

Final Report

Integrating Regional Indicators into the Planning and Implementation of the Kansas City Regional MetroGreen project

Abstract

This report describes the progress of the effort to integrate regional indicators into the planning and implementation of the Kansas City Regional MetroGreen project. It begins with a discussion of the project, describing the Mid-America Regional Council (MARC), which was the primary organization involved, and the goals of and limitations on the process itself. It then describes the specific tasks that took place, from the initial stakeholder meeting, through the process of developing indicators, and finally to the review of the final indicator framework. Next, this report provides a critical discussion of the process and recommendations for the future. Overall, it was found that the process was very successful where the development of specific indicators was undertaken by those with the resources to develop them and the motivation to do so, but that there were several indicators that had been chosen without these factors in mind. Those indicators were less successful, which suggests that in the future more careful assessment should take place in the planning stages of indicator development projects.

Project Overview

The Mid-America Regional Council (MARC) is the regional and metropolitan planning organization for the nine-counties and 120 municipalities in the two-state greater Kansas City region. Over the last several years, in collaboration with a variety of organizations in the Kansas City region, MARC has been drafting a Green Infrastructure (GI) Plan to prioritize the region's resource protection needs and integrate green infrastructure with the area's regional and local land use planning. Called MetroGreen, the plan includes an interconnected network of over 1,144 miles of existing and planned greenway corridors, connected to important natural areas and associated green infrastructure. Over the next few years, MARC and its partner organizations will begin to implement that plan, beginning with the creation of a MetroGreen Alliance, a metro-wide network of organizations dedicated to the conservation, restoration and connection of habitat, water quality, biodiversity and associated green infrastructure

Making the MetroGreen plan a reality is not a short term project, rather it is a long term transition to a new way of living and working that will require changes in the region's economic, social and environmental systems and processes. The transition will require action on the part of many organizations and individuals, including municipalities, businesses, nonprofits, and the region's nearly 2 million residents, each with different spheres of influence, responsibility, and control. As with any strategy, in order to ensure successful implementation, regular evaluation of progress is necessary - what gets measured gets managed and what gets measured gets done. However, because of the complexity of the issues faced and the diversity of action required to achieve success, there is a need for longer-term, big-picture systems-level measures of overall regional progress as well as shorter-term, performance-level measures of individual, programmatic and organizational progress.

As originally conceived in June 2007, the main objectives of the Mid-America Regional Council (MARC) Green Infrastructure Indicators Project (GIIP) were to:

- Assist MARC and the MetroGreen Alliance in developing a system of green infrastructure indicators that can be used at both the regional and local level for making decisions and measuring progress
- Develop and refine a prototype framework of indicators that can be used by other regional and local organizations and communities for planning and implementing green infrastructure projects.

One strategic principle underlying the project was that the indicators would be developed as part of a collaborative approach that engaged green infrastructure-related stakeholders in creating consensus around regional goals for green infrastructure. Sample or draft indicators would be used initially to help define the regional goals. As the goals became defined, the indicators would be refined as necessary. Co-development was seen as critical to achieving a framework and set of indicators that would actually be used. This principle of co-development of goals and indicators is in contrast to the more traditional approach of having experts develop a draft set of indicators that is then presented for stakeholder approval. This traditional approach is often faster in terms of producing an indicator report but is not always as successful in creating indicators that are actually used. Adhering to the co-development principle has slowed down the project timeline, however, as described below, progress has been made and the resulting framework and indicators are anticipated to be much more integrated into regional decision-making in the nine county MARC area.

The project was intended to run in conjunction with an EPA-funded project to develop the MetroGreen Alliance. However, at the point the GIIP project began in January 2008, the scope of the project was modified for two reasons. First, the EPA chose not to fund a substantial portion of the project. Second, over the six months prior to the beginning of 2008, there was a groundswell of interest in the MARC region in issues related to sustainability and climate change, which resulted in the creation of a regional *Strategy to Become America's Green Region*. As a result, when the GIIP project got underway, the decision was made to develop a broader set of indicators that, although still focused on green infrastructure, would use 'Becoming a Green Region' as the basic framework. This required a change in the project timeline however, because the group working on the overall Green Region Strategy required more time to begin the collaborative process and engage the appropriate stakeholders. A no-cost extension was requested and approved by the Forest Service to change the end date of the project from September to December 31, 2008.

Process

The specific tasks that took place are described below. Appendix B contains a list of the materials developed for the different tasks.

1. Initial Meeting: A draft framework and set of indicators was developed and presented at a meeting of partner organizations on February 27, 2008. Approximately 30 people attended the meeting representing local, county and state agencies, nonprofit and civic organizations, and academic institutions. The framework and indicators were based on work done to date in the MARC region including:
 - a. the Green Infrastructure framework presented at the March 2007 Green Infrastructure Training sponsored by the US Forest Service and The Conservation Fund.

- b. The vision for MetroGreen articulated in the MetroGreen Vision
 - c. The goals outlined in the Strategy to Become America's Green Region
- 2. Development of Approach: A document was developed that described the 'approach' for developing and using indicators as part of the Green Region Strategy. The contents of this document were used in discussions with potential partners and stakeholders as the Green Region Strategy process got under way. The document outlined the need for two types of indicators that could be used for measuring progress on two different levels:
 - a. Longer-term, big-picture measures of overall regional progress and
 - b. Shorter-term, performance level measures of individual, programmatic and organizational progress
- 3. Consensus on Green Region Strategy Goals: Throughout the summer and fall of 2008, the MARC board-level strategic planning committee held a series of meetings. These meetings were lead by a steering committee, made up of representatives from the MARC board of directors and chairs of many of the key MARC committees. The meetings involved structured discussion, guided by MARC staff, on principles identified from existing regional and local plans on a variety of issues including air quality, transportation, green infrastructure, and watershed management, as well as the overall indicator 'approach.' The result of these meetings was a general consensus to frame all of the region's planning work in the context of a set of broad categories of principles related to the built and natural environment with the overarching principle of sustainability. There was also a general consensus of the need for a nested set of indicators for measuring progress – big-picture measures of regional progress and organizational-level performance measures linked to the regional goals and indicators. Subcommittees worked to refine the goals for specific issues areas
- 4. Revision of Framework: Parallel to the work of the strategic planning committee, feedback from the participants at the Initial Meeting was used to revise the framework and develop an initial list of indicators and potential data sources. The framework was restructured as a matrix using the Green Region 'triple bottom line' viewpoint as columns and MARC's seven program areas as rows. The matrix was populated with indicators that reflected the intersection of one aspect of the triple bottom line with one of the program areas. The resulting indicators, a mix of system and programmatic indicators, highlighted the overlap between the different program areas and drew attention to the interconnection of each program area with each part of the triple bottom line. The list was purposefully exhaustive in order to emphasize the need for intentional selection of specific indicators by the ultimate users of the indicators rather than by indicator 'experts.'
- 5. Initial Selection of System Indicators: The matrix and indicators were reviewed and discussed in a series of meetings with key MARC staff November 4-6, 2008. A short list of system indicators were selected that reflected the intersection of the seven program areas with the Green Region Goals. These were called Regional Vision/Outcome indicators. In addition, a set of programmatic indicators were developed for several of the program areas as an example of the types of indicators that could be used to set policy and evaluate results on a shorter term than the system-level indicators would be able to show progress. The resulting framework and indicator set were compared to the existing Metro Outlook framework to ensure compatibility.

6. Indicator/Framework Review: At the beginning of December 2008, the final draft framework and indicators were presented to the MARC Strategic Planning Working Group. This included:

- a. Seven issue areas and system-level indicators
- b. A matrix showing the relationship between the system-level indicators, the three sustainability Principles, and MARC's seven program areas.
- c. A set of programmatic indicators for several system-level indicators

The matrix with the system-level indicators is shown in Table 1 at the end of this report. Programmatic indicators for two of the system indicators are shown in Tables 2 and 3. There was general consensus among the participants that the broadly construed understanding of "sustainability" outlined in the Green Region Principles should provide the foundation for the regional vision, and that the Green Region Indicator Framework with the triple bottom line matrix structure should be recommended to MARC's Board in January 2009. There was also general consensus on some of the system-level indicators but it was agreed that further work was needed to finalize the entire list. Several one-on-one meetings with other MARC partners were also held to get additional feedback on the framework, indicators, process, and what additional stakeholders needed to be involved to continue to move the process forward.

Discussion

The development and use of system and programmatic indicators for a Green Region is a long-term process that will take several years to complete. There are five critical tasks remaining before the Green Region Indicator Framework is an effective tool for measuring and reporting on progress on the Strategy to Become America's Green Region. Although listed sequentially, it is important to note that these tasks need to be done in parallel. Briefly, they are:

- Expand outreach to key regional partners to increase commitment to and use of Green Region Vision Statement, Strategy, and Indicator Framework for regional collaboration, decision-making, and reporting on progress.
- Refine current list of system-level indicators in terms of description, methodology, reporting mechanisms, and identification of key regional partners.
- Develop performance-level indicators for MARC program areas related to each of the system-level indicators.
- Integrate indicators with MARC strategic planning, program evaluation and regular reporting.
- Incorporate the Green Region Indicator Framework into MetroOutlook to provide a "dashboard" for regional progress and efforts.

MARC is a nonprofit association of the nine county and 120 city governments in the Greater Kansas City region. It is governed by a board made up of local elected officials. As the metropolitan planning association for the region, MARC promotes regional cooperation and provides a forum for advancing social, economic and environmental quality of life in the region. This broad focus is reflected in the Green Region Vision and in the seven issue areas and system-level indicators defined through this process:

- *Sustainable Land Use*: Percent of land in the MARC region that is permeable.

- *Sustainable Economic Development*: Annual regional greenhouse gas (GHG) emissions compared to 1990 baseline.
- *Social Capital Investment*: Percent of 3rd graders reading at the 3rd grade level.
- *Financial Well-Being*: Percent of population in households with jobs providing self-sufficient level of income.
- *Health*: Percent of population that is obese.
- *Safety*: Percent of people who feel safe compared to the actual crime rate (change compared to baseline year).
- *Equality of Opportunity*: Geographic concentration of poverty.

However, because MARC represents local governments and is funded primarily through grants from federal and state agencies and private foundations, MARC's authority and responsibilities are more narrowly focused on the issues of early childhood learning, emergency services, transportation planning, community development, environmental planning, and the elderly. Over a third of MARC's budget is related to early childhood education programs. Another third of the budget relates to MARC's duties as the regional transportation, environmental, and land use planning organization. As a result, the first three system indicators are the most well-developed and ready for further work at the methodology level. By contrast, although transportation and land use decisions have an impact on economic development and employment in the region, MARC's programs have a limited ability to directly affect the number and type of regional jobs or level and concentration of poverty. In addition, although MARC's member municipalities direct the local law enforcement and health agencies, MARC itself has little control over actual crime rates, public safety, and human health.

In the table, the indicators are introduced with a phrase intended to further clarify their sustainability dimensions. Further work is needed on all of the indicators on both process and methodology levels. On the process level, MARC need to reach out to other regional stakeholders to get commitment to use the system indicators for regional decision-making as well as commitment from the stakeholders to create and report regularly on their activities with programmatic indicators related to the system indicators. On the methodology level, work is needed to:

- Identify the specific data sources or funding needed to develop data not currently available,
- Establish baselines and trend methodologies,
- Develop reporting mechanisms and platforms for communicating the importance of the issues, the rationale for the indicators, the effectiveness of policies and programs, and the other issue areas that assist or prevent progress.

Appendix A contains specific details on the work needed for each of the seven system-level indicators.

Recommendations

The following recommendations are important as MARC and its regional partners continue to refine the Green Region vision, strategy, and indicator framework. Some recommendations relate to the role of indicators and the indicator development process, some relate more to MARC's leadership role in the region and process, and still others relate to the overall Green Region vision and strategy:

1. Recognize the role of indicators as tools for Green Region development. Indicators are a means to an end, not as an end in themselves. Strive for a balance between creating ‘final indicators’ and being flexible and open to change as additional stakeholders and key partners are identified. Focusing on the system indicators as a tool in collaborative decision-making will strengthen the process and result in better decisions and better indicators.
2. Use appropriate language and terminology for the intended audience. The terminology used by indicator experts is often complex, frequently confusing, and only occasionally helpful when communicating with stakeholders and key decision-makers. Focus on developing language that best communicates the information needed to foster better collaborative decision-making, rather than language that merely describes the intricacies of indicators and their development.
3. Accept appropriate ownership of the Green Region Strategy process and indicator framework. As the regional council of government, MARC has tremendous influence in regional decision-making but limited authority or responsibility in the local decisions that ultimately will determine the outcome of the Green Region Strategy. Success will require constant outreach to key partners so that they understand, accept and fulfill their roles and responsibilities as co-owners of the strategy, indicators and outcomes.
4. Set priorities to achieve maximum effect. Focus initially on the system indicators most closely aligned with MARC’s program areas and the interests of key regional partners. Focus on developing performance indicators for those program areas and integrating these indicators into MARC’s strategic planning process and program evaluation. Specifically focus on system indicators for greenhouse gas emissions and green infrastructure, and performance indicators for MARC’s transportation, environment, community development, and effective government programs related to these two system indicators.
5. Integrate the Green Region Indicators and Framework with MetroOutlook. Integrating MetroOutlook and the Green Region Indicator Framework should be done to increase the engagement of stakeholders in the Green Region Strategy. Initially, the integration should focus on 1) the system indicators on which regional partners are most engaged or 2) the performance indicators that are best able to explain the ‘story’ of becoming Green Region including who is actively engaged and who else needs to be involved.
6. Include indicators related to tax and other regulatory policies. Although it is generally acknowledged that local, regional, and federal tax policies have a significant impact on all aspects of regional development, the framework as developed currently does not include any tax-related indicators. Indicators are needed that can raise awareness of these impacts and support a collaborative process to develop tax policies that promote truly sustainable regional development.
7. Use indicators to help shift of underlying assumptions of regional development goals, expectations and standard practices. Throughout most of the 20th century, ‘expansion’ or ‘growth’ was the underlying measure of success for community development programs and practices in the US. However, in the 21st century, as globalization raises our awareness of constraints on resources such as energy, water and the global climate, community development goals and practices are changing to focus on community quality of life. For the Green Region Strategy, this will mean changing the discussion from getting ‘bigger’ to

getting 'better.' The system and performance level indicators can be effective tools in facilitating collaborative discussions on these issues with disparate stakeholders and regional partners.

Table 1. Draft Green Region Indicator Framework and System Indicators

MARC's Sustainability Principles			Regional Outcome/Vision Indicators	MARC's Program Areas						
Environment	Economic	Social		Env	Transportation	Comm. Dvlpmt	Education	Public Safety	Comm. Service	Effect Gov't
✓	✓	✓	Sustainable Land Use: Percent of land in the MARC region that is permeable	✓	✓	✓		✓		
✓	✓		Sustainable Economic Development: Annual regional greenhouse gas (GHG) emissions compared to 1990 baseline	✓	✓	✓				✓
	✓	✓	Social Capital Investment: Percent of 3 rd graders reading at the 3 rd grade level.			✓	✓		✓	✓
	✓	✓	Financial Well-being: Percent of population in households with jobs providing self-sufficient level of income		✓	✓			✓	
✓		✓	Health: Percent of population that is obese		✓	✓				
	✓	✓	Safety: Percent of people who feel safe compared to the actual crime rate (change compared to baseline year)			✓		✓		✓
	✓	✓	Equality of Opportunity: geographic concentration of poverty			✓				

Table 2. Draft Programmatic Indicators for Sustainable Land Use

Regional Outcome/Vision Indicator: Percent of land in MARC region that is permeable

Related Indicators:

- Total amount of impervious surfaces
- Total amount of open space permanently protected
- Percent of regional waterways meeting water quality standards

Organization	Organizational Indicators
MARC Environment Program	<ul style="list-style-type: none"> • Miles/acres of Metro Green plan completed (number and percent of total plan) • Municipalities and counties with adequate green infrastructure standards, regulations and ordinances related to smart growth, low impact development, etc (number and percent of total regional land area) • Percent of regional stream miles with 100 feet of riparian buffer • Percent of regional stream miles in municipalities with set back regulations
Municipalities	<ul style="list-style-type: none"> • Miles/acres of Metro Green plan completed (number and percent of total plan) • Percent of municipal stream miles with 100 feet of riparian buffer • Percent of development projects permitted that include land conservation • Percent of land area that is green infrastructure land vs developed land • Impervious surface compared to 1990 baseline (number of acres and percent of total land area) • Open space permanently protected compared to 1990 baseline (number of acres and percent of total land area) • TMDLs compliance • Percent of storms resulting in CSOs • Percent of waterways that meet designated water quality standards
Developers	<ul style="list-style-type: none"> • Percent of projects that are brownfield redevelopment • Percent of projects that are within ¼ mile of transit • Percent of project area that is preserved as green infrastructure • Percent of project area that is impervious compared to 1990 baseline • Number of best management practices used in development
State and Federal Agencies	<ul style="list-style-type: none"> • Funding for green infrastructure projects • Funding for open space preservation • Amount of open space preserved (percent increase over 1990 baseline)
Landowners	<ul style="list-style-type: none"> • Percent of land that is developed vs percent providing ecosystem services

Table 3. Draft Programmatic Indicators for Sustainable Economic Development	
Regional Outcome/Vision Indicator: Total annual carbon emissions in the region compared to 1990 baseline	
Supplemental Regional Indicators:	
<ul style="list-style-type: none"> - Percent of emissions by sector (residential, commercial, industrial, transportation, other) - Percent of emissions by fuel type (oil, gas, coal, electricity, other) - Percent of regional energy from renewable sources 	
Organization	Performance Indicators
MARC Effective Government Program	<ul style="list-style-type: none"> • MARC municipalities that have signed on to the US Conference of Mayor’s Climate Protection or similar agreement (number and percent of total regional population represented) • MARC municipalities that have completed an emissions inventory (number and percent of total regional emissions)
MARC Transportation Program	<ul style="list-style-type: none"> • Regional VMTs by municipality and county compared to 1990 baseline • Regional modal split compared to 1990 baseline (number and percent of trips and percent of trips) • Regional energy use for transportation compared to 1990 baseline
MARC Environment Program	<ul style="list-style-type: none"> • MARC municipalities that have a sustainability program or have done a sustainability assessment (number of municipalities, percent of total regional population, and percent of regional land area represented) • Total emissions reported annually by municipalities compared to 1990 baseline
GKC Chamber of Commerce	<ul style="list-style-type: none"> • Businesses that have signed on to the Greater Kansas City Climate Protection Partnership (number of businesses and percent of workforce represented) • Businesses that have calculated and reported on their carbon footprint, energy use, or emissions (number of businesses, percent of workforce represented and percent of regional emissions) • Total emissions reported by businesses compared to 1990 baseline
KCP&L (other utilities?)	<ul style="list-style-type: none"> • Customers who have applied for and completed an energy audit (number and percent of total energy use by residential, commercial, industrial, and institutional classifications) • Total energy use and emissions by residential, commercial, industrial, and institutional classifications compared to 1990 baseline
Universities	<ul style="list-style-type: none"> • Universities, colleges and other educational institutions that have signed on to the American College and University Presidents Climate Commitment or similar programs (number and percent of total regional student body represented) • Number of educational institutions that have done an energy audit and are reporting annual emissions (number and percent of total educational emissions) • Total emissions reported by the educational institutions

Table 3. Draft Programmatic Indicators for Sustainable Economic Development	
Regional Outcome/Vision Indicator: Total annual carbon emissions in the region compared to 1990 baseline	
Supplemental Regional Indicators:	
<ul style="list-style-type: none"> - Percent of emissions by sector (residential, commercial, industrial, transportation, other) - Percent of emissions by fuel type (oil, gas, coal, electricity, other) - Percent of regional energy from renewable sources 	
Organization	Performance Indicators
Public Transit Providers	<ul style="list-style-type: none"> • Annual ridership on public transit compared to 1990 baseline (number and percent of population) •
Public	<ul style="list-style-type: none"> • Personal carbon footprint • Annual miles traveled in single occupancy vehicle compared to

Appendix A: System Indicator Details – Sustainable Land Use

System Indicator – Sustainable Land Use: *Percent of land in the MARC region that is permeable.*

This indicator is intended to measure the extent to which the MARC region is retaining and preserving the green infrastructure lands that provide critical ecosystem services for the region including flood mitigation, carbon sequestration, biodiversity, and habitat, in addition to the recreational and general quality of life benefits. Initially defined as ‘percent of land that is impermeable,’ this indicator was redefined as ‘permeable’ to provide a more positive focus and to raise awareness of the different degrees of land permeability. Many people would consider a green lawn as being ‘permeable,’ however, although more permeable than an asphalt driveway, a lawn is much more compacted and less useful as green infrastructure land than a natural meadow. A methodology needs to be developed that will allow different types of land use to be characterized according to their permeability relative to natural green infrastructure land.

Some specific metrics and data sources that were identified as potentially useful for this indicator include:

- MARC parcel data - In the past two years MARC has been collecting parcel data from the counties and municipalities in the region. One issue has been differences between municipalities in how land use is classified. MARC staff has been converting the data to a common set of land use classes. As a result, MARC now has a regional map of land use that for which they get parcel data updates quarterly from the counties/municipalities.
- Acres or percent of land that is impervious – this information may be available from federal agencies that provide satellite imagery data – the Kansas Applied Remote Sensing Program (Dr. Mark Jakubauskas) may be able to assist with this including finding a potential funding source from the state of Kansas.
- Acres or percent of area that is comprised of parking lots – although Johnson County is the only county in the MARC region that has data on parking lots in GIS format, it could be a useful test case of the feasibility and usefulness of this indicator. This would be a relatively easy performance level metric for individual organizations
- Number of lane miles – could be a proxy for impervious surfaces and as a measure of ‘car habitat’
 - Right-of-way information from the parcel data could be a useful data source
 - MARC maintains the street center line data which could be used to create open polygons in GIS
- Building footprints – comparing the footprint of a building to the parcel size could provide a measure of development density.
 - MARC already has this data for Johnson County, which could be used as a test case of the feasibility and usefulness of this indicator
 - Municipalities may have information on the square feet of interior space of buildings, although this would need to be combined with the number of stories to tell the difference between 3000 square feet on three stories (1000 sq ft footprint) and 3000 square feet in a single story (3000 sq ft footprint)

Appendix A: System Indicator Details – Sustainable Land Use

- This could also be combined with population change from Census data to should rate and density of development
- This would be a relatively easy performance level metric for individual organizations such as developers, property managers, landlords and homeowners
- Parking spaces – metrics related to parking spaces could be useful as performance metrics:
 - Number of parking spaces required per building or building size – fewer parking spaces implies that alternative transportation is available or encouraged
 - Number of municipalities that allowed shared parking – a performance level measure for MARC that should extent to which member governments encouraging and supporting alternative modes of transportation
- Open space - Protected areas such as parks and conservation lands would provide some measure of green infrastructure land. Some sources of data include:
 - Park land information from municipalities and land trusts
 - Army Corps of Engineers controlled areas
 - Federal farm bill program lands – NRCS may be a source for this data although may only be available as a quantity, not as GIS data
 - Could also measure access to parks based on the number of people living within a certain distance of parks
 - Rate of change of natural land cover (conversion to developed land uses) could use the MARC land cover data as a baseline and determine changes from parcel data updates from counties and municipalities, which include land use and year-built attributes
 - Open space data could be refined by specifically looking at:
 - Priority or high quality natural areas that are either protected or lost
 - Communities incorporating farmland into long-range plans, or acres of farmland otherwise protected
 - Participation of local agricultural producers in the local economy – perhaps through a measure of local farmers’ markets
- Urban forest canopy – there are two commonly used methods for measuring urban canopy – the US Forest Service UFORE program and the American Forests City Green program – both will require funding for developing the model and doing the field work to gather data.

There are a number of key regional partners who are already working on green infrastructure and sustainable land use issues. These include:

1. MARC city and county members including:
 1. Clay County is restoring 225 acres of prairie around Smithville Lake by end of 2008
 2. Jackson County Park and Recreation Dept has a Mitigation Program to restore wetland and riparian corridor habitat on county parklands
 3. Kansas City Missouri is addressing combined sewer overflow issues
2. Local volunteer organizations including:
 1. KC Wildlands – has improved and restored 250 acres of habitat within the priority greenways
 2. Blue River Watershed Association,

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3. Little Blue River Watershed Coalition
3. Public land trust organizations that hold and manage conservation lands in the region including:
 1. Kansas Land Trust (Kansas and western Missouri)
 2. Trust for Public Land (prepared a conservation financing research report on regional sales tax ability to raise funds)
 3. Platte County Land Trust
 4. Watershed Land Trust
4. State and Federal agencies:
 1. Kansas Department Health and Environment (KDHE) - runs the Watershed Restoration and Protection Strategy (WRAP) program and has some funding to support restoration
 2. Missouri Department of Conservation (MDC) – has a Stormwater Grant and Loan Program
 3. Missouri Department of Natural Resources (DNR) and KDHE administer EPA Section 319 grants for water quality/watershed related projects
 4. MO DNR and KS Dept of Wildlife and Parks administer states’ Land and Water Conservation Fund
 5. USDA- NRCS and County Conservation Districts for agricultural land
 6. US Army Corps of Engineers – working on restoration reevaluation plans for Blue River and Missouri River and has programs for funding and assistance
 7. US Fish & Wildlife – has grants for Conservation Opportunity Areas which includes the Missouri and Blue Rivers – also provides technical support
5. National environmental organizations:
 1. Audubon Society – conducted assessment program to identify potential restoration areas within Missouri river corridor
 2. The Nature Conservancy
 3. National Wild Turkey Federation
 4. Pheasants Forever
6. Recreation groups
 1. Ducks Unlimited
 2. Johnson County Bicycle Club, KC Bicycle club, MO Bicycle Federation
 3. Johnson County Friends of Parks
 4. EarthRiders Mountain Bike Club (KCMO)
 5. KS Alliance for Wetlands and Streams (statewide)
 6. Ozark Wilderness Waterways Club (KC based)
7. Development related organizations
 1. Home Builders Association Of Greater KC (HBA)
 2. ACEC – association of consulting engineering firms that does lobbying work in the two state legislatures

Key Next Steps:

1. Engage key regional partners to get consensus on the need for a system-level indicator of sustainable land use, methodology for reporting progress, and agreement to develop and report on related program level indicators at least annually

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2. Work with regional partners to identify best sources of data for on system indicator and resources to support data collecting and reporting
3. Incorporate system-level indicator into MetroOutlook.
4. Develop programmatic indicators for MARC
5. Work with regional partners to identify their programmatic indicators and ways to incorporate into MetroOutlook reports

Appendix A: System Indicator Details – Sustainable Economic Development

System Indicator – Sustainable Economic Development: *Annual regional greenhouse gas (GHG) emissions compared to 1990 baseline.*

There was general consensus among MARC staff and the Strategic Planning Committee that this indicator is an important system-level indicator for the measuring progress toward becoming America's Green Region. In addition, because many of the regional partners have climate related programs, this issue is also an excellent starting point for developing programmatic indicators to link to the system indicators. Some of the partners and efforts currently underway include:

- Greater Kansas City Chamber of Commerce Climate Protection Partnership includes many businesses in the region and a defined set of actions to be taken
- Kansas City Power and Light working with businesses and residents to identify conservation improvement
- Bridging the Gap has a number of programs related to climate change and energy conservation that are targeting businesses, schools, and the general public.
- Local Universities and colleges involved in the American College and University Presidents' Climate Commitment program
- Local mayors that have signed on to the US Conference of Mayors' Climate Action Plan
- Local municipalities that are part of the International City/County Managers Association Center for Performance Measure project to develop performance level sustainability metrics

However, although energy and emissions are mentioned in the 2001 and 2007 MetroOutlook Reports, greenhouse gas emissions are not currently tracked in MetroOutlook.

Key Next Steps:

1. Work with regional partners to identify best sources of data for reporting on regional level emissions and most useful subcategories of emissions sources (transportation, buildings, residents, businesses, etc)
2. Incorporate system-level indicator into MetroOutlook.
3. Develop programmatic indicators for MARC
4. Work with regional partners to identify their programmatic indicators and ways to incorporate into MetroOutlook reports

Appendix A: System Indicator Details – Social Capital Investment

System Indicator – Social Capital Investment: *Percent of 3rd graders reading at the 3rd grade level.*

The quality and results of regional childhood education systems was identified in the 2001 and 2007 MetroOutlook reports as an important issue to the region's residents and important to the long-term viability of the region's economic development. The people of the MARC region represent a critical component of the region's community capital. The individuals' health, skills and abilities, as well as the regional level of trust, respect, and ability to work collaboratively on collective issues are key to the region's long-term vitality. A critical component of this is the ability of individuals to participate in all aspects of the community. Measuring what percent of the region's third graders are able to read at the third grade level is not only a gauge of the effectiveness of the existing educational system, but it is also a leading indicator of the region's future economic vitality, because literacy is a key aspect of work force quality and is a factor in participation in civic and cultural life of the region. Literacy rate is highly correlated with criminal activity and recidivism rates. According to MARC staff in the Early Childhood Education Program, the California Prison Board uses third grade reading levels to predict the future need for prison space. In addition, unlike a more traditional measure of workforce quality such as the percent of the population with a high school or college diploma, third grade reading level provide a warning when there is still time to do something if there is a problem.

This indicator was strongly supported by the MARC Early Childhood Education Program staff because of the indicator's use as both a lagging indicator of variations in the accessibility of high quality, publicly-funded early childhood education programs and as a leading indicator of future regional economic and social capacity. However, further work needs to be done with this indicator to engage additional stakeholders in committing to the use of the indicator for regional decision-making and the regular reporting of related programmatic indicators.

Key Next Steps:

1. Get buy-in from key regional partners on the use of this indicator as a system-level regional indicator
2. Develop program level indicators for MARC and the regional partners
3. Incorporate into MetroOutlook and report annually on progress

Appendix A: System Indicator Details – Financial Well-Being

System Indicator – Financial Well-Being: *Percent of population in households with jobs providing self-sufficient level of income.*

This indicator was strongly supported by MARC staff and there was general consensus among the Strategic Planning Work Group that this was an important regional issue. However, because this is an issue area for which MARC as an organization has no direct control or decision-making authority, it is unclear if effective programmatic indicators can be developed before additional regional stakeholders are engaged and commit to moving forward

Key Next Steps

1. Identify regional partners for this issue area
2. Develop consensus on system indicator
3. Define data requirements and report annually in MetroOutlook
4. Work with regional partners to develop program level indicators and incorporate into MetroOutlook.

Appendix A: System Indicator Details – Health

System Indicator – Health: *Percent of population that is obese.*

This indicator was proposed as a system measures of human health. It was also identified as an important issue in both the 2001 and 2007 MetroOutlook reports. However, although some members of MARC staff and the Strategic Planning Work Group thought this was a useful system indicator, there was no consensus on this being the best indicator in a regional ‘short-list.’ Since health is another area where MARC as an organization has no direct control or decision-making authority, more work is needed to engage other stakeholders who do have specific authority and responsibility for regional health issues. These other organizations need to have a strong say in the choice of system indicators in order to be able to develop effective programmatic indicators related to this issue.

Key Next Steps

1. Identify regional partners for this issue area
2. Develop consensus on system indicator
3. Define data requirements and report annually in MetroOutlook
4. Work with regional partners to develop program level indicators and incorporate into MetroOutlook.

Appendix A: System Indicator Details – Safety

System Indicator – Safety: *Percent of people who feel safe compared to the actual crime rate (change compared to baseline year).*

Public safety, and particularly safe neighborhoods, was identified as a very important issue in both the 2001 and 2007 MetroOutlook reports. However, the MARC staff identified several different components of this issue which were often at odds with each other, specifically the disparity between the actual crime rate within a particular area and citizens' perception of safety, as well as the differences in a neighborhood's residents' perceptions of safety and those of outsiders to the neighborhood. The resulting system indicator description was an attempt to show these differences, however, there is no established methodology for actually measuring this indicator. In addition, since safety is another area where MARC as an organization has no direct control or decision-making authority, more work is needed to engage other stakeholders who do have specific authority and responsibility for these issues, including developing and reporting on effective programmatic indicators related to safety

Key Next Steps

1. Identify regional partners for this issue area
2. Develop consensus on system indicator
3. Define data requirements and report annually in MetroOutlook
4. Work with regional partners to develop program level indicators and incorporate into MetroOutlook.

Appendix A: System Indicator Details – Equality of Opportunity

System Indicator – Equality of Opportunity: *Geographic concentration of poverty.*

This indicator was strongly supported by MARC staff and there was some consensus among the Strategic Planning Work Group that this was an important regional issue. However, because this is another issue area for which MARC as an organization has no direct control or decision-making authority, it is unclear if effective programmatic indicators can be developed before additional regional stakeholders are engaged and commit to moving forward.

Key Next Steps

1. Identify regional partners for this issue area
2. Develop consensus on system indicator
3. Define data requirements and report annually in MetroOutlook
4. Work with regional partners to develop program level indicators and incorporate into MetroOutlook.

Appendix B: Project Tasks and Deliverables

Project Tasks	Deliverables and filename
1. Create draft framework (V1) and indicators based on: <ul style="list-style-type: none"> • GI framework • MetroGreen Vision • Green Region Strategy 	Framework Version 1 – initial framework for first meeting <ul style="list-style-type: none"> • V1 - Initial Indicator Framework.doc
2. Facilitation of Feb 2008 meeting with regional partners	Detailed Meeting agenda, invitation, list of invitees, presentation, meeting notes <ul style="list-style-type: none"> • MARC Mtg 2008-02-27 Detailed Agenda.doc • MARC Mtg 2008-02-27 Final.ppt • MARC Mtg 2008-02-27 Initial Meeting Notes.doc
3. Refinement of framework(V2), indicators and data sources/gaps	Framework Version 2 – revised framework with indicators based on Feb meeting <ul style="list-style-type: none"> • V2 - Framework and Indicators Draft MARC Region.doc
4. Documentation of Indicator Approach	Indicator Approach – document summarizing the need for regional indicators and process for developing them collaboratively with regional partners <ul style="list-style-type: none"> • Indicator Approach Oct 28 2008.doc
5. Interim report to Forest Service	Status Report Sept 08 <ul style="list-style-type: none"> • Status report 2008-09-16 MARC GI.doc
6. Presentation of framework and indicators at Nov 2008 meeting of MARC staff	Framework Version 3 – framework and indicators refinement based on Nov meeting <ul style="list-style-type: none"> • V3 - MARC Mtg 2008-11-04 Resulting Framework and Indicators.doc) Meeting materials: Brief meeting agenda, annotated agenda with indicators worksheets and list of anticipated attendees, presentation, meeting notes and compilation of attendee comments: <ul style="list-style-type: none"> • MARC 2008-11-04 Agenda.doc • MARC 2008-11-04 Detailed Agenda and Indicators.doc • MARC Mtg 2008-11-04 Final.ppt • MARC Mtg 2008-11-04- Notes with Compiled comments.doc
7. Revision of framework and indicators and study of integration of framework/indicators with Metro Outlook	Framework Version 4 – final draft framework with system indicators and proposed program indicators <ul style="list-style-type: none"> • V4 – MARC final draft framework 2008-12-29.doc Sample of integration of GI Framework with MetroOutlook <ul style="list-style-type: none"> • MARC Draft System and Program Indicators.doc
8. Final presentation at regional meeting in Dec 2008 and in followup individual meetings with regional	Meeting materials: invitation and list of invitees, meeting agenda, meeting handout of Regional Indicators in Triple Bottom Line Framework <ul style="list-style-type: none"> • MARC Mtg 2008-12-01 Cover Letter and Working Group.doc

Appendix B: Project Tasks and Deliverables

<p>partners:</p>	<ul style="list-style-type: none"> • MARC Mtg 2008-12-01 Agenda.doc • MARC Mtg 2008-12-01 System Indicators.doc <p>Meetings with regional partners</p> <ul style="list-style-type: none"> • ICMA Center for Performance Measurement (Louise Snyder) • Chamber of Commerce and KCP&L (Jamie Green and Allen Dennis) • Bridging the Gap (Kristen Riott) • 360Architecture (John Ware and Peter Sloan) • KCMO (Dennis Murphy)
<p>9. Final Report:</p>	<p>MARC GI Indicators Final Report.doc</p>
<p>10. Presentations to other organizations on project</p>	<p>National Association of Local Government Environmental Professionals (NALGEP) Webinar May 20 2008</p> <ul style="list-style-type: none"> • NALGEP.ppt <p>Green Infrastructure Community of Practice – DC July 2008</p> <ul style="list-style-type: none"> • FS GI CoP 1.ppt • FS GI CoP 2.ppt
<p>11. Additional Material – These files, developed by MARC and its partners are also useful to understanding the MARC Green Region Indicator project.</p>	<p>Green Region Chart – a draft chart showing five actions needed to ‘Green’ the MARC region (Commit, Conserve, Create, Communicate, Coordinate)</p> <ul style="list-style-type: none"> • America's Green Region chart 12-27.pdf <p>Green Region Strategy – draft description of the strategies needed to ‘Green’ the MARC Region including a vision statement, five strategies (Commit, Collaborate, Communicate, Conserve, and Create) with a total of 17 goals for achieving the vision</p> <ul style="list-style-type: none"> • Strategy to Become America's Green Region.doc <p>MARC Strategic Planning Framework – a draft chart showing MARC’s vision for a sustainable and green region, the three key sustainability principles, and the seven MARC program areas and goals.</p> <ul style="list-style-type: none"> • MARC Strategic Planning Framework_Dec 1 Working Group.doc <p>MARC Draft Strategies – description of proposed strategies for the seven MARC program areas to achieve the program goals</p> <ul style="list-style-type: none"> • Strategies for Program Goals_Dec 1 Working Group .doc
<p>12. Background Materials</p>	<p>Project Description – Original from May 2007, revision in Feb 2008</p> <ul style="list-style-type: none"> • Project Description MARC GI.doc • Project Description MARC GI 2008 2nd rev.doc