The foundation of the Regional Green Infrastructure plan for the nine-county MARC region is a natural resources conservation and restoration study. This study illustrates not only the presence and health of the natural systems but also the intersecting opportunities of human impact to provide a method of making decisions for a more resilient future. The map above shows the highest value water and land conservation areas in context with major impact areas of development. Value is defined by streams, lakes, wetlands, glades, cave and karst, forest, large herbaceous areas, along with weighted combinations of water purification service and wildlife benefits, which act as surrogates for heritage landscape and patterns of ecological health. The darkest colors show the highest value areas. The lightest colors show the impact areas of impervious surface, major roadways, and high reforestation priority that intersect with the high value water and land resources.
CONTENTS

A – DATA WISHLIST ............................................. 4
B – PRECEDENTS ................................................. 7
C – WORKSHOP MATERIALS ......................... 13
D – ANALYSIS PROCESS .................................. 124
E – ATLAS & PLAYBOOK DETAILS .............. 156
F – POLICY ANALYSIS ....................................... 165
The policy recommendations in this document were developed in a three part process:

First, Biohabitats conducted a precedent review of policies from across the nation relevant to enabling or encouraging the implementation of green infrastructure. The applicability of each policy to various contexts within the region was discussed between Biohabitats and BNIM and evaluated based on the policy's impact and relevance in terms of the intersecting environmental, social, and political contexts.

Next a brief inventory of existing policies within the region was conducted to gain an understanding of the current policy context. This inventory was analyzed to identify regional trends and patterns as well as the potential for new policies or to adapt existing policies to new strategies. The precedent policies were subjected to an additional round of evaluation based on this analysis.

Finally, recommendations for each transect and priority area were formulated using the analysis from the first two steps as a guide.
The following table was developed to inventory the preliminary research to identify national precedent policies and ordinances. Highlighted policies indicated policies which received significant debate. Highlights are not used to imply which policies are recommended by this team.

### MARC Green Infrastructure Plan

**Policy Worksheet**

11/29/2016

<table>
<thead>
<tr>
<th>Category</th>
<th>Policy Tool</th>
<th>Notes</th>
<th>Existing Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Comprehensive Plans</td>
<td>Aggregates various planning lenses (transportation, parks, etc.) into a single plan at the municipality level. They need to incorporate the regional GI plan.</td>
<td>Thematic and Comprehensive Plans</td>
</tr>
<tr>
<td>Zoning</td>
<td>Zoning Ordinance</td>
<td>Review and update zoning ordinance on a periodic basis to conform with GI Plan, manage type and intensity of land use in sensitive areas, encourage GI Plan implementation, and remove implementation barriers.</td>
<td>Many communities use zoning to manage the intensity of land uses in clearly environmentally sensitive areas, such as including conservation districts and mixed use districts. Some communities have incorporated urban agriculture and alternative energy into their zoning and development codes</td>
</tr>
<tr>
<td>Zoning</td>
<td>Subdivision and Site Plan Regulation</td>
<td>Review and update subdivision and site plan regulations on a periodic basis to conform with GI Plan, manage type and intensity of land use in sensitive areas, encourage GI Plan implementation, and remove implementation barriers.</td>
<td>Requirements that subdivisions be designed to minimize damage to the natural environment</td>
</tr>
<tr>
<td>Zoning</td>
<td>Form Based Codes</td>
<td>Create form-based standards and regulating plans for street networks, parks, community buildings, relationships of buildings and parking to streets, and provisions for multi-modal transportation. Code to support GI Plan.</td>
<td>At least one form based code exists for a particular district in Overland Park</td>
</tr>
<tr>
<td>Zoning</td>
<td>Cluster Subdivision</td>
<td>Cluster buildings on smaller lots leasing the remainder for recreation, ecosystem conservation, and restoration. Preserve rural and suburban land resources while maintaining or increasing development value.</td>
<td>Cluster development provisions are present in development codes</td>
</tr>
<tr>
<td>Design and Density</td>
<td>Urban Growth Boundaries</td>
<td>Designate areas planned for immediate and long-term utility service and coordinate development approval and utility extensions. Intent is to concentrate development where supportive of the GI plan and reduce utility and road infrastructure costs. A policy designation through a comprehensive plan and not a zoning designation per se.</td>
<td></td>
</tr>
<tr>
<td>Design and Density</td>
<td>Plan Review Incentives</td>
<td>Provide fast track plan reviews, reduced application fees, etc. for development plans that conform with the GI plan.</td>
<td>A Green Build Permit Program currently exists whereby permit fees are reduced for meeting green building standards.</td>
</tr>
<tr>
<td>Design and Density</td>
<td>Density Incentives</td>
<td>Incentive ecosystem conservation and restoration through allowance of increased density in less ecologically sensitive areas.</td>
<td>At least one TND zoning district exists in Olathe. Additionally, many communities have either added or are considering mixed use districts where appropriate</td>
</tr>
<tr>
<td>Design and Density</td>
<td>Community Design Concepts: Traditional Neighborhood Development (TND) and New Urbanism</td>
<td>Create TND districts that allow or require walkable streets, bikelanes, SWM BMPs…</td>
<td>Kansas City, Mo has embraced TDD as a project philosophy with the Downtown Streetcar development and the use of Federal TDR funds to spur TDD on Prospect</td>
</tr>
<tr>
<td>Design and Density</td>
<td>Community Design Concepts: Transit Oriented Development (TOD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Density</td>
<td>Adequate Public Facilities Ordinance</td>
<td>Public facilities and infrastructure must be sufficient to support new proposed development. What if this also included parks and equitable access to parks?</td>
<td>Many communities require parkland and open space dedication at the time of development</td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Transferrable Development Rights (TDR)</td>
<td>Some or all of parcel development rights from a sending district to a receiving district. Purchase of Development Rights open markets.</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Use Value Assessment and Taxation</td>
<td>Discounts in property tax assessments to promote and preserve…</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Conservation Easements</td>
<td>Legal agreement between landowner and land trust of government agency.</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Parkland Acquisition</td>
<td>With focus on ecological value, human health &amp; equity.</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Nutrient Trading</td>
<td>With nutrient water pollution limits, landowners can sell surplus nutrient reductions to landowners that can’t meet their targets. Low cost nutrient reduction sources can sell to high cost nutrient reduction sources.</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Agriculture and Forest Districts</td>
<td>Voluntary preservation of agriculture or forest with incentives and protections.</td>
<td></td>
</tr>
<tr>
<td>Land Management &amp; Conservation Program</td>
<td>Historic Districts</td>
<td>Can include cultural landscape preservation.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Design Review Boards</td>
<td>Often based on historic preservation. Typically more effective in urban areas.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Site Sensitive and Low Impact Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Stormwater Management Permits</td>
<td>At least one jurisdiction requires Stormwater Management Permits</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Erosion and Sediment Control Permits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Buildings Permits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Green Building and Site Sustainability Rating System Min. Requirements</td>
<td>Require or incentivize the use of LEED and Sustainable Sites Rating Systems</td>
<td></td>
</tr>
<tr>
<td>Design and Construction/Program</td>
<td>GI Construction Training and Certification Program</td>
<td>With disadvantaged business and community focus.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Procurement preference for GI Certification and disadvantaged businesses</td>
<td>Certified Green Partners</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Floodplain Regulations</td>
<td>Flood Zone Overlay Districts restrict or prohibit development within flood zones</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Wetland Regulations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Water Protection and Stream Buffer Ordinance</td>
<td>Require 100’ stream buffers, with development restrictions and plant preservation / restoration requirements.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Road Design Standards</td>
<td>Review state and local road design standards on a periodic basis to conform with the GI Plan, encourage GI plan implementation, and remove implementation barriers. Complete Streets Streetscape Design; Parks and Boulevards Design Standards</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Tree Canopy Ordinance</td>
<td>Require preservation and new planting to achieve tree canopy and heat island reduction goals.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Tree Preservation Ordinance &amp; Standards</td>
<td>Developers must submit a tree conservation plan before removing existing vegetation</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Landscaping Ordinance &amp; Standards</td>
<td>Landscaping ordinances and standards including tree minimums</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Invasive Species Ordinance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Remove Weed Ordinance barriers to native plantings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Fees for stormwater coming off of a parcel</td>
<td>Fee structured proportional to the amount of impervious area.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Stormwater Retention Credit (SRC) market</td>
<td>Landowner who treats SW in excess of regulatory requirements can sell stormwater retention credits.</td>
<td></td>
</tr>
<tr>
<td>Design and Construction</td>
<td>Stormwater GI aggregator</td>
<td>An aggregator finances installation of SWM GI on properties of multiple landowners. Aggregator sells the SW retention credits as profit. Can incentive through low interest loans.</td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>Municipal Facility Best Practices Construction Program</td>
<td>City construction must comply with LEED minimums; All county construction projects greater than 5,000 square feet must comply with LEED minimums</td>
<td></td>
</tr>
</tbody>
</table>
### Regional Inventory of Existing Green Infrastructure Policies and Policies

This matrix is of existing policies and ordinances relevant to enabling and encouraging green infrastructure was used to identify which policies are already common or potentially missing, organize existing policies by transect zones, and generally inform possibilities for the introduction of new policies or the adaptation of existing policies to new strategies. This matrix is intended as a brief survey of the region and is not intended to be comprehensive. Expansions to the matrix are encouraged in future phases to gain a more comprehensive understanding of green infrastructure policy within the region.

This matrix was generated by applying the preliminary policy research to a a review of past MARC policy materials as well as the development codes and public facing websites for a small sample of jurisdictions within the MARC region.
### Suburban MIAMI COUNTY
- WEATHERBY LAKE
- SHAWNEE
- PRAIRIE VILLAGE
- OVERLAND PARK
- NORTH KANSAS CITY
- LEAVENWORTH
- KANSAS CITY, MO
- BELTON

#### Regional GI Policy Tools
- Trail systems
- Agriculture
- Alternative communities

#### Infrastructure Goals
- Green philosophy
- Community forestry

#### Briefly addresses commitment to Green Plan
- Residential and recreational uses
- Very low density development
- Agriculture and alternative communities

#### Districts and Mixed Use
- Conservation
- Sensitive areas
- Floodplain

#### Building Codes
- Form-based codes
- Urban growth districts
- Streamside zone limits

#### Incentives
- Property tax abatement
- Cost reductions
- Cost preferences

#### Low Impact Construction
- Stormwater management
- Stormwater ordinances
- Built-out standards

#### Stormwater Ordinance
- Permit required for
- Illicit discharge

#### Streamside Zone
- 50 feet from edge of stream
- 25 feet from edge of 100-year flood waters

#### Floodplains
- 6. Stream restoration
- 5. Minimum required
- 4. Stormwater runoff event

#### Brownfields
- Land Use Restrictions
- Stormwater Infiltration
- Ecological Incentives

#### Sustainable Construction
- LEED Silver
- Sustainable construction

#### New Urbanism Concepts
- BRT funds
- Easements

#### Invasive Species
- Natural code exists for
- Key species

#### Historic Districts
- YES

#### Stream Setback
- YES

#### Green Impact Zone
- NO

#### Floodplain Permit
- YES

#### Conservation District
- YES
REGIONAL PLANNING DOCUMENTS REFERENCED
• Assessing Urban Forest Effects and Values: The Greater Kansas City Region, USDA Forest Service
  https://www.nrs.fs.fed.us/pubs/rb/rb_nrs75.pdf
• Mid-America Regional Council MetroGreen Action Plan
  http://marc.org/Environment/MetroGreen-Parks/The-Plan/Action-Plan
• Mid-America Regional Council Solar Ready Kansas City and Solar Ready II
• Mid-America Regional Council Transportation Outlook 2040
  http://www.to2040.org/plandocs.aspx
• Mid-America Regional Council Clean Air Action Plan
  http://marc.org/Environment/Air-Quality/pdf/clean_air_action_plan
• Missouri Guide to Green Infrastructure

MUNICIPAL AND PROJECT PLANS REFERENCED
• Blueprint for Liberty: Future Land Use Plan, 1999
  http://libertymissouri.gov/DocumentCenter/View/2182
• City of Blue Springs 2014 Comprehensive Plan
  http://www.bluespringsgov.com/455/Comprehensive-Plan
• Gardner, KS 2014 Comprehensive Plan
  http://www.gardnerks.org/development/economic-development/gardner-comprehensive-plan
• Johnson County, KS Rural Comprehensive Plan Update
  http://www.jocogov.org/dept/planning-and-codes/pln/rural-comprehensive-plan
• Kearney, MO 2004 Comprehensive Plan
• Kansas City, MO 2008 Climate Protection Plan
  https://data.kcmo.org/dataset/Climate-Protection-Plan-2008/yqpc-u9wi/data
• Kansas City, MO 2010 Greater Downtown Area Plan
  https://data.kcmo.org/Area-Plans/Greater-Downtown-Area-Plan/e9ss-ttb9/data
• Liberty, MO Downtown Master Plan, 2005
  http://libertymissouri.gov/DocumentCenter/Home/View/1219
• Raytown Central Business District Streetscape Master Plan, 2013
• Municipal Farm Sustainable Reuse Plan
  https://data.kcmo.org/Government/Sustainable-Reuse-Plan-The-Municipal-Farm/szja-m9p8
• Big Bull Creek Master Plan
• Rosedale Master Plan
  http://www.rosedalemasterplan.com/#draft-plan
DEVELOPMENT CODES REFERENCED

Municipal and development codes for the following jurisdictions were referenced

- Belton, MO
- Blue Springs, MO
- Harrisonville, MO
- Independence, MO
- Kansas City, MO
- Kearney, MO
- Lenexa, KS
- Liberty, MO
- Merriam, KS
- North Kansas City, MO
- Olathe, KS
- Overland Park, KS
- Peculiar, MO
- Prairie Village, KS
- Raymore, MO
- Shawnee, KS
- Weatherby Lake, MO
- Clay County, MO
- Jackson County, MO
- Johnson County, KS
- Miami County, KS
- Unified Government of Wyandotte County and Kansas City, KS