economic Impacts of the Ethanol Industry	S	A-102
Waste to Energy (WTE) Facility	A	A-102
Geothermal Heat Pumps	A	A-103
Air Source Heat Pumps	A	A-103

Energy Efficiency



Another method employed by communities in their pursuit of energy independence is to promote energy efficiency. Some communities accomplish

this by encouraging energy audits and financing renovations to houses and buildings. Other communities focus on promoting low-energy lighting and appliances. A welcome byproduct of increased energy efficiency is a reduction of energy utility bills, which helps to offset the cost invested in energy-conserving upgrades.

Community Challenges

Asheville. Most of Asheville's other energy comes from coal (mountaintop mining) and arrives via rail. Currently, there are no other options for electricity, but there are enormous opportunities for the community to save energy through conservation.

Providence is concerned with community engagement related to energy efficiency.

Woodbine is focusing on energy audits for the business district and residential units. Reduction of Woodbine's carbon footprint will be accomplished by offering an energy audit program for businesses and residences, offering grants (for businesses) and zero percent financing (for businesses and residences) for energy-saving renovations. The energy assessments and upgrades are being performed, in part, to make old housing more attractive for new residents.

Spokane emphasizes renewable energy and energy conservation by reducing car use and developing optimal municipal operating practices.

Success Stories




























Boston's Mayor Thomas M. Menino launched the Renew Boston Residential Program, which provides eligible Boston residents with free energy efficiency improvements, such as air sealing and insulation upgrades, to help conserve energy, save money and lower utility bills.

Milwaukee developed the Me² program to help residents and businesses implement energy-efficient practices. Also, Milwaukee is collaborating with EPA, DOE and local businesses to implement Me³, which is a sustainable manufacturing program to help minimize the environmental impact of manufacturing practices.

Woodbine. In 1992, an initiative replaced old oil furnaces in the community with gas furnaces or heat pumps. Energy consumption was reduced, and the initiative helped to maintain the community's population. Currently, Woodbine has some of the lowest utility costs in the county. In October 2010, the Municipal Light and Power project held an open house featuring LED bulb giveaways and energy demonstrations to raise awareness of energy efficiency.

Research Question

- What is the relationship between energy conservation and family health, behavior and the ability to afford food?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Rural Small Business and Agriculture Energy Assessments		A-103
National Action Plan for Energy Efficiency: A Vision for 2025		A-103
Energy Efficiency Program		A-103
Guide to Energy Saving Performance Contracting of K-12 Schools, Local Governments and Community Colleges		A-103
Self-Assessment Guide for Energy Saving Opportunities		A-103
Light-Emitting Diode (LED) Streetlights		A-103
Environmental and Energy Services Cabinet		A-103
Small Business Direct Install Program		A-104
Renew Boston Residential Energy Assessments		A-104
Boston Buying Power (BBP)		A-104
HEAT Loan Program		A-104
Lights Out Boston		A-104
Energy Efficiency and Conservation Block Grant (EECBG) Program		A-104
Portfolio Manager		A-104
Finance Energy Saving Projects Through Performance Contracting		A-104
Milwaukee Energy Efficiency (Me ²) Program		A-104
Business Grants for Energy Efficiency		A-104
Better Buildings Challenge		A-105
Energy Audits		A-105
Focus on Energy		A-105
Tax Incentives		A-105
Downtown Energy Audits and Efficiency Improvements		A-105
Downtown Energy Plan		A-105
Residential Energy Plan		A-105
Iowa Power Fund Community Grant Program		A-105
Bright Energy Solutions		A-105
High Efficiency Water Heaters		A-105

Human Health

Cross-Cutting Issue

Overview

Improving human health is another important common theme across many disciplines. Communities face chronic health issues ranging from obesity and diabetes to environmentally related issues such as lead poisoning and high ozone levels. Communities and public health departments are working to improve many factors that affect health (e.g., air quality, nutrition, exercise). For example, asthma and other respiratory diseases cause significant health issues for many, and elevated asthma rates have been correlated with poor air quality. Communities focus on improving air quality to secure health benefits. Access to healthy foods through robust local food systems provides better nutrition to communities, which reduces malnutrition and obesity. Importantly, economics, education and transportation have a combined influence on health outcomes of more than 50 percent, and health and many social justice issues are interconnected. Healthy lifestyles are very important to communities, and this issue often is raised in the context of installing green spaces, trails and cleaning up the environment (air, water, land). Second to economics, health reaches across all facets of a community and is a strong driver for decisions. There is a need for more outreach and education within communities concerning the connection between environmental and human health.

Sustainability Priorities

Reduce Disease



Many communities are afflicted with high rates of obesity and asthma. Obesity can be reduced by improving accessibility to trails and parks as well as improving the walkability of the community to promote walking or biking instead of driving. Reducing environmental exposure to air pollutants might help to decrease asthma. Hospitals that are practicing green health care are needed, as are businesses and industries that have a small environmental footprint, farms and access to fresh food.



Community Challenges

Asheville is relatively healthy, compared with the rest of North Carolina, but obesity, heart disease, kidney disease and teen pregnancy are issues.

Boston understands that public health effects should be considered in a holistic manner and take into account policies for energy, environment, sustainability, food and others. In general, the public does not understand the link between ecology and health. The community is focused on other more immediate issues such as food, bills and flooding. Urban lighting choices must consider how higher levels of ambient light can affect breast cancer rates and other diseases.

Milwaukee experiences high asthma rates and high blood lead levels in children. Milwaukee will prioritize public health by renovating old housing and developing a cumulative risk assessment paradigm. Milwaukee also is concerned with infant mortality, sexually transmitted diseases and lead poisoning. To resonate with the public health sector, sustainable strategies should address the upstream factors in these problems, particularly race, income and education.

Ogden recognizes health as an important priority and has started building a community health center.

Spokane. Outreach should focus on demonstrating that being green is saving money or improving lives. For example, green living can affect health positively; in Spokane, many kids have asthma and many adults are diabetic.

Woodbine is pursuing initiatives that include building a health and wellness center.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Buncombe County Health Priorities	A	A-106
Healthy Living Opportunities Map	S	A-106
National Women's and Men's Health Weeks	A	A-106
Youth Tobacco Education	A	A-106
Blood Lead Screening	S	A-106
Lead Poisoning Prevention Program (LPPP)	A	A-106
Renovation, Repair and Painting Training Program	A	A-106
Preventative Maintenance Program	A	A-106
Lead Hazard Reduction Work Grants	A	A-106
Lead Hazard Task Force	A	A-106
Clean Air Campaign	A	A-106
Health Benefits of Greenways	A	A-107
The Strategic Alliance for Health (SAH)	A	A-107
Lead Safe Boston	A	A-107
Dissemination of Public Health Information	A	A-107
Healthy Communities Program	A	A-107
Breast, Cervical and Colon Health Program (BCCHP)	A	A-107
Public Health Clinic	A	A-107
Community and Family Services	A	A-107
Tribal Health and Fitness Program	A	A-107

Integrate Public Health in Decisions



A challenge to developing integrated urban heat island reduction strategies is that cities need help in connecting environmental and public health experts and community-based organizations. An integrated strategy would measurably reduce energy consumption and public health risks (e.g., heat stress, asthma, respiratory ailments).

Community Challenges

Boston. Collectively, the municipalities recognize that light and noise will affect people more as campaigns are urging residents to open their windows rather than use air conditioning.

Research Questions

- How does unsustainable growth affect public health?

- What are the measurable public health outcomes (acute and chronic) from sustainable development that align with pressing public health issues?
- What measures of environmental quality and community health and well-being best reflect the full costs and benefits of alternative solutions?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Mobilizing Action Towards Community Health (MATCH)	S	A-107
Safe Driving Insurance Discount Programs	A	A-108
Safe Kids Program	A	A-108
Young Inexperienced Driver Education	A	A-108
Wellness Programs	A	A-108
Greenways Transportation Safety Benefits	A	A-108
Area Agency on Aging (AAA)	A	A-108
Buncombe Greenways Health Impact Assessment	S	A-108
Open Circle Curriculum	A	A-108
Green Cleaning Policy	P	A-108
Mobilizing for Action through Planning and Partnerships (MAPP)	S	A-108

Improve Health Data Accessibility



The recent changes to the Census data have changed the resolution of health data that are collected. The American Community Survey takes a small sample every year versus the Census Long Form that collects a large sample of data every 10 years. The change has made it more difficult to address questions at a local level. Health questions could be coupled with social, economic and education issues to permit analyses that enable development of solutions to larger societal problems.

Community Challenges

Asheville recognizes that health and many social justice issues are interconnected and require improved data accessibility to address these issues.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Air Quality Notifications	S	A-108

Environment

Cross-Cutting Issue

Overview

Although natural resources and environmental issues (e.g., water quality, water quantity, biodiversity) are recognized as concerns, they have not been the key motivators for most community sustainable actions. Historically, some of the communities involved in the Listening Sessions made great efforts to correct polluted air and water. Currently, these are not the main drivers of their actions, in part because there are not solid, direct links between environmental issues and health, economics or other benefits. With limited resources, decision makers are focusing on meeting the basic needs of community members (e.g., housing, health, jobs) and tangentially addressing environmental issues. Communities need to preserve and conserve natural spaces and historic places, and preserve and protect natural resources.

Sustainability Priorities

Conservation of Natural Resources



Most communities recognize natural resources are finite, and steps must be taken to conserve them. Communities, however, have a difficult time considering envi-

ronmental impacts (e.g., air quality, wetlands, water quality) within the same process as land use, transportation and housing planning. Illegal fish harvesting and capturing juveniles or protected species is a problem. A lack of knowledge on local fish regulations or harvesting guidelines, or a lack of enforcement, contributes to this issue.

Community Challenges

Asheville. Conservation of natural resources is a priority.

Boston's goal is to preserve and enhance the resources of built and natural environments. The city is particularly interested in conserving natural resources such as groundwater.



Milwaukee. The conservation of natural resources will be accomplished by reusing Brownfields to develop parks and improving stormwater runoff and water cleanliness.

Spokane values natural resource conservation, including water conservation, ecosystem preservation, environmental cleanup and the creation of urban green spaces.

Wyandanch conserves natural resources through preserving drinking water quality and quantity, protecting ecosystems and developing parks.

Success Stories

Milwaukee. Efforts taken to conserve natural resources include: the Great Lakes Restoration Initiative to combat invasive species, remove toxins, restore wetland habitats and protect against polluted runoff; Lake and Riverside Parks designed by renowned landscape architect Fredrick Olmstead; construction of walking and biking trails along the Milwaukee River and the Hank Aaron bike trail in the Menomonee Valley; and native landscaping in the Menomonee Valley.

Woodbine initiated a community planting project using native trees and wildflowers.

Research Question

- What are new economic valuing system options for land use that shows the value of sustainability?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Ecosystem Enhancement Program (EEP)		A-109
GreenWork Projects		A-109
Conservation Initiatives		A-109
Advancing Animal Management		A-109
North Carolina Mountain Resources Commission		A-109
Adopt-a-Greenway		A-109
Massachusetts Wetland Protection Act (WPA)		A-109
Massachusetts Rivers Protection Act		A-110
Conservation Commission Act		A-110
Urban Wilds Initiative (UWI)		A-110
MassGIS		A-110
Grow Boston Greener (GBG)		A-110
Midwest Environmental Advocates Programs		A-110
Alliance for the Great Lakes		A-110
Milwaukee Community Program		A-110
Seven Generations Concepts		A-110
John A. Finch Arboretum		A-110
Lake Roosevelt White Sturgeon Recovery Project		A-111
Spokane Tribal Hatchery		A-111
Urban Forestry Program		A-111
Resource Enhancement and Protection (REAP)		A-111
Soil Conservation		A-111

Biodiversity



Protecting ecosystem diversity is becoming increasingly important as increased housing, buildings and roads that cut off access to animal migration corridors isolate populations within small areas. These isolated populations have a smaller gene pool and may be less adaptable over time.

tions within small areas. These isolated populations have a smaller gene pool and may be less adaptable over time.

Community Challenges

Asheville plans to protect ecosystem diversity. Key areas of ecosystem vulnerability include the loss of biodiversity through changes in land use and invasive species. North Carolina has exceptional biodiversity (e.g., more than 100 tree species and high numbers





of salamander species), but invasive species, land use changes, acid deposition, forest fires, severe weather and climate change are threatening this diversity. Connective corridors among different habitats and ecological communities need to be a priority.

Boston. Invasive species removal is a primary concern in local rivers. Boston and the surrounding municipalities are concerned with the ecological health of estuaries.

Milwaukee is concerned with biodiversity and crop pollination.

Research Questions

- What options for eradicating local invasive species can be developed?
- What are the best methods of land-use planning that minimize impacts on natural resources (e.g., to maintain biodiversity)?
- What methods exist to encourage urban redevelopment and limit suburban sprawl?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Sensitive Species Preservation		A-111
Preserve Wildlife Corridors		A-111
Habitat Connectivity Mapping Tools		A-111
Living Roadway Trust Fund (LRTF)		A-112

Appreciation



There is a lack of understanding of the dependence humans have on soil and plants, and there exists an underappreciation for the services they provide for cleaner water

and air. In addition, a lack of connection to nature is a sustainability barrier. Water that is unsuitable for recreation or fishing, air quality problems, and the effects of sprawl (highways, energy infrastructure) have the biggest impacts on the urban core. If the community is not connected to the environment in positive ways, environmental neglect and abuse occurs (e.g., trash is dumped, urban gardens are vandalized and so forth).

Community Challenges

Wyandanch. The community currently is creating a botanical garden/conservatory. The botanical garden will be a destination for school field trips and can help children learn about better ways to live (e.g., healthier eating, outdoor activities).






Success Stories






Milwaukee. Urban Ecology Centers throughout the community provide educational resources to engage students and other citizens in understanding the environmental impact of various behaviors. The Urban Ecology Center’s Citizen Science Program allows volunteers the opportunity to conduct field research to improve ecological literacy and appreciation.

Spokane has successfully improved air and water quality over the long term (40 to 50 years), and similar successes can occur with sustainability. Although Spokane is a low-income area, it has been successful in addressing environmental issues. People value nature; this began with the traditional values of the Native Americans who first occupied the region. The community has had a “near nature, near perfect” theme for many years, and people routinely participate in weekend outdoor activities. As demonstrated by the cleanup of the Spokane River, when people acknowledge a problem and decide to take action, they are successful. Acknowledging issues, however, can be difficult. It took brown air and increases in asthma cases, for example, before the community took action on air quality. It will be even more challenging to address issues like global climate change where the scientific evidence does not get political traction because local effects are not visible.

Research Questions

- What full-cost accounting for products and services can be created?
- How can the environment be better integrated with housing and transportation decisions?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Water in Western North Carolina Film Series		A-112
Discovery Camp		A-112
Adult Education Classes		A-112
Riverfront Bus Tour		A-112
Boston Nature Center and Wildlife Sanctuary		A-112

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Urban Ecology Center		A-112
Keep Greater Milwaukee Beautiful, Inc. (KGMB)		A-112
Schlitz Audubon Nature Center		A-112
Wehr Nature Center		A-112
SeedFolks Youth Ministry		A-113

Environmental Hazards



Air quality is a concern for many communities that are experiencing elevated rates of asthma and other issues because of air pollution (e.g., high levels of ozone and particulates).

Some communities are faced with natural environmental hazards (e.g., soil hazards such as lead and radon). Mitigating human exposure to environmental hazards is a priority for many communities. In the past, multimedia problems were addressed one media at a time, which is inefficient and does not address the downstream effects of decision making. For example, a community might have water that is unsuitable for recreation or fishing, air quality problems, and the effects of sprawl (highways, energy infrastructure) that have the biggest impacts on the urban core. Communities need to adopt a holistic view and treat multimedia issues simultaneously.

Community Challenges

Asheville plans to improve air quality by reducing driving. The city’s air quality is affected by high concentrations of ozone, particulates and acid deposition, and radon is a concern.

Boston. Quantifying the general ecological health of the Boston Harbor and Massachusetts Bay is important for environmental decisions. Cambridge is concerned with mitigating lead hazards in the soil.

Wyandanch citizens are concerned with dust from the wooden pallet factory that frequently settles on cars.

Research Question

- What remediation options for lead can be developed, given that it is not practical to pave over or remove all soil with lead concentrations greater than 5,000 parts per million (ppm)?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Buncombe County Multi-Hazard Risk Tool		A-113
Southern Air Principles Agreement		A-113
Users Guide for SAMI Air Quality Results		A-113
Air Quality Index		A-113
ForWarn		A-113
Radon Testing		A-113
Dam Operations and Maintenance Procedures		A-113
Dam Emergency Action Plans		A-113
Flood Inundation Mapping		A-114
Flood Operations Plan		A-114
Flood Warning System		A-114
Stormwater Best Management Practices (BMPs) Education		A-114
Riverbank Protection Program		A-114
Bluff Stabilization Program		A-114
Emergency Shelter		A-114
Community Emergency Response Team (CERT) Training		A-114
Notification Warning Systems		A-114
Regulations for the Control of Atmospheric Pollution		A-114
City of Boston Environment Department Guidelines for Construction		A-114
Heat Wave Stress Mitigation Solutions		A-115
Climate Change and Coastal Flooding Analysis		A-115
Models of the Effects of Recharge Best Management Practices (BMPs) on Groundwater Elevation		A-115
Liquefaction Susceptibility Mapping		A-115

Performance Measures and Metrics

Cross-Cutting Issue

Overview

Metrics are critical to measure or predict the economic, environmental and social effects of a sustainable action in a community. Many communities are implementing sustainable practices, but are uncertain of how they can measure the results of their efforts. For some communities, a lack of performance measures prevents them from choosing sustainable options. Metrics and different types of information are crucial for sustainability efforts, but need to be simplified for public consumption. Some of the economic benefits are longer term; the return on the investment might occur within the next 50 years. The future costs of an unsustainable action versus a sustainable action should be considered by the community when making a decision. Modern economics is not good at doing this. The lack of training and education to conduct life-cycle analysis comparisons of activities precludes the ability to know which of the available options have the lower carbon footprint and are truly sustainable.



people actually use it? If the city invests in housing that is near public transportation to reduce greenhouse gases, do people actually move there and drive less? If a person buys a green home, does it save money in the long term? A community organization agreed that if small businesses can see on paper that a sustainable action will benefit them, they are likely to implement it.

Boston. All municipalities are concerned with program evaluation and effectiveness and would appreciate additional educational tools.

Milwaukee understands that capturing the social sciences dimension in the metrics is essential.

Research Questions

- What are the full, real costs of sustainable practices compared to other choices?
- How can green building information and benefits be quantified into a financial formula that is relevant to developers?

Sustainability Priorities

Develop Indicators



Performance measures and indicators are helpful in demonstrating how an investment in a sustainable practice yields a tangible benefit. Typically, benefits are couched in terms

of quality of health, air and water quality, and so forth; however, there is often no way to effectively connect these benefits directly to the sustainable practice being applied. Vital sustainability indicators are needed to track performance relative to meeting specific sustainability targets.

Community Challenges

Spokane. City officials suggested that performance measures would be helpful in showing residents how an investment in a sustainable practice yields a tangible benefit. If the city invests in a bicycle lane, do

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Greenways and Trails Performance Measures		A-116
Staff Interviews		A-116
Strength, Weakness, Opportunities, Threats (SWOT) Analysis		A-116
Boston Indicators Project		A-116
Menomonee Valley Benchmarking Initiative (MVBI)		A-116
Natural Step Model		A-116

Apply Metrics



Communities must capture economic outcomes as well as others (e.g., social, environmental, health) that are valued by the community to assess the success of sustainability

initiatives. Evaluating performance measures and metrics can facilitate the decision-making process.

Community Challenges

Asheville would like to use metrics to assist with decision making.

Success Stories

Milwaukee. Wisconsin's Menomonee Valley Benchmark Initiative, which is an ongoing collaboration that systematically tracks the community, environmental and economic conditions of the Menomonee River Valley and surrounding neighborhoods to assess change, is a good example of a successful project with appropriate metrics.

Research Question

- What are the most useful and practical tools implemented by communities?

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Western North Carolina Report Card on Forest Sustainability	⚙️	A-116
Environmental Management System (EMS)	⚙️	A-116
Transit Performance Ranking	⚙️	A-116
GRASP® Level of Service Analysis	⚙️	A-117
Boston About Results (BAR)	⚙️	A-117
Energy Use Monitoring	⚙️	A-117
ICLEI Star Community Index	⚙️	A-117
Community Assets Study	⚙️	A-117
Impact Assessment Tool	⚙️	A-117
Lake Roosevelt Fisheries Evaluation Program (LRFEP)	⚙️	A-117
Greenhouse Gas Inventory	⚙️	A-117
Report on City of Spokane Drinking Water	⚙️	A-117
Water Supply Sustainability Index (2050) Map	⚙️	A-117

Environmental Reporting



Communities are interested in the sustainability efforts of local businesses and facilities. For example, they are concerned with the environmental impact of manufacturing or

industrial companies and how facility emissions affect the neighborhood air quality. Many companies realize the importance of this issue and publish annual reports detailing their sustainability objectives and progress. Standardized reporting indices, such as the Dow Jones Sustainability Index, evaluate the performance of companies according to specific economic, environmental and social sustainability criteria.

Policies, Approaches and Scientific Tools	Tools	Page Number for Additional Information
Western North Carolina Vitality Index	⚙️	A-117
Sizing the Clean Economy Report	⚙️	A-118
Climate Indicators in Boston	⚙️	A-118
Boston Community Greenhouse Gas Inventories	⚙️	A-118
Green Tier Program	⚙️	A-118
Milwaukee Biodiversity Monitoring and Education (BIOME) Project	⚙️	A-118
Global Reporting Initiative (GRI) Report	⚙️	A-118

Appendix I: SOURCES OF INFORMATION: ORGANIZATIONS AND DOCUMENTS



Appendix I

Sources of Information: Organizations and Documents

Asheville, North Carolina

Municipal Resources

City of Asheville

<http://www.ashevillenc.gov/Home.aspx>

Sustainability Department

<http://www.ashevillenc.gov/Departments/Sustainability.aspx>

Projects and Initiatives

<http://www.ashevillenc.gov/Departments/CommunityRelations/ProjectsandInitiativesInformation.aspx>

Community Development Division

<http://www.ashevillenc.gov/Departments/CommunityDevelopment.aspx>

Planning and Development Department

<http://www.ashevillenc.gov/Departments/PlanningDevelopment.aspx>

Building Plan Review (Development Services)

<http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview.aspx>

Parks and Recreation Department

<http://www.ashevillenc.gov/Departments/ParksRecreation.aspx>

Transit Department

<http://www.ashevillenc.gov/Departments/Transit.aspx>

Transportation Department

<http://www.ashevillenc.gov/Departments/Transportation.aspx>

Water Resources Department

<http://www.ashevillenc.gov/Departments/Water.aspx>

Stormwater Services and Utility

<http://www.ashevillenc.gov/Departments/StormwaterServicesUtility.aspx>

Office of Economic Development

<http://www.ashevillenc.gov/Departments/EconomicDevelopment.aspx>

City Codes and Ordinances

<http://www.ashevillenc.gov/Departments/DevelopmentServices/DevelopmentOrdinances.aspx>

<http://library.municode.com/index.aspx?clientId=12499>

Buncombe County

<http://www.buncombecounty.org/Default.aspx>

Buncombe County Public Health Department

<http://www.buncombecounty.org/Governing/Depts/Health/PublicHealth.aspx>

Buncombe County GIS Department

<http://www.buncombecounty.org/Governing/Depts/GIS/Default.aspx>

Buncombe County Parks, Greenways, and Recreation Department

<http://www.buncombecounty.org/Governing/Depts/Parks/Default.aspx>

Buncombe County Planning and Development

<http://www.buncombecounty.org/Governing/Depts/Planning/Default.aspx>

North Carolina Division of Air Quality

<http://daq.state.nc.us/>

North Carolina Department of Agriculture

<http://www.ncagr.gov/>

Local Organizations

Land-of-Sky Regional Council

<http://www.landofsky.org/index.html>

Renaissance Computing Institute, University of North Carolina at Asheville (RENCI)

<http://www.renci.org/>

Western North Carolina Livable Communities Initiative

http://www.landofsky.org/planning/p_sustainable_grant.html

French Broad River Metropolitan Planning Organization

<http://www.fbrmpo.org>

Blue Ridge Forever Coalition

<http://www.blueridgeforever.info/>

One North Carolina Naturally

http://www.onencnaturally.org/pages/CPT_Other_Planning_Efforts.html

Western North Carolina Regional Air Quality Agency

<http://www.wncairquality.org/>

Western North Carolina Alliance

<http://wnca.org/>

Appalachian Sustainable Agriculture Project

<http://www.asapconnections.org/>

GreenWorks

<http://www.ashevillegreenworks.org/index.html>

Green Opportunities

<http://www.greenopportunities.org/>

Advantage West, Economic Development Group

<http://www.advantagewest.com/>

Western North Carolina Nature Center

<http://wncnaturecenter.com/>

The North Carolina Arboretum

<http://www.ncarboretum.org/>

RiverLink

<http://www.riverlink.org/>

Metropolitan Sewerage District (MSD) of Buncombe County

<http://www.msdbc.org/index.php>

Waste Reduction Partners

<http://wastereductionpartners.org/>

Clean Energy WNC (Evolve Energy)

<http://evolveenergyp.com/>

Southern Alliance for Clean Energy

<http://www.cleanenergy.org/>

Land-of-Sky Clean Vehicles Coalition

<http://cleanvehiclescoalition.org/news.php>

National Environmental Modeling and Analysis Center, University of North Carolina at Asheville (NEMAC)

<http://nemac.unca.edu/>

University of North Carolina at Asheville

<http://www.unca.edu/>

Asheville City Schools Foundation

<http://acsf.org/>

Asheville Design Center

<http://ashevilledesigncenter.org/>

Hand Made in America

<http://www.handmadeinamerica.org/>

Plans

General Plans

Asheville Sustainability Management Plan (2009)

<http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf>

Buncombe County Sustainability Plan (2012)

<http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf>

Asheville City Development Plan 2025 (2002)

<http://www.ashevillenc.gov/Departments/PlanningDevelopment/AshevilleCityDevelopmentPlan.aspx>

Asheville Downtown Master Plan (2009)

<http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/DMP%20August%2010.pdf>

Asheville Strategic Operating Plan (2012–2013)

<http://www.ashevillenc.gov/Portals/0/city-documents/general%20assets/SOPFY12-13.pdf>

[North Carolina Statewide Logistics Plan \(2008\)](#)

ftp://landofskygis.org/MPO/Freight/GovernorsLogisticsTaskForce_FinalReport_Jun2012.pdf

[North Carolina Common Agenda \(2012\)](#)

<http://www.nccommonagenda.org/>

Land Use

[Asheville Parks, Recreation, Cultural Arts and Greenways Master Plan \(2009\)](#)

http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf

[Buncombe County Greenways and Trails Master Plan \(2012\)](#)

<http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx>

[Buncombe County Comprehensive Land Use Plan \(1998 and updates\)](#)

<http://www.buncombecounty.org/Governing/Depts/Planning/LandUsePlanning.aspx>

[Asheville Future Land Use and Transportation Plan \(2002\)](#)

http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf

[The Riverfront Plan \(1998\)](#)

http://www.riverlink.org/documents/riverfront_plan.pdf

Buildings and Infrastructure

[Asheville Downtown Master Plan \(2009\)](#)

<http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/DMP%20August%2010.pdf>

[Consolidated Strategic Housing and Community Development Plan 2010-2015 \(2010\)](#)

<http://www.buncombecounty.org/Governing/Depts/Planning/Housing.aspx>

[Affordable Housing Plan for Asheville \(2008\)](#)

http://www.ashevillenc.gov/portals/0/city-documents/CommunityDevelopment/Affordable_Housing_Programs/planfinal.pdf

[The 10-Year Plan to End Homelessness \(2005\)](#)

<http://www.ashevillenc.gov/Portals/0/city-documents/CommunityDevelopment/Homeless/10yearplan.pdf>

[Design Guidelines for the River District](#)

http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf

[Charlotte Street Corridor Plan](#)

<http://www.ashevillenc.gov/portals/0/city-documents/Planning/CharlotteStCorridorPlan.pdf>

[Asheville Downtown Design Review Guidelines \(In Progress\)](#)

Please Contact: 828-259-5556

Transportation

[Asheville Transit Master Plan \(2009\)](#)

<http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf>

2035 Long Range Transportation Plan by the French Broad River Metropolitan Planning Organization (2010)

<http://fbrmpo.org/lrtp/>

Coordinated Public Transit and Human Services Transportation Plan by the French Broad River Metropolitan Planning Organization (2012)

ftp://landofskygis.org/MPO/JARC-NF/FBRMPO_2012_HSTPlan/MPO_HST_Plan_Final_2012.pdf

Transportation Options for Western North Carolina: A Regional Plan for Mobility Choices (2001)

<ftp://www.landofskygis.org/MPO/SpecialStudies/WNC%20Transportation%20Options%202000/Intermodal%20Plan.pdf>

North Carolina Department of Transportation Comprehensive Transportation Planning Manual

<https://connect.ncdot.gov/projects/planning/Pages/TransPlanManualCTP.aspx>

Asheville Comprehensive Bicycle Plan (2008)

http://www.ashevillenc.gov/Portals/0/city-documents/TransportationEngineering/Traffic_Engineering/FinalBikePlanAdopted022608.pdf

Blue Ridge Bike Plan (2013)

<http://landofsky.org/brbp.html>

Asheville Pedestrian Thoroughfare Plan (2005)

<http://www.ashevillenc.gov/Departments/Transportation/TrafficEngineering/BicyclePedestrianServices.aspx>

Asheville Regional Airport Master Plan (2001) and Future Development

<http://flyavl.com/pages/about-the-airport/planning-development.php>

Water Management

Flood Management Plan (2007)

<http://www.ashevillenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%202007.PDF>

Economics

Asheville Sustainable Economic Development Strategic Plan (2000)

http://www.ashevillenc.gov/portals/0/city-documents/Planning/economic_development.pdf

Land-of-Sky Regional Council 2013-2017 Comprehensive Economic Development Strategy

<http://www.landofsky.org/pdf/LGS/CEDS2013-2017.pdf>

Asheville 5X5: A 5-Year Plan for Job Creation

<http://www.ashevillechamber.org/economic-development/asheville-5x5-campaign-5-year-plan-job-creation>

Asheville Adopted Budget (2012–2013)

<http://www.ashevillenc.gov/Portals/0/city-documents/finance/AdoptedBudgetFY12-13R.pdf>

Asheville Minority Business Plan (2006)

[http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/Minority_Business/Minority%20Business%20Plan%202006\(2\).pdf](http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/Minority_Business/Minority%20Business%20Plan%202006(2).pdf)

Western North Carolina Inland Port Feasibility Study (2009)

<http://savethecape.org/stcwp1/wp-content/uploads/PDFs/WNCInlandPortFeasibility.pdf>

Seven Portals Study: An Investigation of Economic Development Through Logistics Villages, West Region Report (2011)

<http://www.ncdot.gov/doh/preconstruct/tpb/research/download/2010-34-0masterfinalreport.pdf>

Environment

North Carolina Wildlife Action Plan

<http://www.ncwildlife.org/plan.aspx>

Boston, Massachusetts

Municipal Resources

City of Boston Home Page

<http://www.cityofboston.gov/>

Boston's Green Boston E-Newsletter

<http://www.cityofboston.gov/environmentalandenergy/newsletter/>

Boston's Sustainability Accomplishments

http://www.cityofboston.gov/Images_Documents/sus_accom_tcm3-2768.pdf

Boston Conservation Commission (BCC)

<http://www.cityofboston.gov/environment/conservation/>

Boston Environmental and Energy Services

<http://www.cityofboston.gov/environmentalandenergy/default.asp>

Boston Parks Department

<http://www.cityofboston.gov/parks/>

Boston Housing Authority

<http://www.cityofboston.gov/bha/>

Boston's Green Buildings

<http://www.cityofboston.gov/environmentalandenergy/buildings/>

Boston's Green Buildings Code

http://www.cityofboston.gov/Images_Documents/Article%2037%20Green%20Buildings%20LEED™_tcm3-2760.pdf

Boston's Transportation Department

<http://www.cityofboston.gov/transportation/>

Boston's Office of Food Initiatives

<http://www.cityofboston.gov/food/>

Boston Residents Jobs Policy

<http://www.cityofboston.gov/brjp/>

Boston Businesses

<http://www.cityofboston.gov/business/>

Private Industry Council

<http://www.bostonpic.org/>

[Boston Public Health Commission](http://www.bphc.org/Pages/Home.aspx)

<http://www.bphc.org/Pages/Home.aspx>

[Boston's Environment Department](http://www.cityofboston.gov/environment/)

<http://www.cityofboston.gov/environment/>

[City of Cambridge](http://www.ci.cambridge.ma.us/)

<http://www.ci.cambridge.ma.us/>

[City of Providence](http://www.providenceri.com/)

<http://www.providenceri.com/>

[City of Medford](http://www.medford.org/Pages/index)

<http://www.medford.org/Pages/index>

[City of Medford Environment and Energy](http://www.medford.org/pages/medfordma_energy/index)

http://www.medford.org/pages/medfordma_energy/index

Local Organizations

[A Better City Transportation Management Association](http://www.abctma.com/about/index.htm)

<http://www.abctma.com/about/index.htm>

[Boston About Results](http://www.cityofboston.gov/bar)

<http://www.cityofboston.gov/bar>

[Grow Boston Greener](http://www.growbostongreener.org/gbg/)

<http://www.growbostongreener.org/gbg/>

Plans

[A Climate of Progress: City of Boston Climate Action Plan Update \(2011\)](http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf)

http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf

[Boston's Open Space Plan 2008 – 2014 \(2008\)](http://www.cityofboston.gov/parks/openspace0814.asp)

<http://www.cityofboston.gov/parks/openspace0814.asp>

[Boston's Sustainability Policy Initiatives \(2009\)](http://www.epa.gov/greenpower/documents/events/15oct09_glickel.pdf)

www.epa.gov/greenpower/documents/events/15oct09_glickel.pdf

[Leading the Way III: A Report on Boston's Housing Strategy for 2009 – 2012 Plan Summary \(2009\)](http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf)

http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf

[Beyond Shelter: Boston's Strategy to Reduce Homelessness \(2010\)](http://www.cityofboston.gov/Images_Documents/Beyond%20Shelter%20-%20Boston's%20Strategy%20to%20Reduce%20Homelessness%20June%202010_tcm3-17659.pdf)

http://www.cityofboston.gov/Images_Documents/Beyond%20Shelter%20-%20Boston's%20Strategy%20to%20Reduce%20Homelessness%20June%202010_tcm3-17659.pdf

[Sparkling Boston's Climate Revolution \(2010\)](http://www.cityofboston.gov/Images_Documents/BCA_full_rprt_r5_tcm3-19558.pdf)

http://www.cityofboston.gov/Images_Documents/BCA_full_rprt_r5_tcm3-19558.pdf

[City of Boston Hazard Mitigation Plan Update \(In Progress\)](http://www.cityofboston.gov/environment/mitigationplan.asp)

<http://www.cityofboston.gov/environment/mitigationplan.asp>

Milwaukee, Wisconsin

Municipal Resources

City of Milwaukee Home Page

<http://city.milwaukee.gov/home>

Milwaukee Office of Environmental Sustainability

<http://city.milwaukee.gov/sustainability>

Milwaukee Department of Neighborhood Services

<http://city.milwaukee.gov/DNS>

Milwaukee Water Works

<http://city.milwaukee.gov/water>

Milwaukee Metropolitan Sewerage District

<http://v3.mmsd.com/>

Milwaukee Department of City Development

<http://city.milwaukee.gov/DCD>

Redevelopment Authority of the City of Milwaukee

<http://www.mkedcd.org/racm/>

Milwaukee Health Department

<http://city.milwaukee.gov/Health>

Sixteenth Street Community Health Center

<http://sschc.org/>

Wisconsin Department of Natural Resources

<http://dnr.wi.gov/>

Brownfields Showcase Community Fact Sheet

<http://nepis.epa.gov/EPA/html/DLwait.htm?url=/Exe/ZyPDF.cgi?Dockey=P100AIPP.PDF>

Environmental Justice Pilot; Showcase Communities Pilot Project

<http://www.epa.gov/compliance/ej/grants/ej-showcase.html>

Environmental Justice Cooperative Agreements Fact Sheet

<http://www.epa.gov/compliance/ej/resources/publications/factsheets/fact-sheet-ej-sejca-grants-2009.pdf>

EPA Response to Public Comments on Plan EJ 2014 Strategy and Implementation Plans

<http://www.epa.gov/compliance/ej/resources/policy/plan-ej-2014/plan-ej-2011-comments-responses.pdf>

“Lead, Get the Facts” Website

<http://www.epa.gov/lead/index.html>

“Using Pesticides Safely” Website

<http://www.epa.gov/pesticides/health/safely.htm>

Local Organizations

Milwaukee Local Initiatives Support Corporation

<http://www.lisc.org/milwaukee/>

Wisconsin Regional Training Partnership

<http://www.wrtip.org/>

Transition Milwaukee

<http://transitionmilwaukee.org/>

Center for Resilient Cities

http://www.resilientcities.org/Resilient_Cities/PROFILE.html

University of Wisconsin–Milwaukee

<http://www4.uwm.edu/>

Midwest Environmental Advocates

<http://midwestadvocates.org/>

Milwaukee Estuary Area of Concern

<http://www.epa.gov/greatlakes/aoc/milwaukee/index.html>

Sweet Water Trust

<http://www.sweetwatertrust.org/>

Focus on Energy

<http://www.focusonenergy.com/>

Plans

Milwaukee Sustainability Plan (In Progress)

<http://city.milwaukee.gov/sustainability/SustainabilityPlanGreenTeam.htm>

Milwaukee Table of Steps in the Sustainability Planning Process (In Progress)

<http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf>

Milwaukee Green Team's Report to Mayor Tom Barrett (2005)

http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf

Milwaukee Public Schools Comprehensive Literacy Plan (2010)

http://www.milwaukee.k12.wi.us/portal/server.pt/comm/programs___resources/310/comprehensive_literacy_plan/43262

Ogden, Iowa

Municipal Resources

City of Ogden Home Page

<http://www.ogdeniowa.net/>

Ogden Parks and Trails

<http://www.ogdeniowa.net/parks.html>

Ogden Community Center

<http://www.ogdeniowa.net/lgcc.html>

Iowa Department of Natural Resources

<http://www.iowadnr.gov/>

Local Organizations

Ogden Downtown Revitalization Planning Portal

<http://www.localsynergy.net/ogden/>

Iowa's Community Vitality Center

<http://www.cvcia.org>

Ogden Reporter

<http://www.zwire.com/site/news.cfm?brd=1842>

Boones Future Economic Development

http://boonegov.com/economic_dev.html

Plans

Iowa Brownfields Redevelopment Program

<http://www.iowadnr.gov/InsideDNR/RegulatoryLand/ContaminatedSites/Brownfields>

Ogden Downtown Market Assessment

<http://s104245.gridserver.com/ogden/>

12 Local Synergy Strategies for Revitalizing Main Street

http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf

Spokane, Washington

Municipal Resources

City of Spokane Home Page

<http://www.spokanecity.org/>

City of Spokane Environmental Programs

www.greenspokane.org

Spokane City Council

<http://www.spokanecity.org/government/citycouncil/>

Spokane Community Development

<http://www.spokanecitycd.org/>

Spokane Community Development Board

<http://www.spokanecitycd.org/cdboard.htm>

Spokane Planning and Developing Group

<http://www.developingspokane.org/>

Spokane Building Services

<http://www.buildingspokane.org/>

Spokane Historic Preservation Office

<http://www.historicspokane.org/>

Spokane Parks and Recreation

<http://www.spokaneparks.org/>

Spokane Community, Housing and Human Services

<http://www.spokanechhs.org/>

Spokane Regional Health District

<http://www.srhd.org/>

City of Spokane Valley

<http://www.spokanevalley.org/>

City of Liberty Lake

<http://www.libertylakewa.gov/>

Washington State Department of Ecology

<http://www.ecy.wa.gov/>

“Tools and Key Resources for Sustainable Communities” Website

<http://www.epa.gov/smartgrowth/partnership/tools.html>

Local Organizations

Spokane Tribe of Indians

<http://www.spokanetribe.com/>

Spokane Tribal College

<http://www.spokanetribalcollege.org/>

Impact Capital

<http://www.impactcapital.org/>

Spokane Neighborhood Action Program (SNAP)

<http://www.snapwa.org/>

Spokane Home Builders Association

<http://www.shba.com/>

Washington State University Spokane

<http://spokane.wsu.edu/>

Eastern Washington University

<http://www.ewu.edu/>

Community Colleges of Spokane

<http://www.ccs.spokane.edu/>

Association of Spokane Realtors

<http://www.spokanerealtor.com/>

Plans

Spokane Sustainability Action Plan (2009)

http://www.greenspokane.org/wp-content/uploads/2010/08/Sustainability_Action_PlanB.pdf

Spokane Water Stewardship Strategic Plan (2006)

<http://www.greenspokane.org/wp-content/uploads/2011/11/Spokane-Water-Stewardship-Strategic-Plan-4-12-06.pdf>

Consolidated Community Development and Housing Plan (2010)

<http://www.spokanecitycd.org/housing/2010comp1.pdf>

Spokane Regional 10-Year Plan to End Homelessness 2005 – 2015 (2008)

<http://www.spokanecounty.org/data/housingcommunitydevelopment/The%20Road%20Home.pdf>

City of Spokane's Community Development Program Citizen Participation Plan (2012)

<http://www.spokanecitycd.org/citizen/cpp.htm>

Spokane Tribe of Indians Sustainable Community Master Plan (2012)

<http://www.spokanetribe.com/hcc>

Woodbine, Iowa

Municipal Resources

City of Woodbine Home Page

<http://www.woodbineia.org/>

Woodbine Green Initiatives

<http://www.woodbineia.org/green-initiatives>

Woodbine Economic Development

<http://www.woodbineia.org/business>

Woodbine Parks and Recreation

<http://www.woodbineia.org/city-of-woodbine/parks-recreation>

Woodbine Council and Boards

<http://www.woodbineia.org/city-of-woodbine/council-boards>

Woodbine Municipal Lighting and Power

<http://www.brightenergysolutions.com/municipalities/?category=home&state=ia&municipality=12>

Harrison County Landfill

<http://www.harrisoncountyparks.org/recycling.html>

Iowa Department of Agriculture

<http://www.iowaagriculture.gov>

Local Organizations

Iowa Sustainability Index Roundtable

<http://www.design.iastate.edu/TownCraft/roundtable033010.php>

AmeriCorps

<http://www.americorps.gov/>

Rainscaping Iowa

<http://www.rainscapingiowa.org>

Iowa Storm Water

<http://www.iowastormwater.org>

Iowa Living Roadway

<http://www.iowalivingroadway.com>

Plans

Sustainable Community Master Plan (2010)

http://www.simonsonassoc.com/woodbine/Woodbine_Final_Report.pdf

Community Plan To Reduce Poverty 2007-2008 (2007)

<http://www.simonsonassoc.com/woodbine/docs/WoodbineCommunityPlanFinal1.pdf>

Iowa's Living Roadways, Community Visioning Program (2008)

<http://www.communityvisioning.org/scripts/PDF/FINAL08Report.pdf>

Woodbine Energy Savings Progress and Case Studies (2011)

<http://www.iowaeconomicdevelopment.com/community/downloads/green/EnergyGroupCaseStudy.pdf>

Wyandanch, New York

Municipal Resources

Wyandanch Rising Community Revitalization Initiative

<http://sustainableli.org/what-we-do/community-revitalization/wyandanch/>

Suffolk County

<http://www.suffolkcountyny.gov/>

Economic Opportunity Council

<http://www.eoc-suffolk.com/>

Town of Babylon

<http://www.townofbabylon.com/>

Babylon Department of Community Development

<http://www.townofbabylon.com/departments/details.cfm?did=17>

Babylon Department of Planning and Development

<http://www.townofbabylon.com/departments/details.cfm?did=12>

Babylon Department of Environmental Control

<http://www.townofbabylon.com/departments/details.cfm?did=9>

Babylon Department of Parks, Recreation and Cultural Affairs

<http://www.townofbabylon.com/departments/details.cfm?did=7>

Babylon Department of Human Services

<http://www.townofbabylon.com/departments/details.cfm?did=10>

Wyandanch Public Library

<http://wyan.suffolk.lib.ny.us/index.htm>

[Martin Luther King Community Health Center](#)

<http://goodsamaritan.chsli.org/index.php/martin-luther-king-jr-community-health-center>

[“21 Practical Ways to Help the Environment” Website](#)

<http://www.practicalenvironmentalist.com/21-practical-ways-to-help-the-environment>

Local Organizations

[Wyandanch Community Development Corporation](#)

<http://www.wyandanchcdc.org/index.html>

[Greater Long Island Clean Cities Coalition](#)

<http://www.gliccc.org/>

[Sprawl Watch Clearinghouse](#)

<http://www.sprawlwatch.org/>

[Sustainable Long Island Resource Center](#)

<http://sustainableli.org/get-involved/resource-center/>

[Transit Solutions for Long Island](#)

<http://www.transitsolutions.org/>

[Wyandanch Homes and Property Development Corporation](#)

<http://www.whpdc.com/>

[Wyandanch Community Development Corporation](#)

<http://www.wyandanchcdc.org/>

[Island Harvest Hunger Relief](#)

<http://www.islandharvest.org/intro.aspx>

[Newsday](#)

<http://www.newsday.com/>

[ERASE Racism](#)

<http://www.eraseracismny.org/index.php>

Plans

[Wyandanch Downtown Revitalization Plan \(2009\)](#)

<http://www.townofbabylon.com/DocumentCenter/View/47>

[The Wyandanch Hamlet Plan \(2004\)](#)

http://sustainableli.org/uploaded_files/pages/attach/f_f54b6447b8f081386817c8a48d298a46Wyandanch%20Vision%20Plan.pdf

[Wyandanch Intermodal Transit Facility Environmental Assessment \(2010\)](#)

<http://www.townofbabylon.com/DocumentCenter/View/18>

[Wyandanch Sustainable Urban Site Design and Low-Impact Development \(2011\)](#)

<http://www.tstc.org/issues/tod/conference/Wyandanch.pdf>

[Brownfields Grant Fact Sheet \(2009\)](#)

http://www.epa.gov/brownfields/success/babylon_ny.pdf

Appendix II: POLICIES, APPROACHES AND SCIENTIFIC TOOLS



Appendix II

Policies, Approaches and Scientific Tools

LAND USE: Policies, Approaches and Scientific Tools				
Sustainability Priority	Tool		Description	Community
Land-Use Planning		Community Viz	Three-dimensional land use and visualization tool used to evaluate land-use changes. http://placeways.com/communityviz/index.php	Asheville, NC
		Future Urban-Regional Environment Simulation (FUTURES) Model	A model looking at projected land development up to 2040 to help shape land-use decisions. http://www.renci.org/news/releases/researchers-forecast-150-percent-rise-in-developed-land	Asheville, NC
		Comparative Risk Assessment Framework and Tools (CRAFT)	CRAFT is a planning framework that is a user-friendly, Web-based support system to help natural resource managers address uncertainties inherent in land management decisions. CRAFT offers a structured, simplified approach to determine objectives and calculates risks and trade-offs associated with different management scenarios. http://www.forestthreats.org/research/tools/craft/	Asheville, NC
		ArchHydro	To expand the Metropolitan Sewer District (MSD) boundary to encompass a larger geographic area, Buncombe County land-use planners created drainage sub-basins using the ArchHydro tool in ArcGIS based on the most recent LIDAR data. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
		Land Development Plan Guidelines for North Carolina Local Governments	Co-developed with the Center of Urban and Regional Studies at University of North Carolina, Chapel Hill, these guidelines help define the components of a local land-use plan, emphasizing the protection of local and regional water quality and providing a broad community and regional context for planning issues. http://www.nccommerce.com/Portals/2/Documents/CommunityDevelopment/CommunityPlanning/LandDevPlanGuidelines.pdf	Asheville, NC
		Design Review Techniques	Both direct and indirect techniques are used to reduce land-use conflicts and concerns related to design. Examples of direct design review techniques include review by the Historic Resources Commission and Downtown Commission to ascertain whether a project is compatible with the neighborhood in which it is located. Examples of indirect design review techniques include conditional use zoning and permitting as well as the provision of building size incentives in exchange for improved site and building design within zoning overlay districts. The River District Review Committee has implemented a mandatory review/voluntary compliance design review program. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
		Mountain Landscapes Initiative Toolbox	The Mountain Landscapes Initiative Toolbox is a list of tools for planning and building in the mountains, including best practices. Chapters in the Toolbox cover everything from the coordination of economic development with long-range planning to best practices for clearing home sites and for grading roads on a slope. It addresses farmland preservation, affordable housing and green building techniques, as well as providing state-of-the-art planning resources for elected officials, local government staffers and citizen boards. http://www.regiona.org/wp-content/uploads/2011/06/Toolbox-Complete.pdf	Asheville, NC
		Transit Oriented Development (TOD)	TOD is a strategy to locate services and residential land use around a transit stop. The transit stop is located centrally with a mix of land uses within a comfortable walking distance. The inclusion of residential and commercial land uses creates an origin and destination location that is strongly coordinated with the transit system. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_1.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Land-Use Planning	 Land Cover Maps	Data from the 2001 National Landcover Database was used to create interactive Google Earth maps showing forest spatial patterns, forest density and mixtures of land use. The maps are visualization tools that can be used to analyze and assess land use change and forest fragmentation. http://www.forestthreats.org/research/tools/landcover-maps/	Asheville, NC
	 Future Land Use and Transportation Plan Map	Transit requires moderately high residential densities to operate efficiently. Very few areas in Asheville have this level of density, although the proposed Smart Growth development pattern has the potential to resolve this to some extent along the city's major transportation corridors. Maps illustrating future development patterns can assist land-use planning efforts and decision making. http://www.ashevilenc.gov/portals/0/city-documents/Planning/land_use_section_2.pdf	Asheville, NC
	 NC OneMap	NC OneMap is a public service providing comprehensive discovery and access to North Carolina's geospatial data resources. NC OneMap, the State's clearinghouse for geospatial information, relies on data sharing and partnerships. http://www.nconemap.com/	Asheville, NC
	 Living Maps: From Cosmos to Community	To develop regional and local strategies for sustainable development, economic prosperity and quality growth, the "Living Maps" program explored three questions with audiences: How can we make transportation between where people live and work more sustainable and affordable? How do we balance land-use demands among agriculture, development, recreation and environment? What global and regional issues will affect local communities over the next 20 years? http://worldviews.net/living-maps/	Asheville, NC
	 Buncombe County GIS datasets	GIS data sets include parcels, street centerlines, surface water, elevations (contours) and aerial imagery. http://www.buncombecounty.org/Governing/Depts/GIS/Default.aspx	Asheville, NC
	 Voluntary Agriculture Districts	A Voluntary Agriculture District ordinance has been adopted by 80 counties. This means that more than three-quarters of the counties in North Carolina are actively protecting farm and forest land for future generations. Other tools that often follow are the Enhanced Voluntary Agriculture District (EVAD), farmland protection plans, present use value taxation acceptance and easements. http://www.ncadfp.org/documents/EVADBrochure.pdf	Asheville, NC
	 Priority Corridor Planning	These studies provide the foundation for detailed design efforts by analyzing the placement of the planned greenway by conducting field work, evaluating terrain and constraints, identifying the types of landowners present in the corridor, and defining preliminary cost estimates of construction. The Buncombe County Greenways and Trails Master Plan identifies five new Priority Corridors that should undergo such a study. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
	 Sewer Service Extension Policy	The Buncombe County Land Use Plan recommends expanding the Metropolitan Sewer District (MSD) and adopting sewer service extension policies that support the direction and pattern of development recommended in the land use plan. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
	 New Urbanism	The city should continue to follow the tenants of New Urbanism in its development plans, promoting pedestrian-friendly neighborhoods and business districts. This includes mixed-use developments that allow people to live near where they shop, play and work. Additionally, city officials should create a comprehensive plan that either places large cultural amenities in close proximity or creates a method for tourists to easily move from one attraction to the next without relying on automobiles. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI

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Sustainability Priority	Tool	Description	Community
Land-Use Planning	 Bel-Red Subarea Plan and Land Use Code Incentive System	The recommended Bel-Red Subarea Plan and Land Use Code support an incentive system where developments would provide or pay towards parks, open space, affordable housing, and other public amenities in exchange for increased heights and densities. After developing an initial draft incentive system, the City has asked the Urban Land Institute (ULI) Seattle District to conduct an independent review of the incentive system and specifically the incentive ratios and densities needed for the incentive system to work. The draft incentive system is included in the draft Bel-Red Land Use Code - Part 20.25D. http://www.bellevuewa.gov/bel-red_intro.htm	Spokane, WA
	 Preserve All Future Uses (PAFU)	PAFU means that most future land use options will be maintained by keeping as much land in original or near-original conditions for as long as possible. http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Spokane, WA
	 Performance-Based Management	Performance-based management was adopted by the Tribal Council through a 2008 Integrated Resource Management Plan (IRMP) Final Environmental Impact Statement. This alternative seeks to promote sustainable practices within the overall goal of preserving the land for cultural and natural resources. The IRMP future land use map designated “restricted” and “non-restricted” areas for a housing “short list” and commercial development. http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Spokane, WA
	 Getting to Smart Growth: 100 Policies for Implementation Report	The report presents specific practices that communities can use to implement smart growth, centered around 10 smart growth principles, including a series of “practice tips” that either illustrate the principles’ application in a community, or identify additional resources to aid communities in implementation. http://www.smartgrowth.org/pdf/gettosg.pdf	Wyandanch, NY
Zoning and Regulations	 Greenway- and Trail-Specific Design Standards	It is recommended that Buncombe County, along with the cities and towns, partner to develop a set of greenway- and trail-specific design standards. These standards would be adopted by each government agency to help guide how greenways and trails are constructed and ensure consistency in basic design parameters across jurisdictions. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
	 Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)	It is recommended that Buncombe County, along with the cities and towns, partner to develop a set of greenway- and trail-specific design standards that meet the ADAAG. http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/adaag	Asheville, NC
	 Unified Development Ordinance (UDO)	Organized as a traditional zoning code, the UDO is a land-use regulatory tool that specifies permitted uses and dimensional requirements for land development in the city's various zoning districts. http://www.ashevillenc.gov/departments/developmentservices/developmentordinances.aspx	Asheville, NC
	 Buncombe County Zoning Ordinance	The ordinance expands zoning throughout the county to implement sound comprehensive planning policies that will help ensure orderly growth and development while also protecting and preserving rural communities and agricultural land, as well as Buncombe County's scenic beauty, natural resources, parks and open spaces. The zoning districts and regulations are intended to guide development within the Metropolitan Sewerage District (MSD) service area by concentrating commercial, industrial and multifamily developments along major corridors, thus allowing single family residential communities to maintain their residential neighborhood qualities. In areas outside the MSD boundaries, properties have been designated Open Use (OU), which regulates only those uses that could have significant impacts on communities and surrounding properties, including, but not limited to, chip mills, asphalt plants, amusement parks and hazardous waste facilities. The zoning designation for an affected property gives reasonable consideration to the character of the community and suitability for particular uses. http://www.buncombecounty.org/common/planning/zoning/zoning_ordinance.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Zoning and Regulations	 Annexation Plan Map	Annexation is a development tool that has been used in several ways. First, several major expansions were done by legislative acts as recently as 1979. Another significant method of annexation has been “petitioned” annexation. Areas expected to sustain urban growth in the planning period are shown on the Annexation Plan Map. This map was adopted in 2002 and indicates acres that have the potential for future annexation. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_1.pdf	Asheville, NC
	 Extraterritorial Jurisdiction (ETJ) and Joint Planning Area Map	Cities of 25,000 or more in population may exercise ETJ powers up to 3 miles beyond their corporate limits. There are several reasons for permitting cities to extend land-use planning jurisdiction outside of their corporate limits. Simply stated, these surrounding areas are the future city in a growing urban environment. As they develop, the application of city development regulations ensure that the urban development is compatible with the existing city and that adequate infrastructure is put in place as these areas develop. Maps are useful to identify areas for which ETJ planning should be concentrated. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_1.pdf	Asheville, NC
	 Development Standards for Central Business District Ordinance	Adopted in 2010, the Development Standards for Central Business District Ordinance details specifications for downtown buildings. The ordinance is consistent with Asheville's City Development Plan 2025 and Smart Growth policies. In addition, it implements a portion of the Asheville Downtown Master Plan, provides a form-code framework for designing new structures and aligns future development potential with community goals. http://www.ashevillenc.gov/portals/0/city-documents/Planning/2010_CBD_Ordinance.pdf	Asheville, NC
	 Form-Based Code Mechanisms	Asheville employs form-based code mechanisms to provide the fine level of building massing and height control needed to ensure design compatibility with the downtown's celebrated urban form and architecture. Favorite historic buildings are used as models to set height and massing controls. http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/DMP%20August%202010.pdf	Asheville, NC
	 Self-Financing Bonds	Self-financing bonds is a planning and fiscal management tool that allows communities to finance infrastructure and land assembly costs using projected increases in property tax receipts. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Land Value Taxation Approach	Land value taxation is a property tax appraisal and tax allocation tool that establishes a financial incentive for development or redevelopment of vacant or underutilized property. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Land Use Incentive Policy	A policy that implements goals of the Strategic Plan and 2025 Comprehensive Plan in providing incentives for transforming development projects that support public benefit elements, including green buildings/energy, affordable housing, workforce housing, and mixed use and transit orientation (including Brownfields). http://www.ashevillenc.gov/Portals/0/city-documents/planning/LandUseIncentiveResolution.pdf	Asheville, NC
	 Window and Door Architectural Style	Window and door appearance, size and placement should be in keeping with that of the most visually dominant Character Building in the immediate area of the proposed building. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Awnings	The use of awnings is encouraged. The material should honor the history of the old cotton mill. Colors should be in keeping with the muted nature of the use of red brick. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Zoning and Regulations	 Internal Site Illumination	The use of indirect techniques such as up-lighting is encouraged. The River Design Review Committee specified preferred lighting fixtures, housings and lamps. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Signage	Sign numbers and size are regulated by ordinance. The preservation of original signs is encouraged. New signs should express the nature of the business in the building and complement the character of the building. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Sidewalk Style	Sidewalk style should add to a sense of unity within the River District. Originality within the context of the uniform standard is encouraged. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Parking Facility Style	Originality is encouraged. The number of parking spaces should be minimized, and no parking should directly abut the street. Standards are recommended so that parking areas are pleasant and feel inviting. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Underground Utilities	All utilities should be placed underground. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Street Lighting	All street lighting should be of a uniform character and complement the character of the Character Buildings. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Street Furniture	The use of public furniture (e.g., benches, trash receptacles, drinking fountains) is encouraged. Originality is encouraged, but an overall sense of visual unity is desired. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Sculptural Art	The use of sculpture and fountains is encouraged. Originality and the use of materials and goods produced in the River Front area are encouraged. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Kiosks	The placement of kiosks is highly encouraged. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Water Craft	Water craft in the French Broad River should have a direct visual relationship to water craft used in the French Broad River in times past. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
	 Slope Stabilization	Standards should be aimed at minimizing the impact of new development by preserving trees and other vegetation that are critical to the protection of views and the stabilization of steep slopes, and reducing the amount of stormwater runoff— and the effects of it—from development. This may be achieved by limiting the amount of disturbed and impervious areas on each site and by increasing the minimum lot size on very steep slopes. http://www.buncombcounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Zoning and Regulations	 Well Location Regulations	Buncombe County should consider adjusting well location regulations to minimize well density in areas where the volume of groundwater is low, thereby encouraging commercial and some residential development to be located where municipal water is available. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
	 Septic Requirements	Buncombe County should consider revising septic requirements that allow developers to avoid the more stringent Department of Environment and Natural Resources (DENR) review for permits for developments that generate wastewater flows in excess of 3,000 GPD. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
	 System Vision™	Asheville city and regional governments should maximize use of externally monitored construction standards such as System Vision™. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
	 Review Codes and Ordinances	The city should conduct a comprehensive review of Milwaukee's Code and Ordinances to identify where barriers exist or prohibit the implementation of green principles and actions. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
Building Density	 Smart Growth Policies	Asheville's future development pattern should be based upon the Smart Growth policies adopted by the City Council in 2000. These policies call for a more efficient use of land and other resources to provide opportunities for a larger proportion of the region's population. http://www.ashevilleenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
	 Transfer of Development Rights (TDR)	The general concept of TDR is to protect undeveloped land and foster denser development in the city. This is a useful tool for achieving great regional land conservation and for promoting infill development. The TDR approach allows the creation of receiving zones and donor zones whereby development rights (density) could be transferred from one zone to another, allowing an increased density in receiving zone areas where it is appropriate and allowing preservation of wetlands, critically located open space or farmland in the donor zone. http://www.ashevilleenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Urban Villages	Concentrated pockets of more dense urban development or "urban villages" present an opportunity to provide a better transportation system for the community. These concentrated urban developments and select locations are easier to serve with public transit, and offer the opportunity for people to park and walk to several destinations. http://www.ashevilleenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
	 Hub-Directed Development	Buncombe County should direct development to follow the recommended pattern. Hubs are existing and emerging commercial centers where development should be concentrated. However, over time, such development should include a mixture of uses. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
	 Residential Development Density	Buncombe County High Density residential development should be located within a hub or mixed with commercial uses within a hub. It includes multifamily (condominiums, apartments), attached single family (townhouses), and small lot detached single family (patio homes, zero lot line lots) dwellings. Buncombe County Medium Density residential development should be built surrounding hubs but lying further away than High Density. It includes detached single family dwellings on medium sized lots. Buncombe County Low Density residential development should be built surrounding hubs but lying further away than High or Medium Density. It includes detached single family dwellings on large lots, and building height may average two stories. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
	 Cottage Development Standards	Asheville instituted a voluntary by-right alternative that allows for increased density in exchange for smaller building sizes as well as shared parking and open space. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC

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Sustainability Priority	Tool		Description	Community
Building Density		Mixed-Use Development	The sustainable planning strategy of mixed-use development is another sustainable land-use strategy to develop new, reuse and/or revitalize older buildings in developed areas that are inclusive of residential, employment and service opportunities. http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Spokane, WA
		Mixed-Use Buildings	Encourage development of mixed-use buildings, which include both a commercial (i.e., retail and office) and residential component, allowing more people to live downtown, improving shopping and amenities, and reducing the need for employees and business owners to commute to work. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY
Green Space		Green Toolbox	The One North Carolina Naturally Green Toolbox is a guide to provide North Carolina's counties, towns and cities with tools for nature-friendly growth. http://www.ncwildlife.org/Conserving/Programs/GreenGrowthToolbox.aspx	Asheville, NC
		Working Lands Toolbox	The One North Carolina Naturally Resources Working Lands Toolbox provides resources for statewide and local approaches to counter farm and forest loss. http://www.onencnaturally.org/pages/WL_Toolbox.html	Asheville, NC
		Green Infrastructure	Green infrastructure is an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations. The green infrastructure approach ties in with Smart Growth and differs from conventional conservation approaches in that it attempts to work within the framework of land development, growth management and infrastructure planning rather than in isolation or in opposition to development. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
		Greenways—Connect Buncombe	Buncombe County Greenways are open pathways safely connecting local parks, schools and communities. A set of 10 major action steps emerged for implementation, which are intended to help guide development of the proposed greenways network and create a supportive program and policy environment for greenways and trails throughout Buncombe County, for example, developing standards and guidelines for greenways, amend ordinances to support greenways, and conduct detailed plans for priority corridors. http://www.buncombecounty.org/Governing/Depts/Parks/Greenways.aspx	Asheville, NC
		City Greenways	Greenways are multi-use paths used for recreation and alternative transportation that typically occupy stream and river corridors. Greenways connect people to the places they live, work and play as well as preserve open space to promote air and water quality. Asheville currently offers 4.3 miles of developed greenways and is working towards its vision of a 15-mile system composed of 12 interconnected corridors. http://ashevillenc.gov/Departments/ParksRecreation/ParksOverview/Greenways.aspx	Asheville, NC
		Asheville Riverfront Open Space Guidelines	The Design Guidelines create a vision for long-term aesthetic development of open space in the riparian corridor. It was created during a series of charrettes in 1990 and is part of the zoning code for the City of Asheville. These guidelines have guided the development of all the parks and greenways built along the river corridor since 1990. Design Guidelines are given for signage, landscaping, art in the public space, trails, fishing piers, structures and logos. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
		Open Space	All site plans should incorporate the concept of the land immediately adjacent to the river being open, public festival space. Throughout the district, open spaces between buildings should be put to use as parks, recreation space and passive space available for relaxation. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Green Space	 Linking Lands and Communities	<p>The Land-of-Sky Regional Council (LOSRC) worked with leaders from across a four-county region (Madison, Buncombe, Henderson and Transylvania) to develop a strategic plan for conservation and development. The Linking Lands project identified a physical network comprised of the region's most valuable natural systems, including lands that provide water resources, agricultural lands (farms and forests), wildlife habitat and large functioning ecosystems, recreation lands and cultural resources. As a result, the Land-of-Sky Regional Council developed a Regional Conservation and Development Network that is serving as a resource for local governments, land trusts, landowners and developers. The Land-of-Sky Regional Council is working with local and regional interests to design a regional framework for conservation and development (green infrastructure) that will strategically guide future growth in the region while respecting the integrity of the region's ecosystems. This conservation network will identify valuable ecological systems and resources, important working lands, and areas most suited for future growth and development, thus helping link urban and rural communities and protect the area's rich natural and cultural heritage.</p> <p>http://linkinglands.org/</p> <p>http://nemas.unca.edu/projects/linking-lands-and-communities</p>	Asheville, NC
	 Land Trusts	<p>A land trust is a private, nonprofit organization whose primary purpose is the protection of open space. The land trust typically will focus its efforts in a specific community, state or region to preserve open space for future generations. Land trusts relevant to Asheville include the Conservation Trust for North Carolina, Southern Appalachian Highlands Conservancy and Trust for Public Land.</p> <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
	 Governor's Million Acre Initiative	<p>The Governor's Million Acre Initiative is a collaborative, state-led endeavor to accelerate the rate that land is protected in North Carolina and to permanently preserve an additional 1 million acres of land by the end of 2009. The state is accomplishing these goals by fostering partnerships among private and public land protection partners, promoting regional open space planning and providing information about the importance of open space protection.</p> <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
	 Land Conservancies	<p>Land conservancies can help play a role via a formal alliance with the County that identifies appropriate roles for the County and conservancies, is tailored to the context of each conservancy, delineates types of land that are for protection versus lands for public use, creates opportunities for agricultural preservation and agricultural tourism, and outlines a strategy for land banking for future greenway corridors.</p> <p>http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx</p>	Asheville, NC
	 Development Requirements	<p>One strategy to implement the policy changes recommended throughout the Buncombe County Greenways and Trails Master Plan is the requirement that land be set aside and in some cases constructed for greenways, as part of land development by private developers.</p> <p>http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx</p>	Asheville, NC
	 Fee-in-Lieu	<p>Buncombe County should establish a fee-in-lieu option to the provision of open space and construction of greenways. Such an option allows developers to pay a fee in lieu of providing open space or other identified required amenities within a development. The fees can be used for land acquisition for, construction of, and/or maintenance of greenways, as well as other activities related to the identified purpose of the open space.</p> <p>http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx</p>	Asheville, NC
	 Open Space Regulations	<p>Buncombe County should study and evaluate options for sharing the burden of providing open space and recreational areas with private developers—for example, consider adding open space regulations to the County's Subdivision Ordinance. In addition to setting aside a percentage of a site for open space purposes, developers also should be required to make accessible a portion of the open space and improve it for use by the community in which it lies.</p> <p>http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf</p>	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Green Space	 Boston Natural Areas Network (BNAN)	The BNAN works to preserve, expand and improve urban open space through community organization, acquisition, ownership, programming, development and management of certain kinds of urban land: community gardens, urban wilds and greenways. http://www.bostonnatural.org/index.htm	Boston, MA
	 Boerner Botanical Gardens	The Boerner Botanical Gardens, an internationally renowned horticultural showplace in the Milwaukee County Parks, offers gardeners, plant lovers and students the opportunity to take in the colors and scents of a variety of collections. http://county.milwaukee.gov/BoernerBotanicalGard10113.htm	Milwaukee, WI
	 Harrison County Conservation Board (HCCB)	The HCCB was authorized by the people of the county at the general election in 1966 for the purpose of purchasing and developing land for parks, hunting and fishing access, and other recreational use within the county. http://www.harrisoncountyparks.org/index.html	Woodbine, IA
Parks and Recreational Areas	 Parks, Greenways and Facilities Inventory	In planning for parks, recreation, culture and greenways, Asheville prepared an inventory of parks, greenways and facilities using existing mapping, staff interviews and onsite visits to verify amenities and assess the condition of the facilities and surrounding areas. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
	 Buncombe County Parks and Recreation Services	Buncombe County Parks and Recreation Services maintain the BC Sports Park, Charles Owen Park, Hominy Valley and Lake Julian as recreational resources for Buncombe County residents and tourists. http://www.buncombecounty.org/Governing/Depts/Parks/Facilities/parks/	Asheville, NC
	 City Parks	The park system of the City of Asheville reflects its wondrous setting from the surrounding mountains to its rivers. The parks also embody the indigenous Appalachian culture as well as its evolving cosmopolitan heritage that initiated with the arrival of the Vanderbilt family. The parks are predominantly nestled within various neighborhoods of the city and serve a variety of passive and active recreation needs. http://www.ashevilenc.gov/Departments/ParksRecreation/ParksOverview.aspx	Asheville, NC
	 City Parks and Recreation Planning Division	The Planning Division includes the planning, design, mapping, land acquisition, construction drawings, contracts, construction administration budgets and grants process. The current Capital Improvement project includes the Armory Site Plan, Festiva Resort Property, Walton Street Pool, Reed Creek Greenway, Livingston Street Center and MLK Playground. http://ashevilenc.gov/Departments/ParksRecreation/ParksOverview/ParksPlanningDevelopment.aspx	Asheville, NC
	 French Broad River-Pigeon River Trails	Land-of-Sky Regional Council partnered with the State Trails Program to develop a regional trail map for the French Broad/Pigeon River watershed. The map contains existing trails, open spaces and bicycle routes and proposed local and regional trails. ftp://www.landofskygis.org/Greenways/Regional%20Trails%20Map%20FBR-PR.pdf	Asheville, NC
	 French Broad River Paddle Trail	RiverLink is thrilled that it has received funding to develop an interactive online map of the French Broad River Paddle Trail. This map will assist paddlers in planning a trip along the 117 miles of the French Broad River, designating river access points, campsite locations and details, additional lodging opportunities, outfitters, shuttles and additional trail services and links. http://www.riverlink.org/	Asheville, NC
	 Greenways Resource Conservation Benefits	Greenways decrease fuel costs and the use of natural resources by providing non-motorized transportation options, such as walking and biking. http://www.railstotrails.org/resources/documents/resource_docs/tgc_fs_livable.pdf	Asheville, NC
	 Zeugner Center	The Zeugner Center features an indoor pool with locker rooms and showers, a large multi-purpose activity room with a kitchen area and a smaller activity/meeting room. http://www.buncombecounty.org/Governing/Depts/Parks/Facilities/Zeugner.aspx	Asheville, NC

LAND USE: Policies, Approaches and Scientific Tools

Sustainability Priority	Tool	Description	Community
Parks and Recreational Areas	 Outdoor County Pools	Buncombe County Parks and Recreation Services offers five outdoor pools located in all areas of Buncombe County. http://www.buncombecounty.org/Governing/Depts/Parks/Facilities/Pools/Default.aspx	Asheville, NC
	 CountyRiver Parks	Buncombe County Parks and Recreation Services has seven river parks located throughout Buncombe County. These facilities offer grills, picnic tables and river access. http://www.buncombecounty.org/Governing/Depts/Parks/Facilities/River/	Asheville, NC
	 Whitewater Course	As part of the riverfront revitalization, city and county officials should develop a whitewater course in the existing ravine on the west side of the river near Smith Bridge. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
	 County Soccer Fields	Buncombe County Parks, Greenways & Recreation has soccer fields located in the northern, southern and western portions of Buncombe County. http://www.buncombecounty.org/Governing/Depts/Parks/Facilities/Soccer/	Asheville, NC
	 County Playgrounds	Buncombe County Parks, Greenways & Recreation offers several playgrounds located throughout Buncombe County. http://www.buncombecounty.org/Governing/Depts/Parks/Activities_Youth.aspx	Asheville, NC
	 Kids and Parks Program	Buncombe County should support the Kids and Parks Program. http://www.kidsinparks.com/	Asheville, NC
	 Mayors' Cup Raft Race	City and county elected officials and staff battle it out annually on the French Broad River during the Mayors' Cup Raft Race, hosted by the Land-of-Sky Regional Council. The purpose of the race is to acknowledge the importance of the French Broad River as a cultural, economic, natural and recreational resource. http://www.landofsky.org/mayorscup.html	Asheville, NC
	 River Access Signage	As part of the riverfront revitalization, city and county officials should improve river access signage. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
	 Teen Activities	Buncombe County Parks, Greenways & Recreation offers a variety of teen activities. This includes soccer leagues and adult kickball. http://www.buncombecounty.org/Governing/Depts/Parks/Activities_Teen.aspx	Asheville, NC
	 Adult Activities	Buncombe County Parks, Greenways & Recreation offers a variety of adult activities. This includes: kickball, open swim, lap swim, fishing/boating, programs, walking, outdoor volleyball, picnicking, grills, the Sightseers (a day-trip program) and soccer leagues. http://www.buncombecounty.org/Governing/Depts/Parks/Activities_Adult.aspx	Asheville, NC
	 Sports Leagues	Buncombe County Parks, Greenways & Recreation is proud to be associated with three youth leagues in Buncombe County. These organizations are the Hominy Valley Youth League, North Buncombe Youth League and the Swannanoa Youth League. Buncombe County Parks, Greenways & Recreation offers various adult soccer leagues. http://www.buncombecounty.org/Governing/Depts/Parks/Activities_leagues.aspx	Asheville, NC
	 Special Olympics	The mission of Special Olympics is to provide year-round sport training and athletic competition in a variety of Olympics-type sports for children and adults with intellectual disabilities, giving them the opportunities to develop physical fitness; demonstrate courage; experience joy; and participate in the sharing of gifts, skills and friendship with their families, other Special Olympic athletes and the community. http://www.buncombecounty.org/Governing/Depts/Parks/SpecialOlympics.aspx	Asheville, NC

LAND USE: Policies, Approaches and Scientific Tools

Sustainability Priority	Tool	Description	Community
Parks and Recreational Areas	 City Recreation Program	Asheville Parks, Recreation and Cultural Arts is dedicated to providing quality leisure experiences for the community through a variety of recreational programs, services, parks and specialized facilities. By generating a wide range of opportunities for folks of all ages, interests and abilities to come together in pursuit of positive leisure outlets, recreation creates connections between people and their communities, and enhances an overall quality of life for Asheville residents and visitors. http://ashevillenc.gov/Departments/ParksRecreation/Recreation.aspx	Asheville, NC
	 Tree and Bench Donation Program	The Fund for Parks and Recreation, the City of Boston's not-for-profit parks endowment, accepts charitable donations to restore and improve Boston's renowned open spaces. People may donate new or existing park benches. Donations may be made to plant or care for trees. http://www.cityofboston.gov/parks/streettrees/memorial_tree.asp	Boston, MA
	 Emerald Necklace	Boston's Emerald Necklace consists of an 1,100-acre chain of nine parks linked by parkways and waterways. This linear system of parks and parkways was designed by Frederick Law Olmsted. The Emerald Necklace Conservancy has opened the Emerald Necklace Visitor and Volunteer Center in the Back Bay Fens. The Center is a hub for volunteers to come together for service projects as well as a training ground for Emerald Necklace Docents and Interpretive Guides. Also, it is an access point into the Emerald Necklace park system and acts as an information center on all park activities, offering walking and biking tours, guide maps, interactive learning activities and exhibits. http://www.emeraldnecklace.org/parks/gatehouse/	Boston, MA
	 Golf Courses	The City of Boston through the Boston Parks and Recreation Department maintains two golf courses for the enjoyment of city residents and non-residents alike: George Wright Golf Course and William J. Devine Golf Course. http://www.cityofboston.gov/golf/	Boston, MA
	 Boston Park Rangers	In 1982, The Boston Parks and Recreation Department Park Ranger Division was formed as a seasonal program; in 1988, the ranger program became a year-round presence in the park system. Today, the diverse responsibilities of the Boston Park Rangers include park security and safety, visitor services, resource management and interpretive programming. Rangers provide services in the nine Emerald Necklace parks, as well as Boston's historic burying grounds, neighborhood parks and playgrounds. http://www.cityofboston.gov/Parks/ParkRangers/	Boston, MA
	 Milwaukee County Parks	Milwaukee County Parks sustains the legacy of the county's world-class park system by managing and conserving natural, cultural and recreational resources for the benefit of the community. Resources include parks, community centers, golf courses, trails, natural areas, gardens and sports facilities. http://county.milwaukee.gov/Parks	Milwaukee, WI
	 The Central Iowa Trail Association (CITA) Program	CITA is a nonprofit corporation focused on design, construction and maintenance of natural trails in partnership with city, county, state and private landowners. CITA actively promotes the 7.2 mile mountain bike track at Seven Oaks Recreation facility. http://mountainbikedesmoines.com/	Ogden, IA
	 Seven Oaks Recreation	Seven Oaks Recreation is a year-round commercial recreation facility located just east of Ogden on the western side of Boone. The facility is a regional draw offering individual and group activities, including skiing, snowboarding, canoeing, river floats and camping. The lodge seats 200 and is a destination for weddings and other banquets. http://www.sevenoaksrec.com/	Ogden, IA
	 Don Williams Recreation Area	The Don Williams Recreation Area is located north of downtown Ogden. The park includes a 9-hole golf course, 150 electric campsites, 30 tent campsites, hiking trails, a lake and other recreational activities. http://www.co.boone.ia.us/index.aspx?page=296	Ogden, IA

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Sustainability Priority	Tool	Description	Community
Parks and Recreational Areas	 Spokane Park System	Nestled along the serene Spokane River and in all directions from its urban skyline lie more than 4,100 acres of protected Green Space. This is the City of Spokane's park system. The initial parks plan was designed by the legendary Olmsted Brothers, Landscape Architects of New York's Central Park fame, under the direction of the Spokane Park Board, whose members determined that Spokane be a model of modern park planning. The City of Spokane Parks and Recreation Department is responsible for the professional management and prudent caretaking of all park land and park facilities. http://spokaneparks.org/index.php/Parks/page/77/	Spokane, WA
	 City of Spokane Parks & Recreation Department Recreation Program	The City of Spokane Parks & Recreation Department's Recreation/Entertainment Division offers classes, special events, athletic leagues and activities for youth, teens, adults, seniors and persons with physical and mental disabilities. The recreational opportunities it offers include biking, hiking, swimming, snowshoeing, kayaking, arts and crafts, wine tours and much more. http://spokaneparks.org/index.php/Parks/page/94/	Spokane, WA
	 Community Development Parks Projects	Community Development Park Projects have contributed to the development and improvement of parks within their neighborhoods by funding land acquisition, play equipment, landscaping, pathways and restroom facilities. http://www.spokanecitycd.org/parksprojects/index.htm	Spokane, WA
	 Manito Park	Manito Park was officially established in April 1904 and has evolved from an undeveloped recreational area with a few flower beds, picnic spots and a zoo to one of Spokane's primary showplaces. Comprised of five major garden areas (the Nishinomiya Tsutakawa Japanese Garden, Duncan Garden, Rose Hill, Lilac Garden and Ferris Perennial Garden), Manito Park is nationally recognized for its diverse horticultural displays. http://spokaneparks.org/index.php/Parks/page/88/	Spokane, WA
	 Riverfront Park	Riverfront Park (the legacy of Expo '74) is a popular gathering place for local residents and tourists. Major attractions include the IMAX Theatre, Spokane Falls SkyRide, Looft Carousel and Gift Shop, Pavilion Amusement Rides, Ice Palace, Tour Train, Enchanted Forest Mini Golf, Pony Rides, Spokane Falls and Sculpture Walk. http://spokaneriverfrontpark.com/	Spokane, WA
	 Golf Courses	The City of Spokane Parks & Recreation Department maintains four golf courses: Downriver, Esmeralda, Indian Canyon and Qualchan. http://www.spokanegolf.org/	Spokane, WA
	 Aquatic Centers	The City of Spokane Parks and Recreation Department operates six area aquatic centers offering a variety of amenities and programs designed for youth and adults. Programs include its Learn-to-Swim program as well as American Red Cross Lifeguard Training, Junior Guard and various other programs to help residents keep cool, active and entertained during the hot summer months. http://spokaneparks.org/index.php/Parks/page/47/	Spokane, WA
	 Dog Park	On December 27, 2010, a 3-year contract between SpokAnimal C.A.R.E. and the City of Spokane Parks and Recreation Department marked the beginning of the first dog park within the City of Spokane. http://spokaneparks.org/index.php/Parks/page/774/	Spokane, WA
Preservation of Historic Places	 Preservation, Restoration and Rehabilitation	Historic preservation, in and of itself, has become one of the most important tools in the entire Smart Growth toolbox. Historic preservation is a multifaceted group of activities that uses the built heritage as a means for revitalization, neighborhood stabilization, attraction for tourism, job creation, film industry production, affordable housing, luxury housing, education, transportation and other activities. The spin-off from all this activity includes job creation, downtown and neighborhood revitalization, improved community appearance and greater community pride. http://www.ashevilenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC

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Sustainability Priority	Tool	Description	Community
Preservation of Historic Places	 Historic District Design Review	The Historic Resources Commission was created in 1979 to evaluate historically significant neighborhoods, areas and individual sites, and to recommend their designation as a Local Historic District or Local Historic Property. It administers the design review of new construction or rehabilitation within those areas. http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC
	 Downtown Design Review	The Downtown Design Review program seeks to encourage building renovation and new development within the downtown area in a manner that will encourage visual harmony, enhance historic integrity, and encourage creative design solutions. The Downtown Design Review process is triggered by any change to the exterior of a building or property. http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC
	 River District Design Review	The establishment of the River District is in recognition that the French Broad and Swannanoa Rivers, within the City of Asheville, are unique natural resources that are both environmentally sensitive and vital to the economic development of the city. The purpose of the River District is to celebrate, conserve, promote and manage the riparian areas of these rivers. The design review process encourages the design of new construction and rehabilitation projects in a manner that will promote visual harmony, enhance the historical integrity of the River District and recognize the environmental constraints of developing along the river. River District Design Review has been designated as a mandatory review and voluntary compliance program. http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC
	 Historic Tax Incentives	The Tax Reform Act of 1976 created the first federal tax incentive for preserving income-producing historic structures. In 1993, the North Carolina General Assembly created the first state historic tax incentives for income-producing historic structures. Since the implementation of the North Carolina State Historic Tax Credits in 1998, the development of residential units in downtown Asheville has boomed, in part due to the 30 percent historic rehabilitation tax credit for nonincome-producing properties. These new residential units have stimulated the development of even more independent businesses to serve the new residential and visitor populations. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Inventory Studies and Surveys	Identification of historic resources must precede efforts to preserve them. In 1978 and 1998, Asheville conducted a survey of historic resources, including locations that contained significant concentrations of early structures. These efforts led to the designation of 12 districts (e.g., Madison Avenue and Oak Park Road) with potential National Register status. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Historic Burying Grounds Initiative (HBGI)	The HBGI is a public/private cooperative program established within the Boston Parks and Recreation Department with the history of the initiative dating back to the early 1970s. Its mission is the comprehensive restoration, ongoing conservation and heritage interpretation of Boston's 16 historic burying grounds. http://www.cityofboston.gov/Parks/HBGI/	Boston, MA
	 Grave Marker Conservation	Conservation of slate grave markers in historic cemeteries has been attempted for decades, but many previous methods have proved to be unsatisfactory in terms of duration, protection of grave markers and aesthetics. New materials and techniques have given conservators hope of conserving these stones at a high level, but they are unsure about which techniques are the most successful. Gathering and analyzing information about conservation techniques in a new database will give them added insight and knowledge to go forward successfully. http://www.cityofboston.gov/parks/openspace0814.asp	Boston, MA
	 Historic Burying Grounds Surveys	Known information about historic burying grounds and cemeteries should be improved by improving existing maps and updating 1980s historic burying grounds surveys. http://www.cityofboston.gov/parks/openspace0814.asp	Boston, MA








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Sustainability Priority	Tool	Description	Community
Preservation of Historic Places	 Educational and Interpretive Use	The city should encourage use of historic and active cemeteries as educational resources for schools, Boston Park Ranger interpretive efforts and the Freedom Trail and other tourism efforts. http://www.cityofboston.gov/parks/openspace0814.asp	Boston, MA
	 Moore-Turner Heritage Gardens	The Heritage Gardens were restored to the period they flourished following their redesign in 1911. Some historic plant materials survived. Plant material was reintroduced in 2007 based on historic research incorporated into the planting plan, which was approved by the Spokane Landmarks Commission. http://spokaneparks.org/index.php/Parks/page/593	Spokane, WA
	 Façade Master Plan	Historic façade renovations were performed on 23 main street businesses, including the incorporation of energy-saving measures (e.g., awnings, motion lighting, insulation, green materials). http://www.woodbineia.org/green-initiatives/projects	Woodbine, IA
	 Century and Heritage Farm Programs	The Century and Heritage Farm programs, which recognize farms that have been in the same family for 100 or 150 years respectively, is run in partnership between the Iowa Department of Agriculture and Land Stewardship and Iowa Farm Bureau. http://www.iowaagriculture.gov/centuryFarmsProgram.asp	Woodbine, IA
	 Rebuilding Community: A Best Practices Toolkit for Historic Preservation and Redevelopment	The report presents “best practices” found in a variety of communities that have adopted the power of historic preservation as an effective tool for sustainable revitalization, suggesting ways to harness that power in everything from zoning ordinances and reinvestment incentives to preservation-friendly building codes and innovative new uses for old buildings. http://www.preservationnation.org/issues/housing/Rebuilding_Community.pdf	Wyandanch, NY
Urbanization	 New Urbanization	New urbanism is a land-development management concept that establishes a development pattern based on structure location, building design and access, parking location and building height, rather than on the permitted and prohibited land uses that traditional zoning uses as its primary development management tool. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Urban Villages	Concentrated pockets of more dense urban development or urban villages present an opportunity to provide a better transportation system for the community. These concentrated urban developments and select locations are easier to serve with public transit, and offer the opportunity for people to park once and walk to several destinations. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
	 Smart Growth	Smart Growth addresses housing, environment, community design and development, public health, transportation, local government and other interests. The 10 principles of Smart Growth are: mix land uses; take advantage of compact building design; create a range of housing opportunities and choices; create walkable neighborhoods; foster distinctive, attractive communities with a strong sense of place; preserve open space, farmland, natural beauty and critical environmental areas; strengthen and direct development towards existing communities; provide a variety of transportation choices; make development decisions predictable, fair and cost effective; and encourage community and stakeholder collaboration in development decisions. http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Spokane, WA
Urban Sprawl	 Smart Growth Land Use Policies	Asheville's City Council adopted in 2000 a set of land-use policies that promote Smart Growth principles—for example, mixed-use developments and buildings should be encouraged; compatible, higher density commercial and residential infill development should be encouraged; and traditional neighborhood development patterns should be recognized and encouraged. http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_1.pdf	Asheville, NC





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Sustainability Priority	Tool	Description	Community
Urban Sprawl	 Policy Guide to Smart Growth	The American Planning Association (APA) identifies Smart Growth as that which supports choice and opportunity by promoting efficient and sustainable land development, incorporates redevelopment patterns that optimize prior infrastructure investments, and consumes less land that is otherwise available for agriculture, open space, natural systems, and rural lifestyles. Smart Growth is not a single tool, but a set of cohesive urban and regional planning principles that can be blended together and melded with unique local and regional conditions to achieve a better development pattern. Smart Growth is an approach to achieving communities that are socially, economically and environmentally sustainable. Smart Growth provides choices—in housing, transportation, jobs and amenities (including cultural, social services, recreational and educational, among others)—using comprehensive planning to guide, design, develop, manage, revitalize and build inclusive communities and regions. http://www.planning.org/policy/guides/adopted/smartgrowth.htm	Asheville, NC
	 Urban Growth Modeling	Using historical satellite imagery and population data and projections, Renaissance Computing Institute (RENCI) researchers developed an Urban Growth Model that generates statistical and visual representations of likely trends in developed land area. Satellite image analysis reveals how the landscape has changed from 1976 through 2006. The Urban Growth Model combines the satellite image-based maps of development with population trends and offers forecasts of future development in the region through 2030. By examining historical and forecast patterns of Urbanization, RENCI researchers hope to assist policy makers, planners and land conservationists in developing tools to understand and plan for rapid urban growth. http://unca.renci.org/tag/urban-growth-model/	Asheville, NC
	 Resolution on Near-Nature Quality of Life Initiative	The resolution on Spokane's Near-Nature Quality of Life Initiative that was adopted by the city council in 2007 expresses support for Smart Growth policies and stewardship of the region's natural resources. http://www.greenspokane.org/wp-content/uploads/2010/11/Quality_of_Life_Initiative.pdf	Spokane, WA
Redevelopment of Abandoned Urban Areas	 Adaptive Reuse	Adaptive reuse preserves architectural diversity and contributes to a healthy neighborhood. For example, Asheville's architectural diversity contributes significantly to the character of the city. However, some buildings are no longer appropriately situated to carry out their original function; the market for their particular use has changed or their location does not support the use for which they were originally built. Applying adaptive reuse principles resulted in the repurposing of a taxi stand on a predominantly residential street as a neighborhood deli and a historic inn in a single-family neighborhood as a bed and breakfast. http://www.ashevilleenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf	Asheville, NC
	 Infill Development	Infill development offers a method for redeveloping vacant properties within the city. Maps are used to illustrate properties where the land value is greater than the building value; these properties have strong potential for redevelopment. Buncombe County should encourage infill development that is consistent in scale and architectural character with the existing character of the community. Spokane uses the sustainable planning strategy of infill to allow development in empty parcels of developed areas and where services are provided. http://www.ashevilleenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Asheville, NC Spokane, WA
	 Vacant Lots and Buildings	Vacant lots along Straight Path should be given priority for infill development. Existing vacant buildings are encouraged to be filled and/or redeveloped. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY
Aesthetics	 Ridgeline Development Guidelines	Ridgeline development in Buncombe County should be restricted to protect the natural appearance of the mountains. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC









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Sustainability Priority	Tool	Description	Community
Aesthetics	 River Viewscapes Guidelines	Development restrictions should be imposed in 100-year flood plains in Buncombe County to protect river viewscapes. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC
	 Flood Plain Development Restrictions	Development restrictions should be imposed in 100-year flood plains in Buncombe County to protect river viewscapes. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC
	 Street Scaping	In an effort to sustain revitalization efforts currently underway in the Burton Street community, the community plans to undertake street scaping with My Brother's Keeper. http://ashevilledesigncenter.org/projects/burton-street/	Asheville, NC
	 Urban Landscaping	Native and non-invasive landscaping material should be used in urban landscaping. Consider additional plantings to soften the pedestrian experience. http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC
	 Community Visioning Program	The Community Visioning Program integrates technical landscape planning and design techniques with sustainable community action to assist community leaders and volunteers in making sound and meaningful decisions about the local landscape. The program empowers local leaders through a planning process that results in a transportation enhancement plan reflecting the values and identity of the community. http://www.communityvisioning.org/overview.html	Woodbine, IA
	 Uniform Streetscape	A uniform streetscape along Straight Path within the project area should be encouraged through the use of streetlights, signs, landscaping and building design. Land-use regulations should be revised as appropriate. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY
	 Beautification Projects	Beautification projects that address façade, landscape and streetscape improvements should be implemented, and an aesthetically pleasing and functional transition between public spaces and parking areas should be encouraged. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY

BUILDINGS AND INFRASTRUCTURE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Green Building Architecture		Leadership in Energy and Environmental Design (LEED™)	<p>The LEED™ Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. In April 2007, Asheville adopted a resolution adopting the LEED Standards for city-owned buildings. Asheville considered utilizing the U.S. Green Building Council's (USGBC) LEED™ for existing buildings (EB) best management practices as a guideline to system-wide planning and improvement. Milwaukee should seek to get LEED™ (Leadership in Energy & Environmental Design) certification from the USGBC for some of its high-profile public buildings. With the success of LEED™ in high-profile buildings, the city could adopt a policy to include LEED™ requirements in all city building projects over \$3 million.</p> <p>http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf</p> <p>http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf</p> <p>http://www.cityofboston.gov/environmentalandenergy/buildings/</p>	Asheville, NC Boston, MA Cambridge, MA Milwaukee, WI
		ENERGY STAR	<p>ENERGY STAR maximizes and promotes energy efficiency for commercial, industrial and residential settings.</p> <p>http://www.energystar.gov/</p>	Asheville, NC Medford, MA Milwaukee, WI
		Green Building Design	<p>Green building design includes the following principles:</p> <ul style="list-style-type: none"> • Smaller is better: A smaller, well-constructed house lasts longer, uses fewer resources and is more efficient to operate. • Renewable energy: Incorporate passive solar heating, natural light and natural cooling mechanisms. • Optimize material use: Minimize waste by designing for standard ceiling heights and building dimensions. Simplify building geometry. • Recycling: Provide for storage and processing of recyclables. • Design for adaptability: Use classic or timeless architectural styles for long-term adaptability to other uses. Consider home office needs with layout and wiring. • Design for durability: Use quality construction and materials for a long life. • Incorporate roundabouts at roadway intersections to reduce traffic delays and air pollution. <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
		Land Use and Site Planning	<p>Land use and site planning principles include:</p> <ul style="list-style-type: none"> • Reuse older buildings. Adaptive reuse of existing buildings is the most sustainable construction. • Encourage infill and mixed-use development to increase walkability and reduce automobile dependence. • Minimize automobile dependence and design for multi-modal access. • Maximize site resources to make the best use of solar insulation, vegetation for natural cooling and wind protection. • Locate development to minimize environmental impact. • Reduce impervious surfaces by designing landscapes to absorb stormwater instead of carrying it offsite in storm sewers. • Design water-efficient, low-maintenance landscaping. • Protect trees and topsoil during site work. • Avoid use of pesticides and other chemicals that may leach into the groundwater. <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC

BUILDINGS AND INFRASTRUCTURE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Green Building Architecture		Conservation of Resources and Materials	<p>Building approaches to conserve resources and materials include:</p> <ul style="list-style-type: none"> • Use natural and durable products that are not heavily manufactured. • Choose low-maintenance building materials. • Buy locally produced building materials to save transportation impacts in both energy use and pollution generation. • Use building products made from recycled materials. • Use salvaged building materials when possible. • Seek responsible wood supplies. • Minimize the use of pressure-treated lumber. • Minimize packaging waste. • Use recycled materials for parking lots and other paved surfaces. <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
		Operational Efficiency	<p>Building practices to improve operational efficiency include:</p> <ul style="list-style-type: none"> • Install water-efficient equipment. • Install high-efficiency lights and appliances. • Install high-efficiency heating and cooling equipment to save money and produce less pollution during operation. • Investigate the feasibility of gray water for irrigation. • Incorporate Access Management measures into the transportation system. <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
		Indoor Environmental Quality	<p>Sustainable indoor environmental quality practices include:</p> <ul style="list-style-type: none"> • Avoid materials that will create indoor pollutants. • Install mechanical ventilation equipment. • Avoid potential health hazards, such as radon, mold and pesticides. • Avoid ozone-depleting chemicals in mechanical equipment and insulation. <p>http://www.ashevillenc.gov/portals/0/city-documents/Planning/vision_section_2.pdf</p>	Asheville, NC
		Energy Use Index (EUI)	<p>EUI is a way to measure Asheville's baseline energy use and compare it to other buildings. EUI can be defined as the ratio of total BTU's used per year to the total number of square feet of conditioned space.</p> <p>http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf</p>	Asheville, NC
		Energy Audits	<p>An energy audit helps determine where buildings are losing energy and money—and how such problems can be corrected to make it more energy efficient. The energy audit can check for items such as checking for leaks, examining insulation, inspecting the furnace and ductwork, performing a blower door test and using an infrared camera.</p> <p>http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf</p>	Asheville, NC
		Healthy Buildings, Healthy People: A Vision for the 21st Century Report	<p>A vision for indoor environmental quality (IEQ) in the 21st Century. The objective of the report is to “realize major human health gains” over the next 50 years by improving indoor environmental quality.</p> <p>http://www.epa.gov/iaq/hbhp/index.html</p>	Asheville, NC
		Permit Fee Incentive Program	<p>Buncombe County should develop a building permit fee incentive program to encourage energy efficient, HealthyBuilt Home and LEED-certified development.</p> <p>http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf</p>	Asheville, NC
		Residential Design Standards	<p>Residential Design Standards for new construction and the rehabilitation of existing buildings to ensure that all projects conform to current applicable regulations and to promote cost-effective, environmentally responsible, quality design.</p> <p>http://www.cityofboston.gov/dnd/PDFs/D_2010_DND_DESIGN_STANDARDS-112010.pdf</p>	Boston, MA

BUILDINGS AND INFRASTRUCTURE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Green Building Architecture		Boston Stretch Energy Code Ordinance	On November 17, 2010, the Boston City Council adopted stronger energy efficiency regulations for new buildings in the City of Boston. The stretch energy code requires new residential and commercial buildings to achieve approximately 20 percent better energy efficiency than was required by Massachusetts' base energy code. http://www.cityofboston.gov/Images_Documents/MA%20Stretch%20Energy%20Code_tcm3-21507.pdf	Boston, MA
		Green Roof Demonstration Project	The Demonstration Project features approximately 150 modular pregrown plant trays installed on the 8th and 9th floor terraces of City Hall and reflects the city's commitment to green technology, environmental awareness and energy efficiency. http://www.cityofboston.gov/Images_Documents/Green_Roof_Demon_tcm3-2745.pdf	Boston, MA
		Brighton Branch Library	The Brighton Branch Library will be one of the first renovated City of Boston buildings that will incorporate the U.S. Green Building Council's LEED™ (Leadership Energy Environmental Design) Commercial Interiors guidelines toward achieving LEED™ status. http://www.cityofboston.gov/environmentalandenergy/buildings/	Boston, MA
		Sustainable Design Guidelines for the Menomonee River Valley	A guidance document to promote sustainable buildings and redevelopment in the region. http://www.renewthevalley.org/media/mediafile_attachments/05/45-mvpguidelinesbrochure.pdf	Milwaukee, WI
		LEED™ Building Green Meeting Incentives	The Spokane Convention Center, an LEED™ Silver Certified Building, offers incentives for reducing the environmental footprint of meetings and conferences held at the center. http://www.spokanecenter.com/greenmeetings.php	Spokane, WA
		Center on Sustainable Communities (COSC)	COSC is a nonprofit membership organization founded in 2005 that serves as Iowa's trusted educational resource for sustainable building. As the recognized leader in providing education and connecting resources, COSC empowers individuals and communities to make everyday decisions that promote sustainability, resulting in a better quality of life for all Iowans. http://icosc.com/	Woodbine, IA
Affordable Housing		Sustainable Development Projects Bonus Evaluation Form	This evaluation form scores affordable housing and green building criteria to evaluate options for sustainable development. http://www.ci.asheville.nc.us/Portals/0/city-documents/Sustainability/Appendix7G.pdf	Asheville, NC
		Encourage Affordable Housing	The creation of transit corridor overlay districts encourage affordable housing by providing incentives for mixed use development, higher density, sustainability, infill development and open space. http://www.ashevillenc.gov/portals/0/city-documents/CommunityDevelopment/Affordable_Housing_Programs/planfinal.pdf	Asheville, NC
		Asheville Housing Sales Statistics	The North Carolina Association of Realtors® is a nonprofit trade association founded in 1921. The Association pledges to preserve and promote the right to own, transfer and use real property; maintain a leadership role in the legislative, political and regulatory process; promote and maintain the highest ethical standards; develop and provide the best education, products and services; and promote housing affordability. http://www.ncrealtors.org/market_statistics.cfm	Asheville, NC
		Housing Needs Assessment and Market Study	As outlined in the Asheville Regional Housing Consortium—Housing Needs Assessment and Market Study, the proportion of housing that is renter occupied has increased in all counties within the region. This trend runs contrary to the national trend of increasing homeownership rates. Additionally, vacant housing has increased in all counties. http://www.buncombcounty.org/common/planning/HMandNA.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Affordable Housing		Educational Materials for Renters and Landlords	To foster affordable housing, Buncombe County should provide educational materials for renters and landlords on Buncombe County's website. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		HOME Investment Partnerships Program	HOME provides formula grants to states and localities that communities use—often in partnership with local nonprofit groups—to fund a wide range of activities that build, buy, and/or rehabilitate affordable housing for rent or homeownership or provide direct rental assistance to low-income people. http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/programs/home	Asheville, NC
		Low Income Housing Tax Credit Programs	Asheville city and regional governments should maximize use of federal Low Income Housing Tax Credit programs for rental developments. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Housing Trust Fund Policy	In 2004, Buncombe County created local Housing Trust Funds specifically to overcome the barrier of lack of local investment in affordable housing. The Trust Funds support the following programs: low-interest loans for new construction of single-family and multifamily homes that are priced affordably (\$135,000 or less); down payment assistance programs; and reduced permit fees for construction of affordable homes. In September 2009, Buncombe County made changes to the Housing Trust Fund Policy to allow housing trust funds to be used to support rental development and to expand the permit fee rebate program to cover septic in addition to the Metropolitan Sewer District sewer rebate and Water Authority rebate. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Townhouses in Urban Districts	Townhouses were added as a by-right use in all urban districts by the City of Asheville. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Water Line Cost Sharing	A new program was created by Asheville to allow developers of affordable housing projects the opportunity to apply for grants for the extension of public water infrastructure. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Gated Community Prohibition	In an effort to encourage interconnectedness and affordability of residential communities, Asheville adopted a prohibition on gated communities. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Homelessness Prevention Programs	People experiencing a housing crisis may need housing stabilization assistance in the form of budgeting, rental education, housing relocation to a more affordable home and eviction prevention. Short-term financial assistance in the form of rent and utility payments can help stabilize families and prevent homelessness. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Housing First Programs	Housing First programs carefully screen potential participants, create individualized case plans, and offer long-term financial assistance and intensive case management so that people can access housing. Once in housing, participants work to grow income and stabilize any physical or mental health issues that could threaten their housing stability and lead to homelessness again. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Rapid Rehousing Programs	These housing stabilization supports include help finding housing, rental education, negotiating with landlords, budgeting and help in managing the effects of homelessness. In addition, households that qualify can access financial assistance for up to 18 months while they get back on their feet. The goal of rapid rehousing programs in Asheville and Buncombe County is to reduce the amount of time people experience homelessness so that it is only a short episode in their lives. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Affordable Housing		The Boston Home Center (BHC)	The BHC provides first-time homebuyers with educational courses and financial assistance, and markets homes developed for income-eligible, first-time homebuyers. The BHC also assists homeowners with education and foreclosure prevention counseling, as well as encourages strong, stable neighborhoods by providing residents with financing and technical assistance to maintain and improve their homes. http://www.cityofboston.gov/dnd/bhc/	Boston, MA
		Homebuying 101: How to Buy a Home	This is a free 8-hour course offered by Boston's Department of Neighborhood Development (DND) and designed for any first-time homebuyer. This course includes information about the mortgage process, managing debt, shopping for a home and legal concerns related to home buying. This course is required if potential homeowners are applying for financial assistance from the city. http://www.cityofboston.gov/dnd/bhc/Homebuying_101_How_to_Buy_a_Home.asp	Boston, MA
		Homeowner 201: Tips for New Homeowners	This free 6-hour seminar designed especially for new homeowners (and homebuyers applying for financial assistance from the Department of Neighborhood Development (DND)) includes information on property maintenance, lead paint, landlord/tenant issues and budgeting. The seminar is offered in partnership with Massachusetts Affordable Housing Alliance (MAHA). http://www.cityofboston.gov/dnd/bhc/Homeowner_201_Tips_for_New_Homeowners.asp	Boston, MA
		Financial Education Training for Homebuyers and Homeowners	With radical changes in the current mortgage marketplace, new products and services are rapidly evolving. Ensuring that Boston's homeowners and new buyers find loans that best suit their needs and are sustainable in the long run is a key priority for the city in the coming years. The BHC assists homeowners with educational courses. http://www.cityofboston.gov/dnd/bhc/	Boston, MA
		Foreclosed Property Acquisition Training for Homebuyers	Helping homebuyers understand the risks and opportunities that come with purchase of a bank-owned foreclosed property is an important new function of the BHC. http://www.cityofboston.gov/dnd/bhc/	Boston, MA
		Foreclosure Prevention Counseling Program	In 2006, the BHC began its foreclosure prevention counseling program. It has expanded its services to include five community-based agencies around the city. http://www.cityofboston.gov/dnd/bhc/	Boston, MA
		Bulk Acquisition of Bank-Owned Foreclosed Properties	Boston's strategy to reclaim bank-owned foreclosed properties will include bulk acquisition of bank-owned foreclosed properties. Depending upon their condition at purchase, properties will be sold to homebuyers or to qualified contractors and developers for renovation and reoccupancy. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Direct Down Payment and Rehabilitation Assistance to Homebuyers Acquiring Foreclosed Properties	Boston's strategy to reclaim bank-owned foreclosed properties will include direct down payment and rehabilitation assistance to homebuyers acquiring foreclosed properties. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Turnkey Homeownership	Boston's strategy to reclaim bank-owned foreclosed properties will include turnkey homeownership, where contractors and professional developers receive funding to acquire and renovate foreclosed properties for eventual sale to a homebuyer. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Rental Development	Boston's strategy to reclaim bank-owned foreclosed properties will include rental development, where developers or nonprofits acquire and rehabilitate foreclosed properties for use as long-term affordable rental housing, including housing for homeless families. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Green Affordable Housing Program	The program provides training and other tools to the affordable housing sector to promote energy efficiency, green building techniques and healthy homes strategies. http://www.cityofboston.gov/dnd/d_green_housing.asp	Boston, MA

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Sustainability Priority		Tool	Description	Community
Affordable Housing		3D Program	Boston has almost 9,000 triple deckers, housing that first began appearing in Boston's neighborhoods in the 1890s but still provide livable, affordable homes for Bostonians in the 2010s. The 3D Program offers a wide range of benefits and services to help owners of triple deckers make the most of their properties. http://www.cityofboston.gov/3d/	Boston, MA
		Homebuying Financial Assistance	Graduates of Homebuying 101 and Homeowner 201 may be eligible to receive financial assistance from the City of Boston. Benefits include: receiving up to 3 percent of the purchase price for down payment and closing costs; receiving up to \$20,000 down payment and closing costs under the 3D Advantage program; and receiving up to \$20,000 toward the purchase and repairs of a foreclosed property in certain neighborhoods (\$10,000 toward the purchase and \$10,000 for the rehabilitation). http://www.cityofboston.gov/dnd/bhc/Financial_Assistance_Program.asp	Boston, MA
		Neighborhood Stabilization Program (NSP)	These funds, which total more than \$21 million, are being administered by the city's DND and will support a variety of new and existing programs related to Boston's ongoing foreclosure prevention and intervention efforts. http://www.cityofboston.gov/dnd/pdr/dnds_recovery_programs.asp	Boston, MA
		Foreclosure Prevention Initiative	The counselors at BHC help at-risk homeowners analyze their financial situation and refer them to the appropriate resources. http://www.cityofboston.gov/dnd/bhc/Preventing_Foreclosure_Boston's_Foreclosure_Prevention_Initiative.asp	Boston, MA
		Rental Housing Center	The Rental Housing Center provides advice, information and assistance to Boston landlords and tenants who have problems or questions about rental housing issues. The Center's services include administering a Safety-Net program, which provides income-eligible elderly or disabled tenants who are living in formerly rent-controlled units with a rent subsidy for up to 24 months, and assisting eligible tenants who have lived in the same formerly rent-controlled units in applying for Section 8 vouchers on the basis of loss of rent control. http://www.cityofboston.gov/dnd/brhc/	Boston, MA
		Boston Redevelopment Authority (BRA)	The BRA has made a commitment to create affordable homeownership and rental opportunities in the City of Boston with the intent of promoting public health, safety, convenience welfare and to continue the expansion of the city's housing stock. The BRA aims to alleviate the impacts of market rate housing on the supply and costs of housing for low- and moderate-income households. Using public land and with the help of developers, financing assistance and relief from regulation, housing is made affordable to all incomes, ages and households by reducing the rent or purchase price to below market values, thus reducing monthly rent and mortgage payments and requiring lower down payments. http://www.bostonredevelopmentauthority.org/affordhousing/AH.asp	Boston, MA
		Don't Borrow Trouble Foreclosure Prevention	The BHC provides consumer outreach, information and counseling to help Boston homeowners avoid predatory lending and foreclosure. Services include counseling, intervention and workout strategies. http://www.cityofboston.gov/dnd/bhc/Dont_Borrow_Trouble.asp	Boston, MA
		Online Affordable Opportunities List	The BRA maintains an online list of upcoming affordable housing opportunities. http://www.bostonredevelopmentauthority.org/affordhousing/AHOpps.asp	Boston, MA
		Foreclosure Intervention Team (FIT)	In February 2008, Mayor Menino organized the FIT to deliver coordinated and focused city attention on areas most heavily impacted by foreclosures. The first of these areas was the Hendry Street area of Dorchester. http://mayorsinnovation.org/pdf/HistoryofBoston.pdf	Boston, MA

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Sustainability Priority		Tool	Description	Community
Affordable Housing		Below-Market Housing Units	To promote continued access to high-cost neighborhoods, the city will ensure that at least 13 percent of new housing units will be below-market units, affordable to moderate-to-middle income households. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Stabilize High-Foreclosure Areas	The efforts in designated areas will focus not just on acquisition and renovation of bank-owned foreclosed properties but also on identifying and intervening at troubled properties before they become foreclosed and abandoned. In addition, support for existing homeowners wanting to repair their properties, as well as outreach to tenants living in troubled, abandoned or fore-closed properties, also will be made available. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Expand and Enhance Homeownership Programs and Services	In the high-foreclosure neighborhoods of Dorchester, Mattapan, Roxbury, Hyde Park and East Boston, the city will expand and enhance its homeownership programs and services to provide more aid to transform middle-income renters into successful first-time homebuyers. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		City-Owned Affordable Rental Units	The city will produce 1,000 new affordable rental units in 2012. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Metropolitan Boston Housing Partnership (MBHP)	The MBHP is the state's largest regional provider of rental housing assistance, serving home-less, elderly, disabled and low-income individuals and families in Boston and 29 surrounding communities. Its primary role is the administration of government-funded rental assistance subsidies. It also offers homelessness prevention and housing supports through its Housing Consumer Education Center, its Scattered Site Family Emergency Shelter and the Boston Homelessness Prevention Clearinghouse. In addition to its programs for tenants, it offers a variety of services for property owners and first-time homebuyers, including home modification assistance, affordable homeownership opportunities, and leasing assistance. http://www.mbhp.org/pages.asp?p=59&c=22	Boston, MA
		Shelter Diversion Program	A shelter diversion program will be designed to find non-shelter housing options for families in need. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Homelessness Early Warning System	An early warning system will be established with the public schools and health centers, organi-zations that often are among the first to realize that a family is at-risk for homelessness. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Stabilization Services for Newly Unemployed	Stabilization services to help people remain housed during periods of temporary loss of income will be expanded. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Homeless Housing Production	The city intends to expand its homeless housing production by doubling its homeless set-aside rate from 10 to 20 percent, and will seek to double its annual rate of homeless housing produc-tion between 2009 and 2012. This latter production goal will be achieved via a new Homeless Housing Production Partnership between the Department of Neighborhood Development (DND) and Boston Housing Authority (BHA). http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Monitoring and Early Warning	For privately owned affordable housing potentially at-risk for converting to market-rate, a pre-ventive model will ensure adequate lead time to work with owners, thereby resolving issues that might impede a renewal of affordability agreements and contracts. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Enforcing Agreements	For privately owned affordable housing potentially at-risk for converting to market-rate, diligent enforcement of Massachusetts General Law Chapter 121A and Land Disposition Agreements has been a very effective tool to persuade owners to extend their affordability commitments. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA

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Sustainability Priority		Tool	Description	Community
Affordable Housing		Financial and Physical Restructuring	For privately owned affordable housing potentially at-risk for converting to market-rate where owners are responsible landlords, but the circumstances have resulted in a financial or physical threat to the development, the city will arrange a financial restructuring and renovation in exchange for a substantial extension of affordability. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Buyouts	For privately owned affordable housing potentially at-risk for converting to market-rate where the owner is unable or unwilling to manage the property properly, the city will support a buyout by a responsible owner, in exchange for a substantial extension of the affordability requirements. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Non-Eviction Policy	The city has implemented a non-eviction policy on all bank-owned foreclosed properties that it is buying from lenders. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Emergency Repair Funds	The city has allocated emergency repair funds to make critical repairs and maintain habitability of bank-owned properties. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Tenant Education	When rent control ended in 1994, the city began to educate tenants about their legal rights and responsibilities. With foreclosures displacing so many tenants, the city will expand its training workshops. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Landlord Assistance	The city will offer education and mediation services, along with grant and loan assistance for lead paint abatement. Vacant units in owner-occupied houses with foreclosure activity also will be targeted for services in the hopes of forestalling foreclosure. Where necessary, renovation and repair assistance will be given to return unrentable units to occupancy status and restore the revenue stream. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Rental Housing Conversion Assistance	When private properties occupied by lower income tenants come on the market, the city will provide financial assistance to buyers who agree to maintain affordability for the long term. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Spokane Low Income Housing Consortium (SLIHC)	The SLIHC promotes the long-term availability of housing that is appropriate and affordable for low-income and very-low-income persons, with more than 30 nonprofit and public members and associate members who develop and promote affordable housing. http://www.slihc.org/index.php?page=about	Spokane, WA
		Comprehensive Housing Counseling	Wyandanch Community Development Corporation (WCDC) offers comprehensive housing counseling administered by certified counselors, which includes mortgage default and delinquency counseling. In an effort to avoid foreclosures, WCDC works with homeowners and lenders to initiate loss mitigation components such as Special Forbearance, Mortgage Modification and the HUD Partial Claim and Refinancing. The mission of WCDC is to conduct and participate in development, services and housing projects designed to preserve the community, protect the health and safety of residents and promote self-help programs measured by improved appearances and the removal of blighted conditions in the target and service areas. http://www.wyandanchcdc.org/index.html	Wyandanch, NY
		Multifamily Housing	Multifamily residential developments should provide units that accommodate a mix of incomes, which could be accomplished with incentive or inclusionary zoning programs for affordable housing within multifamily developments. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY

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Sustainability Priority		Tool	Description	Community
Deteriorated Housing		Homebuying 103: How to Buy a Home That Needs Work	This is a free 2-hour seminar offered by Boston's DND to learn about special mortgages and other resources available to help homeowners fix-up their homes. http://www.cityofboston.gov/dnd/bhc/Homebuying_103_How_to_Buy_a_Home_that_Needs_Work.asp	Boston, MA
		Distressed Buildings Reports	The DND conducts an annual survey of buildings in the city that are identified as distressed. A distressed building is considered to be any residential, commercial, industrial or mixed-use building (excluding sheds and garages on residential property) that is not occupied and has visible signs of physical distress (boarded, burned, open to the elements or otherwise deteriorated). http://www.cityofboston.gov/dnd/pdr/Distressed_Buildings_Reports.asp	Boston, MA
		Online City-Owned Property Inventory	The DND inventories information about property and land owned by the city. http://www.cityofboston.gov/dnd/remc/City_Property_For_Sale.asp	Boston, MA
		HOPE VI	HOPE VI is a federally funded program that allows public housing authorities to apply for funding to redevelop severely distressed housing developments. Through the HOPE VI Program, the Boston Housing Authority (BHA) was able to redevelop three of its most troubled developments: Mission Main, Orchard Gardens and Maverick Landing. http://www.bostonhousing.org/detpages/deptinfo151.html	Boston, MA
		Capital Fund Financing	In April 2008, an \$82 million bond was issued to fund up-front capital improvements in city-owned housing. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Energy Performance Contracting	Energy upgrades to city-owned housing will be undertaken by energy providers, who will bear the initial costs and be repaid out of the energy cost savings resulting from those improvements. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Redevelopment Through Public Private Partnership	There are very distressed developments where redevelopment, and HOPE VI funds from the federal government, will be required. Projects on the scale of the redevelopment of Franklin Hill and Washington Beech meet this criteria. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Redevelopment Through Project-Based Vouchers	The Boston Housing Authority (BHA) is formulating a pilot for certain city-owned housing developments that serve elderly and disabled clients. Redevelopment via a project-based voucher model would generate enough additional income to finance major capital improvements. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
Downtown Revitalization		Downtown Asheville Design Guidelines	Downtown Asheville is recognized as a special place to be protected as a community resource. It represents an important part of the city's heritage and its unusual character creates an identity for Asheville today. Compatible design helps to enhance the quality of life for all residents while also strengthening the economic viability of downtown. The Downtown Asheville Design Guidelines do not dictate styles, but rather suggest a variety of choices for achieving design compatibility within the downtown area. The guidelines also can help to protect property values by encouraging improvements that maintain buildings as viable assets. The Downtown Design Review process is triggered by any change to the exterior of a building or property. http://www.downtowndevelopment.com/pdf/FinalPlan5.pdf http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC








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Sustainability Priority		Tool	Description	Community
Downtown Revitalization		Asheville East of the RiverWay Sustainable Multi-Modal Neighborhood Program	The Asheville East of the RiverWay Sustainable Multi-Modal Neighborhood Program is a “fundamentally new model of revitalization,” linking the values of jobs, housing, energy, transportation and the environment. http://www.ashevillenc.gov/portals/0/city-documents/EconomicDevelopment/east_of_riverway_summary.pdf	Asheville, NC
		Character Buildings	Character Buildings are those buildings that set the architectural character of the Riverfront Design Core District because of the historical significance, construction type, age and visual characteristics. Restoration, renovation and creative use of these buildings in a way that would retain their unique character is strongly encouraged. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
		Building Façades	All buildings in Asheville's Riverfront Design Core District should be faced with materials prevalent in nearby Character Buildings. Facades should incorporate elements found in Character Buildings in the immediate area. Wyandanch, NY, visioning participants were eager for a face-lift for the community that would include new facades for the buildings along Straight Path and either a new building or a new use for the old Kentucky Fried Chicken building on Straight Path. There are several vacant lots along Straight Path that can be developed. The Vision Plan identifies key areas and proposes suitable uses for some of these properties. Although the majority of properties on the corridor are in private ownership, this fact does not change the opportunity to look at the highest and best use of the properties. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf http://www.townofbabylon.com/documentcenter/view/16	Asheville, NC Wyandanch, NY
		Façade Materials	Building fenestration is required because it enhances the character of downtown Asheville by providing features of visual interest at the sidewalk for the benefit of pedestrians. Storefronts should be developed as panels made of glass and non-masonry materials to visually connect interior to exterior and bring daylight deep into the building. http://www.ashevillenc.gov/Departments/DevelopmentServices/BuildingPlanReview/DesignReview.aspx	Asheville, NC
		Site Plan	Buildings should be placed in keeping with the atmosphere created by the placement of other nearby Character Buildings. http://www.ashevillenc.gov/Portals/0/city-documents/Development%20Services/Plan_Review/Design_Review/river_district_design.pdf	Asheville, NC
		Boston Main Streets	Boston Main Streets relied on the National Trust for Historic Preservation's National Main Street model to Boston and was the first urban, multi-district Main Street program in the United States, bringing the technical knowledge of business district revitalization to 19 Boston business districts. http://www.cityofboston.gov/dnd/obd/about.asp	Boston, MA
		ReStore Boston	ReStore Boston provides matching grants (up to \$7,500 per storefront) to help eligible neighborhood business and property owners complete storefront renovation projects. Since its inception, this nationally acclaimed revitalization project has provided professional design services to more than 300 businesses and completed 80 storefront improvement projects. http://www.cityofboston.gov/dnd/obd/G_ReStore_Boston.asp	Boston, MA
		Downtown Crossing Economic Improvement Initiative (DCEII)	In October 2004, Mayor Thomas M. Menino launched the DCEII, signaling a renewed commitment to the beloved but tired neighborhood. The DCEII consists of two components: short-term and long-term efforts. The short-term component has focused on immediate actions, including the cleanliness program, enhanced enforcement of regulations, new plantings in the district, and seasonal promotions and programming. The long-term component included the Branding and Identity Strategy for Downtown Crossing, which was kicked off in late 2006 and completed in May 2008. http://www.bostonredevelopmentauthority.org/Planning/PlanningInitsIndividual.asp?action=ViewInit&InitID=110	Boston, MA

BUILDINGS AND INFRASTRUCTURE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Downtown Revitalization		Housing on Main Streets	Housing on Main Streets supported citizen efforts to plan their neighborhood's growth and to develop housing. By combining residential, commercial and community uses with transportation infrastructure improvements, Housing on Main Streets sought to build a walkable neighborhood. http://www.bostonredevelopmentauthority.org/Planning/PlanningInitiativesIndividual.asp?action=ViewInit&InitID=99	Boston, MA
		Ogden Downtown Revitalization Portal	Ogden, working with EPA, in partnership with the Iowa Department of Natural Resources (IDNR), is using the Local Synergy approach to revitalize its downtown, including three centrally located properties and the abandoned gas station that sits at the gateway to downtown. http://s104245.gridserver.com/ogden/	Ogden, IA
		Downtown Market Assessment Study	Brownfields redevelopment study performed in collaboration with EPA to identify potential market opportunities for revitalization downtown. http://s104245.gridserver.com/ogden/	Ogden, IA
		Community Development Block Grant Façade Master Plan	The City of Woodbine was awarded a \$500,000 Downtown Revitalization Community Development Block Grant as part of a \$900,000 Façade Master Plan to renovate 23 buildings in the Main Street District. This project was completed in January 2012 using a partnership of the City of Woodbine, individual business owners and Woodbine Main Street. http://www.woodbineia.org/main-street	Woodbine, IA
		Consistency of Design	Consistency of design is a common trait among successful commercial areas. When consistent building types are used, the street is perceived as highly ordered and cohesive in spite of significant stylistic variations. Transitions between commercial and residential use on Straight Path can be achieved with careful planning. High-quality urban buildings follow very specific site design principles. Without proper site placement, even the most ornate and well-conceived structure would not contribute to the overall quality of a street, a block, or a district. Too often, simple decisions about the location of entrances or parking can make the difference between a lively street and an unpleasant road. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
		Reading, Riding and Retrofit	Reading, Riding and Retrofit is an overarching vision of the Asheville-Buncombe HUB and the Asheville-Buncombe Sustainable Community Initiative (ABSCI) to encourage, promote and support environmental sustainability projects across all schools in Buncombe County. An EPA Climate Showcase Communities grant has provided funds for facilities' upgrades/retrofits to significantly reduce energy use and related costs. http://www.landofsky.org/rrr.html	Asheville, NC
Community Infrastructure		Pipeline Assistance Project (PAP)	Natural Gas pipelines in the three-county area (Buncombe, Haywood and Henderson Counties) often abut federal lands and unusually sensitive areas. In the event of natural gas leaks and explosions, drinking water sites and ecological areas are at risk of being compromised. Key aspects of the Western North Carolina PAP are: risk assessment, identifying a consultation zone, furthering public awareness, generating tools that will inform land use planning and emergency response planning and assistance. Rich data sets will be generated, providing data regarding valve stations locations, high consequence populations and critical infrastructure. http://www.nctomorrow.org/land-of-sky-regional-council/files/2011/10/CEDS-2013-2017.pdf	Asheville, NC
		Pipe Rating Program	Seeking higher levels of efficiency, the Metropolitan Sewerage District (MSD) of Buncombe County, NC, developed a program that targets hot spots for pipe rehabilitation. This program also dovetails with the new State Collection System Permit (at the time only the fourth such permit in the state). http://www.msdbc.org/projects/piperatingprogram.php	Asheville, NC
		Boston Green Building Standard	By amending Article 37 of the municipal zoning code, the city requires that all large-scale projects meet the U.S. Green Building Council's LEED™ certification standards. http://www.cityofboston.gov/Images_Documents/Article%2037%20Green%20Buildings%20LEED_tcm3-2760.pdf	Boston, MA

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Sustainability Priority		Tool	Description	Community
Community Infrastructure		Department of Neighborhood Development (DND)	DND provides services and programs to the city's neighborhoods through seven divisions: Administration & Finance, Director's Office, The Boston Home Center, Neighborhood Housing Development, Office of Business Development, Policy Development and Research, and Real Estate Management & Sales. http://www.cityofboston.gov/DND/	Boston, MA
		Executive Order Relative to Greening City Building Maintenance and Operations	The executive order establishes green building maintenance and operations programs and requirements for all Boston city departments. http://www.cityofboston.gov/Images_Documents/EO_GreeningCityOps_tcm3-2732.pdf	Boston, MA
		Groundwater Trust	Deteriorated groundwater levels are gradually destroying underground wood pilings, the foundation of structural support for Boston buildings. This is an environmental condition unique to metropolitan Boston that threatens neighborhoods, homes and other historic buildings. Monitoring of water levels, long advocated by geo-technical engineers familiar with deteriorating below-grade condition of these buildings, now has begun under the auspices of the Boston Groundwater Trust. http://www.bostongroundwater.org/	Boston, MA
		New Roxbury Neighborhood Police Station	The new station incorporates energy-efficient building systems as well as brand new site utility systems and achieves Leadership in Energy and Environmental Design (LEED) Silver Certification. http://www.cityofboston.gov/news/default.aspx?id=5223	Boston, MA
		South Sixth Street Green Corridor	As a pilot project, a 3-mile portion of South Sixth Street has been designated as "The Green Corridor." The street boasts a community-organized and community-operated garden, a forum for neighborhood sustainability in the Energy Exchange, multiple green infrastructure projects to reduce stormwater runoff, enhanced landscaping and beautification, active and engaged neighborhood and business associations, and a commitment from stakeholders—public and private—to advance "green" works on South Sixth Street. http://city.milwaukee.gov/ImageLibrary/Groups/ccCouncil/2011-PDF/GreenCorridorDesignationPlan.pdf	Milwaukee, WI
		Community Development Fund	The Spokane Tribe of Indians established a Community Development Fund to raise funds for community-identified projects for the specific purpose of infrastructure and other public purpose projects within the Reservation that benefit the health and well-being of the residents of the Reservation. http://www.spokanetribe.com/donations	Spokane, WA
Technology Access for Rural Areas		Expand Broadband Access	Buncombe, Haywood and Henderson have some of the lowest percentages of people without access to high-speed Internet in Western North Carolina and technology access should be increased. http://www.nctomorrow.org/land-of-sky-regional-council/files/2011/10/CEDS-2013-2017.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Increase Public Transportation		Future Development Pattern for Transit	Technical studies determined the minimum density necessary for optimum transit performance to develop a smart growth development pattern along the city's major transportation corridors. Maps illustrate this future development pattern. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_2.pdf	Asheville, NC
		Job Access/Reverse Commute (JARC)	JARC is a formula program of funding to develop transportation services to transport welfare recipients and low-income persons to and from jobs (job access) and to transport residents of urban centers, rural and suburban areas to suburban employment opportunities (reverse commute). Eligible activities for JARC funding include late-night and weekend service, guaranteed ride home service, expanded public transit routes, ridesharing and carpooling activities, and car loan programs. ftp://landofskygis.org/MPO/JARC-NF/FBRMPO_2012_HSTPlan/MPO_HST_Plan_Final_2012.pdf	Asheville, NC
		Downtown Shuttle Route	According to the 2008 Comprehensive Parking Study, there could be a deficit of 700–800 parking spaces downtown. The shuttle service could connect remote parking locations to downtown destinations and promote the “park once” approach that eliminates the need to use a personal vehicle for travel to multiple destinations in downtown. Frequent service using “green” vehicles is encouraged. http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/DMP%20August%2010.pdf	Asheville, NC
		Location of Public Agencies	Social service agencies should be mindful of where bus routes are, and if their clientele are heavy transit users, any new locations should be required to be on a bus route. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC
		Emergency Ride Home (ERH)	The ERH program provides registered participants (commuters who regularly vanpool, carpool, bike, walk or take transit) with a reliable emergency ride home on the day the person has used an alternative mode of transportation to get to work. http://allison-evans.com/web/transit/emergency-ride-home/index.html	Asheville, NC
		Share the Ride NC	Share the Ride NC program is a ride-share matching service, enabling participants to find others with similar commutes and work hours who are interested in carpooling or vanpooling. www.sharetheridenc.org	Asheville, NC
		Ridesharing Facilitation	Buncombe County should use existing media outlets (BCTV, website, social media) to connect rideshare participants. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Ridesharing and Carpooling Incentives	Buncombe County should solicit neighborhood businesses to offer rebates, discounts or coupons for participants in the rideshare program and carpoolers. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Fairmount Indigo Planning Initiative	The Fairmount Indigo Planning Initiative is a 2-year Boston Redevelopment Authority study to develop short- and long-term strategies for significantly expanding transportation options (both rail and bus) for communities living within the Massachusetts Bay Transit Authority's 9.2 mile Indigo Fairmount Indigo Corridor commuter rail line. http://www.fairmountindigoplanning.org/#	Boston, MA
		Massachusetts Bay Transportation Authority (MBTA) Key Route Improvements	City government is working with the MBTA in a \$6-million, federally funded project to improve service and amenities on 15 high-ridership, high-frequency “key routes” in Boston by 2012. Improvements include the installation of bus shelters, benches and solar-powered trash receptacles, consolidation of stops, improved accessibility, curb extensions, signal upgrades, clear signage and pavement markings. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA

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Sustainability Priority		Tool	Description	Community
Increase Public Transportation		Roadway Design	The city can support mass transit through the design of its local road infrastructure. For a mass transit system to be successful, the routes must be easily accessible, fast and frequent. City roads can be designed to allow specialty lanes for mass transit vehicles, and bus stops can be retrofitted to allow greater efficiency in loading and unloading. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		The Moccasin Express	This Spokane Tribal Transit Program seeks to increase public transportation through the provision of bus service for Spokane Indian Reservation citizens. http://www.spokanetribe.com/userfiles/file/The%20Moccasin%20Express%20Web%20Page%2085x1103072011.pdf	Spokane, WA
		Transportation Benefit District	At its February 14, 2011, meeting, the City of Spokane Transportation Benefit District adopted a \$20 vehicle tab fee that will help pay for street maintenance projects and pedestrian improvements within the City of Spokane. http://www.spokanecity.org/_documents/boards/tbd/tbd-qa_2011.pdf	Spokane, WA
		Designing Livable Communities: A Transportation Enhancement Study	This 2008 study investigated how the community currently uses its existing transportation infrastructure and made recommendations for improvements and enhancements. http://www.simonsonassoc.com/woodbine/Woodbine_Final_Report.pdf	Woodbine, IA
		Transit Solutions for Long Island	This program promotes public transit solutions for Long Island residents and workers through the increased use of private and public buses and the railroad. http://www.transitsolutions.org/	Wyandanch, NY
		Improve Connectivity	This effort ensures that new development provides connectivity between the northern and southern portions of the project area (i.e., north and south of the Long Island Rail Road [LIRR] tracks) by way of walkways, building and site layouts, and/or greenways. This could be achieved with the proposed Intermodal Transit Facility, which includes a pedestrian bridge linking the north and south sides of the LIRR tracks and a plaza that would be situated so as to provide a safer walk from Site A to the LIRR station. http://www.townofbabylon.com/documentcenter/view/69	Wyandanch, NY
Provide Multi-Modal Transportation Options		Complete Streets	The French Broad River Metropolitan Planning Organization coordinates and implements Complete Streets to design streets and highways to serve all users. http://fbrmpo.org/committees/complete-streets-subcommittee/	Asheville, NC
		Complete Streets Policy	Asheville developed a policy to encourage planners to employ Complete Streets practices in corridor planning. Complete Streets is a planning philosophy that addresses the fact that many streets in America are designed with the automobile as the exclusive user, ignoring pedestrians, bicyclists and buses. http://www.ashevilenc.gov/Portals/0/city-documents/economicdevelopment/ped/PED%20Report-Complete%20Streets-15%20May%202012.pdf	Asheville, NC
		Complete Streets Planning and Design Guidelines	The North Carolina Department of Transportation (NCDOT) Planning and Design Guidelines represent a significant step towards implementing Complete Streets in planning, design and construction activities undertaken by NCDOT and the jurisdictions with which they collaborate. The processes, street types and recommendations included in the planning and design guidelines are intended to support the concept of collaboratively designed and context-based complete streets. The purpose of the guidelines is to provide direction in the decision-making and design processes to ensure that all users are considered during the planning, design, construction, funding and operations of North Carolina's transportation network. http://www.completestreetsnc.org/wp-content/themes/CompleteStreets_Custom/pdfs/NCDOT-Complete-Streets-Planning-Design-Guidelines.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		Asheville Transit Services (ATS)	Operated by the City of Asheville through a third-party operator, Asheville Transit provides transportation within the Asheville and the surrounding area, including downtown, the hospitals, schools, malls, universities and residential areas. ATS contracts with Mountain Mobility to provide comparable paratransit transportation to all qualifying individuals who are unable to use the bus due to a disability. ATS currently operates 23 fixed routes 6 days a week, including evening services. The system currently is configured as a hub-and-spoke system, with service on each route originating and terminating at the downtown transit center. ATS provided almost 1.6 million trips in Fiscal Year 2009. http://www.ashevillenc.gov/Departments/Transit.aspx	Asheville, NC
		Land-of-Sky Rural Planning Organization (LOSRPO)	LOSRPO is a voluntary organization of local governments working cooperatively with the North Carolina Department of Transportation (NCDOT) and local officials to enhance transportation planning opportunities for rural areas in the region. http://landofskyrpo.org/	Asheville, NC
		Blue Ridge Commuter Connections	The Blue Ridge Commuter Connections program is Western North Carolina's commuter assistance program. http://www.bestworkplaces.org/uncategorized/city-of-asheville-asheville-north-carolina/	Asheville, NC
		Transit Design Guidance	The U.S. Department of Transportation (DOT) Design Guidance recommends that bicycle and pedestrian ways be established in new construction and reconstruction. Asheville intends to formally adopt a policy that is in line with DOT guidance. http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design.cfm	Asheville, NC
		Transportation System Management (TSM)	TSM describes a range of measures designed to enhance the efficiency and safety of the inter-modal transportation network as well as to minimize congestion and improve the air quality of the region. Strategies include new or expanded infrastructure such as: new roadways, new transit or bicycle facilities and widened sidewalks; and modifications to existing service such as: improved traffic signalization schemes, enhanced transit service and reserved lanes for high-occupancy vehicles and/or hybrid vehicles. http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf	Asheville, NC
		Travel Demand Management (TDM)	TDM, also called Mobility Management, refers to strategies that result in more efficient use of transportation resources. TDM strategies include: <ul style="list-style-type: none"> • Improved transit options, such as set route transit and dial-a-ride services. • Improved non-motorized planning and facilities (sidewalks, crosswalks and bike lanes). • Incentives to use alternative modes and reduce driving. • Parking and land-use management. • Universal Design (transport systems that accommodate all users). http://fbrmpo.org/tdm/	Asheville, NC
		Travel Demand Model	The model (under development) will be used for alternative testing, scenario planning (land use and transportation), and the development of traffic forecast. http://www.mabtrans.com/view-project.asp?id=531	Asheville, NC
		Improved Connectivity	One primary challenge is a lack of connectivity between all modes of transportation, which can make accessing and boarding buses dangerous. Many of the region's major thoroughfares, including core transit routes, lack pedestrian facilities such as sidewalks, crosswalks or crossing signals, and medians to provide refuge for pedestrians crossing wide streets. To reduce the risk of further accidents like this and to make public transportation a more viable option for riders who have a choice of transportation modes, it is imperative that roads with existing or potential transit service be designed or retrofitted to accommodate all users of the transportation system. http://fbrmpo.org/lrtp/	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		On-Board Transit Survey	French Broad River Metropolitan Planning Organization staff will be working with the Asheville Transit and NCDOT Public Transportation Division to identify funding for an On-Board Transit Survey during the 2012–2013 fiscal year. An On-Board Transit Survey is a necessary component to better understand transit riders' origins, destinations and travel patterns, and to update the Travel Demand Model. http://www.nctomorrow.org/land-of-sky-regional-council/files/2011/10/CEDS-2013-2017.pdf	Asheville, NC
		Household Travel Survey	The French Broad River Metropolitan Planning Organization will be working with the NCDOT Transportation Planning Division to identify the necessary local match to perform a Household Travel Survey for the region during FY 2012–2013. Similar to the On-Board Transit Survey, a Household Travel Survey is a necessary component of updating the Travel Demand Model for the region. http://www.nctomorrow.org/land-of-sky-regional-council/files/2011/10/CEDS-2013-2017.pdf	Asheville, NC
		Access Management	Access management is a systematic hierarchy of roadways and control of access to highways, major arterials and other roadways. The benefits of access management include improved movement of traffic, reduced crashes and fewer vehicle conflicts. http://fbrmpo.org/streets-highways/	Asheville, NC
		Design Elements	Asheville has identified certain design elements and considerations that should be incorporated in the improvement of existing thoroughfares and construction of new ones. Street Design Templates address the design of the roadway, character scale and design of adjacent development as well as bike lanes and sidewalks, and right-of-way to address issues such as building setback, parking location, and scale and size of buildings. Asheville has classified the major thoroughfares in four major categories: Gateway Boulevard, Urban/ Neighborhood Corridor, Connecting Corridor and Regional Commercial Corridor. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Congestion Management Process (CMP)	The CMP includes strategies to reduce congestion focusing on improved efficiency and alternatives to single-occupant vehicles (SOV). http://fbrmpo.org/streets-highways/	Asheville, NC
		Road Diets	Road Diets limit the number of through lanes to improve traffic flow and increase safety, in addition to providing better access for pedestrians and other users. http://fbrmpo.org/streets-highways/	Asheville, NC
		Traffic Calming Policy	Asheville continually strives to strengthen and protect its neighborhoods by improving the quality of life in residential areas. Traffic conditions on residential streets can greatly affect neighborhood livability. Speeding traffic and unnecessary through traffic in neighborhoods create safety hazards on residential streets. When traffic problems become a daily occurrence, the sense of community and personal well-being are threatened. http://www.ashevillenc.gov/portals/0/city-documents/TransportationEngineering/Traffic_Engineering/TrafficCalmingPolicy.pdf	Asheville, NC
		Interstate Highway Expansion and Design	Changes to the interstate highways are being made to promote the movement of goods and people between states and regions as well as handling local traffic. For example, 80 percent of the "I-26 Connector" traffic is expected to be local traffic. Maps illustrate the need for expanded highways to accommodate the increased volume of local traffic. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_2.pdf	Asheville, NC
		Bike Policy	Asheville Transit's policy is to support and promote the use of bicycles as an alternative and sustainable transportation option. Asheville Transit allows bicycles to travel on buses at no extra charge, and provides the greatest flexibility possible within the constraints of capacity and safety. http://www.ashevillenc.gov/Portals/0/city-documents/transit/TransitBikeProgram.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		Urban Bikeway Design Guide	The purpose of the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (part of the Cities for Cycling initiative) is to provide cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists. http://nacto.org/cities-for-cycling/design-guide/	Asheville, NC
		Bike on Bus Program	Asheville Transit's Bike on Bus program allows bicyclists to bring their bicycles on board buses to use them when they disembark at their destination. This program should be expanded as it enhances the viability of both transportation modes. Options for expanding and improving the program include installing high-capacity bicycle racks on buses and increasing bus service frequency, especially where bicycle-on-bus service is in high demand. http://www.ashevillenc.gov/Portals/0/city-documents/TransportationEngineering/Traffic_Engineering/FinalBikePlanAdopted022608.pdf	Asheville, NC
		Bicycle Racks and Lockers	To encourage bicycle commuting, bicycle parking can be provided in the form of bike racks or bike lockers. Secure bicycle parking located close to building entrances and transit entry points can make bicycling more attractive. It also reduces the risk of bicycle damage or theft. http://www.ashevillenc.gov/Portals/0/city-documents/TransportationEngineering/Traffic_Engineering/FinalBikePlanAdopted022608.pdf	Asheville, NC
		Bicycle Route Accommodations	Just as bicycle trips and users vary widely, there are several types of facilities available for bicyclists. These include: shared roadway, wide outside lane, paved shoulders, bicycle lanes, and greenways and multi-use paths. http://fbrmpo.org/lrtp/	Asheville, NC
		Safe Routes to School (SRTS) Program	Asheville's SRTS Program is a collaboration between Asheville Transit, Asheville Public Schools, public health organizations, parent associations, and local walking and bicycling advocacy groups, to develop safe bicycle routes to Asheville schools. Asheville should work with local schools to increase participation in International Walk and Bicycle to School Day to increase awareness of bicycling as a fun and healthy transportation choice that can reduce automobile congestion and pollution near schools. http://www.ashevillenc.gov/Portals/0/city-documents/TransportationEngineering/Traffic_Engineering/FinalBikePlanAdopted022608.pdf	Asheville, NC
		League of Certified Instructors (LCI)	The Asheville/Buncombe area is fortunate to have a growing number of bicycle safety instructors certified by the LCI. These instructors assist people to learn how to ride their bikes safely in traffic. http://www.bikeleague.org/programs/education/instructors.php	Asheville, NC
		Asheville on Bikes	Asheville on Bikes cultivates the culture of commuting and urban cycling within the city through celebration and advocacy. It believes that bicycling has a direct impact on the health of the community. http://ashevilleonbikes.com/	Asheville, NC
		Bicycle-Mounted Law Enforcement Officers	Asheville has law enforcement on bikes. ftp://landofskygis.org/MPO/BlueRidgeBikePlan/November2012_CommMeetings/LocalPolicies_Matrix.pdf	Asheville, NC
		Asheville Bicycle and Pedestrian Task Force	The Asheville Bicycle/Pedestrian Task Force is a citizen's advisory committee to the City of Asheville. It works closely with city and metropolitan planning staff to give input on the needs of bicyclists and pedestrians. http://abptaskforce.org/	Asheville, NC
		Share the Road Signs	The Blue Ridge Bike Plan recommends adding "share the road" signs for bicycles on certain routes. http://www.landofskygis.org/brbp.html	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		Bicycle Shoulders	The Blue Ridge Bike Plan recommends expanding Asheville's network of bike shoulders on roads and in climbing lanes. http://www.landofsky.org/brbp.html	Asheville, NC
		Crash Data Tool	The NCDOT's Division of Bicycle and Pedestrian Transportation provides a crash data tool via their website, where 10 years of pedestrian and bicycle crash information is available at the state, region, county and city level. http://www.ncdot.gov/bikeped/researchreports/	Asheville, NC
		Sidewalk Improvement Program	Asheville instituted a "fee-in-lieu" of sidewalk program to channel development costs for required sidewalks into the most critical areas. The program generated more than \$160,171 in the 3 years since its inception. http://www.ashevillenc.gov/portals/0/city-documents/TransportationEngineering/Bike_and_Ped_Services/2005PedestrianPlanChapters1-2PlanPurposePlanningContext.pdf	Asheville, NC
		Sidewalk Specifications and Details Manual	The 2009 City of Asheville Standard Specifications and Details Manual specifies the requirements for sidewalks on one or both sides of new or existing streets. The Standard Specifications also address the provision of bicycle facilities and multimodal design standards for transit facilities. http://www.ashevillenc.gov/Departments/DevelopmentServices/StandardDetailsSpecifications.aspx	Asheville, NC
		Preferred Street Design Cross-Sections	Preferred street design cross-sections should provide provisions for bike lanes and sidewalks, and also should extend beyond the right-of-way to address items such as building setbacks, parking location and scale and size of buildings. Creating this typology for Asheville streets will provide a blueprint for future transportation improvements and future development. The result will be a better coordination between land use and transportation planning. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Passenger Rail Initiative	Per the Western North Carolina Passenger Rail Initiative, Asheville plans to add passenger rail to the existing freight service. The passenger rail station will serve as a multimodal hub for passenger rail, route bus transit, commercial inter-city bus transit, bike, car and on foot. In addition, the station will tie into the Asheville Greenway System. http://www.ashevillenc.gov/Departments/EconomicDevelopment/ProjectsInitiatives.aspx	Asheville, NC
		South East High Speed Rail (SEHSR) Corridor	With tremendous economic and population growth, the Southeast needs a comprehensive, multi-modal transportation system. High-speed rail service will provide business and leisure travelers with a competitive alternative to air and auto for trips between 100 to 500 miles. The corridor seeks to provide service from Washington, D.C., to Charlotte, North Carolina, and received additional funding in 2010. Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama and Tennessee have joined together with the business communities in each state to form a SEHSR Coalition to plan, develop and implement high-speed rail in the Southeast. The system will be developed incrementally, upgrading existing rail rights-of-way. http://fbrmpo.org/lrtp/	Asheville, NC
		Commercial Rail Service	Railroads serve regional and national transportation functions and are an important part of the French Broad River Metropolitan Planning Organization areas' integrated transportation system. There is increased interest in rail as an economically efficient and environmentally sound mode to transport goods in and around Asheville. http://fbrmpo.org/lrtp/	Asheville, NC
		Boston Complete Streets	Boston Complete Streets is a program that put pedestrians, bicyclists and transit users on equal footing with motor-vehicle drivers, creating streets that are both great public spaces and sustainable transportation networks. http://bostoncompletestreets.org/	Boston, MA








TRANSPORTATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		Boston Bikes	Boston Bikes seeks to make Boston a world-class bicycling city by focusing on improvements in all five universal bike planning areas: Engineering, Enforcement, Education, Encouragement and Evaluation. http://www.cityofboston.gov/bikes/	Boston, MA
		Hubway Bikeshare System	Hubway is a bike-sharing system providing more than 100 stations and 1,000 bikes available in Boston, Brookline, Cambridge and Somerville. http://www.thehubway.com/	Boston, MA
		Bicycle Safety Plan	Mayor Thomas M. Menino, in conjunction with MassBike, Livable Streets Alliance, Boston Cyclists Union, Walk Boston, Boston University Police, Northeastern Police and Boston Public Health Commission, announced a new enforcement and education campaign in 2011 to promote safe behavior among cyclists and drivers in preparation for the city's launch of the Hubway bike-share program. http://www.icleiusa.org/news/bicycle-safety-plan-rolled-out-for-boston	Boston, MA
		Melnea Cass Boulevard Design Project	The Boston Transportation Department is working with the Roxbury community to redesign Melnea Cass Boulevard with the goal of making it a neighborhood friendly corridor. The scope includes the development of roadway and streetscape designs that create a pedestrian friendly environment, ensure efficient traffic flow, accommodate transit vehicles and bicycles and promote economic development. http://www.cityofboston.gov/transportation/melnea/	Boston, MA
		Walk Boston	A website that provides tools to help advocates identify the problems pedestrians face and offer solutions for overcoming and improving the city's walking environment. http://www.walkboston.org/what-we-do/being-advocate	Boston, MA
		Pedicabs	Pedicabs—cyclist-powered taxis—are licensed by the Police Department, with approval by the Transportation Department required for routes and times of operation. In the past 3 years, Boston has gone from no licensed pedicabs to 21 pedicabs operated by two companies. http://www.cityofboston.gov/Images_Documents/Interim%20Pedicab%20Rule_tcm3-9951.pdf	Boston, MA
		South Station Expansion	The expansion, including construction of seven new tracks, would support a significant increase in Amtrak Acela Express high-speed rail service to Boston and expansion of the Massachusetts Bay Transportation Authority (MBTA) commuter rail service. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Transportation Access Plan Agreement (TAPA)	The Boston Zoning Code (Article 80) requires developers of large projects, greater than 50,000 square feet, to sign a TAPA with the Boston Transportation Department. Boston City Government has used this tool effectively for many years—and will continue to use it, now in conjunction with Complete Street Guidelines—to develop the streetscape, keep down parking capacity, expand traffic management tools, expand bicycle infrastructure and expand the use of transportation demand management (TDM) by businesses and institutions. http://www.cityofboston.gov/transportation/rules/guidelinesappeal.asp	Boston, MA
		Off-Street Bicycle Parking Guidelines	The Off-Street Bicycle Parking Guidelines established minimum guidelines for the number of covered and outdoor bicycle parking facilities required from projects subject to Boston Redevelopment Authority (BRA) and Boston Transportation Department (BTD) review. http://www.cityofboston.gov/transportation/pdfs/guidelines.pdf	Boston, MA
		Bicycle Lanes	The city should continue its efforts to add bicycle lanes to city streets and create a fully integrated bicycle lane network. In high traffic areas, the city may even consider dividing bike lanes from auto traffic lanes using small medians. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Central State Park Bike Route (CSPBR)	The CSPBR winds over 91 miles of trail connecting three state parks. The route travels through Ogden, and local facilities and establishments are promoted in the CSPBR guide and literature. http://www.guthrie-county-tourism.com/index_files/biking.htm	Ogden, IA










TRANSPORTATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Provide Multi-Modal Transportation Options		Futurewise: Transit-Oriented Communities, A Blueprint for Washington State	A 2009 report analyzing the issues of urban development and providing options for managing transportation growth. http://futurewise.org/resources/publications/TOC%20Blueprint%20Final%2011-23-09%20for%20Website.pdf	Spokane, WA
		National Transportation Enhancements (TE) Clearinghouse	Communities across America are using TE funds from the federal government to expand travel choice, strengthen the local economy, improve the quality of life and protect the environment. http://www.enhancements.org/	Woodbine, IA
		Intermodal Transit Facility Feasibility Study (2008)	The study concluded that a new intermodal facility is recommended in downtown Wyandanch to improve the quality of life for the public and encourage economic revitalization. http://www.townofbabylon.com/documentcenter/view/17	Wyandanch, NY
		Street Design	Straight Path is a dominant factor in determining how people experience Wyandanch. Preliminary research indicates that current traffic levels of approximately 23,700 cars per day could easily be accommodated on a well-designed, two-lane street. The excess space formerly dedicated to travel lanes can be allocated to wider sidewalks and bicycle lanes. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
Adopt New Technologies		Clean Vehicles Coalition	The Clean Vehicles Coalition is a Clean Cities program of the Land of Sky Regional Council in the Western North Carolina area that aims to reduce the Nation's dependence on foreign sources of petroleum and improve air quality through the use of cleaner/alternative fuels, including compressed natural gas, propane, ethanol, biodiesel, electricity and hydrogen. http://www.landofsky.org/cleanvehicles.html	Asheville, NC
		Intelligent Transportation Systems (ITS)	ITS encompasses a variety of information technology-based solutions, such as synchronized signals and real-time messaging, to improve the driver experience and minimize congestion. http://fbrmpo.org/streets-highways/	Asheville, NC
		Asheville Area Electric Vehicle (EV) Committee	The committee is a collection of local governments, utility providers, businesses, academic institutions and nonprofits committed to preparing the Asheville Metro Area for plug-in electric vehicles. http://www.advantagegreennetwork.org/group/ashevilleareaevcommittee	Asheville, NC
		EVBoston Initiative	EVBoston is an initiative of the Boston Transportation Department, focusing on the infrastructure and introduction of electric cars to Boston. An EVBoston map identifies electric vehicle charging stations around the area. http://www.evbostononline.org/	Boston, MA
		Electric Vehicle Charging Station Grant	Boston was granted 22 free dual electric vehicle charging stations by the Green Communities Division of the state's Department of Energy Resources. The grant included \$1,000 per station for installation. Through the EVBoston initiative, the City of Boston is preparing for the growth of the electric vehicle market in the region, and as a newly designated "Green Community," the City of Boston was able to apply for these funds and be given priority consideration on the state's list of potential applicants. http://www.cityofboston.gov/news/Default.aspx?id=5209	Boston, MA
		Boston Diesel Retrofit Program	As part of the Boston CleanAir Vehicles Program, the City of Boston paid one-half of the cost of pollution control equipment for diesel vehicles. Diesel retrofit vehicles were marked "CleanAir Vehicles." http://www.cityofboston.gov/Images_Documents/APCC%20diesel%20retrofit%20grant%20FY10_tcm3-16369.pdf	Boston, MA
		Alternative Fuel and Hybrid Vehicles	The city should explore the feasibility of purchasing and operating passenger alternative fuel vehicles that run on renewable and clean biofuels such as ethanol or biodiesel. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Alternative Vehicles	The city should require the Fire and Police departments to use alternative vehicles. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf	Milwaukee, WI

TRANSPORTATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Adopt New Technologies		Alternative Fuel Vehicles Program	The Greater Long Island Clean Cities Coalition (GLICCC) is instrumental in cultivating an advanced transportation community in which people learn about a wide range of options and technologies. In addition, GLICCC helps create markets for alternative fuel vehicles (AFVs), fuel economy, idle reduction, and other emerging transportation technologies. The GLICCC can provide a forum for members to leverage their resources, develop joint projects, collaborate on public policy issues, and promote petroleum reduction and clean air technologies. The GLICCC provides information on funding available from various sources to help offset the cost of Alternative Fuel Vehicles and Infrastructure. http://www.gliccc.org/funding/	Wyandanch, NY
		Strive Not To Drive Campaign	The Strive Not To Drive program promotes active and sustainable transportation in Asheville and Buncombe counties. http://ashevilleonbikes.com/strive-not-to-drive	Asheville, NC
Encourage Acceptance		Public Education Campaigns	Asheville Transit implements public education campaigns to increase awareness and acceptance of public transit options. Individuals fall into one of three groups: supporters (36%); swing (33%); and non-supporters (31%) of public transit. The high level of non-supporters represents a real challenge. Marketing efforts should focus on the swing group rather than trying to energize the supporter group. They will be energized by any efforts devoted to the swing group. The swing group is mostly unfamiliar with transit; the more familiar they are, the more supportive. Four key messages emerged: <ul style="list-style-type: none"> • Provide opportunities for people from every walk of life. • Have lots of choices and options available. • Provide easy access to the things people need in everyday life. • Provide the mobility and freedom for people to do what they most want to do. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC
		Effective Route Management and Attractive Transit Facilities	Asheville's Transit Master Plan describes efforts to provide effective route management and attractive facilities. Ideally, the transit center will be refurbished every 10 years to keep it looking new and attractive. Any route management improvements can take advantage of many technologies that have developed since the transit center was originally constructed. These can include a "next bus" display indicating when the next bus on a route could be expected to arrive. Additionally, an automatic vehicle location (AVL) system could be implemented on the buses showing graphically their location around the city, with a map prominently displayed at the transit center. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC
		Targeted Intersection Improvements	Targeted intersection improvements, such as adding right and left turn lanes, go a long way toward preserving the capacity of the roadway. Another promising intersection option is the modern roundabout. Roundabouts present a demonstrated successful alternative to signalized intersections. Roundabouts maintain a constant flow of traffic through an intersection and can improve safety. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Local Street Network Connections	Although Asheville will never be able to create the traditional urban pattern of a grid street network due to its topography, a few key connections in the local street network will go a long way toward reducing connections on major thoroughfares. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Attractive and Convenient Transit Shelters	Asheville requires the provision of transit shelters in new commercial, office, mixed use and industrial developments that are of sufficient size to attract a significant transit ridership. The shelters should be attractive, maintenance-free, handicap accessible and provide a power outlet (preferably solar powered). To maximize the benefit of the passenger shelters, an attractive pedestrian path should be provided connecting the shelter with nearby destinations. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC

TRANSPORTATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Encourage Acceptance		Safety Plan	Each public transportation operator in the French Broad River Metropolitan Planning Organization (MPO) region has its own safety plan, which it keeps updated to comply with Federal Transit Administration (FTA) requirements. Although common public transportation safety issues such as driver training, drug testing, and regular vehicle maintenance are largely outside the purview of the MPO, the greatest impact that can be had on public transportation safety at the regional level is to ensure that streets are safe for public transit users, including customers traveling to and from a bus stop as well as while they are on transit vehicles. http://fbrmpo.org/lrtp/	Asheville, NC
		Improving the Transit-Riding Experience	Asheville Transit conducted a survey to identify areas in need of improvement, including information quality, span of service, timeliness, frequency and routing. Efforts are underway to improve the transit-riding experience, including the scheduling of routine Sunday routes. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC
		Preferred Parking	Buncombe County should promote preferred parking for carpooling and alternative fuel source vehicles. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Park and Ride Lots	Buncombe County should establish “park and ride” lots and other mechanisms to reduce transportation congestion in commercial hubs and other important areas and educate the public about their value. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC
		Traffic Signal Upgrades	Asheville's traffic signals are in need of a major upgrade to modern technology to provide a citywide synchronized system. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Access Management	Access Management is the term used to describe efforts to improve the traffic flow and safety on a roadway by controlling the access points. A successful access management plan will provide access to adjacent properties through shared driveways, access roads and turning lanes at intersections. Access management should be a component of all new roadway improvements. http://www.ashevillenc.gov/portals/0/city-documents/Planning/land_use_section_1.pdf	Asheville, NC
		Low-Greenhouse Gas Taxis	The number of low-greenhouse gas taxis in Boston continues to grow as owners and drivers become more familiar with the technology and more aware of the financial benefits, and as taxicab users express their preferences. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Parking Freezes	Off-street parking in Boston is subject to the city's zoning code and parking freezes in three parts of the city: Downtown, South Boston, and East Boston. Effective administration and enforcement of the Downtown and South Boston parking freezes, by limiting parking availability, discourage commuters from driving in Boston and reduce vehicle miles travelled (VMTs). http://www.cityofboston.gov/environment/airpollution/parkingfreezes.asp	Boston, MA
		Metered On-Street Parking	City government seeks to manage and enforce on-street metered parking to optimize turn-over at—and discourage cruising for—metered parking places and to discourage driving to transit-served locations. http://www.cityofboston.gov/parking/meters.asp	Boston, MA

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Sustainability Priority		Tool	Description	Community
Encourage Acceptance		Organization's Clean Air and Mobility Program	The Metropolitan Planning Organization's Clean Air and Mobility Program funds a wide variety of projects that improve air quality and mobility and that reduce congestion in the region using federal Congestion Mitigation and Air Quality (CMAQ) funds. This program expanded on three previously existing programs: the Suburban Mobility, Transportation Demand Management (TDM) and Regional Bike Parking programs. http://www.ctps.org/Drupal/clean_air_mobility_overview	Boston, MA
		Transportation Management Association (TMA)	MassCommute is a coalition of 11 TMAs working with more than 300 businesses, medical facilities and higher learning institutions in 39 municipalities across the Commonwealth. TMAs leverage public and private funds to promote the use of ride sharing and other alternative commute methods to reduce traffic congestion and vehicle emissions while improving access for commuters. http://www.masscommute.com/	Boston, MA
		Car-Sharing	Boston City Government would like to ensure that every Boston resident lives within one-fourth of a mile of a shared car by 2020. City government is using its contracting authority to increase the number of car-sharing opportunities. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Bicycle Racks	Businesses should be encouraged to provide bicycle racks on their property. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Locker Rooms	Businesses should be encouraged to provide locker rooms for employees to shower and change cloths after their bike commute to work. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Green Parking Permit	The city could encourage further use of high mileage hybrid and alternative fuel vehicles by providing free street parking for qualifying vehicles. Such vehicles would have to demonstrate public benefits, such as significantly reduced greenhouse gas emissions per mile traveled. Such a program could be administered through the existing city parking permit programs. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Develop a Signature Event	Expand an existing event—or develop a new one—that creates a unique draw to Ogden and builds off of the assets identified. For example, work with CITA to sponsor a bike tour along the CSBPR. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Commute Trip Reduction (CTR) Program	Spokane's CTR Program provides support for ride sharing, taking public transportation and other alternative forms of transportation, contributing to improving the city's air quality. http://www.mycommute.org/	Spokane, WA
		Sitting Places	Participants described undesirable “loitering” on the street, and wanted ordinances to prohibit people from standing on the street. There is also a need to welcome people to the community and the street, make them comfortable, and invite them to stay. The sense of place that people envisioned for Wyandanch is created not only by physical attributes; it also is created by the people who are present in the public space. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY

LOCAL FOOD SYSTEMS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Community Gardens		School Garden Programs	To foster community health, Buncombe County should promote and support school garden programs. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Registries	North Carolina State University lists community gardens by county and provides national and North Carolina registries. http://nccommunitygarden.ncsu.edu/gardens.html	Asheville, NC
		Master Urban Gardener (MUG)	Boston Natural Areas Network's (BNAN) MUG program and other initiatives provide leadership training for community gardeners and include current leaders as a resource. http://bostonnatural.org/MUG.htm	Boston, MA
		HOME GR/OWN	Milwaukee is one of 20 cities named a finalist in the "The Mayor's Challenge," a national grant competition sponsored by the Bloomberg Philanthropies challenging cities to address serious urban problems with innovative ideas. Milwaukee's innovative HOME GR/OWN plan incorporates foreclosed properties, urban farming and entrepreneurial spirit to revitalize neighborhoods and improve public health. The city owns nearly 4,000 vacant lots and foreclosed homes and will designate a significant portion of them for other creative uses, including urban agriculture and urban homesteading. Milwaukee is competing against 19 other cities for the \$5 million grand prize as well as four \$1 million additional runners up prizes. http://city.milwaukee.gov/sustainability/HOMEGR/OWN.htm	Milwaukee, WI
		Growing Power, Inc.	Growing Power is a national nonprofit that implements its mission by providing hands-on training, on-the-ground demonstration, outreach and technical assistance through the development of Community Food Systems. www.growingpower.org	Milwaukee, WI
		Alice's Garden	Alice's Garden is a 2-acre, urban, community garden in Milwaukee, WI, nurturing families and organizations to restore cultural/family traditions connected to land and food. http://www.alicesgardenmilwaukee.com/	Milwaukee, WI
		Community Garden Program	The Spokane Community Garden Program is a collaboration between the City of Spokane, the Spokane Regional Health District (health district), WSU Spokane County Extension (WSU extension) and its Master Gardener Program and interested gardeners. http://www.greenspokane.org/community-gardens/	Spokane, WA
		Earth Turners Community Garden	The garden is a project of the Earth Turners, an organization of high-school-age people guided by Community-Minded Enterprises. The Earth Turners work with children from the Peaceful Valley Community Center, mentoring them in gardening, healthy eating and environmentally sound food production. http://spokaneparks.org/index.php/Parks/page/104/	Spokane, WA
		Plant Hardiness Zone Map	The 2012 USDA Plant Hardiness Zone Map is the standard by which gardeners and growers can determine which plants are most likely to thrive at a location. http://planthardiness.ars.usda.gov/PHZMWeb/	Spokane, WA
		Woodbine Community Schools (WCS) Latchkey Community Garden	In Summer 2011, the WCS Latchkey program participated in a Community Garden Project. http://www.woodbineia.org/green-initiatives/projects	Woodbine, IA
Farmers Markets		Asheville City Market	The Asheville City Market is a community initiative of the Appalachian Sustainable Agriculture Project (ASAP) and is governed by its Board and By-Laws. It is operated at two locations with various summer and winter hours. http://www.asapconnections.org/citymarket.html	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Farmers Markets		Mountain Tailgate Market	The Mountain Tailgate Market Association (MTMA) is a collaborative group of farmer- and vendor-only markets in the southern Appalachian mountains of Western North Carolina. Formed in 2002, the organization works collaboratively to promote the local markets, fresh food, and artisan crafts of the area's farmers, artists, bakers, food processors and other producers. http://www.asapconnections.org/MTMA.html	Asheville, NC
		Boston Bounty Bucks	The Food Project partnered with the City of Boston to pilot the Boston Bounty Bucks program to enable all residents of Boston to have access to the produce available at city farmers' markets and to strengthen the economy of local farmers. http://thefoodproject.org/bountybucks	Boston, MA
		Office of Food Initiatives	The Office of Food Initiatives was created to assist local farmers, merchants and various city departments to determine viable areas that would embrace and thrive from Farmers Markets. http://www.cityofboston.gov/food/farmers/locations.asp	Boston, MA
		Sustainable Food Leadership Award	The Sustainable Food Leadership Award, launched at the Mayor's 5th Annual Green Awards in 2011, recognizes businesses and/or organizations that demonstrate extraordinary efforts to provide the freshest, local food in the most sustainable manner. http://www.cityofboston.gov/environmentalandenergy/greenawards/sustainablefood.asp	Boston, MA
		Farmers Markets Map	Buying local Ogden foods is a simple way to improve individual and community health. Local food does not suffer the "jet lag" of produce trucked across the country. It puts more money back into the local economy and saves a lot of gas. http://www.american towns.com/ia/ogden-local-food	Ogden, IA
		Spokane Farmer's Market Website	The Spokane farmer's market website presents local food options as well as information about nutrition and food assistance programs. http://www.spokanefarmersmarket.org/	Spokane, WA
		Puget Sound Fresh Website	This website provides information on Farmers Markets and local produce available seasonally and year-round. http://www.pugetsoundfresh.org/	Spokane, WA
		Welcome Center Farmers Market	The Welcome Center Farmers Market is located in Missouri Valley, IA. Its participation in the Farmers Market Nutrition Program is pending. http://www.idalsdata.org/fmnp/index.cfm?fuseaction=main.formFarmersMarketDirectory	Woodbine, IA
		Shiloh Community Farmer's Market	The Shiloh Community Farmer's Market in Wyandanch provides fresh produce picked up from Long Island growers every Saturday. http://snap-retailers.findthedata.org/1155018/Shiloh-Community-Farmers-Market	Wyandanch, NY
Farms to Restaurants and Schools		Farm to Institution Program	The Appalachian Sustainable Agriculture Project's (ASAP) current Farm to Institution Program partners with the University of North Carolina–Asheville (UNCA) to get hospitals, colleges, universities and other institutions have the potential to act as community role models for proactive healthy choices by featuring fresh, local foods and offer food- and farm-related educational programming. http://www.asapconnections.org/farmtoinstitution.html	Asheville, NC
		Growing Minds Farm to School	Farm to School programming includes school gardens, local food cooking classes and demonstrations, farm field trips and the serving of local food in school cafeterias. The program provides resources and training to teachers, schools, Child Nutrition Directors, cafeteria staff, parents, extension agents, farmers, and other community stakeholders to encourage and sustain Farm to School efforts. http://growing-minds.org/	Asheville, NC
		King County Food and Fitness Initiative	A program to create vibrant communities supporting locally grown food. The program strives to improve the school food and fitness environment by educating students about the nutritional and health benefits of eating locally grown foods and exercising regularly. http://county.wsu.edu/king/health/foodandfitness/Pages/default.aspx	Spokane, WA

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Sustainability Priority		Tool	Description	Community
Agricultural Partnerships		Growing Farm and Forest Economies Project	The Western North Carolina (WNC) Growing Farm and Forest Economies Project will lead to the creation of higher wage jobs by identifying key niche markets in processing and manufacturing of value-added products and services, highlighting existing infrastructure capabilities and investigating opportunities for growth. http://landofsky.org/pdf/LGS/CEDS2013-2017.pdf	Asheville, NC
		Appalachian Sustainable Agriculture Project	Appalachian Sustainable Agriculture Project mission is to help local farms thrive, link farmers to markets and supporters, and build healthy communities through connections to local food. http://www.asapconnections.org/	Asheville, NC
		Appalachian Grown™ Certification Program	The Appalachian Grown™ branding program identifies local farm products in stores and restaurants and at other businesses. The Appalachian Grown symbol is displayed with farm products grown or raised in Western North Carolina and the Southern Appalachian Mountains. http://www.asapconnections.org/appalachiangrown.html	Asheville, NC
		Blue Ridge Food Ventures Program	To foster community health, Buncombe County should promote and develop incentives for local sustainable farms (i.e., expand the Blue Ridge Food Ventures program). Blue Ridge Food Ventures is an 11,000 square foot shared-use kitchen incubator and natural products manufacturing facility that offers support in product development, guidance through the maze of regulations governing safe production of food products and dietary supplements, advice on packaging and label design, and much more. http://www.advantagewest.com/content.cfm/content_id/144/section/food	Asheville, NC
		Mary Boyer Sustainable Food and Agriculture Grant	The purpose of the Sustainable Food and Agriculture Grant is to strengthen the local food system by supporting female farmers, ranchers and processors who plan to create innovative, sustainable solutions to production or marketing obstacles in the High Country. http://www.advantagegreennetwork.org/profiles/blogs/sustainable-food-agriculture-grant	Asheville, NC
		The Boston Collaborative for Food and Fitness	The Boston Collaborative pursues strategies to strengthen the local/regional food system by increasing markets through schools, increasing access and affordability of healthy food in retail outlets—especially independent stores in low-income neighborhoods—and other projects in neighborhoods with community partners, including youth. The Collaborative leverages the W.K. Kellogg Foundation investment with in-kind and financial resources from public and private sources. http://www.bcff-online.org/	Boston, MA
		Local Producer Ordinance	The Local Producer Ordinance promotes local economic development and food production through bid discounts on competitively bid contracts and evaluation credits on professional service contracts for companies based on three-tiers of evaluation criteria. The three tiers include: <ul style="list-style-type: none"> • Companies headquartered in the five-county region that fabricate, process or supply goods in the region, as well as companies headquartered in a wider 15-county region that grow food within the wider region. • Companies headquartered in the five-county region, which meet sustainability practices as set by the Office of Sustainability. • Companies located anywhere that purchase at least 20 percent of the amount of their city contract from local food producers. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Cooperatives	Various cooperative business models are springing up as viable ways to maximize capital. Consumer-owned cooperatives produce more consumer loyalty by giving customers a voice in purchasing decisions, a share in the benefits that their patronage produces and/or discounted pricing comparable to the “bulk pricing” that larger corporations offer. Worker-owned cooperatives have proven to increase productivity and quality while also generating wealth-building opportunities that demonstrate the regenerative nature of re-localization. Producer cooperatives, such as dairies and other agricultural businesses, have long demonstrated success in ensuring fair pricing and streamlining distribution, processing and/or packaging for groups of local-scale farmers. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA











LOCAL FOOD SYSTEMS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Diversified Foods		MANNA Food Bank	MANNA Food Bank collects, stores, warehouses and distributes food to MANNA-accredited non-profits throughout 16 counties in Western North Carolina. MANNA provides direct service on a very limited basis to those struggling with hunger through the MANNA Packs for Kids Program and Food Stamp Outreach. MANNA assists partner agencies with acquiring food to serve those facing hunger. http://mannafoodbank.org/	Asheville, NC
		Growing Local: Expanding the Western North Carolina Food and Farm Economy	A 2007 report titled, "Growing Local: Expanding the Western North Carolina Food and Farm Economy," indicates that there is significant market potential for expanding the locally grown and produced products industry. http://www.advantagegreen.org/	Asheville, NC
		Local Food Guide	The Appalachian Sustainable Agriculture Project's (ASAP) online Local Food Guide for Western North Carolina and the Southern Appalachians connects citizens with fresh local food, the farmers who grow it, and the markets, grocers and restaurants committed to using locally grown products. http://www.buyappalachian.org/	Asheville, NC
		Electronic Benefits Transfer (EBT) Card Use at Farmers Markets	To foster community health, Buncombe County should enable Farmers Markets to accept EBT cards. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Meat Packing Facility	Buncombe County should research the feasibility of a meat-packing facility in the area. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Healthy Cooking Education	Buncombe County should support existing programs that teach and promote the importance of healthful cooking. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Food Trucks	Boston is excited to host food trucks at various downtown locations and in the neighborhoods. Food trucks can be found at 20 public locations around Boston and at special sites like the Rose Kennedy Greenway. The Mayor's Office, Public Works, Transportation, Inspectional Services, and Fire departments have developed a single application process for procuring Mobile Food Vending Vehicle Permits. http://www.cityofboston.gov/business/mobile/	Boston, MA
		Milwaukee Food Council	Although food significantly affects a myriad of issues related to the economy, the environment, public health, land use, community culture and quality of life, there is no single government body in Milwaukee that illuminates food's interconnectedness with such problems. The Milwaukee Food Council seeks to bridge this gap by working across sectors to examine and collaborate on existing policies and operations to build a food system that is ecologically sustainable, economically vibrant and socially just. http://www.resilientcities.org/Resilient_Cities/MILWAUKEE_FOOD_COUNCIL.html	Milwaukee, WI
		Spokane Tribe Senior Center Meal Program	The Spokane Tribe serves lunches to seniors at its Senior Center. http://www.spokanetribe.com/seniors	Spokane, WA
		Farmers Market Nutrition Program	The Iowa Department of Agriculture and Land Stewardship helps promote the more than 170 Farmers Markets located across the state and administers the Farmers Market Nutrition Program for seniors and residents participating in the Women, Infants and Children (WIC) program. http://www.iowaagriculture.gov/Horticulture_and_FarmersMarkets/farmersMarketNutritionProgram.asp	Woodbine, IA

WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Water Conservation		Water Supply Stress Index	The Water Supply Stress Index (WaSSI) model is a Web-based planning tool to help natural resource planners and managers evaluate the balances and tradeoffs between water availability and carbon sequestration, and to support informed decision making in light of changing environmental conditions. The WaSSI can predict how climate, land cover and human population change may impact water availability and carbon sequestration at the watershed level and across the lower 48 United States and Mexico. http://www.forestthreats.org/research/tools/WaSSI/	Asheville, NC
		Best Management Practices (BMP)	Asheville's water quality BMP tools are recognized as the best way to treat or eliminate pollutants in stormwater runoff. Examples include wet ponds, stormwater wetlands, rain gardens and riparian buffers. http://www.ashevillenc.gov/portals/0/city-documents/Planning/air_water_quality.pdf	Asheville, NC
		The Irrigation Association	For landscaping, Asheville encourages the use of water conservation approaches promoted by The Irrigation Association. http://www.irrigation.org/	Asheville, NC
		Water Measurement Manual	Asheville consults the Department of Energy's (DOE) Federal Energy Management Program's Water Measurement Manual: A Water Resources Technical Publication to improve water conservation practices. http://www.usbr.gov/pmts/hydraulics_lab/pubs/wmm/	Asheville, NC
		Rate Structuring	Nonessential water use can be reduced through rate structuring. Rate structures include: <ul style="list-style-type: none"> Increasing block rates. Tiered pricing provides the incentive for users to remain in the "lowest tiers" to avoid the high charges that result from water use above specified thresholds. Seasonal rates. Increasing block rates are sometimes placed into effect during warmer, high-demand periods, particularly in cases where summer demands are notably higher than the remainder of the year. http://www.ashevillenc.gov/Portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf	Asheville, NC
		Industrial/ Commercial Water Efficiency Audits	Waste Reduction Partners has an ongoing technical support project with the City of Asheville Water Resources Department to perform water saving assessments for their large water customers. http://landofsky.org/pdf/LGS/CEDS2013-2017.pdf	Asheville, NC
		Sustainability Wheel	This Sustainability Wheel helps connect the dots of the Wilma Dykeman RiverWay and illustrates the many voices of the river. http://www.riverlink.org/documents/SustainabilityWheel_000.pdf	Asheville, NC
		Water Efficiency Manual for Commercial, Industrial and Institutional Facilities	The Water Efficiency Manual for Commercial, Industrial and Institutional Facilities presents information on how to conduct a water efficiency program, water management options, industry-specific processes, auditing methodology and tools, and drought contingency planning for facility managers. http://infohouse.p2ric.org/ref/01/00692.pdf	Asheville, NC
		Groundwater Conservation Overlay District (GCOD)	The GCOD requires people building or renovating properties in the affected area to ensure that their projects will not cause any reduction in groundwater levels and to incorporate systems that will recharge rainwater into the ground instead of sending it all down the sewer. http://www.bwsc.org/REGULATIONS/groundwater/groundwater.asp	Boston, MA
		City-State Groundwater Working Group	In 2005, the city and state governments came together to sign a Memorandum of Understanding creating a City-State Groundwater Working Group that includes all of the public agencies responsible for the underground infrastructure, including the state Office of Commonwealth Development, the Boston Groundwater Trust, the Massachusetts Bay Transportation Authority (MBTA), Mass Turnpike Authority and Boston Water and Sewer, among others. All of these agencies have pledged to work together to understand the causes of the problem and to repair those problems for which they are responsible. http://www.cityofboston.gov/Images_Documents/Mem_Unders_tcm3-2755.pdf	Boston, MA










WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Water Conservation		Groundwater Trust	The Boston Groundwater Trust monitors groundwater levels in the city and makes recommendations to solve local issues. http://www.cityofboston.gov/boardsandcommissions/GT.asp	Boston, MA
		Water Conservation and Efficiency Program	The Massachusetts Water Resources Authority's (MWRA) Water Conservation and Efficiency programs help maintain regional water demand comfortably below the water supply system's safe yield (300 million gallons per day). http://www.mwra.state.ma.us/comsupport/waterconservationmain.htm	Boston, MA
		Groundwater Availability Assessment Tools	Tools to measure the amount of water currently available determine changes in water levels and evaluate correlations with increased withdrawals. The tools also measure impacts to adjacent users, surface water impacts and long-term aquifer sustainability. http://www.spokanecounty.org/data/utilitieswqmp/Water%20Availability%20Tools%20and%20Criteria.pdf	Spokane, WA
		Spokane Water Stewardship Program	The Spokane Water Stewardship Program offered rebate opportunities through its Sprinkler/Smart Controller and High Efficiency Toilets rebate programs. http://www.spokanewater.org/stewardship/	Spokane, WA
		Conservation-Based Water Rate Structure Policy	The Spokane City Council approved a new conservation-based water rate structure that charges large water users more per unit of water. http://www.spokanewater.org/stewardship/	Spokane, WA
		Water Star	The Water Star Program will be a quarterly contest for all City of Spokane employees. The winner of the contest will be the employee who comes up with a creative way to save water within City Hall (or other City properties). The winner will be given a Water Star award and gift certificate. This program will hopefully motivate and remind employees to save water while at work and hopefully in their own homes as well. http://www.greenspokane.org/wp-content/uploads/2011/11/Spokane-Water-Stewardship-Strategic-Plan-4-12-06.pdf	Spokane, WA
Water Quality		Watershed Perpetual Conservation Easement	The easement preserves the land for conversation in its current state of forest for purposes as a surface water supply reservoir. http://www.ashevilenc.gov/Portals/0/city-documents/water/Asheville-Watershed-Conservation-Easement.pdf	Asheville, NC
		Water Resources Department ISO 14001	Asheville's Water Resources Department is committed to environmental protection and high water quality. This commitment was demonstrated in 2004, when the Department became the first ISO 14001 registered water utility in the state. The environmental policy includes enhanced water quality, improved communication and regulation compliance. http://www.ashevilenc.gov/Departments/Water/EnvironmentalPolicy.aspx	Asheville, NC
		North Carolina (NC) Source Water Collaborative	The NC Source Water Collaborative is a statewide partnership to protect drinking water. It includes participants from nonprofit organizations, university programs, state, local and federal agencies, professional associations, and regional councils of government. The collaborative's intention is to support strategies designed to preserve the lakes, streams, rivers and aquifers used for drinking water and the land that protects and recharges these sources of water. http://www.ncwater.org/pws/swap/Collaborative.html	Asheville, NC
		Fertilizer Use	Buncombe County should educate landowners to reduce fertilizer use that could impact water bodies. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Water Quality Educational Outreach	Buncombe County should promote education programs regarding healthy streams/waterways, reaching people through multimedia outlets (i.e., tax bill, laundromats, religious institutions, community centers, BCTV, schools). http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC

WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Water Quality		Waterway Buffer Zones	Preservation of water quality in Buncombe County should be encouraged through natural buffers adjacent to waterways. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC
		River Cleanup Program	As part of the riverfront revitalization, city and county officials should establish a river cleanup program. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
		Integrated Water Supply Improvement Program	The Massachusetts Water Resources Authority's Integrated Water Supply Improvement program is a 10-year, \$1.7 billion series of projects to protect watersheds and to build new water treatment and transmission facilities. Its main components are watershed protection programs, disinfection improvements, the new John J. Carroll Water Treatment Plant, the MetroWest Water Supply Tunnel, covered water storage tanks and pipeline rehabilitation. http://www.mwra.state.ma.us/04water/html/iwsip.htm	Boston, MA
		Boston Harbor and Massachusetts Bay Water Quality	The Massachusetts Water Resources Authority (MWRA) monitors the water quality of Boston Harbor and Massachusetts Bay, measuring nutrients, pathogens, metals, organics, solids, pH, oil and grease, and toxicity. http://www.mwra.state.ma.us/harbor/html/bhrecov.htm	Boston, MA
		Milwaukee Estuary Area of Concern (AOC)	The Milwaukee Estuary was designated an AOC in the 1980s because of historical modifications and pollutant loads that contributed toxic contaminants to the AOC and Lake Michigan. Through the Remedial Action Planning (RAP) process, the Wisconsin Department of Natural Resources (WDNR) along with the help of Citizens Groups, have identified 11 of the 14 beneficial uses as impaired. The 1994 Milwaukee Estuary Remedial Action Plan identified many projects to implement to help meet the vision and goals set for the Estuary by the Citizen's groups. http://www.epa.gov/greatlakes/aoc/milwaukee/index.html	Milwaukee, WI
		Surface Water Quality Standards	The purposes of these water quality standards are to: restore, maintain and protect the chemical, physical, biological, and cultural integrity of the surface waters of the Spokane Indian Reservation; promote the health, safety, welfare, and economic well-being of the Spokane Tribe, its people, and all the residents of the Spokane Indian Reservation; achieve a level of water quality that provides for the protection and propagation of fish and wildlife, for recreation in and on the water, and for all existing and designated uses of the water; promote the holistic watershed approach to management of the Reservation's water; and provide for protection of threatened and endangered species. These standards are designed to establish the uses for which the surface waters of the Spokane Tribe will be protected, prescribe narrative and numeric water quality criteria to sustain the designated uses, protect existing water quality, and prevent water quality degradation. http://www.spokanetribe.com/upload/FCKeditor/Final%20Revised%20Water%20Quality%20Standards.pdf	Spokane, WA
		Spokane Valley-Rathdrum Prairie (SVRP) Aquifer Atlas	The SVRP Aquifer Atlas presents a comprehensive summary of the region's groundwater resource and is a basic reference of the geographic, geologic and hydrologic characteristics of this Aquifer that is intended for broad community use in education, planning and general technical information. http://www.spokanecounty.org/data/utilitieswqmp/aquifer_atlas/Aquifer%20Atlas%20WEB%20res.pdf	Spokane, WA
		Water and Fish Program	The Water and Fish Program began in 2001 combining EPA and Tribal funded water quality programs with the Joint Stock Assessment stream and lake assessment project with the overall goal of protecting and improving water quality and fisheries. http://www.spokanetribe.com/dnr-water	Spokane, WA
		Source Water Protection Resources	An EPA webpage that provides tools and information that citizens can use to learn about source water protection in their area, measures to protect drinking water and tools for source water planning at the community level; fact sheets, guides and other resources to help citizens take an active role in source water protection. http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/citizeninvolvementin-sourcewaterprotection.cfm	Wyandanch, NY

WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Water Quality		Water Quality Portal (WQP)	The WQP is a cooperative service sponsored by the United States Geological Survey (USGS), EPA and the National Water Quality Monitoring Council that integrates publicly available water quality data from the USGS National Water Information System (NWIS) and the EPA STORage and RETrieval (STORET) Data Warehouse. http://www.waterqualitydata.us/	Wyandanch, NY
		Stormwater Best Management Practices (BMPs)	Asheville utilizes numerous BMPs. Stormwater BMPs are actions, behaviors or landscaping practices that reduce pollution and/or the amount of stormwater runoff flowing into waterways. BMPs can be structural, such as a rain barrel or shoreline buffer, or nonstructural, such as picking up after pets or washing vehicles on the grass. Examples of structural BMPs include: rain barrels, pervious materials, native plants, swales, shoreline buffers, habitat gardens, retention ponds, stream bank restoration, backyard wetlands, rain gardens and shade trees. Examples of nonstructural BMPs include the following: never put anything into a storm drain, drainage ditch or creek; always clean up after pets; have soil tested to determine the exact amount of fertilizer and nutrients lawns need; use pesticides as a last resort and do not over-apply; dispose of leaves, grass clippings and other yard waste properly; always throw litter in the trash; reduce, reuse and recycle items whenever possible; recycle motor oil, antifreeze and other auto fluids at an auto parts store or the county landfill; dispose of paints, pesticides and other household hazardous chemicals properly; wash vehicles on the grass or take them to a commercial car wash; check vehicles for leaks and repair them. http://www.ashevillenc.gov/Departments/StormwaterServicesUtility/BestManagementPractices.aspx	
Stormwater Concerns		Stormwater Ordinance	The ordinance has stream protection and erosion rules that can affect both future development and the city's ability to maintain water quality in rivers, streams and lakes. http://www.ashevillenc.gov/portals/0/city-documents/Stormwater/OrdinanceNo3875.pdf	Asheville, NC
		Drought Management Model and Two-Part Flood Model	The computer-based tools are designed to help the city balance the risk of flood damages against its obligation to maintain a safe and reliable water supply system. http://www.ashevillenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%2007.PDF	Asheville, NC
		WaterRICH	WaterRICH is a RiverLink Initiative to assist homeowners in understanding rainwater management. http://www.riverlink.org/WaterRICH.asp	Asheville, NC
		Floodwater Protection Ordinances	Amendment of the County's flood protection ordinance is recommended to encourage greenways within floodways. Incentives can be provided to property owners who allow the location of greenways within floodways. Ordinances prohibiting paved greenways within required stream buffers should be revised to permit hard surfaced greenways if best management practices and low impact development techniques are used to reduce the impact of stormwater runoff. http://www.buncombcounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		Stormwater Management Program	For the riverfront revitalization, city and county officials should develop a comprehensive stormwater management program. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
		Milwaukee Waters: The Lowdown on Runoff Pollution Booklet	The booklet "Milwaukee Waters: The Lowdown on Run-Off Pollution" is an educational tool that explains the issue of stormwater runoff in easy-to-understand language and pictures and provides for citizens to contact authorities about potential problems. http://city.milwaukee.gov/ImageLibrary/Groups/citySWMP/documents/brochure.pdf	Milwaukee, WI
		Friends of Milwaukee's Rivers	As part of its Municipal Stormwater Outreach Program, Friends of Milwaukee's Rivers has created three PowerPoint presentations that train citizens to identify and prevent polluted stormwater runoff. The project envisions a team of informed Water Ambassadors willing to become familiar with the material, connect with potential audiences and make the presentations. Using volunteer presenters to supplement and extend in-house staff expertise increases the amount of people who can become informed and educate others about stormwater. http://mkeriverkeeper.org/support/powerpointpresenters.htm	Milwaukee, WI

WATER MANAGEMENT: Policies, Approaches and Scientific Tools




Sustainability Priority		Tool	Description	Community
Stormwater Concerns		Bioretention Facilities	The city has constructed two major bioretention facilities along Canal Street in the Menomonee Valley. The facilities remove contaminants from stormwater before the flows are discharged into the Menomonee River. http://city.milwaukee.gov/ManagingYourStormwater	Milwaukee, WI
		Onsite Stormwater Management	The Public Works facility on 35th and Capital manages its stormwater onsite in an attractive pond. http://city.milwaukee.gov/ManagingYourStormwater	Milwaukee, WI
		Green Roofs	In 2007, the Department of Public Works installed a green roof on the municipal building at 809 N. Broadway. The city also has installed a green roof on its historic Central Library. http://city.milwaukee.gov/GreenRoofHelpsReduce21961.htm	Milwaukee, WI
		Green Streets	The use of bioretention to reduce stormwater runoff and increase onsite stormwater infiltration is incorporated into Green Street projects. These facilities function as filtration/infiltration devices. Roadway runoff enters the bioretention facilities where vegetative plantings filter pollutants and stormwater evaporates or infiltrates into the ground. http://city.milwaukee.gov/ManagingYourStormwater/Green-Streets.htm	Milwaukee, WI
		Green Street Screening Criteria	Engineers will have a list of screening criteria they enter into the city's streets database in addition to the pavement and pothole conditions. It ensures potential green streets are identified at the outset by looking at wide medians and availability of land. Other conditions, such as a steep grade, make a street an unlikely candidate for green infrastructure. Timing green infrastructure with the reconstruction of a street can save 20 to 40 percent compared to tearing up a street with the specific purpose of adding green infrastructure. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Bioswales	Green street design features ditches or channels covered with foliage, known as bioswales. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Porous Blocks	Green street design features porous blocks. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Planters	Green street design features planters. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Permeable Pavement	When there is no green alternative for streets, pervious surfaces—permeable concrete, permeable asphalt and pavers—enable stormwater to seep into the ground. Pavers resemble a modular, modern day version of cobblestone. The rain seeps through the gaps between the pieces. EPA recommends using permeable pavement in non-critical areas (e.g., low-use roadways, sidewalks, parking lots, alleys). http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Green Roof Subsidies	The Milwaukee Metropolitan Sewerage District (MMSD) is offering a subsidy for green roofs at \$5 per square foot. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Deep Tunnel	The Deep Tunnel is a system of massive sewers that help reduce water pollution by storing excess wastewater 140 to 330 feet underground until there is capacity to treat it at the reclamation facilities. http://v3.mmsd.com/deeptunnelhowitworks.aspx	Milwaukee, WI

WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Stormwater Concerns		Greenseams	Greenseams is an innovative flood management program that permanently protects key lands containing water absorbing soils. The program makes voluntary purchases of undeveloped, privately owned properties in areas expected to have major growth in the next 20 years and open space along streams, shorelines and wetlands. All land acquired will remain undeveloped, protecting water and providing the ability to store rain and melting snow. Wetlands maintenance and restoration at these sites will provide further water storage. http://v3.mmsd.com/Greenseams.aspx	Milwaukee, WI
		Stormwater Management Program	The city has developed a program comprised of a Stormwater Pollution Prevention Program, Stormwater Management Plan and Erosion Control Program. http://city.milwaukee.gov/StormWaterManagement12378.htm	Milwaukee, WI
		Household Rain Barrels	The Milwaukee Metropolitan Sewerage District (MMSD) Rain Barrel program was created to reduce the amount of stormwater entering the District's system, as a part of the MMSD's "Every Drop Counts" campaign. It includes information on purchasing, installing and maintaining rain barrels. The MMSD also manufactures rain barrels. http://v3.mmsd.com/RainBarrels.aspx	Milwaukee, WI
		Rain Garden Plant Program	The MMSD provided grants to homeowners for a 50 percent discount compared to retail prices on rain garden plants. http://h2ocapture.com/Learn/Funding-Programs/Rain-Gardens-Project	Milwaukee, WI
		Green City Parking Lots	City projects need to be showcased that achieve onsite stormwater management to demonstrate their feasibility for the private sector, for example, green city parking lots that use stormwater best management practices (BMPs). http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Stormwater Fee	The city should implement a stormwater fee based on the amount of impervious surface on each property. This fee will help pay for maintenance on the city's sewer system and allow the city to reduce the existing sewer maintenance fee on sanitary sewerage. More importantly, it will provide credit adjustments for commercial property owners who reduce the city's sewer costs by managing their stormwater onsite through green roofs, rain gardens and other bioretention features. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Downspout Disconnect	The MMSD provided a public outreach program to instruct homeowners on how to disconnect downspouts that are connected to the combined sewer system and any downspouts illegally connected to the sanitary sewer, reducing the risks of combined sewer overflows. http://v3.mmsd.com/DownspoutDisconnect.aspx	Milwaukee, WI
		Greenways Design	The city should develop design guidelines to direct the creation of a coherent network of greenways and other public open spaces in redevelopment proposals. Continuous greenways and coherently planned open spaces also can play a significant role in orchestrating stormwater solutions on a smaller scale, including the organization of individual development projects. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Prioritize Stormwater Improvement Investments	The city should use GIS mapping tools and work with the MMSD to identify the key parcels, which if improved would make the greatest contribution to water quality. Similarly, identify the top permitted dischargers in the city and encourage them to sign on to a Green Tier Charter to voluntarily and meaningfully reduce discharges. Uncooperative and/or critically located dischargers might receive enhanced enforcement. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI

WATER MANAGEMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Stormwater Concerns		Plant Trees	The city should increase the city's tree canopy by increasing the number of trees planted on city rights-of-way and encouraging plantings on private property. According to a study conducted by American Forests, the tree canopy cover of Milwaukee is estimated at 16 percent. This existing canopy reduces stormwater flow by up to 22 percent and provides an estimated \$15.4 million in benefits. To maximize the benefit of the urban forest, the city's canopy needs to be increased to 30-40 percent. The greatest opportunity for increased tree canopy is on private property and open spaces. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Incorporate Native Plantings	The city should consider the use of native plantings versus strictly ornamental species. The city also should develop public education materials for homeowners on incorporating native plantings. Native plantings have the benefit of longer root systems that allow for greater water absorption and provide drought resistance. In addition, native plants require less maintenance than traditional annuals and ornamental plant species. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Postpone Laundry When It's Raining Campaign	The city should request that the MMSD fund and distribute washing machine magnets that read, "Postpone your laundry when it's raining" to reduce the risk of sewer overflows. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Spokane Urban Runoff Greenway Ecosystem (SURGE) Program	The SURGE program retrofits the existing curb and gutter systems in several places around the city using low-impact and green infrastructure strategies to mimic the natural hydrologic process by capturing, treating and infiltrating stormwater runoff, to study the impact on water quality. http://www.spokanewastewater.org/SURGE/Documents/SURGE-west%20broadway-WCN.pdf	Spokane, WA
		Spokane Regional Stormwater Manual	The Spokane Regional Stormwater Manual establishes standards for stormwater design and management to help communities in the Spokane region to protect water quality, prevent adverse impacts from flooding, and control stormwater runoff to levels equivalent to those that occurred prior to development. http://www.spokanecounty.org/data/engineers/SRSM_Apr08Final/SRSM_April2008Final.pdf	Spokane, WA
		Rainscaping Iowa	Rainscaping Iowa is a statewide educational campaign that promotes urban stormwater management practices to protect water quality and reduce runoff with the help of its partners. http://www.rainscapingiowa.org/	Woodbine, IA
		Iowa Storm Water Education Program	The Program's mission is to provide education, outreach, technical resources and training programs to protect and improve water quality in Iowa. The Iowa Storm Water Education Program was created in 2004 to address the educational needs of cities and others impacted by stormwater regulations. The program has grown over the past few years to include the following: Quarterly Resource Program, Technical Services, and Workshops and Training. http://www.iowastormwater.org/	Woodbine, IA
		Workshops on Rain Barrels	At the Woodbine Applefest on September 24, 2011, workshops were held every hour and representatives from the manufacturer were available all day during the festival. http://test.woodbineia.org/wp-content/uploads/2011/08/Woodbine-Brochure-for-rain-barrels-Rev-01.pdf	Woodbine, IA
		Rain Barrel Source	The company uses food-quality, high-density polyethylene barrels that were previously used for food, cleans and rinses them with rain water, and adds the fittings and screens to make rain barrels. The shapes vary depending on what barrels are available for upcycling at the time of order. The company also offers information about wholesale, municipal, retail and educational programs. http://www.upcycle-products.com/	Woodbine, IA

WASTE MANAGEMENT AND SITE REVITALIZATION: Policies, Approaches and Scientific Tools				
Sustainability Priority		Tool	Description	Community
Waste Management		WasteWise Program	WasteWise is a free, voluntary EPA program through which organizations eliminate costly municipal solid waste and select industrial wastes, benefiting their bottom line and the environment. WasteWise participants can join as partners, endorsers or both. http://www.epa.gov/epawaste/conserve/smm/wastewise/index.htm	Asheville, NC
		Integrated Solid Waste Management for Rural Areas Planning Tool Kit	A set of tools to help address the challenges of solid waste management, with a focus on waste reduction in rural areas, particularly by applying strategic planning principles, group problem solving, public involvement processes, business development and regional approaches. http://www.usda.gov/rus/water/docs/swmgmt.pdf	Asheville, NC
		Pay-As-You-Throw (PAYT) Programs	PAYT programs, also called unit-based or variable-rate pricing, provide a direct economic incentive for residents to reduce waste. Under PAYT, households are charged for waste collection based on the amount of waste they throw away, in the same way that they are charged for electricity, gas and other utilities. If they throw away less, they pay less. http://www.epa.gov/epawaste/conserve/tools/payt/index.htm	Asheville, NC
		Environmentally Preferable Purchasing (EPP)	One way to tackle waste reduction at the source is through “environmentally preferable purchasing/procurement” or EPP. EPP helps the federal government “buy green,” and in doing so, uses the federal government’s enormous buying power to stimulate market demand for green products and services. Geared first to help federal purchasers, this site can help green vendors, businesses—large and small—and consumers. http://www.epa.gov/epp/	Asheville, NC
		Eco-Industrial Zone	A Boston Redevelopment Authority (BRA)-sponsored project in the Newmarket Business District will, among other things, look at the possibility of creating an “eco-industrial zone” where the waste stream of one business can contribute to the raw materials of another. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Green Information Technology Roadmap	The purpose of the Green Information Technology Roadmap is to present guidelines for the procurement, utilization and renewal of information technology that will, as required by the Mayor’s Executive Order Relative to Greening City Building Maintenance and Operations, “further reduce municipal consumption of energy, paper and other resources, and reduce the amount of electronic components entering into the waste stream, and support other city departments’ efficiency efforts.” http://www.cityofboston.gov/Images_Documents/Green%20IT%20Roadmap_tcm3-14275.pdf	Boston, MA
		Green Procurement Policy	The Green Procurement Policy created new environmentally preferable procurement guidelines for city purchases that will help conserve natural resources, minimize pollution and reduce materials going into landfills. http://www.cityofboston.gov/Images_Documents/GreenProcurementPolicy_tcm3-14276.pdf	Boston, MA
		Hazardous Waste Recycling	County residents can make an appointment to drop off household hazardous waste at the Harrison County Landfill Commission Satellite Site. http://www.harrisoncountyparks.org/recycling.html	Woodbine, IA
Waste Removal		Sewer Map	The Metropolitan Sewerage District (MSD) of Buncombe County, NC, posts an online, geographic information system (GIS)-based map of sewer pipes. http://gis.msdbc.org/External/	Asheville, NC
		Construction Specifications	The MSD of Buncombe County, NC, provides technical drawings for sewer-related construction. http://www.msdbc.org/newdevelopment/constructdrawings.php	Asheville, NC
		Sewer Extension Manual for Developers	This manual is specifically for individual developers who are building new sewers and/or upgrading existing sewers to public standards to provide sewer service to new developments built by said developer. These sewer systems will be turned over to the MSD for ownership and maintenance upon completion of all MSD requirements. http://www.msdbc.org/newdevelopment/sewerextmanual.php	Asheville, NC

WASTE MANAGEMENT AND SITE REVITALIZATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Waste Removal		Enforcement Response Plan (ERP)	The purpose of MSD ERP is to provide guidelines for anticipated enforcement situations. http://www.msdbc.org/documents/policies/EnforcementResponsePlan.pdf	Asheville, NC
		Policy and Procedures for Right of Way Acquisition	The purpose of this policy is to establish procedures for the MSD to acquire easements in real property for constructing, operating, maintaining, repairing, rehabilitating and replacing, if necessary, interceptor and collector sewer lines in the District Sewerage System. http://www.msdbc.org/documents/policies/ROWPolicy.pdf	Asheville, NC
		Policy and Procedures for Extension of Sewer Service	The purpose of this policy is to establish procedures for the MSD to extend the sewerage to areas not currently served by the MSD. http://www.msdbc.org/documents/policies/SewerExtensionPolicy.pdf	Asheville, NC
		Sewer Use Ordinance	The purpose of this ordinance is to: prevent the introduction of pollutants into the sewerage system that will interfere with the operation of the system or contaminate the resulting sludge; prevent the introduction of pollutants into the sewerage system that will pass through the system inadequately treated; promote reuse and recycling of industrial wastewater and sludges from the sewerage system; protect both sewerage system personnel who may be affected by sewage, sludge and effluent in the course of their employment as well as protecting the general public; provide for equitable distribution of the cost of operation, maintenance and improvement of the sewerage system; and ensure that the sewerage system complies with its National Pollutant Discharge Elimination System (NPDES), Non-Discharge Permit, Collection System Permit conditions, sludge use and disposal requirements, and any other federal or state laws to which the sewerage system is subject. http://www.msdbc.org/documents/policies/SewerUseOrdinance.pdf	Asheville, NC
		Reporting Illegal Dumping	A system for citizens to report illegal waste dumping using an email form. http://www.mass.gov/eea/agencies/massdep/about/contacts/report-a-spill-or-environmental-crime.html	Boston, MA
		Solar-Powered Trash Compactors	The city will expand the number of solar-powered trash compactors, BigBellies. The trash compactors, first placed on Boston streets in 2006, reduce the amount of trash subject to spillage from ordinary trash barrels and require less frequent visits from trash-collection vehicles. http://www.cityofboston.gov/publicworks/cleanliness/litter.asp	Boston, MA
		Household Hazardous Waste Collection	The Milwaukee Metropolitan Sewerage District (MMSD) developed a Household Hazardous Waste Collection program for Milwaukee County residents with permanent and mobile drop-off locations. http://v3.mmsd.com/HHW.aspx	Milwaukee, WI
		Police Department Medicine Collections	Wastewater treatment plants are not designed to remove all medicines from wastewater. Drugs can end up going through the plants and directly to local rivers and lakes. The MMSD is working with more than a dozen police departments in Milwaukee County to provide medicine collections all year long. Medicines collected include prescription and over-the-counter medications, ointments, sprays, inhalers, creams, vials and pet medications. http://v3.mmsd.com/policestations.aspx	Milwaukee, WI
		Community Cleanup Initiative	A volunteer trash pickup and street celebration should be arranged before winter weather begins. A celebration to share in the sense of accomplishment and pride should follow. Food, music and laughter should be plentiful! http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
Recycling		Zero Waste AVL Recycling Guide	The city's recycling program provides a guide to help citizens in recycling their household wastes, including yard waste, electronics, foam, yoga mats, compact fluorescent light bulbs and other materials. http://www.ashevillenc.gov/Portals/0/city-documents/sanitation/zerowaste/Comprehensive%20Zero%20Waste%20AVL%20Guide.pdf	Asheville, NC





WASTE MANAGEMENT AND SITE REVITALIZATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Recycling		LEED™ Points for Recycling	Boston's "LEED™-certifiability" requirement for large projects includes a prerequisite that buildings provide easily accessible recycling facilities and grants LEED™ "points" for reducing construction waste and reusing materials. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Earth911 Recycling Directory	Earth911 Recycling Directory is published by a for-profit company to provide the most accurate and comprehensive directory of its kind, containing recycling information for more than 300 materials. Directory users can search more than 1 million ways to recycle, with information on finding the nearest recycling options and resources. http://earth911.com/about/	Boston, MA
		Small Household Residential Rec	This program applies to Boston residents in households with 1–6 units. Boston residents no longer have to separate paper and cardboard from cans and bottles. Instead, they may mix all recyclable materials together in one large container. http://www.cityofboston.gov/publicworks/wastereduction/curbside.asp	Boston, MA
		Recycling in Large Buildings	The City of Boston's Public Works Department provides free weekly recycling services to residents in large apartment buildings and condominiums. Buildings with 7 or more units are considered large buildings. http://www.cityofboston.gov/publicworks/wastereduction/recycling.asp	Boston, MA
		Mandatory Residential Recycling	Current city ordinances and regulations "define goals and mechanisms for maximizing" residential recycling in Boston, but they do not require anyone to recycle. Boston's Department of Public Works is conducting research on possible components of an ordinance to require recycling for both residential and commercial properties. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Leaf and Yard Waste Collection	Boston Public Works Department will collect leaves or yard debris, and the city will use the compost to fertilize area parks. http://www.cityofboston.gov/publicworks/wastereduction/yardwaste.asp	Boston, MA
		Organic Waste Recycling	City government is looking into developing a more comprehensive program, which could include, for example, year-round curbside pickup for residential food waste and acceptance of food waste from commercial and institutional food handlers (that is, restaurants, cafeterias, distributors, and so on). City government continues to explore possible sites and technologies, and hopes to establish a pilot program for curbside pickup of organics by 2012 and to see the development of a year-round anaerobic digester or composting facility by 2013. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		Green Festivals Initiative	The city should implement a "Green Festivals" initiative for the lakefront festivals and the Wisconsin State Fair that increases recycling programs already in place; identifies ways to reduce energy use; powers the events with clean, renewable energy; and solves stormwater problems onsite. The festivals could use highly visible recycling receptacles and increase their availability to make recycling easier and demonstrate Milwaukee's commitment to the environment. The city could assign a recycling specialist to work directly with festival groups, block clubs and business associations to educate them on practices that maximize recycling rates. Festivals could be powered completely by renewable energy through the purchase of renewable energy blocks. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Single-Sort Recycling	Milwaukee has a residential curbside recycling program that includes aluminum, paper, plastic, metal and cardboard. Milwaukee residents are required to place recyclable materials in designated receptacles provided by the city and place at curbside for collection. To encourage compliance, all recyclables may be mixed together in recycling carts. http://www.milwaukeeerecycles.com/	Milwaukee, WI

WASTE MANAGEMENT AND SITE REVITALIZATION: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Brownfields and Superfund Site Remediation		Construction Site Recycling Initiative	The city should develop a construction and demolition waste management policy that would be tied into the city permit process and recommended for all city projects and projects that receive city funding. It could include education and language encouraging construction waste recycling on every project—residential and commercial—by distributing to the applicants appropriate resource information, contact information and information on potential cost savings. For every construction or demolition project, the city could request submission of a construction or demolition waste management plan for plan examiner approval. Credits toward other areas of the approval processes or toward a “green permit” could be awarded as incentives for complying. Alternatively, the city could require a refundable deposit from builders as part of the demolition or construction permit. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Harrison County Landfill	The Harrison County Landfill accepts both landfill disposal and recycling materials. It is run by the Harrison County Landfill Commission, which is a 28(E) Governmental Agency represented by all of the government agencies in Harrison County. http://www.harrisoncountyparks.org/recycling.html	Woodbine, IA
		Composter Source	The company uses food-quality, high-density polyethylene barrels that were previously used for food, cleans and rinses them with rain water, and adds the fittings and screens to make composters. The shapes vary depending on what barrels are available for upcycling at the time of order. The company also offers information about wholesale, municipal, retail and educational programs. http://www.upcycle-products.com/	Woodbine, IA
		Regional Brownfields Initiative (RBI)	The RBI continues to seek funding through EPA to provide assistance to non-causative property owners and prospective developers for the revitalization of abandoned or underutilized properties in the region. http://www.landofsky.org/brownfields.html	Asheville, NC
		North Carolina Brownfields Program	The North Carolina Brownfields Program, authorized by the state statute known as the Brownfields Property Reuse Act, provides a mechanism to treat prospective developers of brownfield sites differently than the parties responsible for contaminating them. Prospective developers negotiate a brownfields agreement with the program that defines activities needed to make the site suitable for reuse, rather than cleaning up the site to regulatory standards (which responsible parties are required to do). http://portal.ncdenr.org/web/wm/bf	Asheville, NC
		Underground Storage Tank (UST) Section	The UST Section of the North Carolina Division of Waste Management issues permits, collects annual fees and handles requests for information for regulated and/or commercial underground storage tanks. The section ensures compliance with all relevant state and federal laws, policies, rules and regulations by assisting owners and operators in complying with operational standards (e.g., leak detection, spill and overfill detection). This section also oversees the administration of several Trust Funds for the reimbursement of cleanup costs associated with UST releases. http://portal.ncdenr.org/web/wm/ust	Asheville, NC
		Agency for Toxic Substances and Disease Registry (ATSDR) Brownfields/ Land Revitalization Action Model	A grassroots, community-level model designed to foster dialogue, communication and vision among the “Development Community” to achieve positive, sustainable improvements in overall community health by revitalizing abandoned, idled or underused industrial and commercial sites complicated by real or perceived contamination. http://www.atsdr.cdc.gov/sites/brownfields/docs/ATSDRActionModel.pdf	Milwaukee, WI

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Sustainability Priority		Tool	Description	Community
Brownfields and Superfund Site Remediation		Environmental Law Institute (ELI) Workshop: Overcoming Barriers to the Redevelopment of Petroleum Brownfields and Other Vacant Properties: The Wisconsin Approach	In May 2010, ELI convened key brownfields practitioners for a workshop in Milwaukee, WI, to identify best practices in overcoming obstacles to brownfields redevelopment in Wisconsin. The workshop was intended to identify the tools and approaches that have been responsible for Wisconsin's programmatic success, determine how these tools and approaches could be transferred to other states, and identify ways in which EPA could better support the states in their efforts to redevelop brownfields. http://www.eli.org/pdf/WI_Brownfields_Workshop_Report.pdf	Milwaukee, WI
		Brownfield/ Grayfield Tax Credit Program	The Brownfield/Grayfield Tax Credit Program offers qualifying projects tax credits of up to 24 percent for qualifying costs of a Brownfield project and 30 percent if the project meets green building requirements. "Grayfield" also is included in the tax credit program. A Grayfield project can receive tax credits of up to 12 percent of qualifying costs and 15 percent if the project meets green building requirements. http://www.iowaeconomicdevelopment.com/Regulatory/brownfield	Ogden, IA Woodbine, IA
		Brownfields Technical Support	EPA's Office of Brownfields and Land Revitalization offered Ogden technical support to identify reuse strategies for the Brownfields within the downtown community. EPA, in partnership with the Iowa Department of Natural Resources (IDNR), is providing redevelopment planning support to city officials as they plan to revitalize the downtown community, including three parcels in the middle of downtown and the abandoned gas station that serves as the gateway to their community and a recreational destination park. http://www.epa.gov/brownfields/	Ogden, IA
		Brownfields to Greenfield\$, A Manual on Brownfields Redevelopment	The purpose of Brownfields to Greenfield\$, A Manual on Brownfields Redevelopment is to provide a roadmap for understanding the Brownfield redevelopment process and the opportunities available in New York. It is designed to provide information for local government officials seeking to facilitate Brownfield redevelopment in their communities, citizens hoping to understand how the process affects them, developers and investors seeking to participate in this growing marketplace, groups that want to facilitate the redevelopment process, and end users of redeveloped property. http://sustainableli.org/uploaded_files/pages/attach/f_189c150b16b3b20caebbe74181170519Brownfields%20to%20Greenfields%20Manual%202011-final.pdf	Wyandanch, NY

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Sustainability Priority		Tool	Description	Community
Jobs		Economic Development Coalition (EDC) Map Viewer	An online tool for exploring businesses located in the four-county Asheville Metropolitan Statistical Area (Buncombe, Haywood, Henderson and Madison Counties in North Carolina), including county and city borders, roads, railroads, rivers, business locations, flood plains, property parcel boundaries and aerial photos. http://www1.nemac.unca.edu/NEMAC_MapViewer/asheville_msa.html#	Asheville, NC
		Rural Jobs Accelerator Challenge	The U.S. Department of Agriculture (USDA) Rural Jobs Accelerator Challenge is a national initiative to support rural partnerships that are critical components of President Obama Administration's efforts to support small businesses. The program was designed by the Taskforce for the Advancement of Regional Innovation Clusters and the White House Rural Council. http://www.rurdev.usda.gov/ruraljobsaccelerator.html	Asheville, NC
		GroWNC	GroWNC is focused on economic competitiveness and job creation for the Asheville region. Drawing on existing plans, strategies, community input and models, the group will develop a plan to foster economic prosperity through a regional vision that identifies implementable projects and actions. http://www.gro-wnc.org/index.html	Asheville, NC
		AgriVentures	The project seeks to address critical economic development concerns in rural regions, including: quality job creation, creating strong linkages between regional industries and rural communities, filling supply-chain gaps in growing rural sustainable industries, engaging youth in rural entrepreneurship, supporting private-sector innovation and business creation, retaining wealth in rural communities, and creating a replicable model for regional sustainable economic development in rural Appalachia and America. The project will assist the sustainable agriculture and natural resources clusters by developing feasibility studies and small pilot programs to identify and promote investment in major supply chain opportunities and provide Western North Carolina businesses with access to new technology from regional universities and other research and development centers. http://www.mountainx.com/article/44869/WNC-AgriVentures-snags-815000-federal-grant	Asheville, NC
		Green Opportunities (GO) Training	GO offers training programs for low-income adults in Asheville, NC, who face systematic barriers to employment. http://greenopportunities.org/training/	Asheville, NC
		Greenways Training Program	Buncombe County should develop a training program for new volunteers and partners who want to work on maintaining trails, conducting programs along the greenways and constructing some facilities. Working with partners and the National Trails Training Program (NTTP) to develop a greenway-specific curriculum will help volunteers, design and planning professionals, contractors and other partners who want to design and construct trail facilities, work on maintaining trails and conduct programs along the greenways. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		Mountain Area Workforce Development Board (WDB)	The Mountain Area WDB is a partnership of private business executives and the leading workforce development organizations in Buncombe, Henderson, Madison and Transylvania counties of western North Carolina. The purpose of the WDB is to provide policy, planning, oversight and funding for local workforce development programs and address workforce issues as they emerge within the region. http://www.mountainareaworks.org/	Asheville, NC
		Life Works	Life Works supports individuals and families in Madison and Buncombe Counties who live on limited incomes. Participants work to complete their goals in 1 to 3 years. http://www.communityactionopportunities.org/lifeworks.html	Asheville, NC
		Child Care	Buncombe County should examine potential sources of funding to offer additional child care options. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC











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Sustainability Priority		Tool	Description	Community
Jobs		Private Industry Council (PIC)	The PIC connects the youth and adults of Boston to education and employment opportunities. The PIC identifies labor and skill shortages, and then crafts innovative initiatives that respond to the needs of employers and local residents. http://www.bostonpic.org/	Boston, MA
		Green Jobs Boston	Green Jobs Boston is a city-wide initiative coordinating a growing list of green job creation, training and placement efforts. Boston's conversion to a sustainable city is stimulating job growth and creating opportunities across all economic sectors. https://sites.google.com/site/greenjobsboston/	Boston, MA
		Boston Urban Mechanics Program	The Boston Urban Mechanics Program is an internship program that introduces participants to government and public service work, exploring not only city government but also the vast network of partnerships—among city agencies, businesses, institutions and nonprofit organizations—that cultivate the city's future. http://www.cityofboston.gov/internships/	Boston, MA
		Empowerment Zone Grant	The \$300,000 in Empowerment Zone grant funding that Boston received from the U.S. Department of Housing and Urban Development grant funded green-collar job creation and workforce training for three separate initiatives: the Green Youth Corps, green technician and auditor training, and green job creation through the Mayor's Renew Boston initiative. http://www.cityofboston.gov/news/Default.aspx?id=4261	Boston, MA
		Green Infrastructure Project Jobs	The green infrastructure projects have the potential to create about 500 positions and 160 green construction jobs on average for 25 years. http://www.sustainablecitynetwork.com/topic_channels/water/article_e231295c-65a9-11e2-8c13-0019bb30f31a.html	Milwaukee, WI
		Re-Localized Production	This strategy is in many ways the response to demand-driven development. Understanding gaps is a critical piece to re-localizing production, but there are often other external costs that are eliminated by transitioning production to local sources. The two focus areas for re-localized production are food and energy. These two markets are critical, and ensuring local sources of both provides tremendous security and resilience despite the volatility of these markets in the larger system. Additionally, local job supply is bolstered significantly through this strategy, as production also merits the need for distribution and retail jobs that can synergize into a cohesive local market. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Tribal Scholarship Higher Education and Adult Vocational Training	The Spokane Tribe offers a Tribal Scholarship for Higher Education and Adult Vocational Training. http://www.spokanetribe.com/Education	Spokane, WA
		Washington State's Green Economy: A Strategic Framework	This report by Washington State's Department of Commerce outlines a strategic policy framework for a green-economy jobs initiative and was delivered to the governor and the legislature in 2009 to help guide policy development. http://www.ecy.wa.gov/climatechange/CTEDocs/GreenEconomy_StrategicFramework.pdf	Spokane, WA
		Advanced Manufacturing Jobs and Innovation Accelerator Challenge	The Advanced Manufacturing Jobs and Innovation Accelerator Challenge is a federal multi-agency program to foster innovation-fueled job creation through public-private partnerships to help catalyze and leverage private capital, build an entrepreneurial ecosystem and promote cluster-based development in regions across the United States. http://manufacturing.gov/docs/applicant-tools-resources.pdf	Woodbine, IA
Economic Development		Riverfront Redevelopment Commission	The Commission will recommend to the City and County an overall policy for the continued development and sustainability of the regional riverfront. http://ashevillenc.gov/Departments/CityClerk/BoardsCommissions/AshevilleAreaRiverfrontRedevelopmentCommission.aspx	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Economic Development		Economic and Community Development Programs	Handmade in America has programs to grow economies through crafts (e.g., Appalachian Women Entrepreneurs, Small Town Revitalization and Craft Labs). http://www.handmadeinamerica.org/development.html	Asheville, NC
		Greenways Economic Benefits	Greenways spur job growth in construction, maintenance, tourism-related opportunities and local businesses. http://www.railstotrails.org/resources/documents/resource_docs/tgc_economic.pdf	Asheville, NC
		Business Satisfaction Survey	Buncombe County should collect and analyze feedback from area businesses through a business satisfaction survey (interaction with County services, efficiency of processes) and establish a satisfaction baseline for doing business within Buncombe County with the results of the survey. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Blue Ridge Advanced Manufacturing Initiative	The Blue Ridge Advanced Manufacturing Initiative program of AdvantageWest includes the 25 economic development professionals in the region and corporate allies ready to assist existing and new companies with their expansion plans. http://www.advantagewest.com/content.cfm/content_id/142/section/industrial	Asheville, NC
		Blue Ridge Entrepreneurial Council (BREC)	An initiative of the AdvantageWest Economic Development Group, the BREC is a nurturing organization for entrepreneurs in Western North Carolina, creating homegrown jobs and growing the region's economy. BREC supports entrepreneurs through the following four focus areas: education, mentoring and networking, communications and capital formation. BREC meets monthly and provides quarterly opportunities for qualified entrepreneurial businesses to present plans before a group of local investors, the Blue Ridge Angel Investors Network. http://www.brecnc.com/	Asheville, NC
		Western North Carolina Film Commission	Operated by AdvantageWest, the Western North Carolina Film Commission assists filmmakers with scouting and securing locations, and acts as a liaison for services such as road closures, permits and use of public property. The Commission also provides logistical information regarding crew, talent, equipment, stage and support services. http://www.advantagewest.com/content.cfm/content_id/152/section/film	Asheville, NC
		Building Massachusetts' Economy Through Transportation Investment	The report provides a review of new funding sources to build transportation infrastructure deemed critical for Boston's future growth, reducing congestion and bringing various environmental and economic benefits. http://www.abettercity.org/docs/about_buildingmasseconomy.pdf	Boston, MA
		Fraunhofer Center for Sustainable Energy Systems	The Fraunhofer Center for Sustainable Energy (CSE) Systems plans to move its headquarters to Boston. Fraunhofer CSE creates jobs through transitional R&D work that takes place at the facility. The center will continue to focus on development of low-cost, high-efficiency systems, products and best practices. http://www.cityofboston.gov/news/Default.aspx?id=5143	Boston, MA
		Boston Innovation District	The Innovation District is nestled between Boston's transportation gateways: abutting historic Boston Harbor, adjacent to Logan International Airport, and at the nexus of two major interstate highways. It also contains the largest tract of underdeveloped land in the City of Boston, an area with opportunity for growth; a strong existing knowledge base; and the ideal location for producing new ideas, new services and new products. http://www.innovationdistrict.org/	Boston, MA
		Green Corridor Eco-Industrial Park	A Green Corridor eco-industrial park is recommended that would incorporate green infrastructure and focus on synergistic industries modeled on eco-industrial corridors in other cities such as St. Paul, MN. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI

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Sustainability Priority		Tool	Description	Community
Economic Development		Milwaukee Economic Development Corporation (MEDC)	The MEDC has been a participating lender in thousands of investment projects in the Milwaukee area. All together, these projects have generated more than \$1 billion of new investments and thousands of jobs for Milwaukee residents. http://www.medconline.com/uploads/2011_MEDC_Annual_Report.pdf	Milwaukee, WI
		Milwaukee E3 (ME3) Program	ME3 is a no-cost program to help manufacturers cut costs while at the same time helping to minimize negative environmental impacts of their manufacturing processes and practices through sustainable manufacturing processes and technologies. http://city.milwaukee.gov/ME3	Milwaukee, WI
		Inventory Existing Green Technology/ Services/Market	To track the city's progress in developing a green economy, the city should work to identify the current inventory of green businesses in Milwaukee, the region and the Nation. By understanding what is currently here, the city can work to develop industrial "clusters" within particular market niches. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Wisconsin Technology Council	The city should partner with the Wisconsin Technology Council. The Wisconsin Technology Council is the leading catalyst for tech-based development in Wisconsin. It is the independent, non-partisan science and technology advisor to the governor and the Legislature. http://www.wisconsintechcouncil.com/	Milwaukee, WI
		Green Manufacturing	Industries that could develop in Milwaukee include: building, design and consulting services; renewable energy infrastructure such as wind, solar and geothermal energy; high efficiency small engines; heat exchangers and other high efficiency HVAC items; and recycled material processing. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Green Technology Triangle	City leaders should work to develop a Green Technology Triangle comprised of not-for-profit and private-public economic development organizations marketing the Cities of Milwaukee, Madison and Chicago to the world. The vision of the network organization is to position the Milwaukee-Madison-Chicago region as a leading location in the world for investment, retention and attraction of the most innovative businesses and entrepreneurs in green technology and manufacturing as an emerging business sector. The network also can act as a job center and training for green collar jobs. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Green Business Events	Metropolitan Milwaukee Association of Commerce and city leaders must work to put Milwaukee in the minds of business leaders as a preferred location for green business. They should invite leaders in green business to Milwaukee as part of a regularly scheduled series of events. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Implementing Trail-Based Economic Development Programs Handbook	The Iowa Department of Transportation has developed a handbook for Iowa Communities, entitled "Implementing Trail-Based Economic Development Programs." This handbook is a resource to Ogden as it explores opportunities associated with the Central State Park Bike Route (CSPBR). http://atfiles.org/files/pdf/iowaHANDBOOK.pdf	Ogden, IA
		Local Synergy	Local Synergy is a comprehensive approach to identifying and connecting existing social, economic, infrastructure and natural assets within a community, thereby creating sustainable catalysts for revitalization and economic prosperity. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Iowa Microenterprise Assistance Project (IMAP)	In 2010, the IMAP began a philanthropy and microenterprise demonstration project to assist community foundations in Iowa in two endeavors: (1) philanthropy and endowment building; and (2) activities that can help to support, finance and sustain entrepreneurship and microenterprise development. http://www.cvcia.org/files/imap-philanthropy-year-2011-evaluation-and-overview.pdf	Ogden, IA

ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Economic Development		Business Alliance for Local Living Economies (BALLE)	The BALLE is a national organization that helps communities establish local networks to build supportive economies. This is a resource that may help reverse the retail leakage trends identified in Ogden. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Collective Marketing	Businesses that are already established but want to obtain more local exposure are benefiting from various collective marketing models. Some of the best examples of collective marketing are being generated by the 80+ Business Alliance for Local Living Economies (BALLE) organizations throughout the United States. These initiatives often involve a local branding campaign such as “Buy Local” as well as print and Web promotions that feature multiple local businesses in one location. Online hubs and community networking events help to maximize local patronage and the multiplier effect that takes place when business owners agree to patron one another in a local community, re-circulating wealth. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Education and Training	Education plays a key role in local economic development. Other strategies have related to programs that educate and/or train business owners, and this is an important component of establishing a strong main street economy. Similarly, programs that provide job-training skills (particularly those with a social benefit such as green jobs) help to reduce social costs while increasing the spending powers of the local community. There is also a strong need to educate consumers and existing business owners on the benefits of economic localization. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Spokane Tribe Economic Project (STEP)	The STEP is a proposed mixed-use development on 145 acres of the Spokane Tribe of Indians' ancestral lands on the West Plains of Spokane County. The STEP journey on the West Plains of Spokane County will boost the local and regional economy with the creation of 1,200 jobs and millions of dollars of annual payroll, providing new resources for community members. http://www.stepspokane.com/	Spokane, WA
		Spokane Neighborhood Action Program's (SNAP) Small Business Development Website	SNAP is a Web-based tool to help small businesses with micro-financing. SNAP provides business training, counseling and financial assistance for citizens seeking to start a small business. http://www.snapwa.org/services/neighborhood/business-development	Spokane, WA
		Certified Sites Program	Spokane's Certified Sites Program was developed in cooperation with Greater Spokane Incorporated as a tool for business recruitment and expansion, offering business owners an easy way to obtain information about commercial and industrial sites within the city that are ready for development or “project ready.” http://developingspokane.org/siteselector/default.aspx	Spokane, WA
		Academic Health Science Center, Riverpoint Campus	Spokane and Eastern Washington are experiencing a health care and economic development transformation as a result of the creation and development of the Riverpoint Campus. http://www.morethanamedicalschool.com/explore	Spokane, WA
		Indian Gaming	Indian Gaming today is a major catalyst for community growth and economic development within many Tribes. The Spokane Tribe sees modern Indian Gaming as a way to achieve economic self-sufficiency for Spokane Tribal members and future generations to come. http://www.spokanetribe.com/gaming	Spokane, WA
Resources		Tax Incremental Financing Districts	Funding through a Tax Incremental Financing District (TIF) could promote and/or create incentives for green infrastructure, including such things as stormwater management, access to public space, building technology/service or sustainable development guidelines. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Milwaukee Sustainability Fund	The Brico Fund is developing a Milwaukee Sustainability Fund that ensures immediate transition from planning to action in the community. http://city.milwaukee.gov/sustainability/SustainabilityPlanGreenTeam.htm	Milwaukee, WI










ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Resources		Demand-Driven Business Development	This strategy begins by looking at where there are gaps in a local economy. This often relates to goods and services that are being imported or procured outside of the community, but could easily be replaced or redirected to local businesses. This strategy provides a compelling case for financing, and ensures multiple benefits from the business to the community. Again, this strategy increases the local multiplier effect by retaining spending revenues that would otherwise leave the community. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Local Purchasing Policies	Some communities have enacted policies that encourage local purchasing for government spending. This practice helps to internalize the benefits of the local multiplier effect in allocating public funds to support local businesses. This kind of big picture strategy can demonstrate how even a slightly higher bid by a local company is actually more competitive than one submitted by a company that will not be generating revenues within the city from those funds. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Incubators	Incubators are physical places, or hubs, where small-scale and/or start-up enterprises are able to share resources and maximize their efficiency. These venues often have a theme such as “technology” or “media,” and shared resources can include both physical assets like desks, printers, etc. as well as labor assets like accountants, lawyers, receptionists, etc. Aside from the obvious benefits of having a dramatically reduced overhead, businesses often benefit from collaboration with other incubator members. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Soft Match	The city should identify organizations, individuals or companies that can provide “soft match”—typically through human resources or land dedication—where allowable through funding sources. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		General Obligation Bonds	Short-term strategies for securing local funding commitments can include general obligation bonds for major greenway investments. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		Project Development Financing	Buncombe County should investigate the possibility of using Project Development Financing, North Carolina's form of Tax Increment Financing (TIF), to spur economic development activity in certain areas that are ripe for redevelopment. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
		Land Transfer Tax	Buncombe County should seek opportunities to establish a land transfer tax to generate revenues that could be used by the County for land acquisition. These state and local tax values are assessed on the property at the time of the transfer and generally used to preserve open spaces in rapidly growing areas. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
		Short-Term Tax Deferral Program	Buncombe County should establish a short-term tax deferral program for large parcel owners of prime agricultural and/or natural lands. This property tax incentive would be awarded to program participants who elect to temporarily keep their land in an undeveloped state for a predetermined number of years. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
		Fees/Charges	The Parks, Recreation and Cultural Arts Department is far undervalued and must position its fees and charges to be market-driven and based on both public and private facilities. The potential outcome of revenue generation is lower than national and regional trends relating to public park and recreation agencies. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC

ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Resources		Ticket Sales/ Admissions	This revenue source is about accessing facilities for self-directed activities, such as pools, nature centers, ballparks and entertainment activities. These user fees help offset operational costs. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Membership and Season Pass Sales	The city sells memberships to specific types of amenities to offset operational costs. These membership fees can apply to recreational and fitness centers, tennis centers, golf courses, pools, ice-rinks and so forth. Currently, these funds are not designated for Parks and Recreation. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Inter-Modal Transportation and Efficiency Act	This funding program, commonly called TEA-21 was authorized by the federal government in 1991. Funds are distributed through the state. There are several million dollars in enhancement revenues available for transportation-related projects, including bicycle and pedestrian trails, rail depot rehabilitation, landscaping and beautification projects. Currently, the funds are not all designated for Parks, Recreation, and Cultural Arts. http://www.fhwa.dot.gov/planning/public_involvement/legislation/istea.cfm	Asheville, NC
		Land and Water Conservation Fund	These funds are awarded for acquisition and development of parks, recreation and supporting facilities through the National Park Service and State Park System. http://www.nps.gov/lwcf/	Asheville, NC
		Inter-Local Agreements	These are contractual relationships entered into between two or more local units of government and/or between a local unit of government and a nonprofit organization for the joint usage/ development of sports fields, regional parks or other facilities. Currently, they are not designated for Parks and Recreation, although a portion of the fees could assist in-kind usage and/or funding of parks and recreation services. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Cost Avoidance	The Parks, Recreation, and Cultural Arts Department must be driven by the market and stay with the Department's core businesses. By shifting its role as direct provider, the city will experience savings by deciding whether or not to provide that facility or program. This is cost avoidance. Savings could be realized through partnering, outsourcing or deferring to another provider in the provision of a service and/or facility. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Corporate Sponsorships	This revenue-funding source allows corporations to invest in the development or enhancement of new or existing facilities in park systems. Sponsorships are also highly used for programs and events and could assist in the funding of parks and recreation services and/or facilities. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Reservations	This revenue source comes from the right to reserve specific public property for a set amount of time. The reservation rates are usually set and apply to group picnic shelters, meeting rooms for weddings, reunions and outings or other type of facilities for a special activity. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevilenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC








ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Resources		Volunteerism	This revenue source is an indirect revenue source in that persons donate time to assist the Parks, Recreation, and Cultural Arts Department in providing a product or service on an hourly basis. This reduces the city's cost in providing the service, plus it builds advocacy into the system. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Equipment Rental	This revenue source is available for the rental of equipment used for recreation purposes. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities as well as equipment replacement. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Dedication/ Development Fees	These fees are assessed for the development of residential and/or commercial properties with the proceeds to be used for parks and recreation purposes, such as open space acquisition, community park site development, neighborhood parks development, regional parks development and so forth. Currently, they are designated for Parks, Recreation, and Cultural Arts for land acquisition and development of parks and greenways. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Foundation/Gifts	These dollars are raised from tax-exempt, nonprofit organizations established with private donations in promotion of specific causes, activities or issues. They offer a variety of means to fund capital projects, including capital campaigns, gift catalogs, fundraisers, endowments, sales of items and so forth. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Friends Associations	These groups are formed to raise money typically for a single focus purpose that could include a park facility or program that will better the community as a whole and their special interest. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Merchandising Sales	This revenue source comes from the resale items from gift shops and pro shops for either all of the sales or a set gross percentage. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Land Trust	Many cities have developed land trusts to help secure and fund the cost for acquiring land that needs to be preserved and protected for greenway purposes. This is a good source to look to for acquisition of future lands. Currently, Asheville contracts with a land trust for services. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Naming Rights	Many cities have turned to selling the naming rights for new buildings or renovation of existing buildings and parks for the development cost associated with the improvement. Asheville has utilized this funding mechanism and has many additional opportunities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Surplus Sale of Equipment by Auction	Cities and counties have surplus auctions to get rid of old and used equipment that generate some income on a yearly basis. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the capital, operation and/or maintenance of parks and recreation services and/or facilities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC

ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Resources		Security and Clean-Up Fees	Cities typically charge groups and individuals security and clean-up fees for special events or other type of events held in parks. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Land Swaps	This source is where the city trades property to improve their access of protection of resources. This could include property gain by the city for nonpayment of taxes or where a developer needs a larger or smaller space to improve their profitability. The city or county typically gains more property for more recreation opportunities in exchange for the land swap. Currently, these funds are not always designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Concession Management	Concession management is from retail sales or rentals of soft goods, hard goods, or consumable items. The city either contracts for the service or receives a set of the gross percentage or the full revenue dollars that incorporates a profit after expenses. Currently, these funds are not designated for Parks, Recreation, and Cultural Arts although a portion of the revenue could fund the operation and maintenance of parks and recreation services and/or facilities. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Patron Cards	This allows patrons of a specific recreational facility to purchase patron cards for a month or a year that allows them special privileges above the general public. These privileges include having rights to early tee times, reservations, and special tours, shows or events. The patron cards typically range in price from \$15 a month to \$150 a year. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Life Estates	This source of money is available when someone wants to leave their property to the city in exchange for them to live on their property until their death. The city usually can use a portion of the property for park purposes and then all of it after the person's death. This revenue source is very popular for individuals who have a lot of wealth and their estate will be highly taxed at their death and their children have to sell off their property because of probate costs. This allows the person to receive a good tax deduction yearly on their property while leaving a life estate. It is good for the city because they do not have to pay for the land. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		State and Federal Governmental Loans/ Financial Programs	The city should utilize state and federal governmental loan or financial programs to provide start-up financing or loans for small businesses in green technology/ service fields. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Green Permit	The city should develop a Green Permit that fast tracks projects incorporating innovative storm-water and energy management through the permit process. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Community Supported Enterprise	Businesses at various phases of development have begun to use a model that can be generalized as a "community supported enterprise" to obtain financing when it is unavailable through conventional sources. This term relates to "Community Supported Agriculture" models in which consumers buy "shares" in a farm and pre-pay for a weekly box of mixed produce. This model has expanded to include a diversity of enterprises and investment dynamics. In some cases, investors become "members" of the enterprise. In other cases, they are simply the lender earning interest as their loans are repaid. Others provide rewards in exchange for investment such as gift cards of greater value, or promotional materials. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA


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Sustainability Priority		Tool	Description	Community
Resources		Public Seed Financing	Public seed financing applies to both grants and loans through either nonprofit or government programs. This financing is often accompanied by education/training opportunities that help to empower first-time business owners, especially disadvantaged people such as minorities, single-parents, under-earners and so forth. This provides another avenue for unconventional start-up financing and community wealth building. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Economic Development Incentives Policy	The Asheville incentives program provides economic development grants for companies and industries seeking to relocate and expand their business as a way to stimulate private-sector investment, economic growth and jobs. http://www.ashevillenc.gov/Portals/0/city-documents/EconomicDevelopment/IncentivePolicy.PDF	Asheville, NC
Grants		Community Development Block Grant (CDBG) Program	The CDBG program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at the U. S. Department of Housing and Urban Development (HUD). The CDBG program provides annual grants on a formula basis to 1,209 general units of local government and states. http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs	Asheville, NC
		Grants for Parks and Recreation	A variety of special grants either currently exist through the federal and state governmental systems and foundations, or will be established through the life of current and proposed facilities and services. Utilizing grants as a funding source is a huge opportunity although very time consuming. It takes dedicated staff time for research, applications, implementation and tracking of grants. Planning and timing of grant funding to fit a project timeline is critical. New grants continually become available as well as constant changing of guidelines and procedures. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Sustainability Project Grant Application	Grants are available under the Growth Management Act (GMA), which is a policy document that is appropriate for encouraging reduced dependence on foreign oil and promoting better environmental stewardship. http://www.greenspokane.org/wp-content/uploads/2010/11/Spokanes_sustainability_strategic_plan_grant_application2.doc	Spokane, WA
Funding for Small Communities		Community Wealth Building	Community wealth building is an approach that leverages economic development to maximize local business ownership. It can take the form of providing seed funding and/or training to local entrepreneurs. It can also relate to businesses modeled to provide an equity-share to employees. Disadvantaged communities with high poverty levels can benefit from this by proactively decreasing the social costs of under-earning community members while allowing residents to have even greater economic empowerment. Once again, this strategy amplifies a local multiplier effect by increasing the buying power of the local marketplace. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Community-Development Financial Institutions	Re-localization expert Michael Shuman writes in his book “Going Local” that “...the principal affliction of poor communities in the United States is not the absence of money, but its systematic exit.” If people’s investments, loans and savings accounts were with local financial institutions committed to local investment rather than banks that may have “redlined” the very community their customers live in, then people would see a regenerative benefit from the interest their banking generates in their own neighborhoods. Shuman identifies community-development financial institutions (CDFIs) as a cornerstone of community-based financing institutions. He estimates that there are 350 CDFIs in the United States, including commercial banks, thrifts, place-based credit unions and community-development loan funds. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA

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Sustainability Priority		Tool	Description	Community
Decision Making		Coastal and Marine Spatial Planning (CMSP)	A new approach, CMSP aims to distribute and accommodate both traditional and emerging ocean activities to produce sustainable economic and social benefits while minimizing spatial conflicts and environmental impacts. CMSP is an iterative process that uses the best available science along with stakeholder input to support integrated, adaptable and forward-looking ocean management decision making. http://www.seaplan.org/ocean-planning/overview/	Boston, MA
		Explore Asheville	Explore Asheville is the city's official tourism website, promoting the area as a destination for shopping, vacations, weddings and sightseeing in conjunction with the Asheville Convention and Visitors Bureau. http://www.exploreasheville.com/	Asheville, NC
Tourism		Agritourism Office	The North Carolina Department of Agriculture and Consumer Services Agritourism Office website provides resources to support decisions to create an "agritourism" farm that benefits local farming, retaining farmland. http://www.ncagr.gov/markets/agritourism/index.htm	Asheville, NC
		Green Destinations: Sustainability Assessments for North Carolina Tourism-Based Industries	Multi-disciplinary teams of Waste Reduction Partners staff are providing "greening assessments" for hospitality and tourism industries in North Carolina. http://landofsky.org/pdf/LGS/CEDS2013-2017.pdf	Asheville, NC
		NC GreenTravel Initiative	The NC GreenTravel Initiative is a free program of the North Carolina Division of Environmental Assistance and Outreach to help promote robust economic growth and environmental stewardship in the travel and hospitality sector through the recognition of "green" travel-oriented businesses. http://portal.ncdenr.org/web/deao/ncgreentravel	Asheville, NC
		Trolley System	As part of the riverfront revitalization, city and county officials should establish a trolley system to link major tourist attractions. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
		RiverMusic	RiverLink will sponsor 5 Friday nights of live concerts by the French Broad River in the River Arts District of Asheville, NC. http://www.riverlink.org/RiverMusic_2013.asp	Asheville, NC
		Greater Boston Convention and Visitors Bureau (GBCVB)	The GBCVB is the primary private-sector marketing and visitor service organization charged with the development of meetings, conventions and tourism-related business. The goal of the GBCVB is to enhance the economy of Boston, Cambridge and the metropolitan area. http://www.bostonusa.com/partner/aboutgbcvb/ag/gbcvboverview	Boston, MA
		Visit Milwaukee	Visit Milwaukee is an award-winning convention and visitors bureau whose mission is to market Milwaukee, WI, as a premier destination for conventions, trade shows and leisure travel. The bureau strives to create a positive economic impact in the Greater Milwaukee area. http://www.visitmilwaukee.org/about-us	Milwaukee, WI
		Community Attraction and Tourism Program	The Community Attraction and Tourism (CAT) Program supports projects that promote recreational, cultural or other attractions for the general public. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Visit Spokane	Visit Spokane is the destination management organization for Spokane County and its jurisdictions. As the primary programmatic arm for Spokane's travel and tourism promotion, it leads the Spokane tourism industry to work together to generate visitor spending by developing and implementing comprehensive destination management programs. http://www.visitspokane.com/about-visit-spokane/	Spokane, WA
		Apple Festival	The annual Apple Fest includes homemade apple pie sales, car and antique tractor shows, a craft fair, flea and antique markets, regional and local food vendors, a Lincoln Highway historical display and more. http://www.woodbineia.org/wp-content/uploads/2011/08/Applefest-Flyer2.pdf	Woodbine, IA

ECONOMICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Prioritization		Request for Proposal (RFP) Criteria	The city should include use of green technology/services as bonus points when considering bids for city projects. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI

SOCIAL ISSUES: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Leadership		Sustainability Advisory Committee on Energy and the Environment (SACEE)	As part of its commitment to sustainability, Asheville's City Council created the Office of Sustainability in 2009. In addition, the SACEE, which advises the City Council, has recognized the importance of a management plan for advancing Asheville's sustainability efforts. http://www.ashevilenc.gov/Departments/CityClerk/BoardsCommissions/SustainabilityAdvisoryCommittee.aspx	Asheville, NC
		Office of Environmental Sustainability (OES)	Milwaukee's OES was created by Mayor Tom Barrett to position Milwaukee, WI, as a leader in environmental sustainability and performance in the 21st century. The office was created through community support received by the Milwaukee Green Team, a group commissioned by Mayor Barrett in 2004. OES promotes cost-effective environmental sustainability practices that meet Milwaukee's urgent environmental, economic and social needs while enhancing long-term economic growth, thus improving the environment and livability of Milwaukee for all its citizens. http://city.milwaukee.gov/sustainability	Milwaukee, WI
		Ogden Legacy Community Development Corporation	Ogden held a kick-off public meeting with 70 people and identified new talent, energy and active community leaders for the new Ogden Legacy Community Development Corporation. http://www.ogdeniowa.net/legacy	Ogden, IA
Attitudes Toward Sustainability		Green Wedding Program	The North Carolina Arboretum's Green Wedding Program offers elegantly designed green buildings and lush, sustainable landscapes as sites for ceremonies and receptions. Couples will follow guidelines for using organically grown and natural products as part of their wedding and pledge to reduce consumable products as part of their activities. http://www.ncarboretum.org/plan-a-visit-or-event/green-weddings/	Asheville, NC
		Green Business Awards	Green Business Awards are given to businesses located in the City of Boston that demonstrate extraordinary performance related to sustainable environmental practices such as water conservation, wastewater management, the promotion of alternative transportation and transit, energy conservation, onsite renewable energy production, the purchase of renewable energy and sustainable food production. http://www.cityofboston.gov/environmentalandenergy/greenawards/businesses.asp	Boston, MA
		Green Residential Awards	Green Residential Awards recognize residents of the City of Boston who demonstrate exemplary sustainable practices in the following categories: Sustainability/Climate Action Leadership, Waste Reduction Champion, Green Home Renovation and Resource Conservation, and Sustainable Landscape/Garden/Green Roof. http://www.cityofboston.gov/environmentalandenergy/greenawards/residential.asp	Boston, MA
Preservation of Local Culture and Traditions		Greenways Community Benefits	Expanding existing and establishing new recreation and transportation greenways connects people to each other and cultural and natural heritage. Corridors linking areas of farmland and open space help to preserve the rural landscape and way of life. http://www.railstotrails.org/resources/documents/resource_docs/tgc_fs_livable.pdf	Asheville, NC









SOCIAL ISSUES: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Preservation of Local Culture and Traditions		Tribal Cultural Center	The Spokane Tribe Economic Project (STEP) development plan includes careful preservation of an existing wetlands area located on the Tribe's West Plains property. It also includes a 10,480 square foot Cultural Center to highlight the importance of preserving the wetlands and its wild-life, as well as the importance of preserving the rich, diverse heritage of the Tribe's people. http://www.stepspokane.com/tribal-history/	Spokane, WA
		Spokane Lilac Festival	The Spokane Tribe of Indians participates within the annual Spokane Lilac Festival each spring in downtown Spokane, WA. During the Festival's Torchlight Parade, the Spokane Tribal Delegation shares traditional songs and dance steps along the parade route. http://www.stepspokane.com/letters-of-support/community-partners/	Spokane, WA
		Spokane Tribe of Indians Language Program	The Spokane Tribe maintains a website with Salish language lessons that are designed and separated into specific subjects. It includes recordings of Spokane Tribal elders and Salish teachers. Also posted are recordings of songs and stories in Salish. http://spokanelanguage.com/index.htm	Spokane, WA
		Spokane Tribal College (STC)	The STC specializes in providing culturally appropriate higher education opportunities for Native American students. STC's staff offers quality and reliable educational services. http://www.spokanetribalcollege.org/about.htm	Spokane, WA
		Spokane Indians Baseball	Baseball fans now have the opportunity to learn about the Spokane Tribe, the culture, the people and business efforts of the tribe today at a special Spokane Tribe Museum Exhibit at Avista Stadium. The Spokane Indians Baseball organization honors this unique partnership and Native American heritage with two special nights of baseball. There is a "Spokane Tribe Night" and a "Culture Night" on the baseball calendar. http://www.stepspokane.com/letters-of-support/community-partners/	Spokane, WA
		Chief Garry Park Monument	The newly constructed monument to honor Chief Spokane Garry is now open to the public and was dedicated during a special ceremony in late August 2011. The monument is called "The Gathering Place" and features photographs and details about Spokane Garry and the Spokane Tribe of Indians. Each element of the monument has a special meaning. For example, the large steel circle entry way represents "Children of the Sun," and the copper color of the sun structure represents the copper used by Spokane Tribal Ancestors for jewelry and regalia wear. A plaque within the monument provides a full description of all of the elements and what each one represents. http://www.spokanetribe.com/chief-garry-project	Spokane, WA
		Heritage Day Celebration	The month of November is National Native American Heritage Month. The Spokane Tribe celebrates with an Annual Heritage Day Celebration on the ancestral lands of the tribe. The Celebration is free and open to the public. http://www.stepspokane.com/letters-of-support/community-partners/	Spokane, WA
		First Night Spokane	First Night Spokane is a growing family-friendly New Year's Eve celebration held each year in downtown Spokane, WA. The Spokane Tribe of Indians supports this event and sponsors the annual midnight fireworks show. The Spokane Tribe's culture is featured within the "Kids' Night" arts and crafts area. Spokane Tribal symbols and the Salish language are used within an annual art project at First Night Spokane. http://www.stepspokane.com/letters-of-support/community-partners/	Spokane, WA
		Spokane County Fair	The Spokane Tribe of Indians financially supports and participates within the Annual Spokane County Fair held in the fall. During the Spokane County Fair, the Spokane Tribe sets up a beautiful educational booth that highlights the Tribe, culture, people and its ancestral homelands. http://www.stepspokane.com/letters-of-support/community-partners/	Spokane, WA
		Riverfront Park Powwow	The Spokane Tribe and Spokane Tribe Economic Project (STEP) sponsored the Spokane Falls Northwest Indian Encampment and Powwow at Riverfront Park on August 24 and 25, 2012. This free event was open to people of all ages and included traditional dancing and singing contests, Indian art and craft vendors, and traditional Native food stands. http://www.stepspokane.com/event-calendar/	Spokane, WA

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Sustainability Priority		Tool	Description	Community
Community Engagement		Annual Celebration	Land-of-Sky Regional Council hosts an Annual Celebration every October that draws a unique cross section of government officials representing federal, state and local governments, along with business professionals and community leaders. This celebration is to recognize the successes of Land-of-Sky Regional Council and its member governments. http://www.landofsky.org/annualcelebration.html	Asheville, NC
		East of the Riverway Sustainable Communities Initiative	As a partner in the federal Sustainable Communities Initiative, Asheville Design Center (ADC) is working with Green Opportunities to create a community outreach plan that will open the lines of communication between City staff and neighborhoods in the East of the Riverway target area. Appalachian State University Master's Planning students will be conducting existing resources inventories in these neighborhoods. ADC also will work with the University of North Carolina at Asheville students to conduct a health assessment of these neighborhoods. http://ashevilledesigncenter.org/projects/city-of-asheville-east-riverway/	Asheville, NC
		Burton Street Agricultural Fair	To sustain revitalization efforts currently underway in the Burton Street community, the community plans a revival of the Burton Street Agricultural Fair. http://ashevilledesigncenter.org/projects/burton-street/	Asheville, NC
		Burton Technology Center	To sustain revitalization efforts currently underway in the Burton Street community, the community plans to work with the city on the Burton Technology Center. This high-priority project is the creation of a Community Tech Center and Recording Studio in the currently unused basement of the Burton Street Community Center. The project emerged from the community planning process. http://ashevilledesigncenter.org/projects/burton-street/	Asheville, NC
		Triangle Park Murals	In November 2010, Asheville Design Center (ADC) received approval from the City of Asheville's Parks, Recreation, and Cultural Arts Department and the Public Art Board for the process of installing murals on City-owned property, a process new to the City of Asheville. ADC will work to engage the community in outreach that will lead to community input and ownership of the finished mural product. http://ashevilledesigncenter.org/projects/the-block/triangle-park/	Asheville, NC
		Community Clean-Up Days	To sustain revitalization efforts currently underway in the Burton Street community, the community plans to institute community clean-up days at Smith Mill Creek. http://ashevilledesigncenter.org/projects/burton-street/	Asheville, NC
		Master Plan Survey	Asheville conducted a Master Plan Survey through a direct mail methodology to prioritize parks, recreation and cultural arts concerns. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Landowner Outreach Program	The number of landowners that are likely to be engaged as the County plans for and implements the Priority Corridor identified in the Buncombe County Greenways and Trails Master Plan will require a focused, well-orchestrated and well-managed landowner outreach effort. This effort will require a long-term commitment and potentially a partnership with the real estate community. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		Focus Groups	In planning for parks, recreation, culture and greenways, Asheville conducted focus groups. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Stakeholder Meetings	In planning for parks, recreation, culture and greenways, Asheville conducted meetings with key stakeholders. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC







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Sustainability Priority		Tool	Description	Community
Community Engagement		Board Meetings	In planning for parks, recreation, culture and greenways, Asheville attended board meetings. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Communitywide Public Meetings	In planning for parks, recreation, culture and greenways, Asheville conducted communitywide public meetings. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Improve Milwaukee's Sustainability Survey	From June through October 2012, the Milwaukee Green Team asked for residents' input to guide development of Milwaukee's Sustainability Plan and more than 1,000 residents completed the survey. Additionally, the Green Team hosted five in-person town hall meetings, gathering additional input from hundreds more residents. Residents indicated that Milwaukee's greatest challenges for future prosperity and growth include children's education, unemployment and abandoned city lots. http://city.milwaukee.gov/sustainability/SustainabilityPlanGreenTeam.htm	Milwaukee, WI
		Milwaukee's Green Team	Mayor Barrett appointed the Green Team in February 2012, to carry out the Sustainability Planning process. The Mayor appointed 15 community leaders to a joint city-community "Green Team" to oversee the city's Sustainability Plan development. This new Green Team will be the primary liaison between the public and the planning effort. This team also will further the goals and initiatives developed by the city's original Green Team in 2005. http://city.milwaukee.gov/sustainability/SustainabilityPlanGreenTeam/The-Green-Team.htm	Milwaukee, WI
		Spokane's Green Team	The Green Team, composed of city staff from various departments and citizens, uses the Sustainability Action Plan to successfully delineate, implement and measure outcomes of sustainability projects. http://www.greenspokane.org/green-team/	Spokane, WA
		Friends of the Spokane Tribe	The Spokane Tribe created a group called Friends of the Spokane Tribe. Members receive timely, accurate information about the Spokane Tribe and its Spokane Tribe Economic Project (STEP) development. As this group develops, the Tribe will include members in special partnerships and opportunities as well as explore cross-promotions and joint campaigns with members (individuals, businesses, organizations) to build a stronger community. http://www.stepspokane.com/friends-of-the-spokane-tribe/	Spokane, WA
		West End Community Center (WECC) Design Workshops	The Spokane Tribal Planning and Economic Development Department held two community design workshops to bring community members and elected officials together to provide input on the design of the community center for the West End Community. The two workshops included presentations on building concepts, construction materials and WECC grounds design. http://www.spokanetribe.com/planning	Spokane, WA
		Community Visioning Event	Over the course of 5 days (June 5–9, 2003), residents, business and property owners, civic groups, laborers, clergy, seniors, homeowners, renters, government officials and youth worked together to create a vision for a revitalized downtown corridor in Wyandanch, NY. A 4-day community-based planning event, "Wyandanch Rising," was sponsored by the Town of Babylon in partnership with Sustainable Long Island. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
Participation		Public Participation Techniques	The City of Asheville utilizes multiple forms of techniques to increase citizen participation in all aspects of the planning process and at every level of government for outcomes based in collective decision making (e.g., focus groups, neighborhood meetings, design charrettes, use of technology and the media). http://www.ashevillenc.gov/portals/0/city-documents/Planning/communication.pdf	Asheville, NC

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Sustainability Priority		Tool	Description	Community
Participation		Volunteer Services Department	The Volunteer Services Department connects today's 55+ age group with the people and organizations that need them most. There are three programs offered at Land-of-Sky Regional Council Volunteer Services Department: Foster Grandparent Program, Senior Companion Program and Retired & Senior Volunteer Program (RSVP). http://www.landofsky.org/volunteer.html	Asheville, NC
		City Cultural Arts Division	The Cultural Arts Division oversees some of Asheville's already well-known and popular festivals, including the widely attended Bele Chere Festival, as well as the nationally accredited Western North Carolina Nature Center. Recently, the division has expanded its reach with new initiatives like Easel Rider—Asheville's Mobile Art Lab and smART Space, enhancing its interaction with artists and the community. The division also fosters artistic growth in the community using tools like grant opportunities and professional development programs for established and budding artists alike. http://ashevillenc.gov/Departments/ParksRecreation/CulturalArts.aspx	Asheville, NC
		Increase Voter Participation	Buncombe County should increase voter registration and participation in all elections (e.g., EZ registration, early voting). http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Youth Program List	To promote citizen participation in community decisions, Buncombe County should create and publicize a comprehensive list of available youth programs. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Educational Institution-Youth Programs Partnerships	To promote citizen participation in community decisions, Buncombe County should partner educational institutions with youth programs to increase outreach participation. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		English as a Second Language Programs	To promote citizen participation in community decisions, Buncombe County should promote partnerships for programs that teach English as a second language. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Boston Cares Volunteering	Boston Cares mobilizes more than 25,000 volunteers annually in support of Greater Boston schools and nonprofit agencies, offering a wide array of programs and opportunities that make volunteering easy. http://www.bostoncares.org/	Boston, MA
		Milwaukee Recreation	Milwaukee Recreation is a thriving entity that serves to strengthen and extend the bond between public education and the community. Its mission is to enrich the lives of Milwaukee's children, youth, adults and families through many innovative programs. These programs are designed to improve the academic achievement of all students during non-school hours, strengthen families, reduce crime in the neighborhoods and enhance the well-being of all residents. http://www.milwaukee recreation.net/	Milwaukee, WI
		Annual Parade of Green Buildings	Green organizations could establish an "Annual Parade of Green Buildings" to showcase the progress in green economic development. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Corbin Art Center Programs	For more than 50 years, the Center has been providing affordable, quality fine arts and crafts programs for children and adults. Its programs are developed to foster cognitive, creative and personal growth, and classes are small, so participants receive maximum attention from the instructor. http://spokaneparks.org/index.php/Parks/page/145/	Spokane, WA
		City of Spokane Community and Senior Center Programs	Spokane Parks and Recreation affiliates itself with a number of community and senior centers and programs benefiting young children and older adults. http://spokaneparks.org/index.php/Parks/page/42/	Spokane, WA

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Sustainability Priority		Tool	Description	Community
Participation		Trees Forever	Trees Forever helps individuals and communities improve and sustain their places, engaging a network of thousands of community volunteers to help plant and care for trees, native plants, prairies and other natural areas. The program empowers passionate advocates for the environment; educates community and government leaders; collaborates to build partnerships and greater capacity in communities; and promotes sound environmental stewardship and science. http://www.treesforever.org/	Woodbine, IA
		Music on the Path Concert Series	Musical events are held on the Straight Path with local bands and artists to target families and students and link with downtown restaurants. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
Collaboration		Community Mapping and Analysis for Safety Strategies (COMPASS)	The Milwaukee COMPASS Project is a federally funded initiative that aims to build and support collaborative efforts to improve and sustain cities. The idea behind COMPASS is quite simple: a community can collaborate better if it has a better picture of how problems and opportunities are really interrelated. Basically, shared data are integral to good collaboration and problem solving. http://city.milwaukee.gov/compass/	Milwaukee, WI
		Washington Park Partners	In 2010, United Methodist Children's Services became the convening agency for Washington Park Partners, a group of residents, businesses, organizations and other stakeholders to create the Sustainable Community Plan. http://www.washingtonparkpartners.org/	Milwaukee, WI
		Cross-Sector Partnerships	There are many advantages to communities fostering cross-sector partnerships, especially leveraging resources to produce multiple benefits. Businesses that are providing a social benefit can partner with nonprofit organizations to get grant funding in place of conventional financing. Similarly, academic organizations offer a tremendous amount of unconventional capital through grants, interns, education/training, and generating an educated population, labor-pool and marketplace. In addition, cultural/arts programs are often a key to community revitalization. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		Northwest Oregon Community Dialogue	In the spring of 2010, the Northwest Regional Sustainable Communities Partnership (comprising Region 10 offices of EPA, U.S. Department of Housing and Urban Development, Federal Transit Administration, and the Oregon and Washington Division offices of the Federal Highway Administration) solicited the Oregon Transportation Research and Education Consortium (OTREC) to convene a statewide community dialogue about the federal Sustainable Communities initiative. The Oregon Community Dialogue produced several tangible products: extensive notes from the one-on-one interviews; questions and comments submitted by participants before, during and after the Dialogue as well as answers to some of those questions that were given during the lunchtime Q&A session; notes taken by the scribes during the breakout groups; five core themes from each of the four breakout groups; and ideas for demonstration/pilot projects in Oregon communities. http://otrec.us/files/SCP_Oregon_Dialogue_Summary.pdf	Spokane, WA

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Sustainability Priority		Tool	Description	Community
Collaboration		Washington State Sustainable Communities Dialogue	<p>On July 21, 2010, stakeholders from across Washington State convened at Gould Hall on the University of Washington-Seattle campus for a day-long, cross-disciplinary dialogue focused on providing input to the federal Partnership for Sustainable Communities. The Partnership for Sustainable Communities is a groundbreaking initiative within the U.S. government intended to align the objectives and resources of three major federal agencies: the Department of Housing and Urban Development (HUD), the Department of Transportation (DOT) and EPA. Their ultimate recommendations to the federal agencies are represented by the following themes:</p> <ol style="list-style-type: none"> 1. There is a desire by local governments for more direct collaboration with the federal agencies. There is also enthusiasm for the agencies' efforts to operate in a more integrated way to address community challenges. 2. There is a need for increased and streamlined funding to aid in the development and implementation of sustainable communities at varying scales. 3. All types of communities—large and small, urban and rural—desire technical assistance. 4. Stakeholders will benefit from a consistent vision and goals set forth by the agencies over time. <p>http://pcc.wsu.edu/projects/documents/RunstadCtr-SustainCommWADialogueReport_final.pdf</p>	Spokane, WA
		Island Harvest Hunger Relief Programs	<p>Island Harvest, Long Island's largest hunger relief organization, serves as the bridge between those who have surplus food and those who need it. Volunteers and staff "rescue," or collect, good surplus food from more than 800 local restaurants, caterers, farms and other food-related businesses and distribute it to a network of close to 570 soup kitchens, food pantries and other places where those in need can access it.</p> <p>http://www.islandharvest.org/page.aspx?name=abouthunger</p>	Wyandanch, NY
Capacity Building		East of the Riverway Sustainable Communities Initiative	<p>East of the Riverway Sustainable Communities Initiative is a collaborative effort between the City of Asheville, Green Opportunities, Asheville Design Center and community associations to build capacity and community engagement in neighborhoods along the French Broad River. The main goals are to provide more transportation choices, promote equitable and affordable housing, enhance the attractiveness of the neighborhoods to local businesses, support existing networks and resources in the neighborhoods, coordinate policies that leverage community voice and financial investment in these communities, and encourage a sense of pride and ownership among the neighborhood residents.</p> <p>http://greenopportunities.org/projects/join/</p>	Asheville, NC
Public School Education		Career and College Readiness Programs	<p>Buncombe County should partner with school systems on plans for rising 9th graders with an emphasis on career and college readiness.</p> <p>http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf</p>	Asheville, NC
		Early Childhood Learning Opportunities	<p>To provide educational resources that match the needs of the community, Buncombe County should promote early childhood learning opportunities (e.g., Health Adventure, Nature Center).</p> <p>http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf</p>	Asheville, NC
		Listening to Our Teens Project	<p>The Listening to Our Teens Project by the Asheville City Schools Foundation produced a wide and varied list of needs cited by Asheville Students, some of which will be addressed by programs being implemented.</p> <p>http://acsf.org/LTOT%20Executive%20Summary.pdf</p>	Asheville, NC
		WriteBoston	<p>WriteBoston was started by Mayor Thomas M. Menino in 2002 in response to low student scores on the English portion of the Massachusetts Comprehensive Assessment System (MCAS) test. WriteBoston focuses on building teacher capacity to teach and use writing to support student learning across all content areas. The program has developed an effective coaching model, published hundreds of young people in Teens in Print, and provided direct writing support to more than 2,300 students through the Writing Centers.</p> <p>http://www.bostonredevelopmentauthority.org/WriteBoston/about.html</p>	Boston, MA




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Sustainability Priority		Tool	Description	Community
Public School Education		Safe Schools/Healthy Students Initiative	The Milwaukee Public Schools (MPS) Safe Schools/Healthy Students Initiative is dedicated to collaborating with community partners to create school climates that foster positive student behavior and, ultimately, develop responsible, productive youth. http://www2.milwaukee.k12.wi.us/sshs/	Milwaukee, WI
		Environmental Education	The city should work with MPS to identify cost-effective opportunities to incorporate a green message into the classroom with the goal of establishing environmental education as part of the core curriculum. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Comprehensive Literacy Plan	The MPS Comprehensive Literacy Plan (CLP) was designed to be a plan of action to increase Pre-K–Grade 12 Reading and English Language Arts achievement. The implementation of the CLP will guide the development of consistent quality literacy instruction, assessment and professional development across the district. http://www.milwaukee.k12.wi.us/portal/server.pt/comm/programs___resources/310/comprehensive_literacy_plan/43262	Milwaukee, WI
		Comprehensive Mathematics and Science Plan (CMSP)	The MPS are taking a lead on a comprehensive approach to integrating the Mathematics Common Core State Standards with science standards. As a plan of action to improve PreK–12 student learning and achievement in Mathematics and Science, the MPS CMSP is designed to equip every student with the levels of rigor and relevance needed for success in college and career readiness. http://mpsportal.milwaukee.k12.wi.us/portal/server.pt/comm/programs___resources/310/comprehensive_math_and_science_plan/43533	Milwaukee, WI
		Response to Intervention (RtI)	The RtI framework is a scaffolded approach to instruction that uses data analysis to meet the academic and behavioral needs of students using high-quality, differentiated, culturally responsive instruction. http://www5.milwaukee.k12.wi.us/dept/rti/about/	Milwaukee, WI
		Tutoring 4 You	The Tutoring 4 You (T4U) program will target 24 Focus schools identified by Wisconsin's Department of Public Instruction (DPI). Schools that show large gaps in reading or mathematics scores, gaps in graduation rates between subgroups, and/or low performance by high need subgroups have been identified as focus schools. Tutoring will take place in the school and will be available for students for 1 hour for 2 days per week for a total of 40 hours of tutoring support. Staff members employed as tutors will be highly qualified in the subject area they will be teaching: math or literacy. http://mpsportal.milwaukee.k12.wi.us/portal/server.pt/comm/programs___resources/310/tutoring_4_you_-_t4u/42575	Milwaukee, WI
		Milwaukee Public Schools Foundation, Inc.	The Milwaukee Public Schools Foundation, Inc., was organized in 1998 as a nonprofit, tax-exempt corporation for educational and charitable purposes. The mission of Milwaukee Public Schools Foundation, Inc., is to promote educational excellence and strengthen community participation in the Milwaukee Public Schools. http://mpsfoundation.net/	Milwaukee, WI
		School District Expenditure Report	This report uses Internet-accessible revenue and expenditure data to examine the relative importance of primary education to the state's budget and to local government budgets. http://www2.econ.iastate.edu/research/webpapers/paper_10183.pdf	Ogden, IA
		Woodbine Education Foundation	The Woodbine Education Foundation offers a way to plant and cultivate seeds of opportunity to provide support for the accomplishment of projects or undertakings by, or on behalf of, the Woodbine Community School District and its residents. https://sites.google.com/a/woodbine.k12.ia.us/woodbine-education-foundation-endowment-fund/	Woodbine, IA

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Sustainability Priority		Tool	Description	Community
Public School Education		Community United for a Better School (CUBS)	CUBS is a parent, student and teacher organization that provides fun activities for the youth in Woodbine, IA, supports the school through field trip donations, collects box tops and soup labels, continues to work towards the purchase of playground equipment, provides healthy snacks during parent/teacher conferences, provides two \$500 scholarships, supplies staff holiday gifts, provides funds for the box top and reading counts parties, and recognizes teachers during teacher's appreciation week. https://sites.google.com/a/woodbine.k12.ia.us/cubs-pto-org/	Woodbine, IA
		Read to the Zoo Program	The Woodbine Community School District participates in the Pre-K to 6th Grade "Read to the Zoo" program. They are trying to beat other schools to win a free day at Omaha's Henry Doorly Zoo. All books that the children read or have read to them can be recorded on their reading sheet. https://sites.google.com/a/woodbine.k12.ia.us/woodbine-community-schools/about-1	Woodbine, IA
Communication		Better Energy Savings Today (BEST)	Asheville's Sustainability Office developed the BEST program to educate city staff on sustainability issues. The program involved education materials, informational emails and internal newsletter articles, all aimed to inform city staff of alternative transportation options and energy conservation tips. http://www.ashevillenc.gov/portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf	Asheville, NC
		Government Access Channel	Buncombe County should continue the use of the government access channel as a means of raising awareness of current issues regarding growth and development in the county. http://www.buncombecounty.org/common/planning/LandUsePlanUpdate.pdf	Asheville, NC
		Climate Choices Project	Climate Choices Project is a Web-based educational tool to explain to people in the United States what climate change will mean for them, their children and their grandchildren using the most up-to-date science. http://www.climatechoices.org/index.html	Boston, MA
		Sustainability Toolkit	A Web-based toolkit designed to provide participants in A Better City's Challenge for Sustainability with information and guidance on the multitude of services, products, techniques, programs, policies and procedures that are presented within the Challenge for Sustainability. http://www.abettercity.org/toolkit/index.html	Boston, MA
		Sustainable Energy, Education and Communication (SEEC)	In 2005, Johnson Controls, Inc. developed the SEEC employee training and communications program, which is a Web-based educational program that offers broad sustainability information and practical solutions through 10 modules. http://www.johnsoncontrols.com	Milwaukee, WI
		Green Milwaukee Website	The city developed a website that touts Milwaukee, WI, as a premier green city. The website is both a promotional and educational tool. It contains a "to-do" list that provides a road map for individuals and businesses to go green. Specifically targeted messages were developed for homeowners and renters, various ages of school children, various scales of businesses, etc. http://city.milwaukee.gov/sustainability	Milwaukee, WI
		Mayoral Speeches	The Mayor should integrate a discussion of green and support for green initiatives into his speeches, including a clear statement of goals and intent in the annual budget and State of the City addresses. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Green Logo	Milwaukee's Office of Environmental Sustainability (OES) created a logo to convey the message that Milwaukee, WI, is a green city. http://city.milwaukee.gov/sustainability	Milwaukee, WI
		Press Releases	As the city adopts innovative policy proposals, the city issues press releases to draw attention to these initiatives. http://city.milwaukee.gov/inthenews	Milwaukee, WI

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Sustainability Priority		Tool	Description	Community
Communication		Online Newsletter	Milwaukee's Office of Environmental Sustainability's (OES) semi-annual newsletter helps to update residents, businesses and city employees on current and future OES programs, projects and initiatives. http://city.milwaukee.gov/inthenews	Milwaukee, WI
		Newspaper Publicity	Ogden, IA, is raising community consciousness of local support—the local paper helped through an article that featured how the local feed and hardware store is a key anchor that can accommodate the needs of the local customers. http://groundedmuse.com/wp-content/uploads/2012/04/Local_synergy_strategies_11-9-101.pdf	Ogden, IA
		The Rawhide Press	The Rawhide Press is owned and operated by the Spokane Tribe of Indians. It is a monthly community paper. This publication is free to Spokane Tribal members who are older than 18. http://www.spokanetribe.com/the-rawhide-press	Spokane, WA
		Spokane Sustainability Forum	The Spokane Sustainability Forum is a blog sponsored by the Lands Council to communicate to community members about buying local, recycling, minimizing sprawl, green construction and other sustainability-related issues. http://sustainablesokane.blogspot.com/	Spokane, WA
		Sustainable Communities Online	Sustainable Communities Online seeks to pool information on sustainability to make it more readily accessible to the public, presenting initiatives and resources to help people learn about ways to make their community healthier, safer, greener, more livable and more prosperous. Sustainable Communities Online seeks to pool information on sustainability to make it more readily accessible to the public, presenting initiatives and resources to help people learn about ways to make their community healthier, safer, greener, more liveable and more prosperous. Wyandanch, NY, used the website as a source of information to help develop the Wyandanch Hamlet Plan. http://www.sustainable.org/	Wyandanch, NY
		Downtown Promotional Materials	A logo and slogan for downtown can help create a positive symbol that serves as a constant reminder to the public and potential customers. The slogan and logo should be used on all advertising and promotional materials. Slogans can be derived from significant community cultural characteristics or historic character. http://www.townofbabylon.com/documentcenter/view/16	Wyandanch, NY
Decreasing Populations		Countryside and Town: Population in Iowa's Counties Within and Outside of Incorporated Places, 1990–2010	The population living in the countryside in Iowa, outside of towns and cities, declined between 2000 and 2010 by more than 20,000 residents. This loss was a reversal of the gains made in the previous decade. http://www.cvcia.org/files/countryside-town-pop1990-2010.pdf	Ogden, IA
Crime		Crime Prevention Through Environmental Design (CPTED)	It is recommended that Buncombe County, along with the cities and towns, partner to develop a set of greenway- and trail-specific design standards that meet the CPTED guidelines. CPTED is based on the principle that proper design and effective use of buildings and public spaces in neighborhoods can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life for citizens. http://www.ncpc.org/training/training-topics/crime-prevention-through-environmental-design-cpted-	Asheville, NC
		Text-a-Tip	Text-a-Tip enables tips through smart phones and is the latest in a selection of tools for the community to report criminal activity and interact with the Asheville Police Department. http://coablog.ashevillenc.gov/2012/11/texting-tech-helps-apd-get-community-crime-tips/	Asheville, NC
		Citizens Police Academy	The Citizens Police Academy consists of 3-hour classes held weekly for 12 consecutive weeks. The course includes basic classroom instruction, presentations and demonstrations on topics such as criminal investigation, constitutional and criminal law, use of force and forensics. http://www.ashevillenc.gov/Departments/Police/PoliceServices/CrimePrevention.aspx	Asheville, NC

SOCIAL ISSUES: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Crime		Community-Based Youth Programs	Buncombe County should continue to develop and increase the number of community-based programs targeting adjudicated youth and those at risk of offending. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Community Crime Prevention Programs	Buncombe County should use local media coverage to support and promote community crime prevention programs and help raise public awareness. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Substance Abuse Treatment Programs	Buncombe County should improve access to and increase awareness of mental health and substance abuse treatment through advocacy and requiring treatment programs for substance abuse offenders. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Cleanup of Public Places	Buncombe County should utilize nonviolent offenders to clean up public places so that neighborhoods are not conducive to crime. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Economic and Cultural Issue Training	Buncombe County should provide training to law enforcement and judicial personnel concerning economic and cultural issues. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Alternative Sentencing	Buncombe County should increase the number of offenders utilizing alternative sentencing options. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Boston Police Department (BPD) Checkpoint Newsletter	The BPD Checkpoint newsletter is part of the BPD's community policing efforts and serves to communicate the law and how to report crimes. http://www.cityofboston.gov/Images_Documents/Allston-Brighton%202012PDFCheckpointbrochure_9-4-12_tcm3-33586.pdf	Boston, MA
		Truancy Abatement and Burglary Suppression (TABS) Program	The TABS Program began in Milwaukee, WI, in 1993. The mission of TABS is to intervene with students who are truant, deterring them from involvement in the criminal justice system. This is accomplished by promoting school attendance through a collaborative team approach involving students, parents, schools, law enforcement and the Boys and Girls Clubs of Greater Milwaukee. http://mpsportal.milwaukee.k12.wi.us/portal/server.pt/comm/programs___resources/310/tabs/38261	Milwaukee, WI
Social Science Research		Community Demographics Profile	In planning for parks, recreation, culture and greenways, Asheville, NC, considered the profile of the community and demographics, including anticipated population growth from ESRI Business Solutions. ESRI provides a full spectrum of ready-to-use, high-quality geospatial data for geographic information system (GIS) visualization and analysis projects. http://www.esri.com/data/find-data	Asheville, NC
		Direct Mail Survey	In planning for parks, recreation, culture and greenways, Asheville conducted a direct mail survey. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Sports Participation Trends and Statistics	In planning for parks, recreation, culture and greenways, Asheville researched trends and statistics related to American sports participation from the National Sporting Goods Association to help guide the efforts of programming staff. http://www.nsga.org	Asheville, NC
		Arts Participation Trends and Statistics	This National Endowment for the Arts report analyzes the relationship between age and arts participation in the Survey of Public Participation in the Arts data for 1982, 1992, 2002 and 2008. http://www.nea.gov/research/2008-SPPA-Age.pdf	Asheville, NC

ENVIRONMENTAL JUSTICE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Awareness		Community Income Profile	In planning for parks, recreation, culture and greenways, Asheville considered the profile of community income from the Asheville Chamber of Commerce. http://www.ashevillechamber.org/economic-development/research-and-reports/income-reports	Asheville, NC
		Maps and Neighborhood Profiles	The Department of Neighborhood Development (DND) profiles neighborhood characteristics, including affordable housing, distressed housing, household income, foreclosures and demographics. http://www.cityofboston.gov/dnd/PDR/Maps_and_Neighborhood_Profiles.asp	Boston, MA
		Demographic Analysis	Despite a 20 percent increase in the proportion of people of color on Long Island, levels of segregation remain extremely high, according to a new demographic analysis by civil rights nonprofit ERASE Racism. The organization, which has been reporting on the detrimental effects of segregation for the past 11 years, conducted this new research to understand demographic change from 2000 to 2010. The research also showed significant racial disparities in education. Based on graduation rates, only 2.7 percent of all black students on Long Island have access to the best performing schools. Similarly, only 4.5 percent of Hispanic students attend the best performing schools, compared to 28 percent of all white students and 30 percent of all Asian students. http://www.eraseracismny.org/press-room/6-press-releases/255-new-research-reveals-continued-segregation-and-racial-disparities	Wyandanch, NY
Adoption of Environmental Justice Principles		Boston First Targeting	For rental assistance programs such as Section 8, Boston will prioritize its residents first. http://www.cityofboston.gov/Images_Documents/LTW_III_Plan_Summary_tcm3-7922.pdf	Boston, MA
		Center on Wisconsin Strategy (COWS)	The city should partner with COWS, a nonprofit think-and-do tank, based at the University of Wisconsin-Madison that promotes “high road” solutions to social problems. High-road solutions treat shared growth and opportunity, environmental sustainability, and resilient democratic institutions as necessary and achievable complements in human development. COWS is nonpartisan but values-based. In addition, COWS seeks a world of equal opportunity and security for all. http://www.cows.org/about-cows	Milwaukee, WI
		Environmental Impact Analysis	The French Broad River Metropolitan Planning Organization Environmental Impact Analysis used maps and census data to identify minority, low-income, disabled and elderly communities to create “Environmental Justice Maps.” http://fbrmpo.org/lrtp/	Asheville, NC
		Section 8 Subsidies	Asheville, NC, and Asheville regional governments should increase the number of Section 8 subsidized units. http://www.buncombcounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Lesbian, Gay, Bisexual and Transgender (LGBT) Elder Advocates of Western North Carolina (WNC)	LGBT Elder Advocates of WNC is comprised of citizens advocating for lesbian, gay, bisexual and transgender older adults. This group aims to improve the quality of life of LGBT elders. It has created an LGBT elder resource list and sponsors LGBT elder sensitivity training. https://www.facebook.com/LGBTElderAdvocatesofWNC	Asheville, NC
		Tribal Enterprise Rights Ordinance (TERO)	TERO enforces the Spokane Tribal Employment Rights Ordinance of 1995, which provides for Indian Preference in any employment, contract and subcontract conducted on or near the Spokane Indian Reservation. TERO coordinates the Certification of Indian Contractors, negotiates Employer Compliance Plans, offers a Tribal Hiring Hall, Apprenticeship Program, Cooperative Human Resource Agreements as well as provides work-related training. http://www.spokanetribe.com/tero	Spokane, WA
		Weed and Seed	The Wyandanch Weed and Seed program is a Department of Justice initiative that employs community-based strategies in a comprehensive multi-agency approach to law enforcement, crime prevention and community revitalization that affects the quality of life in the Wyandanch, NY, community. http://www.eoc-suffolk.com/wyandanch-weed-and-seed.php	Wyandanch, NY



CLIMATE CHANGE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Climate Change Adaptation		International Council for Local Environmental Initiatives (ICLEI) Membership	The ICLEI—Local Governments for Sustainability is an international association of local and regional governments dedicated to sustainable development. ICLEI member cities are urged to participate in a greenhouse gas/climate change process with five important milestones, the third of which is the development of an action plan. http://www.iclei.org/	Asheville, NC
		Climate Protection Agreement	Asheville, NC, is a signatory to the U.S. Conference of Mayors Climate Protection Agreement. Participating cities in the Agreement serve as conduits to spur local and state action to reduce global warming. http://www.usmayors.org/climateprotection/agreement.htm	Asheville, NC
		Climate Portal and Dashboard	University of North Carolina at Asheville's National Environmental Modeling and Analysis Center (NEMAC) is working with the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC) and the Cooperative Institute for Climate and Satellites provide this data to the many sectors of society that need it for future planning and decision making. Just as the dashboard of a car gives a quick look at the status of the vehicle, the Global Climate Dashboard gives a quick look at the status of the Earth's climate system. http://nemac.unca.edu/projects/climate-portal	Asheville, NC
		National Integrated Drought Information System (NIDIS)	NIDIS is a dynamic and accessible drought information system that provides users with the ability to determine the potential impacts of drought and the associated risks they bring, and the decision support tools needed to better prepare for and mitigate the effects of drought. http://www.drought.gov/drought/	Asheville, NC
		Template for Assessing Climate Change Impacts and Management Options (TACCIMO)	TACCIMO is a Web-based assessment and reporting tool designed to integrate the most current climate change science with forest planning to meet the needs of a variety of users. A collaborative effort between the Eastern Forest Environmental Threat Assessment Center (EFETAC) researchers and U.S. Department of Agriculture (USDA) Forest Service Southern Region planners and resource managers, TACCIMO fits within the National Environmental Policy Act (NEPA) process and can be used in land management plan revision, environmental assessments, environmental impact statements and reasonable alternatives. http://www.forestthreats.org/research/tools/taccimo/intro	Asheville, NC
		Climate Change Executive Order	The executive order establishes task forces and sets goals to guide actions directed at addressing climate change in the city. http://www.cityofboston.gov/Images_Documents/Clim_Action_Exec_Or_tcm3-3890.pdf	Boston, MA
		Sparking Boston's Climate Revolution	This report recommends numerous actions and activities to lessen climate change, including green buildings, transportation and local food. http://www.cityofboston.gov/Images_Documents/BCA_full_rprt_r5_tcm3-19558.pdf	Boston, MA
		Boston Climate Action Leadership Committee	In 2009, the Mayor of Boston announced the members of the Boston Climate Action Leadership Committee, a 22-member group representing the great diversity of the local community. They were charged with charting Boston's collective response to climate change. http://www.cityofboston.gov/climate/bostonsplan/CALC.asp	Boston, MA
		International Council for Local Environmental Initiatives (ICLEI) Municipal Climate Adaptation Workshop	In 2008, ICLEI sponsored a Municipal Climate Adaptation Workshop for Boston. http://www.icleiusa.org/library/documents/municipal-adaptation-workshop/Boston%20Adaptation%20Workshop%20Draft%20Agenda%20for%20website.doc/view	Boston, MA
		Water and Sewer Infrastructure	The Deer Island facility, an oft-cited example of the benefits of long-range planning for climate change, was completed in 2000 and built 2 feet higher than it would otherwise have been so that the hydraulic head (pressure) pushing the plant's effluent through the outfall pipe into Massachusetts Bay would remain sufficient with 2 feet of sea-level rise. http://www.mwra.state.ma.us/03sewer/html/sewditp.htm	Boston, MA





CLIMATE CHANGE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Climate Change Adaptation		Executive Order on Climate Change Challenge	The Washington State Executive Order on Climate Change Challenge sets forth specific energy and other policies and practices that are guiding Washington state programs and decisions. http://www.greenspokane.org/wp-content/uploads/2010/11/Gov_Exec_Order_0702_Climate_Change.pdf	Spokane, WA
		Preparing for a Changing Climate: Washington State's Integrated Climate Change Response Strategy	The strategy lays out a framework to protect Washington State's communities, natural resources and economy from the impacts of climate change, builds local capacity to adapt to expected climate changes, calls on state agencies to make climate adaptation a standard part of agency planning and makes scientific information about climate change impacts readily accessible to decision makers in the public and private sectors. https://fortress.wa.gov/ecy/publications/publications/1201004.pdf	Spokane, WA
		Climate Change Clearinghouse	The Climate Change Clearinghouse website provides dozens of reports on specific areas in which climate change will impact Washington State, including the economy, agriculture, forests and biodiversity to help the state prepare for and adapt to the changing climate. http://www.ecy.wa.gov/climatechange/ipa_resources.htm	Spokane, WA
		Work Group Decision Support Tool	The Sustainability Assessment re Peak Oil and Climate Mitigation Work Group Decision Support Tool is a tool for filling in a vision of what an ideal sustainable Spokane might look like in 30 years. http://www.greenspokane.org/wp-content/uploads/2010/11/Sustainability_Assessment_Peak_Oil_Climate_Mitigation.pdf	Spokane, WA
Reduce Greenhouse Gases		Clean Air and Climate Protection Software (CACP)	EPA funded the creation of Clean Air Climate Protection (CACP) software by the International Council for Local Environment Initiatives (ICLEI). CACP is designed to help local governments formulate climate action plans and is used by the U.S. Conference of Mayors to compute emissions numbers and calculate cost savings. http://www.icleiusa.org/tools/cacp-2009	Asheville, NC
		Greenhouse Gas Resolution	In April 2007, the City Council passed a resolution committing Asheville, NC, to greenhouse gas reductions of 2 percent per year from 2007 levels until an 80 percent reduction has been reached. http://www.ashevilenc.gov/portals/0/city-documents/Sustainability/Resolutions07-91and07-90.pdf	Asheville, NC
		Greenovate Boston	Greenovate Boston is the Mayor's campaign to help cut the city's greenhouse gas emissions 25 percent by 2020 working with representatives from all sectors and neighborhoods. http://www.greenovateboston.org/#	Boston, MA
		A Climate of Progress: Update Report	A Climate of Progress, Update Report is being used by Boston city officials and others to track and report progress toward greenhouse gas reduction goals and to provide resources for successful future actions. http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf	Boston, MA
		ICLEI—Cities for Climate Protection	GreenClimateCities is a new brand of ICLEI's programmatic work, replacing Cities for Climate Protection Campaign, which Boston, MA, joined in 2009. The GreenClimateCities initiative invites cities worldwide to join efforts by local governments from all parts of the world to take voluntary climate action now and not wait for national governments to eventually come to a global climate agreement. Under the GreenClimateCities initiative, cities join a network of like-minded cities to advance the transformation of local building stock and urban infrastructure to become energy-efficient, low-carbon and resilient and to reap the economic benefits of decisive climate action. http://archive.iclei.org/	Boston, MA


CLIMATE CHANGE: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Reduce Greenhouse Gases		U.S. Conference of Mayors Climate Protection Agreement	In 2005, Boston, MA, signed the U.S. Conference of Mayors Climate Protection Agreement. Under the Agreement, participating cities commit to take the following three actions: strive to meet or beat the Kyoto Protocol targets in their own communities through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns; urge their state governments and the federal government to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol, 7 percent reduction from 1990 levels by 2012; and urge the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system. http://www.usmayors.org/climateprotection/agreement.htm	Boston, MA
		Develop a Climate Protection Plan	The City of Milwaukee, WI, should explore adoption of a Climate Protection Plan with city-specific benchmarks. In the absence of national leadership to address global warming, many cities have taken the initiative to adopt local Kyoto standards through the "U.S. Mayors Climate Protection Agreement." http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI

ENERGY: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Energy Independence		Energy Technology Cluster	Milwaukee, WI, is the home of several large world-class technology leaders that are known for their contributions in the energy technologies industry (Johnson Controls, Rockwell International, Eaton Corporation, Magnetek Alternative Energy Division). The city also has several second-tier companies providing energy technologies. The regional expertise in energy controls, small engine design and building technologies provides a particularly strong base for this green industry "cluster." This green cluster could be expanded in several areas to further develop Milwaukee's economy. The Apollo Alliance, a nationally recognized entity that promotes energy independence and good jobs, can partner with the city to promote and expand this business cluster. http://www.bluegreenalliance.org/apollo	Milwaukee, WI
Alternative Energy Sources		EvolveEnergy Partnership	The EvolveEnergy Partnership—a 26-county, joint initiative between western North Carolina's leading public and private-sector clean energy stakeholders—is dedicated to making western North Carolina a model of economic and environmental success through the promotion and support of clean energy. Advancements in renewable energy, energy efficiency and clean vehicles strengthen the local economy, protect vital natural resources and improve the quality of life for all of the region's communities. http://www.landofsky.org/evolveenergy.html	Asheville, NC
		Clean Energy: Opportunities for Western North Carolina	Clean Energy: Opportunities for Western North Carolina is a snapshot of existing businesses and supportive infrastructure. http://www.advantagegreen.org/wp-content/uploads/2011/02/Clean_Energy_White_Paper_with_cover_page1.pdf	Asheville, NC
		Proposed Solar Energy State Law	The North Carolina Solar Jobs Bill was proposed to reduce the amount of purchased renewable energy certificates derived from out-of-state solar facilities and expand solar energy use and compliance. The bill would require that 0.4 percent of energy be derived from solar resources by 2018. http://www.ncleg.net/Sessions/2011/Bills/House/PDF/H495v1.pdf	Asheville, NC

ENERGY: Policies, Approaches and Scientific Tools










Sustainability Priority		Tool	Description	Community
Alternative Energy Sources		Feasibility Studies	For the renewable energy system technologies (e.g., wind, solar, geothermal), feasibility studies are recommended to determine technical, economic and regulatory viability for Asheville. A four-step feasibility process—technical feasibility, regulatory analysis, evaluation of greenhouse gas risks and opportunities and economic analysis—may be used to further investigate the potential of integrating renewable energy at these sites. Preliminary wind studies, for example, have been performed by the Appalachian State University Energy Center, which identified the potential for windmills on three city-owned parcels. Renewable energy options should be pursued after energy efficiency measures have been taken to maximize the energy savings and carbon benefits. http://www.ashevilenc.gov/portals/0/city-documents/Sustainability/AVLSustMGMTPlan.pdf	Asheville, NC
		Database of State Incentives for Renewable Energy (DSIRE)	DSIRE is a comprehensive source of information on state, local, utility and selected federal incentives that promote renewable energy and energy efficiency. http://dsireusa.org/	Asheville, NC Medford, MA
		Solarize Mass	Solarize Mass is a program to make it affordable and simple to make the switch to clean, solar energy through a special community discount, educational workshops and a streamlined installation process. http://www.solarizemass.com/index.cfm/page/About-Solarize/pid/12858	Boston, MA
		Renew Boston Solar	With the assistance of the U.S. Department of Energy's SunShot Initiative, the City of Boston launched Renew Boston Solar to encourage the widespread adoption of solar energy in Boston, MA. Through Renew Boston Solar, the city is: encouraging the installation of solar technology throughout Boston, including easing permitting requirements, mapping feasible locations, and planning the city-wide bulk purchase, financing and installation of solar technology; work with local organizations to maximize Boston's participation in state incentive programs and innovative financing initiatives; and tracking and mapping solar and other renewable energy systems in Boston. http://www.cityofboston.gov/environmentalandenergy/conservation/solar.asp	Boston, MA
		Renew Boston Innovation District Solar Challenge	The Renew Boston Innovation District Solar Challenge is an effort to drive private-sector adoption of solar photovoltaic technologies in the city's Innovation District with the goal of installing more than 1 megawatt of solar photovoltaics by 2013, producing enough clean energy to power 250 homes. http://www.renewboston.org/businesses/innovationdistrict/	Boston, MA
		Renew Boston Solar Interactive Map	The Renew Boston Solar Interactive GIS map allows an individual to see active renewable energy installations within the city and to calculate the solar potential of building rooftops. http://gis.cityofboston.gov/solarboston/#	Boston, MA
		Renew Boston Solar Permitting Guide	The Renew Boston Solar Permitting Guide serves as a resource for building owners and solar installers. http://www.cityofboston.gov/Images_Documents/Solar%20Boston%20Permitting%20Guide%20NEW%20Sept%202011_tcm3-27989.pdf	Boston, MA
		DOE SunShot Initiative	The DOE SunShot Initiative is a collaborative national initiative to make solar energy cost competitive with other forms of energy by the end of the decade. http://www1.eere.energy.gov/solar/sunshot/index.html	Boston, MA
		Boston Harbor Islands Renewables Planning Guide	A planning guide assessing the feasibility of installing wind, solar, tidal and other clean energy on several grid-tied Boston Harbor islands. http://www.uhi.umb.edu/pdf_files/BHI_Renewables.pdf	Boston, MA
		Commonwealth Solar II	Commonwealth Solar II provides rebates for homeowners and businesses in Massachusetts who install solar photovoltaics (PV). Rebates are granted through a non-competitive application process for the installation of PV projects by professional, licensed contractors at residential, commercial, industrial, institutional and public facilities. http://www.masscec.com/programs/commonwealth-solar-ii	Boston, MA

ENERGY: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Alternative Energy Sources		Massachusetts Residential Guide To Solar Power	The Massachusetts Residential Guide To Solar Power can assist Massachusetts residents who are considering using solar energy to generate electricity to power their homes. This guide can help a person determine whether solar PV is right for one's circumstance both technically and economically. It reviews the installation process and provides advice and resources on finding an installer and securing rebates, as well as other pertinent information about solar PV. http://www.masscec.com/index.cfm/page/Residential-Solar-Guidebook/cdid/13301/pid/11151	Boston, MA
		Solar America Cities	Boston was selected as a Solar America City and is committed to developing a sustainable solar infrastructure that removes market barriers and encourages the adoption of solar energy by residents and businesses to lay the foundation for a viable solar market and serve as a municipal model. In 2007 and 2008, the U.S. Department of Energy (DOE) selected 25 major U.S. cities as Solar America Cities, the foundation of DOE's Solar America Communities program. Through this effort, these cities have been working to accelerate the adoption of solar energy technologies for a cleaner, more secure energy future. These unique federal-local partnerships have enabled DOE to identify barriers to solar energy use in diverse locations and at various stages of market development, and to collaboratively develop solutions to those barriers. http://solaramericacities.org/	Boston, MA
		Camp Harbor View	The City of Boston's Camp Harbor View on Long Island now boasts a 16.7 kW solar photovoltaic system designed to produce more than 500,000 kW hours throughout its lifespan and prevent more than 287 tons of CO2 emissions from being released. http://www.cityofboston.gov/environmentalandenergy/conservation/energyaccomplishments.asp	Boston, MA
		Dudley Village	Dorchester Bay Economic Development Corporation (DBEDC) worked with NexAmp to design and install 7.98-kilowatt solar photovoltaic panels and a monitoring system on the roof of Dudley Village North that supplies solar energy to the development's common areas. http://www.cityofboston.gov/news/default.aspx?id=4316	Boston, MA
		Boston Public Schools Solar Energy Units	Solar energy and combined heat-and-power units have been placed on a number of municipal buildings, including three Boston Public Schools. http://www.cityofboston.gov/environmentalandenergy/conservation/energyaccomplishments.asp	Boston, MA
		Article 88, Wind Energy Facilities	The Boston Redevelopment Authority has established zoning regulations for the erection and operation of both ground-mounted and building-integrated wind energy facilities within the city. The zoning regulations provide standards for the placement, design, monitoring, modification and removal of wind energy facilities. The regulations streamline wind turbine installation; address public safety concerns; minimize impacts on scenic, natural and historic resources of the City of Boston; and provide adequate financial assurance for decommissioning. http://www.cityofboston.gov/Images_Documents/Article88%20Wind%20Energy%20Zoning_tcm3-28589.pdf	Boston, MA
		Boston Public Schools Wind Turbines	The Boston school district has issued a Request for Proposals (RFP) for firms to study, design, construct, install and maintain turbines in high-wind locations to generate energy and provide learning opportunities for students. http://www.cityofboston.gov/news/default.aspx?id=3753	Boston, MA
		Massachusetts Water Resources Authority (MWRA) Wind Turbines	The MWRA has developed a series of wind projects around the Boston, MA, area, including a recently installed 1.5 MW turbine at their Charlestown facility and two 190-foot, 600 kW turbines at Deer Island. http://www.cityofboston.gov/environmentalandenergy/conservation/wind.asp	Boston, MA
		Logan Airport Wind Turbines	The Massachusetts Port Authority installed 20 roof-mounted wind turbines at Logan Airport's Office Center in May 2008. This fleet of 12-foot-tall wind turbines, each of which has a capacity of 1 kW, is allowing Logan to tap into the steady winds along Boston's waterfront. http://www.cityofboston.gov/environmentalandenergy/conservation/wind.asp	Boston, MA

ENERGY: Policies, Approaches and Scientific Tools				
Sustainability Priority		Tool	Description	Community
Alternative Energy Sources		Fenway Park Solar Hot Water System	The panels, which will help heat water used throughout the facility, are part of a series of environmentally sustainable practices that have been implemented at Fenway Park this year. http://boston.redsox.mlb.com/news/press_releases/press_release.jsp?ymd=20080519&content_id=2730414&vkey=pr_bos&ext=.jsp&c_id=bos	Boston, MA
		Solar Evacuation Route	The grant from the U.S. Department of Energy (DOE) will allow the city to integrate solar energy applications into its emergency response infrastructure by creating a pilot solar evacuation route that will feature a backup photovoltaic system at Boston's main emergency-vehicle fueling station, as well as solar-powered traffic control and monitoring equipment, lighting and emergency radio repeaters. http://www.cityofboston.gov/news/default.aspx?id=4388	Boston, MA
		Purchase Renewable Energy Blocks	Renewable energy can be purchased from We Energies in "blocks" that represent a portion of the customer's total electricity usage. This would support the expansion of clean renewable power to improve the environment of the region, reduce long-term economic exposure to rising energy prices and help change the outdated impression that Milwaukee is a dirty industrial city. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf	Milwaukee, WI
		Milwaukee Shines	Milwaukee Shines, Milwaukee's solar program, works to expand solar energy use through a comprehensive, citywide approach that employs \$2 million in low-interest solar loans for Milwaukee homeowners and other tools. http://city.milwaukee.gov/milwaukeeeshines	Milwaukee, WI
		Electric Vehicle Charging Stations	Milwaukee Office of Environmental Sustainability (OES) electric vehicle charging stations program is installing the stations in strategic locations throughout the city. The stations are 100 percent funded by the U.S. Department of Energy through the American Recovery and Reinvestment Act. OES also is participating in broader strategic planning efforts for electric vehicles with regional stakeholders. The locations will use ChargePoint stations by Coulomb, which will become part of the national ChargePoint Network that allows drivers to find and reserve charging stations. http://city.milwaukee.gov/sustainability/EVcharging	Milwaukee, WI
		Port of Milwaukee Wind Turbine	Milwaukee's Office of Environmental Sustainability and the Port of Milwaukee partnered to install a Northern Power 100 KW wind turbine at the Port's administration building near the shore of Lake Michigan. The turbine provides more than 100 percent of the electricity needs of the administration building. http://city.milwaukee.gov/sustainability/WindProject	Milwaukee, WI
		Report on the Economic Impacts of the Ethanol Industry	The ethanol industry has transformed Iowa during the past 4 decades. Starting with some entrepreneurs in the 1970s and 1980s, ethanol's growth has been tied to the Iowa countryside and, more directly, to Iowa's corn production. With the waves of development with wet mills in the 1980s and dry mills more recently, the industry has continued to expand and explore new production and marketing opportunities. This report outlines the growth and current state of the ethanol industry, specifically for Iowa, and details the various economic and financial impacts the industry has had within the state, including to the local economy, corn prices, land prices and distributional ownership patterns. http://www.cvcia.org/files/CVC-Ethanol-Report-8-9-2012.pdf	Ogden, IA
		Waste to Energy (WTE) Facility	The WTE briefing paper was written to address the City of Spokane's top state legislative priority for 2012 of seeking a renewable energy designation for electricity generated at Spokane's WTE Facility to maintain the value and economic development potential of the energy produced by the facility. http://www.spokanecity.org/_documents/mayors-office/other/2012/02/06/WTE-renewable-energy-briefing-paper-final.pdf	Spokane, WA

ENERGY: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Alternative Energy Sources		Geothermal Heat Pumps	The Harrison County Rural Electric Co-op sells geothermal (ground source) heat pumps. These heat pumps are electrically powered, self-contained systems that take advantage of the Earth's relatively constant ground temperature to provide heating, cooling and hot water for homes and commercial buildings. Geothermal heat pumps work with the environment to provide clean, efficient and energy-saving heating and cooling year-round through a closed loop or open loop system. http://www.hcrec.coop/aspx/Products.aspx?ProductID=12	Woodbine, IA
		Air Source Heat Pumps	The Harrison County Rural Electric Co-op sells air source heat pumps. In the winter, the heat pump's outside unit captures heat that exists naturally in the atmosphere and transfers it to the inside unit, where it is amplified to warm a home or business. In the summer, the process is reversed to remove heat and excess humidity and provide a cool and comfortable setting. The heat pump does not rely on the combustion of fuels like oil, propane or natural gas. It can deliver up to three times more heat energy compared to the electrical energy that it consumes. Some new models produce hot water for the home or business. http://www.hcrec.coop/aspx/Products.aspx?ProductID=13	Woodbine, IA
Energy Efficiency		Rural Small Business and Agriculture Energy Assessments	Through a grant from the U.S. Department of Agriculture's Rural Energy of America Program, Land-of-Sky Regional Council's Waste Reduction Partners program is offering direct technical assistance to rural small businesses across North Carolina in the form of cost-saving energy audits. http://wastereductionpartners.org/usda-small-business	Asheville, NC
		National Action Plan for Energy Efficiency: A Vision for 2025	This document provides a framework with long-term goals and measures to achieve energy efficiency. http://www.epa.gov/cleanenergy/documents/suca/vision.pdf	Asheville, NC
		Energy Efficiency Program	Buncombe County, NC, should promote participation in Progress Energy's energy efficiency programs. https://www.progress-energy.com/	Asheville, NC
		Guide to Energy Saving Performance Contracting of K-12 Schools, Local Governments and Community Colleges	The North Carolina Guide to Energy Saving Performance Contracting of K-12 Schools, Local Governments and Community Colleges is an online toolkit that includes a fact sheet, reference guide and lessons learned. http://wastereductionpartners.org/phocadownload/userupload/Resources/NC%20Guide%20to%20Energy%20Performance%20Contracting%20with%20bookmarks%20on.pdf	Asheville, NC
		Self-Assessment Guide for Energy Saving Opportunities	Self-Assessment Guide for Energy Saving Opportunities is a Waste Reduction Partners technical assistance publication designed to encourage leaders to engage their organizations in striving for more efficient use of energy resources. http://wastereductionpartners.org/phocadownload/userupload/Resources/self-assessment_guide%20with%20bookmarks.pdf	Asheville, NC
		Light-Emitting Diode (LED) Streetlights	Beginning in 2012, Asheville moved into the third and final phase of its streetlight upgrade program in which—for all roads in city limits except Department of Transportation roads—traditional bulbs will be upgraded to LED fixtures. The Public Works Street Lighting Division in Boston is working to convert street lights from traditional lighting sources, such as mercury vapor and sodium, to LED. http://coablog.ashevilenc.gov/city-of-asheville/city-departments/finance/sustainability-office/ http://www.cityofboston.gov/publicworks/lighting/led.asp	Asheville, NC Boston, MA
		Environmental and Energy Services Cabinet	The mission of the Environmental and Energy Services Cabinet is twofold: (1) to preserve and enhance the resources of the built and natural environment; and (2) to promote affordable, efficient, reliable and safe energy systems for Boston residents. The Cabinet oversees the Inspectional Services Department and Environment Department; serves as chair of the Mayor's Energy Management Board; and oversees programs and policies on green buildings, groundwater, park planning, recycling, renewable energy and certain transportation issues. http://www.cityofboston.gov/environmentalandenergy/default.asp	Boston, MA

ENERGY: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Energy Efficiency		Small Business Direct Install Program	Renew Boston's Small Business Direct Install Program helps small businesses incorporate energy-efficient lighting and controls, high-efficiency mechanical equipment, natural gas measures and other energy-saving strategies within their current facility, paying for up to 70 percent of the total cost for retrofitting lighting and mechanical systems. http://www.renewboston.org/businesses/energyefficiency/	Boston, MA
		Renew Boston Residential Energy Assessments	Renew Boston partners with NSTAR and National Grid to deliver the Mass Save program to Boston residents. Renew Boston and its partners can provide participating residents with a range of efficiency services such as a No-Cost Energy Assessment. http://www.renewboston.org/residents/energy-efficiency/	Boston, MA
		Boston Buying Power (BBP)	BBP assists local businesses to reduce utility costs and consumption by enrolling neighborhood businesses—restaurants, dry cleaners, storefronts, night clubs and apartment complexes, as well as major biotechnology firms, governmental entities, colleges and health care facilities—to create citywide purchasing power. http://www.bostonbuyingpower.com/BPP_agreement.html	Boston, MA
		HEAT Loan Program	The HEAT Loan Program provides customers the opportunity to apply for a 0 percent loan from participating lenders to assist with the installation of qualified energy efficient improvements in their homes. The loans are available up to \$25,000 (depending on utility) with terms up to 7 years. http://www.masssave.com/residential/offers/heat-loan-program	Boston, MA
		Lights Out Boston	Under this voluntary award-winning program, participating building owners and managers have agreed to turn off or dim all architectural and internal lighting between 11:00 p.m. and 5:00 a.m. during the spring migratory bird season. Buildings committed to this program will save money, reduce the risks of climate change and protect wildlife. http://www.cityofboston.gov/environmentalandenergyconservation/lightsoutboston.asp	Boston, MA
		Energy Efficiency and Conservation Block Grant (EECBG) Program	The EECBG is intended to assist U.S. cities, counties, states, territories and Indian tribes to develop, promote, implement and manage energy efficiency and conservation projects and programs designed to: reduce fossil fuel emissions; reduce the total energy use of the eligible entities; improve energy efficiency in the transportation, building, and other appropriate sectors; and create and retain jobs. Through formula and competitive grants, the Program empowers local communities to make strategic investments to meet the Nation's long-term goals for energy independence and leadership on climate change. http://www1.eere.energy.gov/wip/ecbg.html	Boston, MA
		Portfolio Manager	The EPA Portfolio Manager is an online, interactive management tool to track energy and water consumption in buildings. http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager	Cambridge, MA Medford, MA
		Finance Energy Saving Projects Through Performance Contracting	As permitted under Wisconsin state statute, city departments should contract with an Energy Service Company (ESCO) to identify and implement guaranteed energy saving strategies. The ESCO receives no upfront payment for its services. Rather, the ESCO is paid by recouping the energy savings from their improvements. The city thus saves energy with no upfront capital costs. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf	Milwaukee, WI
		Milwaukee Energy Efficiency (Me2) Program	The Me2 Program helps residents and businesses implement energy-efficient practices. http://www.smartenergypays.com/	Milwaukee, WI
		Business Grants for Energy Efficiency	The Office of Environmental Sustainability (OES) in partnership with the Milwaukee Economic Development Corporation has awarded \$850,000 in American Recovery and Reinvestment Act grants to local manufacturers and data centers to support energy efficiency projects. Grants have been awarded to MillerCoors, Oilgear, Materials Recovery, Wisconsin Paperboard and more. http://city.milwaukee.gov/sustainability	Milwaukee, WI

ENERGY: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Energy Efficiency		Better Buildings Challenge	Milwaukee is participating in the Better Buildings Challenge, a Department of Energy national leadership program calling on corporate chief executives, university presidents, state, local and school district leaders to reduce their portfolio-wide energy use by 20 percent by 2020 and showcase the solutions they use and the results they achieve. http://city.milwaukee.gov/BBC	Milwaukee, WI
		Energy Audits	Milwaukee aims to perform energy audits on all city government buildings. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf	Milwaukee, WI
		Focus on Energy	The city should partner with Focus on Energy, which works with eligible Wisconsin residents and businesses to install cost-effective energy efficiency and renewable energy projects. Focus on Energy information, resources and financial incentives help to implement projects that otherwise would not be completed, or to complete projects sooner than scheduled. Its efforts help Wisconsin residents and businesses manage rising energy costs, promote in-state economic development, protect the environment and control the state's growing demand for electricity and natural gas. http://www.focusonenergy.com/#	Milwaukee, WI
		Tax Incentives	The city should utilize tax incentives to support green development that enhances small businesses (e.g., installing energy-efficient HVAC mechanical systems where the cost saving justifies installation). http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/88841_LowRes.pdf	Milwaukee, WI
		Downtown Energy Audits and Efficiency Improvements	As part of a 50:50 cost share project between the Iowa Department of Economic Development (IDED) and the City of Woodbine/Woodbine Municipal Utilities, energy audits were performed by Cenergy on 50 of Woodbine's business buildings. http://www.woodbineia.org/green-initiatives/projects	Woodbine, IA
		Downtown Energy Plan	As part of an Iowa Power Fund Community Grant, the City of Woodbine developed an Energy Plan for the financing of energy efficiency improvements to buildings that were audited in the Downtown Energy Audits. Several businesses are participating by making HVAC, insulation, lighting and other improvements. Energy efficiency improvements also have been made to several public buildings as part of a State Energy Plan grant, including the historic Carnegie Library, fire hall, police station and city office building. http://www.woodbineia.org/green-initiatives/projects	Woodbine, IA
		Residential Energy Plan	Woodbine currently is working to expand its Downtown Energy Plan to its residences. http://www.woodbineia.org/green-initiatives/projects	Woodbine, IA
		Iowa Power Fund Community Grant Program	The Iowa Power Fund Community Grant Program was created to be a tool for the State of Iowa, enabling cities, counties, nonprofit organizations and other organizations to become involved with energy efficiency or conservation efforts, providing grants to help these organizations and communities create local programs to save energy. http://www.energy.iowa.gov/Power_Fund/about_IPF.html	Woodbine, IA
		Bright Energy Solutions	Bright Energy Solutions is a unique portfolio of energy efficiency cash incentive programs that will help residential and business customers reduce their electric energy costs and operate more efficiently. The program is offered to residential and business customers of participating municipal utilities who are members of Missouri River Energy Services. http://www.brightenergysolutions.com/	Woodbine, IA
		High Efficiency Water Heaters	The Harrison County Rural Electric Co-op sells Marathon high efficiency water heaters. Envirofoam™ insulation completely surrounds the entire tank, reducing standby heat loss. Hot and cold heat traps reduce conductive heat loss by up to 60 percent. http://www.hcrec.coop.aspx/Products.aspx?ProductID=8	Woodbine, IA







HUMAN HEALTH: Policies, Approaches and Scientific Tools				
Sustainability Priority		Tool	Description	Community
Reduce Disease		Buncombe County Health Priorities	The top health priorities selected for Buncombe County, NC, for 2010–2014 are: promote healthy weights through healthy living, improve women's health during childbearing years, improve children's health outcomes through a focus on family support and education, increase readiness of all students to learn and succeed in school, provide access to and continuity of a mental health home as well as access to and continuity of a primary care home. http://www.buncombecounty.org/common/health/SOTCH_2011.pdf	Asheville, NC
		Healthy Living Opportunities Map	The Healthy Living Opportunities Map is a new tool to help a person eat well and be more active throughout Buncombe County by finding places such as community gardens, farmer's markets, where to walk or bike that are near to where one lives, learns, works, plays or prays. There are also park locations for 29 different park activities, including basketball, dog parks and swimming pools. http://www.buncombecounty.org/Governing/Depts/Health/Hln.aspx	Asheville, NC
		National Women's and Men's Health Weeks	To foster community health, Buncombe County, NC, should promote separate National Women's and Men's Health Weeks. http://www.cdc.gov/women/nwhw/index.htm	Asheville, NC
		Youth Tobacco Education	To foster community health, Buncombe County, NC, should promote tobacco education for youth. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Blood Lead Screening	To foster community health, Buncombe County should increase awareness of screening for lead levels. http://www.cdc.gov/nceh/lead/about/program.htm	Asheville, NC
		Lead Poisoning Prevention Program (LPPP)	The LPPP at Warren Wilson College works collaboratively with local Health Departments, clinics, housing programs, schools and health care providers. A full-time Program Coordinator is employed and works with part-time student assistants. The Program's goals are to proactively promote lead-safe environments for all residents of Buncombe and Henderson Counties through public education, home inspections and professional trainings. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Renovation, Repair and Painting Training Program	Asheville and regional governments should provide training through the Renovation, Repair and Painting Training Program in English and Spanish to hundreds of painters, renovators, maintenance workers, plumbers, electricians, window/door/cabinet replacement specialists, landlords, weatherization crews, HVAC technicians, siding installers, realtors or anyone working on homes, as required by a new EPA ruling. By April 22, 2010, lead-safe practices must be followed and contractors listed above must be certified. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Preventative Maintenance Program	Households and landlords participating in federally funded housing rehabilitation programs should be enrolled in the state Preventative Maintenance Program to alleviate lead hazards. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Lead Hazard Reduction Work Grants	Asheville and regional governments should provide grant assistance to households in housing rehabilitation programs to cover the cost of lead hazard reduction work. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Lead Hazard Task Force	Asheville and regional governments should continue to support the efforts of the Lead Hazard Task Force to coordinate interagency programs and maximize the effectiveness of their hazard identification/reduction strategies. http://www.buncombecounty.org/common/planning/CSP_Ch1-4.pdf	Asheville, NC
		Clean Air Campaign	This regional campaign is focused on educating the public and community leaders about air pollution and actions everyone can take to improve air quality in Asheville, NC, and the surrounding region. Four air quality issues are ground level ozone pollution, fine particulates, haze and acid deposition. http://www.landofsky.org/cleanair.html	Asheville, NC

HUMAN HEALTH: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Reduce Disease		Health Benefits of Greenways	Nearly two-thirds of Americans suffer from diseases that are preventable with increased physical activity. Providing recreational opportunities in the form of trails lead to better health, fitness and overall wellness. Greenways provide safe, inviting space for physical activity and allow people to turn their daily commutes into daily exercise, building healthy habits by planning healthy communities. http://www.railstotrails.org/resources/documents/resource_docs/HealthandWellness.pdf	Asheville, NC
		The Strategic Alliance for Health (SAH)	The SAH is a 4-year initiative through the Boston Public Health Commission, funded by the Centers for Disease Control and Prevention, whose purpose is to create healthier communities through sustainable, innovative, evidence and practice-based community health promotion and chronic disease prevention programs that promote policy, systems and environmental change. http://www.cdc.gov/healthycommunitiesprogram/communities/sah/	Boston, MA
		Lead Safe Boston	This program offers eligible homeowners, landlords or tenants financial assistance help with lead-based paint abatement. http://www.cityofboston.gov/dnd/bhc/Lead_Safe_Boston.asp	Boston, MA
		Dissemination of Public Health Information	This website provides tools from the EPA Ad Council to educate users about asthma triggers that can be found inside and outside the home, with a variety of resources. http://www.noattacks.org/	Milwaukee, WI
		Healthy Communities Program	The Healthy Communities Program works with community partners, agencies and coalitions to improve the health and safety of Spokane County residents by focusing on four areas: injury prevention, nutrition, physical activity, and tobacco prevention and control. http://www.srhd.org/services/hc.asp	Spokane, WA
		Breast, Cervical and Colon Health Program (BCCHP)	The Spokane Regional Health District's BCCHP provides eligible women and men with free health exams, screenings, limited diagnostic testing and treatment (breast and cervical cancer only), education, referrals and follow-up in nine eastern Washington counties. http://www.srhd.org/services/bcchp.asp	Spokane, WA
		Public Health Clinic	The Spokane Regional Health District's Public Health Clinic provides immunizations, flu shots and travel vaccines, and refugee screening. Fees may be reduced based on family size and income. Medical coupons are accepted. http://www.srhd.org/services/clinic.asp	Spokane, WA
		Community and Family Services	The Spokane Regional Health District offers Community and Family Services, including Early Family Support Services (home-based services to children and families who have been referred to the program by Child Protective Services); the Infant Toddler Network (services for children ages birth to 3 years with developmental delays and/or disability and their families); Weaving Bright Futures (public health nurses work with children and their families who have been exposed to events or difficult life situations affecting their ability to learn and their health status); Neighborhoods Matter (a targeted community driven, community-based approach to reduce the health disparities impacting maternal, child and family health); and the Nurse Family Partnership (Public health nurses with specialized training visit first-time, low-income mothers in their homes). http://www.srhd.org/services/nursing.asp	Spokane, WA
		Tribal Health and Fitness Program	The Spokane Tribe has a Health and Fitness Web page with information, tips and activities that will promote healthier lifestyles. The Tribe also sponsors indoor soccer leagues. http://www.spokanetribe.com/tribalhealth	Spokane, WA
Integrate Public Health in Decisions		Mobilizing Action Toward Community Health (MATCH)	MATCH provides state and county data and rankings of health factors, including health behaviors, clinical care, social and economic, and the physical environment, that shape the communities' health outcomes. http://www.cdc.gov/hrqol/featured-items/match.htm http://www.countyhealthrankings.org/#app/north-carolina	Asheville, NC

HUMAN HEALTH: Policies, Approaches and Scientific Tools				
Sustainability Priority		Tool	Description	Community
Integrate Public Health in Decisions		Safe Driving Insurance Discount Programs	Buncombe County, NC, should encourage adoption of safe driving insurance discount programs. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Safe Kids Program	Buncombe County, NC, should support the Safe Kids Program, including car seat installation training and checks. http://www.safekids.org/our-work/programs/	Asheville, NC
		Young Inexperienced Driver Education	Buncombe County, NC, should provide education for young inexperienced drivers to reduce accidental deaths. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Wellness Programs	Buncombe County, NC, should encourage healthy work environments by promoting the County's and large employers' wellness programs. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Greenways Transportation Safety Benefits	Statistically speaking, the most dangerous thing one can do in Buncombe County, NC, is drive a car. Greenways provide improvements to the built environment making biking and walking safer. Creating engineered improvements to the streets as well as off road facilities for walkers and wheelers reduces automobile crashes. Even if one does not want to enjoy travelling in ways other than a car, a person will still reap benefits of greenways with less traffic congestion and safer driving environments. http://www.buncombecounty.org/Governing/Depts/Parks/GreenwayBenefits.aspx	Asheville, NC
		Area Agency on Aging (AAA)	The Land-of-Sky Regional Council's AAA is the designated regional organization to meet the needs of persons over age 60 in Buncombe, Henderson, Madison and Transylvania counties. The AAA functions in five basic areas: (1) advocacy, (2) planning, (3) program and resource development, (4) information brokerage, and (5) funds administration and quality assurance. The AAA is a leader and catalyst in helping the region to develop a comprehensive system of programs and opportunities that provide older adults the information and support needed to age optimally in the setting of their choice. http://www.landofsky.org/aaa.html	Asheville, NC
		Buncombe Greenways Health Impact Assessment	The study will analyze the expected impact of planned greenways on Buncombe, NC, residents' behavior and public health outcomes. Health Impact Assessment is a relatively new tool in western North Carolina and can be used to highlight the impact of planned transportation projects on community health. http://www.nctomorrow.org/land-of-sky-regional-council/files/2011/10/CEDS-2013-2017.pdf	Asheville, NC
		Open Circle Curriculum	Partners HealthCare, and its founding hospitals Brigham and Women's and Massachusetts General Hospital, is committing \$1 million to the Boston Public Health Commission for a collaborative effort among the two organizations and the Boston Public Schools to implement the evidence-based Open Circle Curriculum for social and emotional learning for 7,000 students in 23 Boston public elementary and K-8 schools. http://www.cityofboston.gov/news/default.aspx?id=5875	Boston, MA
		Green Cleaning Policy	The Green Cleaning Policy codified the Executive Order Relative to Greening City Building Maintenance and Operations that instituted a new green cleaning policy for city-owned buildings to ensure a healthy, safe, and clean environment for employees and constituents. http://www.cityofboston.gov/Images_Documents/CoB%20Cleaning%20Policy_tcm3-14273.pdf	Boston, MA
Improve Health Data Accessibility		Mobilizing for Action through Planning and Partnerships (MAPP)	MAPP is a community-wide strategic planning tool for improving community health that offers a method to help communities prioritize public health issues, identify resources for addressing them and take action. http://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/MAPP/PDFs/MAPP_policy_full.pdf	Milwaukee, WI
		Air Quality Notifications	Residents of the Spokane Reservation have access to data collected at a real-time air quality monitor that records the hourly concentrations of particulates. The monitoring site is located in Wellpinit and data can be accessed any time. https://fortress.wa.gov/ecy/enviwa/StationInfo.aspx?ST_ID=65	Spokane, WA



ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Conservation of Natural Resources		Ecosystem Enhancement Program (EEP)	North Carolina's EEP provides reports, documents and advice to support the goal "to restore and protect North Carolina's natural resources for future generations while supporting responsible economic development." http://portal.ncdenr.org/web/eeep	Asheville, NC
		GreenWork Projects	Asheville GreenWorks, an affiliate of Keep America Beautiful, is a volunteer-based organization working to achieve a clean and green Asheville and Buncombe County through projects like tree planting, environmental cleanups, anti-litter and recycling education, creation and maintenance of green spaces, playground enhancement, neighborhood beautification and care, and preservation of Asheville's rivers and trees. http://www.ashevillegreenworks.org/index.html	Asheville, NC
		Conservation Initiatives	The Western North Carolina (WNC) Nature Center works cooperatively with various organizations to support conservation efforts, including the Butterfly Conservation Initiative, the All Taxa Biodiversity Inventory (ATBI) and the Southeastern Bat Diversity Network's (SBDN) Bat Blitz. http://wncnaturecenter.com/Conservation.aspx	Asheville, NC
		Advancing Animal Management	The WNC Nature Center's work is in species management programs through the Association of Zoos and Aquariums and the U.S. Fish and Wildlife Department in the population management plan of the North American river otter and cougar as well as a specific survival plan for the red wolf. http://wncnaturecenter.com/Conservation.aspx	Asheville, NC
		North Carolina Mountain Resources Commission	The mission of the North Carolina Mountain Resources Commission is to take care of local natural resources to enhance and sustain quality of life and ensure the long-term health of the region and the people. The Commission is tasked with providing recommendations to local, state and federal legislative and administrative entities regarding protection of these resources. http://portal.ncdenr.org/web/ncmrc	Asheville, NC
		Adopt-a-Greenway	RiverLink is recruiting individuals and groups to help maintain its system of greenways through a new Adopt-a-Greenway program. The initiative encourages scouting organizations, civic associations, school and church groups, nature clubs, and businesses seeking community service opportunities to adopt a section of greenway and keep it clear of weeds, sticks, rocks and other debris for a 2-year period. http://www.riverlink.org/	Asheville, NC
		Massachusetts Wetland Protection Act (WPA)	The purpose of the WPA is to protect Massachusetts wetlands resources and to ensure that the beneficial functions of these resources are maintained. The resources identified are protected because they fulfill the public interest to protect public and private water supply, protect fisheries, protect ground water supply, provide flood control, protect land containing shellfish, prevent storm damage, protect wildlife habitat and prevent pollution. These interests are protected by a "no net loss of wetlands" policy. Projects that affect wetlands are required to avoid impacts where possible, minimize unavoidable impacts, and mitigate for unavoidable impacts. Performance standards define the levels of environmental impacts that cannot be exceeded. Projects proposed in wetlands resource areas or in the buffer zone around them must obtain a local Order of Conditions. Wetland resources include land under the ocean, coastal banks, coastal beaches and tidal flats, coastal dunes, barrier beaches, rocky intertidal, salt marshes, land under salt ponds, Designated Port Areas, land containing shellfish and land on the banks of fish runs. http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-10-00-wetlands-protection-act-regulations.html	Boston, MA

ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Conservation of Natural Resources		Massachusetts Rivers Protection Act	The law creates a 200-foot riverfront area that extends on both sides of rivers and streams. In certain urban areas, the riverfront area is 25 feet. According to the law, the riverfront area provides the eight interests of the Wetlands Protection Act: protection of public and private water supply, protection of ground water supply, protection of land containing shellfish, protection of wildlife habitat, flood control, storm damage prevention, prevention of pollution and protection of fisheries. The law also establishes the policy of the state to protect the natural integrity of rivers and to encourage and establish open space along rivers. http://www.mass.gov/eea/agencies/massdep/water/regulations/massachusetts-rivers-protection-act-about.html	Boston, MA
		Conservation Commission Act	A city or town that accepts this law may establish a conservation commission for the promotion and development of the natural resources and for the protection of watershed resources of the city or town. http://www.malegislature.gov/Laws/GeneralLaws/PartI/TitleVII/Chapter40/Section8c	Boston, MA
		Urban Wilds Initiative (UWI)	The UWI seeks to protect the city's publicly owned urban wilds and thereby ensure access and enjoyment of natural treasures to present and future Boston residents. http://www.cityofboston.gov/Parks/UrbanWilds/	Boston, MA
		MassGIS	Through the MassGIS, the Commonwealth has created a comprehensive, statewide database of spatial information for mapping and analysis supporting emergency response, environmental planning and management, transportation planning, economic development and transparency in state government operations. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/	Boston, MA
		Grow Boston Greener (GBG)	GBG is a collaborative effort of the City of Boston and Boston Natural Areas Network (BNAN) to increase the urban tree canopy cover in the city by planting 100,000 trees by 2020. http://www.growbostongreener.org/gbg/	Boston, MA
		Midwest Environmental Advocates Programs	Midwest Environmental Advocates is a nonprofit environmental law center that works for healthy water, healthy air, healthy land and healthy government for this generation and the next. http://midwestadvocates.org/	Milwaukee, WI
		Alliance for the Great Lakes	The Alliance for the Great Lakes is the oldest independent organization devoted 100 percent to the Great Lakes. Its professional staff works with scientists, policymakers, businesses, community groups and everyday citizens to protect and restore the world's largest surface freshwater resource. http://www.greatlakes.org/	Milwaukee, WI
		Milwaukee Community Program	This program of the Student Conservation Association ran for 12 weeks in summer 2012 and included 15 crew members and 3 crew leaders. Each crew met for 8 hours per week to focus on leadership and job skills development and complete service projects each Saturday. The program partnered with Milwaukee County Parks, the Schlitz Audubon Nature Center, the Hunger Task Force Farm & Fish Hatchery, Alice's Garden and the Urban Ecology Center. http://www.thesca.org/stories/milwaukee-community-program-fall-2012	Milwaukee, WI
		Seven Generations Concepts	Seven Generations concepts are part of many North American tribal traditions, including the Spokane. Seven Generation thinking is an ecological concept that urges the current generation to live sustainably and work for the benefit of future generations, and decide if what is being done today will negatively impact those who will be alive several hundred years from now. http://www.spokanetribe.com/userfiles/file/SCMP_Draft_9_26_2012.pdf	Spokane, WA
		John A. Finch Arboretum	The John A. Finch Arboretum is located in southwest Spokane on 65 acres of wooded hills. The Arboretum is a botanical collection of trees and woody plants that have been labeled for field study. The collection has been planted along the Garden Springs Creek and contains a wide variety of native and cultivated plants compatible with growing conditions in Spokane. http://spokane.parks.org/index.php/Parks/page/99/	Spokane, WA

ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Conservation of Natural Resources		Lake Roosevelt White Sturgeon Recovery Project	The Lake Roosevelt White Sturgeon Recovery Project is a multi-agency project that is responsible for assessing the white sturgeon population in Lake Roosevelt. http://www.spokanetribe.com/dnr-sturgeon-recovery	Spokane, WA
		Spokane Tribal Hatchery	The Spokane Tribal Hatchery annually produces kokanee salmon, which is a land-locked form of sockeye salmon, and rainbow trout for release into Lake Roosevelt, Banks Lake and reservation inland lakes. The hatchery was developed and constructed as partial mitigation for the loss of salmon, steelhead and habitat caused by hydroelectric power development on the Columbia River, namely Grand Coulee Dam. http://www.spokanetribe.com/dnr-hatchery	Spokane, WA
		Urban Forestry Program	The City of Spokane created the Urban Forestry Program to manage, protect and expand the public property trees predominately found on city right-of-ways and in city parks. An Urban Forestry Tree Committee was created to advise and make recommendations to the park board and city council regarding managing, conserving and enhancing the trees and shrubs located in public areas of the city, assisting property owners and public agencies. A Citizen Advisory Committee has been established to advise and make recommendations to the city of Spokane Urban Forestry Tree Committee on plans and policies. http://spokaneurbanforestry.org/index.php/Parks/page/90/	Spokane, WA
		Resource Enhancement and Protection (REAP)	REAP is a program in the State of Iowa that invests in the enhancement and protection of the state's natural and cultural resources, using funding from the state's Environment First Fund (Iowa gaming receipts) and from the sale of the natural resource license plate. http://www.iowadnr.gov/Environment/REAP.aspx	Woodbine, IA
		Soil Conservation	Land stewardship is central to the work of the Iowa Department of Agriculture and Land Stewardship. The Division of Soil Conservation provides farmers with expertise and funds to help them install practices that preserve the highly productive soil, prevent erosion and protect the critical waterways. The Department is focused on ensuring that future Iowans can experience the same high quality of life that past generations have enjoyed in the state. http://www.iowaagriculture.gov/soilConservation.asp	Woodbine, IA
Biodiversity		Sensitive Species Preservation	The areas that are home to sensitive plant and wildlife species in Buncombe County, NC, could be preserved through incentive programs as part of the wildlife corridor protection programs or could be considered separately for preservation through individual programs tailored to the needs of that unique species. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf	Asheville, NC
		Preserve Wildlife Corridors	Buncombe County, NC, should protect or preserve wildlife corridors by providing a contiguous natural greenbelt connecting wildlife habitat through greenway programs and public/private cooperation. Spokane, WA: A February 2007 resolution unanimously adopted by the Western Governors' Association on Protecting Wildlife Migration Corridors and Crucial Wildlife Habitat in the West describes the importance of wildlife corridors and crucial habitat and asks the western states, in partnership with important stakeholders, to identify key wildlife corridors and crucial wildlife habitats in the West and make recommendations on needed policy options and tools for preserving those landscapes. http://www.buncombecounty.org/common/planning/LUP_Phase4_1998.pdf http://www.westgov.org/wga/publicat/wildlife08.pdf	Asheville, NC Spokane, WA
		Habitat Connectivity Mapping Tools	Linkage Mapper is a geographic information systems (GIS) tool designed to support regional wildlife habitat connectivity analyses by automating wildlife habitat corridor mapping. The Habitat Connectivity Analysis toolkit is a GIS tool designed to support regional wildlife habitat connectivity analyses by automating the process of identifying habitat concentration areas. http://waconnected.org/habitat-connectivity-mapping-tools/	Spokane, WA

ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Biodiversity		Living Roadway Trust Fund (LRTF)	Recognizing the value of native plants in local roadsides, the Iowa Legislature established the LRTF program in 1988. This annual, competitive grant program provides funding for integrated roadside vegetation management (IRVM) activities, including the preservation, establishment, and maintenance of native vegetation along Iowa's roadsides. http://www.iowalivingroadway.com/LRTF.aspx	Woodbine, IA
		Water in Western North Carolina Film Series	The "Water in Western North Carolina" film series includes two short animated films that illustrate for decision makers and their constituents some key concepts behind pressing water issues facing the region. The films were commissioned by RENCI at the University of North Carolina at Asheville to offer relevant, regional geospatial data in a format easily accessible to a wide range of audiences. One is on impervious surfaces and another on the power connection. http://nemac.unca.edu/projects/water-western-north-carolina	Asheville, NC
Appreciation		Discovery Camp	The North Carolina Arboretum's Discovery Camp programs are based on the overall philosophy that young people benefit from experiences in the outdoors. The mission of the dedicated and experienced staff is to cultivate a sense of adventure and wonder in the outdoors; foster an enthusiasm for exploration in the natural world; and promote environmental awareness, stewardship and conservation. http://www.ncarboretum.org/education/youthfamily-programs/discovery-camp/	Asheville, NC
		Adult Education Classes	The North Carolina Arboretum offers adult education classes. http://www.ncarboretum.org/education/adult-education-programs/	Asheville, NC
		Riverfront Bus Tour	This tour of the French Broad and Swannanoa Rivers with RiverLink is an opportunity to see the improvements that have occurred and hear what is coming over the next several months and years to make the rivers a better place to work, live and play. http://www.riverlink.org/bustour.asp	Asheville, NC
		Boston Nature Center and Wildlife Sanctuary	The Boston Nature Center and Wildlife Sanctuary provides environmental education programs to Boston elementary schools weekly, teaches environmentally sustainable design by example (George Robert White Environmental Conservation Center is one of the "greenest" buildings in Boston), and includes the Clark-Cooper Community Gardens, one of Boston's oldest and largest, providing food and a green oasis for 260 local families. http://www.massaudubon.org/Nature_Connection/Sanctuaries/Boston/index.php	Boston, MA
		Urban Ecology Center	The Urban Ecology Center provides year-round educational programs for kids, families and adults of all ages. The cornerstone program is the Neighborhood Environmental Education Project serving kids in more than 44 urban Milwaukee, WI, schools each year. This program enables students to get to walk in the woods, stand in a river in hip waders or run along the beach at Lake Michigan when they might have no other opportunities to do so. http://urbanecologycenter.org/	Milwaukee, WI
		Keep Greater Milwaukee Beautiful, Inc. (KGMB)	KGMB has a strong history of responsiveness, renewal and innovation. KGMB uses a unique combination of community improvement programs like the Great American Cleanup and environmental education programs to accomplish its goals. http://www.kgmb.org/	Milwaukee, WI
		Schlitz Audubon Nature Center	Schlitz Audubon Nature Center connects people with nature and inspires them to become responsible stewards of the natural world. It is a unique Milwaukee, WI, destination that offers a 185-acre stretch of natural habitat along the shore of Lake Michigan; 6 miles of hiking trails; a 60-foot observation tower providing panoramic views, a Gold LEED™ (Leadership in Energy and Environmental Design) certified, green building that is also available on a rental basis for special events; and programming for visitors and school children. http://www.sanc.org/	Milwaukee, WI
		Wehr Nature Center	Families and individuals can explore the natural environment of the Wehr Nature Center by enjoying a self-guided tour or participating in one of Wehr's many programs led by staff naturalists. http://county.milwaukee.gov/WehrNatureCenter10115.htm	Milwaukee, WI





ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Appreciation		SeedFolks Youth Ministry	In 2006, at the invitation of Milwaukee Cooperative Extensions department of 4-H and Youth Development, SeedFolks Youth Ministry, under the leadership of Venice R. Williams, was invited into Alice's Garden to expand their existing, city-wide, youth and family programming and to further develop the urban agricultural programming at Alice's Garden. SeedFolks brought to the garden programs such as the Garden Mosaics Earn & Learn Program, SeedFolks Reading Circles, Reclaiming and Nourishing Family Traditions, and Brown Boys Bonding Thru Books. http://www.alicesgardenmilwaukee.com/about/history-of-the-garden.html	Milwaukee, WI
		Buncombe County Multi-Hazard Risk Tool	The Buncombe County Multi-Hazard Risk Tool is used to plan for disaster mitigation and response for Buncombe County, NC; other versions also have been developed for Macon and Watauga counties. http://unca.renci.org/products/buncombe-county-multi-hazard-risk-tool/	Asheville, NC
Environmental Hazards		Southern Air Principles Agreement	The states of NC, GA and TN agreed to the principles that will address regional air quality problems and develop new strategies, such as green building, smart growth/land use, transportation and alternative fuels. http://daq.state.nc.us/news/pr/2001/files/sap_0801.shtml	Asheville, NC
		Users Guide for SAMI Air Quality Results	SAMI was established in 1992 to identify and recommend air emissions management strategies to remedy existing and prevent future adverse air quality impacts to natural resources in Southern Appalachia. The Tennessee Valley Authority and Alpine Geophysics joined the primary modeling team of the Georgia Institute of Technology, the University of Alabama in Huntsville and the University of Virginia (UVA) in providing the technological capability needed by SAMI to quantify links between air pollutant emissions and air quality effects. This capability includes modeling pollutant emissions from both biological and man-made sources, modeling the meteorological conditions associated with various pollution episodes, and modeling the chemical reactions and removal processes involved in transporting, transforming and depositing the pollutant emissions. ftp://narsto.esd.ornl.gov/pub/SAMI/0_SAMI_users_guide.html	Asheville, NC
		Air Quality Index	The Western North Carolina Air Quality Agency monitors the Air Quality Index (AQI) and compares it to other areas and provides forecasts. AQI is an index for reporting daily air quality. http://www.wncairquality.org/airquality/asheville_aqi.htm	Asheville, NC
		ForWarn	Forests and vegetated landscapes change naturally through the seasons. However, dramatic changes that occur at unexpected times can be detected through satellite imagery. Forest and natural resources managers, decision makers, scientists and the public can use this system to understand potential threats to the Nation's lands. http://forwarn.forestthreats.org/	Asheville, NC
		Radon Testing	Buncombe County, NC, should expand and encourage participation in radon testing and education programs. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Dam Operations and Maintenance Procedures	After the storms of 2004, the City of Asheville, NC, initiated an operational study of its water supply reservoirs. This project provided the engineering expertise to update the city's Dam Operation and Maintenance Plans. http://www.ashevilenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%202007.PDF	Asheville, NC
		Dam Emergency Action Plans	The Emergency Action Plan (EAP) for the Burnette and Bee Tree Dams addresses a wide range of potential natural and man-made emergency conditions and establishes the resources, operational procedures and emergency warning procedures to be followed during future events. http://www.ashevilenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%202007.PDF	Asheville, NC

ENVIRONMENT: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Environmental Hazards		Flood Inundation Mapping	New flood mapping has been produced for the Swannanoa River from the North Fork Reservoir to its confluence with the French Broad River. http://www.ashevillenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%2007.PDF	Asheville, NC
		Flood Operations Plan (FOP)	The FOP for the Burnette and Bee Tree Dams and the computer-based tools developed to support it are designed to help the city balance the risk of flood damage against its obligation to maintain a safe and reliable water supply system. http://www.ashevillenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%2007.PDF	Asheville, NC
		Flood Warning System	New tools have been developed and have been delivered to the city's Water Resources and Engineering staff. These tools include computer models and capital improvements in the North Carolina Automated Flood Warning System within the Swannanoa watershed. http://www.ashevillenc.gov/portals/0/city-documents/Water/Citizens%20report%20June%2007.PDF	Asheville, NC
		Stormwater Best Management Practices Education	To increase resistance to natural and manmade hazards, Buncombe County, NC, should increase awareness and education of stormwater best management practices to control floods and soil erosion. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Riverbank Protection Program	For the riverfront revitalization, city and county officials should develop a riverbank protection program to alleviate erosion. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
		Bluff Stabilization Program	For the riverfront revitalization, city and county officials should protect the bluffs on the western side of the river from erosion. http://www.riverlink.org/documents/riverfront_plan.pdf	Asheville, NC
		Emergency Shelter	Buncombe County should expand current emergency shelter options in the community (e.g., to ensure access for families with pets). http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Community Emergency Response Team (CERT) Training	To increase resistance to natural and manmade hazards, Buncombe County, NC, should support and foster CERT training to community and neighborhood groups. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Notification Warning Systems	To increase resistance to natural and manmade hazards, Buncombe County, NC, should build upon current notification warning systems in communities. http://www.buncombecounty.org/common/planning/SustainabilityPlan.pdf	Asheville, NC
		Regulations for the Control of Atmospheric Pollution	The Boston Air Pollution Control Commission (APCC) protects air quality in the City of Boston. Its Regulations for the Control of Atmospheric Pollution prohibit the emission of air contaminants in such concentration or of such duration as to cause a nuisance; to be injurious to human or animal life, vegetation, or to property; or to unreasonably interfere with the comfortable enjoyment of life and property or the conduct of business. http://www.cityofboston.gov/Images_Documents/air_pollution_tcm3-13124.pdf	Boston, MA
		City of Boston Environment Department Guidelines for Construction	Under its general authority, the Air Pollution Control Commission (APCC) ensures that construction activities; open piles of sand, dirt and other materials; and similar sources do not release excessive dust or dirt into the air. The Environment Department has compiled Guidelines for Construction for construction companies that want to take precautions against dust emissions and other potential environmental problems. http://www.cityofboston.gov/Images_Documents/construction_guidelines_tcm3-16289.pdf	Boston, MA

ENVIRONMENT: Policies, Approaches and Scientific Tools







Sustainability Priority		Tool	Description	Community
Environmental Hazards		Heat Wave Stress Mitigation Solutions	This report presents the best available global, regional and local climate change and heat wave data; an analysis of Boston's heat wave response; and short- and long-term solutions for mitigating the stresses of heat waves. http://www.cityofboston.gov/Images_Documents/Preparing%20for%20Heat%20Waves%20in%20Boston_tcm3-31986.pdf	Boston, MA
		Climate Change and Coastal Flooding Analysis	Sea-level rise due to climate change will increase storm surge height along the coastline of metro Boston, MA. Risk-based analysis showed that the cumulative 100-year economic impacts on developed areas from increased storm surge flooding depend heavily upon the adaptation response, location and estimated sea level rise. Generally, it was found that it is advantageous to use expensive structural protection in areas that are highly developed and less structural approaches such as floodproofing and limiting or removing development in less developed or environmentally sensitive areas. http://www.cityofboston.gov/Images_Documents/Coastal%20Flooding%20Metro%20Boston_tcm3-31975.pdf	Boston, MA
		Models of the Effects of Recharge Best Management Practices (BMPs) on Groundwater Elevation	The goal of this study was to determine the extent to which installed stormwater recharge BMPs have led to increased groundwater levels. Regional multivariate regression models were developed to determine the potential effects of recharge BMPs on observed groundwater elevations. The resulting models can be used to predict the impact on average well elevations at a particular location by installing a recharge BMP (or a set of such BMPs) of a particular capacity at a particular distance from that location. http://www.cityofboston.gov/Images_Documents/Stormwater%20recharge%20Boston_tcm3-31988.pdf	Boston, MA
		Liquefaction Susceptibility Mapping	This study provides data needed to effectively manage earthquake-induced liquefaction hazards in the Boston area, and it will assist in characterizing seismic hazards, mitigating risks and providing information for urban planning and emergency response. http://www.cityofboston.gov/Images_Documents/Liquefaction%20Susceptibility%20Mapping%20in_tcm3-31983.pdf	Boston, MA

PERFORMANCE MEASURES AND METRICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Develop Indicators		Greenways and Trails Performance Measures	A greater degree of emphasis is being placed on evaluating and documenting how well projects, programs and policies related to greenways are performing. In some cases, requirements for measuring performance of an investment come from funding sources or policy makers who oversee funding programs. Categories of methods to evaluate greenways and trails investment include facilities, funding, resources, usage and participation. http://www.buncombecounty.org/governing/depts/parks/Greenways.aspx	Asheville, NC
		Staff Interviews	In planning for parks, recreation, culture and greenways, Asheville, NC, interviewed staff to provide information about parks and recreation facilities, public art, cultural arts, festivals, services and greenways as well as insight regarding the current practices and experiences of the city in serving its residents and visitors. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Strength, Weakness, Opportunities, Threats (SWOT) Analysis	In planning for parks, recreation, culture and greenways, Asheville, NC, conducted an organizational SWOT Analysis. http://www.ashevillenc.gov/Portals/0/city-documents/parks/homepage_docs/Asheville_FINAL_Report_w_updated_maps_6.2.09.pdf	Asheville, NC
		Boston Indicators Project	The City of Boston, MA, and the Metropolitan Area Planning Council initiated the Boston Indicators Project, which developed many sustainability indicators. The 2009 summary report produced, A Great Reckoning: Healing a Growing Divide, which also was presented at the Iowa Sustainability Index Roundtable. http://www.bostonindicators.org/	Boston, MA Woodbine, IA
		Menomonee Valley Benchmarking Initiative (MVBI)	The MVBI is a project to assess change in Milwaukee's Menomonee River Valley and surrounding neighborhoods. Organized around the principles of Sustainable Development, the MVBI is an ongoing collaboration that systematically tracks and studies the community, environmental and economic conditions of a place that is home to hundreds of Milwaukee businesses and more than 66,000 residents. http://epic.cuir.uwm.edu/mvbi/	Milwaukee, WI
		Natural Step Model	The Natural Step Model of sustainability was developed in Sweden in 1983 by Dr. Karl-Henrik Rob��rt. It has since been adjusted for use at the community level in the book The Natural Step for Communities: How Communities and Towns Can Change to Sustainable Practices. The Natural Step Model is a systematic approach to sustainability. The model does not approach sustainability in terms of single projects but as an entire system and all of the actions and decisions that are made within that system. It also uses the A-B-C-D planning process. That process is as follows: Awareness and Visioning; Baseline Mapping; Creative Solutions; and Decide on Priorities. http://www.naturalstep.org/	Milwaukee, WI
Apply Metrics		Western North Carolina Report Card on Forest Sustainability	The Report Card is aimed at local and regional decision makers and demonstrates a comprehensive understanding of economic, ecological, biological and social information relevant to forest sustainability in the region. By evaluating how forests are being affected by natural and man-made change, decision-making processes and policies informed by the Report Card can ensure that desired values are protected. http://nemoc.unca.edu/projects/western-north-carolina-report-card-forest-sustainability	Asheville, NC
		Environmental Management System (EMS)	An EMS is a set of formal strategies that describe how an organization will evaluate, manage and track its environmental impacts. http://www.epa.gov/ems/	Asheville, NC
		Transit Performance Ranking	Asheville Transit evaluated the performance of all transit routes to identify which were successful and which needed to be examined for productivity improvements. Five factors were evaluated, including: Passenger Trips/Hour, Passenger Trips/Mile, Operating Cost/Passenger Trip, Operating Cost/Mile and Farebox Recovery Ratio. http://www.ashevillenc.gov/Portals/0/city-documents/Transit/Transit%20Master%20Plan%20-%20Final.pdf	Asheville, NC

PERFORMANCE MEASURES AND METRICS: Policies, Approaches and Scientific Tools				
Sustainability Priority		Tool	Description	Community
Apply Metrics		GRASP® Level of Service Analysis	In planning for parks, recreation, culture and greenways, Asheville measured the current delivery of service using the Geo-Referenced Amenities Standards Program (GRASP®) Level of Service Analysis and allowing for a target level of service to be determined that is both feasible and aligned with the desires of citizens as expressed through the citizen survey. This analysis also is represented graphically in GRASP® Perspectives. http://www.icgov.org/site/CMSv2/File/parksAndRecreation/masterPlan/AppendixIIGRASPHistoryandMethodology.pdf	Asheville, NC
		Boston About Results (BAR)	The BAR tool allows for city officials and residents to know what Boston, MA, agencies are doing, how well they are doing it and where they can improve. http://www.cityofboston.gov/bar	Boston, MA
		Energy Use Monitoring	Milwaukee, WI, should track energy use in all city government buildings through the Mayor's Energy Reduction Team. A public report should be provided every 2 years to assess progress. http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/Table1small.pdf	Milwaukee, WI
		ICLEI Star Community Index	ICLEI is an online system that provides a framework for community sustainability, goal and performance measures, a rating system and an online performance management tool to organize and analyze information to meet sustainability goals. http://www.icleiusa.org/sustainability/star-community-index	Milwaukee, WI
		Community Assets Study	As part of the downtown revitalization project, Ogden, IA, conducted a community asset survey to understand the economic character of the surrounding area. Out of a total population of 2,000, more than 300 residents participated. The study identified key components to the revitalization and sustainability of Ogden. The community asset survey also identified a number of gaps in the local market that could be opportunities for future development, including a medical clinic, fitness center and additional restaurants. http://s104245.gridserver.com/uploads/ogden/files/Ogden%20Assets%20Summary_FINAL.pdf	Ogden, IA
		Impact Assessment Tool	The Impact Assessment Tool is used to evaluate the effect of climate change on the city of Spokane, WA, and develop appropriate policies and procedures for operations, services and programs for current and future generations. http://www.cakex.org/sites/default/files/Spokane_BackgroundProcessDeliberationA.pdf	Spokane, WA
		Lake Roosevelt Fisheries Evaluation Program (LRFEP)	The LRFEP began operations in 1988 and is tasked with assessing the effectiveness of the Grand Coulee Dam Artificial Production Program. http://www.spokanetribe.com/dnr-lake-roosevelt-fisheries-evaluation-program	Spokane, WA
		Greenhouse Gas Inventory	Spokane's 1990 and 2005 Greenhouse Gas Inventories are available to track progress toward mitigating greenhouse gas emissions. http://198.1.35.94/wp-content/uploads/2011/05/CityInv20081231fBL.pdf	Spokane, WA
		Report on City of Spokane Drinking Water	The Report on City of Spokane Drinking Water for 2011 summarizes that year's drinking water monitoring and documents some indicators to show the progress being made to meet conservation goals adopted by the city in its Water Stewardship Strategic Plan. http://www.greenspokane.org/wp-content/uploads/2012/04/CitySpo_2011_WQ_rpt.pdf	Spokane, WA
Environmental Reporting		Water Supply Sustainability Index (2050) Map	The Water Supply Sustainability Index (2050) Map demonstrates water supply challenges in Iowa and across the country. http://www.nrdc.org/globalwarming/watersustainability/iowa_With_Climate_Change.pdf	Woodbine, IA
		Western North Carolina Vitality Index	The Western North Carolina Vitality Index reports on the 27 counties of western North Carolina through the perspectives of the region's natural, social, built and economic environments. Designed to assist local governments, interest groups, and the public in furtherance of the Mountain Resources Commission's overall mission to "take care of our natural resources to enhance and sustain quality of life and ensure the long-term health of our region and our people." http://www.wncvitalityindex.org/	Asheville, NC

PERFORMANCE MEASURES AND METRICS: Policies, Approaches and Scientific Tools

Sustainability Priority		Tool	Description	Community
Environmental Reporting		Sizing the Clean Economy Report	The report on “Sizing the Clean Economy,” which is based on the Brookings-Battelle Clean Economy Database, aims to explore the size, growth, and geography of the “clean” or green economy through the production of detailed data on U.S. establishments and workers engaged in producing goods and services that benefit the environment, especially in the Nation’s large metropolitan areas. http://www.brookings.edu/~media/research/files/reports/2011/7/13%20clean%20economy/0713_clean_economy.pdf	Boston, MA
		Climate Indicators in Boston	Climate change is a global phenomenon, but its causes and consequences can be observed locally in Boston in the following: sea-level rise projections for Boston, carbon dioxide in Allston, temperature in the Blue Hills, the urban heat-island effect and flowering times in the Arnold Arboretum. http://www.cityofboston.gov/climate/indicators.asp	Boston, MA
		Boston Community Greenhouse Gas Inventories	Boston Community Greenhouse Gas Inventories are used to track Boston’s progress in reducing emissions. http://www.cityofboston.gov/Images_Documents/2010%20Community%20GHGs%20final%20report%2012Jan12_tcm3-30221.pdf	Boston, MA
		Green Tier Program	Green Tier is a voluntary program that recognizes and rewards environmental performance “that voluntarily exceeds legal requirements related to health, safety and the environment resulting in continuous improvement in this state’s environment, economy, and quality of life.” (s. 299.83(1m)(b), Wis. Stats.) Although entry into the program is voluntary, participation is governed by a legal agreement. Companies, communities and governments negotiate contracts and charters that are flexible, innovative, efficient and enforceable. The city should showcase Green Tier applicants on a bus tour where Milwaukee, WI, companies could be profiled and recognized for their participation. City business organizations should promote this program among local businesses. http://dnr.wi.gov/topic/greentier/	Milwaukee, WI
		Milwaukee Biodiversity Monitoring and Education (BIOME) Project	The Milwaukee BIOME Project started approximately 6 years ago as the Milwaukee County Avian Migration Monitoring Partnership (MCAMMP). MCAMMP has done vegetation sampling, bird-banding, transect counts, and is expanding the research to include a focus on bats. http://milwbiomeproj.wordpress.com/	Milwaukee, WI
		Global Reporting Initiative (GRI) Report	The GRI is a tool that can be used by any organization in Washington state. The completion of the Department of Ecology’s first Global Reporting Initiative Plan in 2012 represents a crucial step forward in the Department’s work, combining for the first time financial, environmental, social and governance performance indicators and standards for measuring sustainability in a single document. https://fortress.wa.gov/ecy/publications/publications/1204034.pdf	Spokane, WA



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