

APPENDIX

PHASE 1 GREEN INFRASTRUCTURE FRAMEWORK

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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.

Preliminary Policy Precedent Inventory

The following table was developed to inventory the preliminary research to identify national precedent policies and ordinances. Highlighted policies indicated policies which recieved signficant debate. Highlights are not used to imply which policies are recommended by this team.

MARC Green Infrastructure Plan Policy Worksheet 11/29/2016

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Category	Policy Tool	Notes	Existing Tools
Plan	Comprehensive Plans	Aggregates various planning lenses (transportation, parks, etc.) into a single plan at the municipality level. They need to incorporate the regional GI plan.	Thematic and Comprehenisve Plans
Plan	Comprehensive Plans	incorporate the regional Gi pian.	Thematic and Comprehenisve Plans
Zoning	Zoning Ordinance	Review and update zoning ordinance on a periodic basis to conform with GI Plan, manage type and intensity of landuse in sensitive areas, encourage GI Plan implementation, and remove implementation barriers.	Many communities use zoning to manage the intensity of land uses in clearly environmentally senstive 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
		Review and update subdivision and site plan regulations on a periodic basis to conform with GI Plan, manage type and intensity of landuse in sensitive areas, encourage GI Plan implementation,	Regirements that subdivsions be designed to
Zoning	Subdivision and Site Plan Regulation	and remove implementation barriers.	minimize damage to the natural environment
Zoning	Form Based Codes	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. Cluster buildings on smaller lots leaving the remainder for	At least one form based code existis for a particular district in Overland Park
		recreation, ecosystem conservation, and restoration. Preserve rural and suburban land resources while maintaining or increasing	Cluster development provisions are present in
Zoning	Cluster Subdivision	development value.	development codes
Zoning	Rezoning Proffers	Use proffers for Special Use Permits to conform with GI Plan while also likely increasing property values through recreation amenities, ecosystem conservation, and restoration. Stronger tool in urban and suburban areas.	
Design and Density	Urban Growth Boundaries	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.	
Design and Density	Plan Review Incentives	Provide fast track plan reviews, reduced application fees, etc. for development plans that conform with the GI plan.	A Green Build Permit Program currently exists whereby permit fees are reduced for meeting green building standards.
Design and Density	Density Incentives	Incentivize ecosystem conservation and restoration through allowance of increased density in less ecologically sensitive areas.	
Design and Density	Community Design Concepts: Traditional Neighborhood Development (TND) and New Urbanism	Create TND districts that allow or require walkable streets, bikelanes, SWM BMPs	At least one TND zoning district exists in Olathe. Additionally, many communities have either added or are considering mixed use districts where appropriate
Design and Density	Community Design Concepts: Transit Oriented Development (TOD)		Kansas City, Mo has embraced TOD as a project philosophy with the Downtwon Streetcar development and the use of Federal BRT funds to spurr TOD on Prospect
Design and Density	Adaguata Dublic Facilities Ordinance	Public facilities and infrastructure must be sufficient to support new proposed development. What if this also included parks and	Many communities require parkland and open space dedication at the time of development
Land Management & Conservation	Adequate Public Facilities Ordinance	equitable access to parks? Some or all of parcel development rights from a sending district to	space dedication at the time of development
Program Land Management & Conservation Program	Transferable Development Rights (TDR) Use Value Assessment and Taxation	a receiving district. Purchase of Development Rights open markets. Discounts in property tax assessments to promote and preserve	
Land Management & Conservation Program	Conservation Easements	Legal agreement between landowner and land trust of government agency.	
Land Management & Conservation	Dayland Association	With focus on coological value by the balling of the Committee	
Program Land Management & Conservation Program Land Management & Conservation	Parkland Acquisition Nutrient Trading	With focus on ecological value, human health & equity. 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. Voluntary preservation of agriculture or forest with incentives and	
Program Conservation	Agriculture and Forest Districts	protections.	
Land Management & Conservation Program	Historic Districts	Can include cultural landscape preservation.	
Design and Construction	Design Review Boards	Often based on historic preservation. Typically more effective in urban areas.	

Design and Construction	Site Sensitive and Low Impact Development		
			At least one jurisdiction requiresStormwater
Design and Construction	Stormwater Management Permits		management Permits
Design and Construction	Erosion and Sediment Control Permits		
Design and Construction	Buildings Permits		
			Some communities have incentives for green
			building construction and improvements,
	Green Building and Site Sustainability Rating	Require or incentivize the use of LEED and Sustainable Sites Rating	including cost of construction rebates and
Design and Construction	System Min. Requirements	Systems	property tax abatement
Design and Construction	GI Construction Training and Certification	Jystems	property tax abatement
Design and Construction/ Program	Program	With disadvantaged business and community focus.	
Design and Construction, Frogram	riogiani	with disadvantaged business and community focus.	
	Procurement preference for GI Certification and		
Design and Construction	disadvantaged businesses		Certified Green Partners
			Flood Zone Overlay Districts estrict or prohibit
Design and Construction	Floodplain Regulations		development within flood zones
Design and Construction	Wetland Regulations		
		Require 100' stream buffers, with development restrictions and	
Design and Construction	Water Protection and Stream Buffer Ordinance	plant preservation/ restoration requirements.	
		Review state and local road design standards on a periodic basis to	
		conform with GI Plan, encourage GI Plan implementation, and	Complete Streets Streetscape Design; Parks and
Design and Construction	Road Design Standards	remove implementation barriers.	Boulevards Design Standards
B	T 0 0 1	Require preservation and new planting to achieve tree canopy and	
Design and Construction	Tree Canopy Ordinance	heat island reduction goals.	
			Developers must submit a tree conservation
Davies and Country ation	Too Door ation Onlinear 9 Standards		·
Design and Construction	Tree Preservation Ordinance & Standards		plan before removing existing vegetation
			Landscaping ordinances and standards including
Design and Construction	Landscaping Ordinance & Standards		tree minimums
Design and Construction	Invasive Species Ordinance		
	Remove Weed Ordinance barriers to native		
Design and Construction	plantings		
Design and Construction	Fees for stormwater coming off of a parcel.	Fee structured proportional to the amount of impervious area.	
		Landowner who treats SW in excess of regulatory requirements	
Design and Construction	Stormwater Retention Credit (SRC) market	can sell stormwater retention credits.	
		An aggregator finances installation of SWM GI on properties of	
		multiple landowners. Aggregator sells the SW retention credits as	
Design and Construction	Stormwater GI aggregator	profit. Can incentive through low interest loans.	
			City construction must comply with LEED
			minimums; All county construction projects
	Municipal Facility Best Practices Construction		greater than 5,000 sqare feet musty comply
Program	Program		with LEED minimums

Regional GI Policy Tools as of 2016

of 2016	Plan		Zoning					Design and	Donritu			Land	Management & Conse	nustion Brossess		Design and Construction									
	Plan		Zoning					Design and	Density			Land	variagement & Const	rvation Program		Construction									
Local Government	Comprehensive Plans	Zoning Ordinance Many communities use scoling to manage the	Subdivision and Site Plan Regulation	Form Based Codes	Cluster Subdivision	Lirban Growth Boundaries	Plan Review Incentives	Density Incentives	Community De Concepts: Traditional Neighborhood Development and New Urba	Community Design Concepts: Transit TND) Oriented nism Development (TOC	Transferable Development b) Rights (TDR)	Conservation Easements	Parkland Acquisition	Agriculture and Forest Districts	d Historic Districts	Site Sensitive and Low Impact Development	Green Building and Site Sustainability Rating System Min. Requireme	Procurement preference for GI Certification and disadvantaged nts businesses	Floodplain Regulatio	Wetland ens Regulations	Sediment an	nd Erosion Contr	Stormwate ol Post Ci	Management, instruction	; illicit Discharge
	Thematic and Comprehensive Plans	Many communities use soning to manage the intensity of land uses in loarly servicementally sensitive areas, such as including conservation districts and mixed use districts. Some communities have incorporated usen agriculture and alternal mergy into their zeeing and development codes.	Regirements that subdivision be designed to minimize or damage to the natural environment	s At least one form based code existis fo a particular district in Overland Pari	Cluster development or provisions are present in development codes		A Green Build Pent Program currently exists whereby permit fees are reduced for meetin green building standards.	nit K		Kansas City, Mo has embraced TCID as a project philosophy with the Downtwon Streetcar developms and the use of Fede BRT Ands to spurr TCID on Prospect	est rai		Open space and Parklar frequently conserved trhough adequate publi facilities containes and parkland dedication requirements	nd ic			Some communities have incentives for green builds construction and improvements, including of construction relates an property tax abatement	ing Certified Green Partners – oost educational tool fo d environmentally conclous consumer	Flood Zone Overlay or Extricts restrict or probibit development s within flood zones		Sediment and Enosion Control Ordinance?	Adopted APW/ 51007	Adopted APW 5600 (rev. 11/03)?	Adopted MARC/APWA Stormwater Best A Management Practices Manual?	t Illicit Discharge Oridnance
BELTON													Explicitly provides for N Green implementation parkland dedication pol	tetro in licy							YES	YES	YES	YES	YES
BLUE SPRINGS	Comprehensive Plan goals reflect committeent to a Green infrastructure philosophy	YES											YES		YES						YES	NO	YES	NO	NO
GARDNER	Comprehensive Plan goals reflect committment to a Green infrastructure philosophy												YES	YES					Permit required for development within floodplain Permit required for development within floodplain		YES	WITH EXCEPTIONS	YES	NO	NO
HARRISONVILLE					YES				mixed use down districts	town			YES	YES Agriultural Distri + Conservation Overlays	YES lets YES		incentives for meeting minimum green building criteria		development within floodplain				YES		
INDEPENDENCE		YES	YES									YES		Overlays	YES		criteria				YES	YES	NO	NO	YES
KANSAS CITY, MO	2008 Climate Protection Plan Briefly addresses environmental issues related to green infrastructure	YES inludes aquifer overl	YES							YES			115	VES	YES		Adopted 2008 Edition of ti National Green Building Standard; incentives for home energy efficiency	he	VES		YES	YES		YES	YES
KEARNEY LEAVENWORTH LEAVENDOD LEE'S SUMMIT	innauructure	district			ns.								11.5			11.5	none energy emosticy		11.5		YES	YES YES	YES YES	YES YES	YES
																	Incentives for meeting								
LENDKA		YES											YES		YES		incentives for meeting minimum green building criteria				YES	YES	YES	YES	YES
UBERTY	Comprehensive Plan goals reflect committment to a Green Infrastructure philosophy								mixed use distri	da			YES	Rural Conervatio	on YES				YES		YES	YES	YES	NO	NO.
MERRIAM MISSION NORTH KANSAS CITY CLATHE		ves			YES				YES	YES			YES	YES	YES				Limited		YES YES YES	YES YES NO NO	NO YES YES NO	NO YES YES NO	NO YES YES NO
OVERLAND PARK				YES					Mixed Use Distr	icts			YES		YES				Limited		YES	YES	YES	YES	YES
PECULIAR													YES	YES							YES	YES	YES	NO	YES
PRAIRIE VILLAGE RAYMORE	C20 0	YES			YES								YES	Consension					PERMIT REQUIRED	YES	YES	YES	YES	YES	YES
RAYTOWN	Plan reflects commitment to using GI amen'sties such as trail systems to improve quality of life												YES	datrict	YES No formal overlay districts but trail an G amenity planning linked to historic assets	d					NO	NO	NO	NO	NO
SHAWNEE WEATHERSY LAKE	improve quality of life	YES very low density residential and recreatio uses only	nal						mixed use distri	cts			YES Indirectly with zoning fo very low density and recreational uses only	YES	assets						YES	YES NO	NO YES	YES NO	YES NO
CASS COUNTY																					YES	NO	NO	NO	NO
CLAY COUNTY		ves			YES									VES			Build Green Incentive Program				NO	NO	NO	YES	YES
SACKSON COUNTY					YES		YES		Mixed Use Prov	sions				YES					YES		YES	YES	YES	YES	YES
JOHSON COUNTY PLATTE COUNTY																		JOCO Certified Gree Partners	en YES		YES YES	YES NO	YES YES	YES YES	YES YES
WYANDOTTE COUNTY									YES								incentives for meeting minimum green building criteria				YES	YES	NO BUT LOCA GUIDEUNES ARE SIMILAR 1 5600	D NO	YES
MIAMI COUNTY RURAL	ves	YES			Village overlay districts								YES	YES YES	YES				YES		YES	YES	YES YES YES	YES	YES
RURAL URBAN SUBURBAN	YES YES	res res		YES	YES YES		YES		YES YES	YES	1		YES YES YES	YES	YES YES		YES YES		YES YES		YES YES YES	YES YES YES	YES YES	YES YES YES	YES YES YES

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.

		Design and Constr	ruction						Program/ Fu	nding		Federal Funding		Coo	rdination		Edu	ication			Community e	ngagement
Stream Sethack	Road Design Standards	Tree Preservation Ordinance & Standards	Landscaping Ordinane & Standards	ce Invasive Species Ordinance	Remove Weed Ordinance barriers to native plantings	Municipal Facility Best Practices Construction Program	Muricipal Facility Best Practices Maintenance Program	Vacant Lot Bevitalization	Grant Programs	The Missouri Properly Assissed Clean Energy (PACE) is a financing program for clean energy and energy and energy efficiency improvements	Green Impact Zo	U.S. Department of Energy SunShot Initiative Un Roofstop Solar Fe se Challenge I & II Pa	rbun Waters ideral artnership	Watershed based regulation and planning	i Department reorganization and communication	Cooperative Extensis Service	ion Musicipal Outr Programs	each Education fo Homeownen	Education for Businesses	Stakeholder Meetings	Watershed Organizations	City Environmental Committees and Boards
Land Use Restrictions Compilers Setback ordinance in buffer zone Model	Parks and plete Streets Boulevands of Ordinances Design Standards	Developers must submit a tree conservation plan before removing is existing vegetation	Landscaping ordinances and standards including tree minimums and species diversity requirements	Many weed ondinances also includes a prohibted noxious weeds list which includes some invasive species	Local weed ordinances primarily or exclusively rely on vegetative height and the presence of notious specis of determine weed ordinance violations	LEED rating minimum for cit or county construction	,															
2007 minimum depending on streams YES YES		Encourages tree preservation by allowing preserved trees to court for minimum tree requirements	YES									YES										
No , but noconstruction sallowed within 100 year flood zone YES		YES	YES					Land Bank Program				YES						Native plants planting guide homeowners. Educational, nonbinding	ist and for			
Varies YES design	plete streets n guie		YES		8" height; exeption provide for large and/or undevelopable lots where the decrinant species are native No 12" height exceptions for native grasses																	
85"- fet Order; 150" and sheamaide zone, no Order; 153"- žet Order, permanent shuckare in 150"-4th Order Steware buffer YES	YES	YES	YES									YES										Tree commission, city beautification commission, Park commission brownfields
lead at 150 feet from the center line of the creek.	YES	VES	YES		No 7" height exceptions for native grasses	YES		WES			YES	YES YE	s				10,000 Rain Gard Program	iens				brownfields Commission, Bicyle ar Pedestrian Advisory, Parks Board
destribution Auffords 5000 TEST Commentation and Auffords 5000 TEST COMMENTATION AND AUTO- TEST COMMENTATION AND A		YES		prohibited species								VES VES					Community Fore	nstry Community for guide	mellay			
40-120 hast TEST Generally 2, Coher Generally 3, Coher Generally 4, Coher General		YES	YES	list	No.12* hoppid exception for active grasses. No. 50* hoppid exceptions for native grasses.							YES YES YES					Program	guide				Tree Board
20 200 feet from contract of norrestional uses, and active trearm vegetation. YES Particle AMARC areas 2004 depression for accurate an ac	cipasted in C.C.C.constration of				No height exceptions for native grasses				YES			YES										Tree Board Tree Board, Recycling Committee Tree Board
indirectly with setbacks between structure and lot boundary	ing to ement complete ts policies soon	YES	VES									YES										Bicycle advisory board
Buffer south 75 15 15 15 15 15 15 15 15 15 15 15 15 15				VES	Make: IT vegetation heighted easeption for native grasses.	LEED Silver for construction : greater than 5,000 sq. feet 5,000 sq. feet 5 satainable priorities statement includes LEED implementation			VES	YES nt p		YES WES										
40 YES 15 YES 15 YES 15 YES 15 YES			YES	YES YES	some exception for large undeveloped tracts and consmental gardens No exceptions for native grasses YES			YES	fund educational projects and activities			YES										VES VES

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 Kanas City and Solar Ready II

http://www.marc.org/Environment/Energy/pdf/Solar_Ready_White_Paper.aspx

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

https://dnr.mo.gov/env/wpp/stormwater/docs/gi-cover.pdf

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.gardnerkansas.gov/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

http://www.ci.kearney.mo.us/pdf/6-15-04 Final Adopted Plan.pdf

Kansas City, MO 2008 Climate Protection Plan

https://data.kcmo.org/dataset/Climate-Protection-Plan-2008/ygpc-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

https://raytownmo.govoffice3.com/vertical/Sites/%7B3A1DBD03-39C2-43FA-8CC9-95B16E6438CB%7D/uploads/Final_Downtown_

Raytown Streetscape Master Plan 2-27-13.pdf

· Municipal Farm Sustainable Reuse Plan

https://data.kcmo.org/Government/Sustainable-Reuse-Plan-The-Municipal-Farm/szja-m9p8

Big Bull Creek Master Plan

http://jcprd.com/pages/pdfs/big-bull-creek/2016-04-11 BBC-MP_Final-Report_web.pdf

· 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