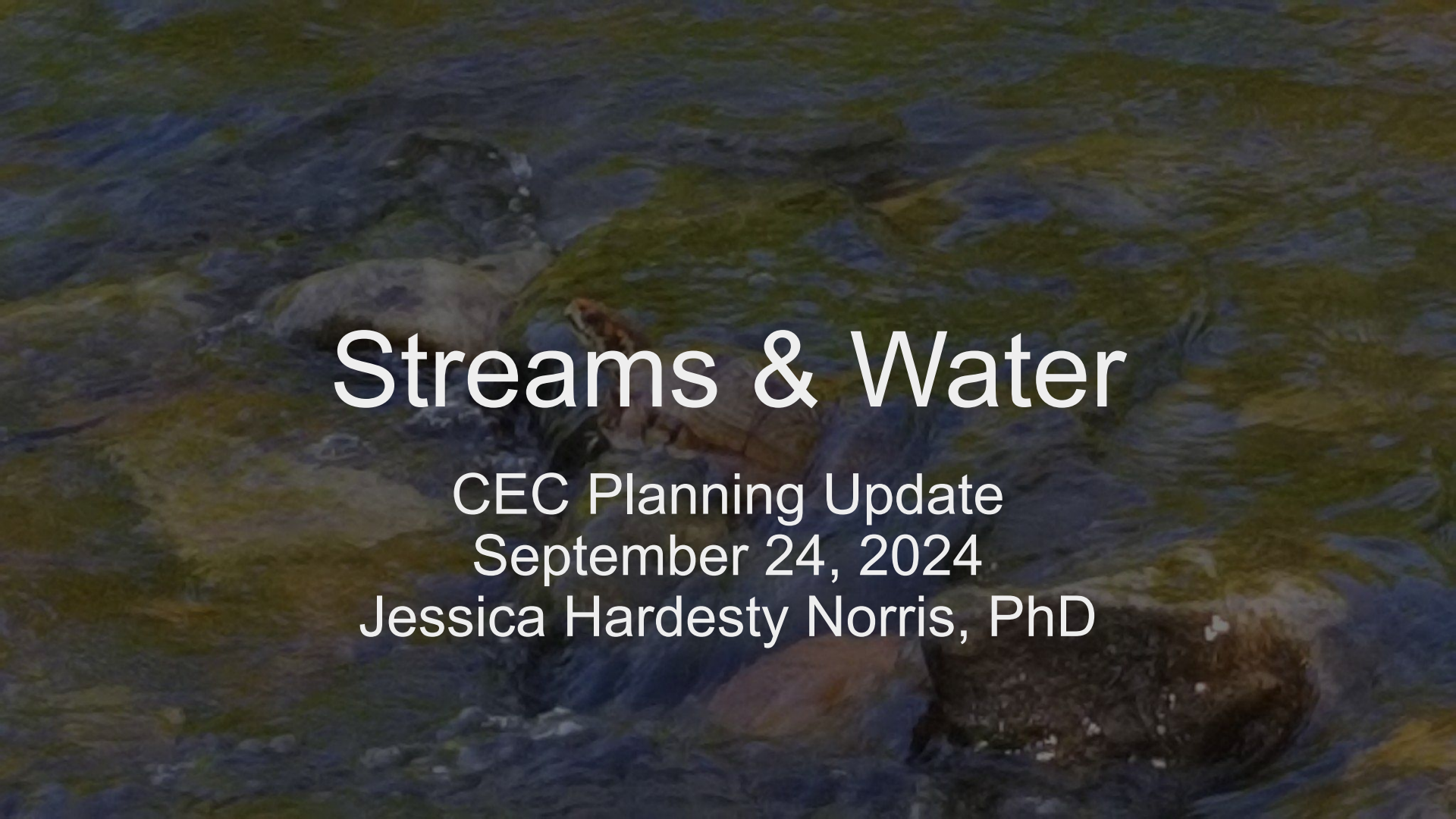


Streams & Water

CEC Planning Update
September 24, 2024
Jessica Hardesty Norris, PhD

A Goal NR-1. Increase climate resilience and carbon sequestration potential of public and private lands.

Strategy NR-1.1: Increase the accessibility and quality of habitat for native plants and animals.		
NR-1.1.1	Manage publicly-owned natural areas to enhance and maintain diverse native communities.	Priority
NR-1.1.2	Establish and effectively manage native-habitat corridors along trails and utility easement areas to restore and maintain landscape connectivity.	Priority
NR-1.1.3	Create an ordinance that establishes a Transfer of Development Rights program to protect undeveloped lands for land conservation and/or agriculture.	Priority
NR-1.1.4	Support the Urban Forest Master Plan to identify programs and suitable locations to maintain and expand Columbia's urban tree canopy.	Priority
NR-1.1.5	Update current tree preservation requirements to protect tree root systems and large legacy trees during construction.	Priority
NR-1.1.6	Assess whether or not to purchase and preserve greenspace in and surrounding the city by quantifying the equitable, environmental, and economic benefits, along with the costs of maintaining and owning the property.	Other
NR-1.1.7	Require the use of native plants in landscaping at City-owned properties.	Other
NR-1.1.8	Update current development regulations to recommend or require the use of appropriate nativetrees and plants for new- and re-development.	Other
NR-1.1.9	Identify underutilized paved areas and incentivize conversion to sustainable green space.	Other

A Goal NR-3. Reduce negative impacts from stormwater runoff and flooding.

Strategy NR-3.1: Improve stormwater management		
NR-3.1.1	Implement strategies to mitigate stormwater impacts due to development and redevelopment of properties currently exempted from stormwater management requirements.	Priority
NR-3.1.2	Build more permeable parking lots and driveways and use more recycled materials with concrete.	Other
Strategy NR-3.2: Minimize risks to flood-prone areas.		
NR-3.2.1	Mine existing data sources (e.g., FEMA Risk Maps) to identify areas prone to flooding.	Priority
NR-3.2.2	Perform detailed studies to identify areas that are at high risk for flooding and may be a prospect for property acquisition or mitigation.	Priority
NR-3.2.3	Increase stream buffer requirements to provide additional flood water storage and minimize property damage due to erosion and flooding.	Priority
NR-3.2.4	Perform a flood risk assessment using historical data and future precipitation forecasts to identify areas and critical infrastructure vulnerable to flooding.	Priority

CAAP: Which can be advanced in Comprehensive Planning?

Goal NR - 1 Climate Resilience
Strategy NR-1.1: Increase the accessibility and quality of habitat for native plants and animals.

- NR-1.1.2 Establish and effectively manage native-habitat corridors along trails and utility easement areas to restore and maintain landscape connectivity.
- NR-1.1.3 Create an ordinance that establishes a Transfer of Development Rights program to protect undeveloped lands for land conservation and/or agriculture.
- NR-1.1.6 Assess whether or not to purchase and preserve greenspace in and surrounding the city…

Goal NR - 2 Stormwater & Flooding Strategy
NR-3.1: Improve stormwater management

- Implement strategies to mitigate stormwater impacts due to development and redevelopment of properties currently exempted from stormwater management requirements.
- Build more permeable parking lots and driveways and use more recycled materials with concrete.

NR-3.2: Minimize risks to flood-prone areas

- Mine existing data sources (e.g., FEMA Risk Maps) to identify areas prone to Flooding.
- Perform detailed studies to identify areas that are at high risk for flooding and may be a prospect for property acquisition or mitigation.
- Increase stream buffer requirements to provide additional flood water storage and minimize property damage due to erosion and flooding. Perform a flood risk assessment using historical data and future precipitation forecasts to identify areas and critical infrastructure vulnerable to flooding.

Process for SWM Recommendations

Understand water management & how it fits in ordinance & comprehensive planning

Understand CoMo & Boone County's stated policies

Understand staff priorities

List and prioritize recommendations

Our Boone County

OUR COMMUNITY. OUR FUTURE. BOONE COUNTY MASTER PLAN

Open House #3 (Online)

August 21, 2024 – Webinar to Start at 7:00pm

CED-SOLUTIONS
community and economic development

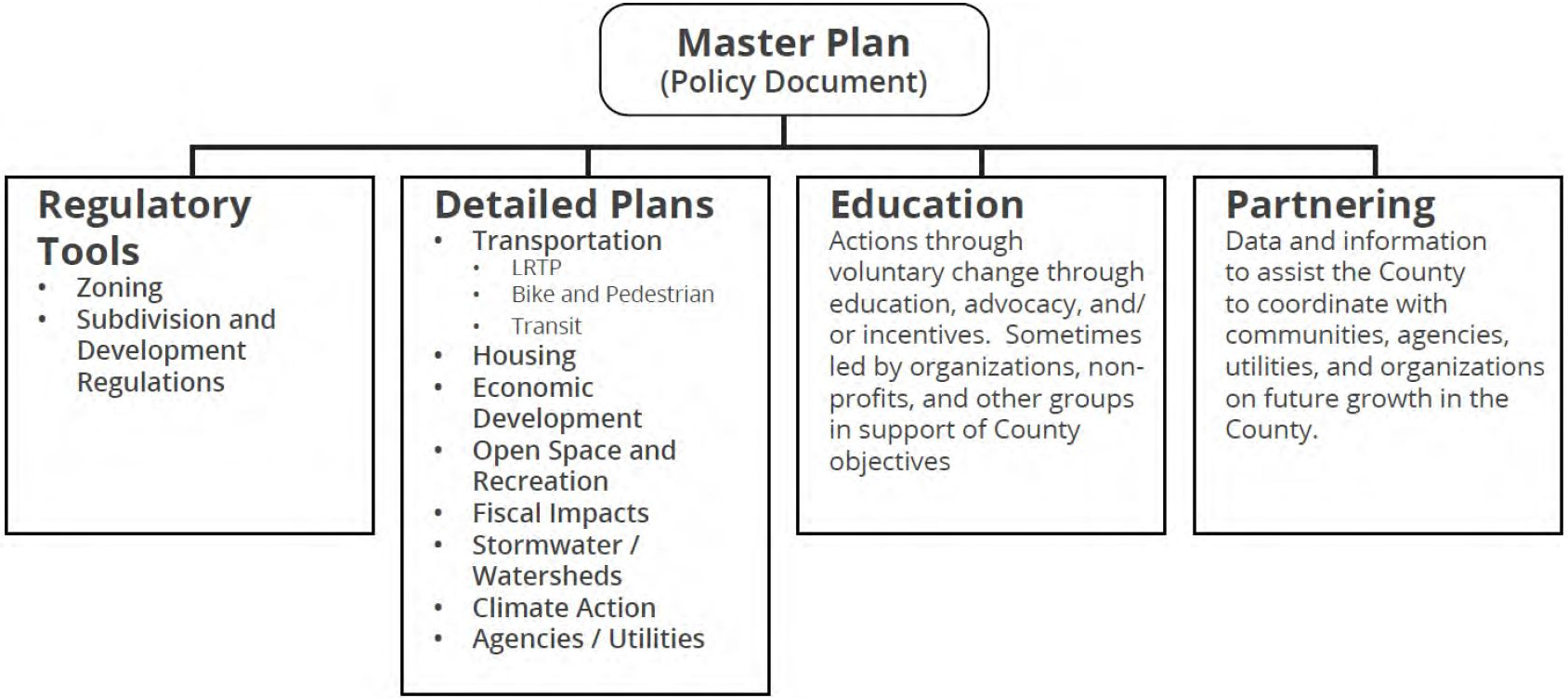
Biohabitats

The i5 Group
Urban & Community Planning | Public Affairs | Landscape Architecture

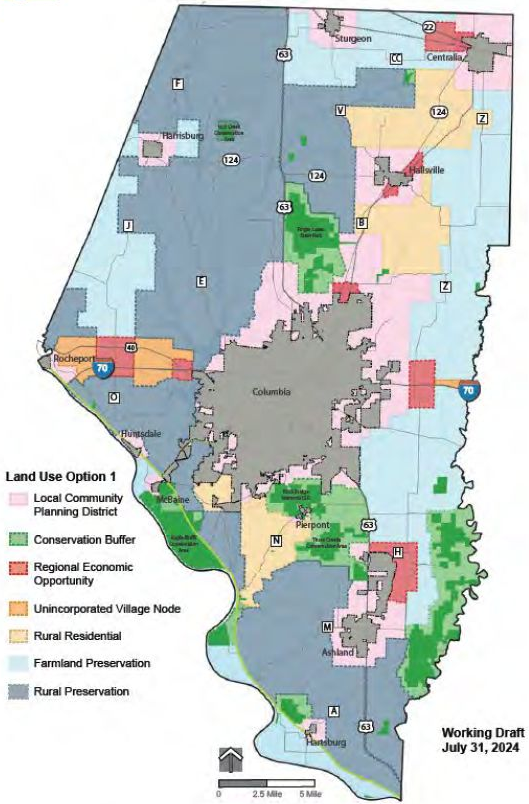
LOCHMUELLER GROUP

SAINT LOUIS UNIVERSITY
Urban Planning & Development Program
COMMUNITY PLANNING LAB

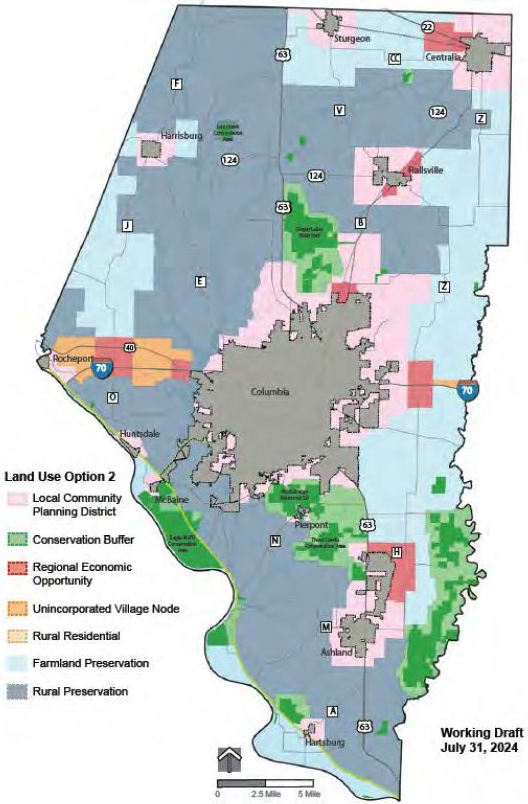
Role of the Master Plan



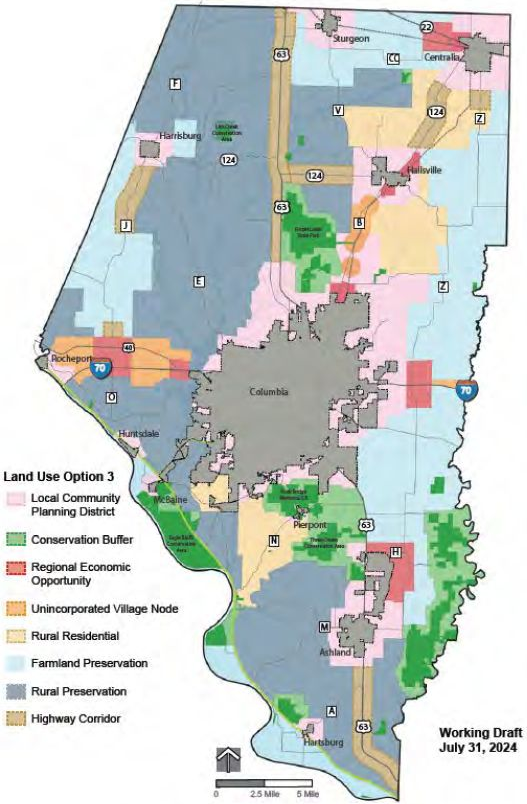
Draft Land Use Concepts



OPTION 1



OPTION 2



OPTION 3

PRINCIPLE #5

NATURAL RESOURCES

Conserve, protect, and restore Boone County's natural habitats and ecologically significant areas.

VISION METRIC	Increase the amount of preserved land in unincorporated Boone County to 30,000 acres from the existing 20,000 acres.

GOALS:

1. Preserve and protect Boone County's natural habitats and ecologically significant areas.

a. Utilize habitat cores and hub analysis to prioritize voluntary conservation easement locations. Consider the creation of a countywide Conservation and Parks Master Plan.
b. Evaluate conservation precedents for feasibility in Boone County, including supplemental conservation easement funding and transfer of development rights (TDR) programs.
c. Encourage the expansion of park and conservation area boundaries through local and state partners and agencies.
d. Evaluate a Sensitive Area zoning overlay in 'Conservation Buffer' land use areas to supplement existing stream buffer, land disturbance, wetland, and sinkhole protections.

2. Restore ecological habitats.

a. Regularly review site development standards for current best practices regarding vegetation preservation and landscaping requirements.
b. Encourage residential property owners, especially on parcels greater than one acre, to restore or preserve natural habitats instead of having lawns or mono-cultures.

3. Continue to improve water quality through watershed scale planning.

a. Continue the ongoing Bonne Femme Watershed Project.
b. Continue the ongoing Hinkson Creek Collaborative Adaptive Management (CAM) process.
c. Evaluate other watersheds for planning initiatives as part of a countywide Stormwater Management Plan.

4. Reduce future flood-related risks.

a. Regularly review and update the stormwater and floodplain ordinances and stormwater design manual in the context of the increasingly changing intensity of rainfall events.
b. Develop a countywide Stormwater Management Plan to identify flood hazard areas and mitigation strategies (with an emphasis on areas outside of designated regulatory (FEMA) flood hazard maps).

CoMo Code: Special Areas, Stormwater, Development

No subdivision where “a finding by the council that a proposed subdivision or development poses a threat to the safety, health and general welfare of inhabitants of the land or surrounding areas due to flooding, improper drainage, steep slopes, rock formations, adverse earth formations, topography, utility easements or other adverse conditions.”

Columbia's Wastewater and Stormwater Integrated Management Plan

Phase 2 Vision and Update Approach

JULY 2024

city of Columbia
Sewer & Stormwater Utilities

https://www.como.gov/utilities/sewer/sewer-imp/

The Phase 1 Plan is Memorialized in the City's Wastewater Discharge Permit and Stormwater Permit (MS4)

- MDNR considers the Phase 1 Plan in current and future regulatory decisions
- Annual updates and communication with the regulatory agencies when the plan changes
- If the City does not make reasonable progress with identified actions, MDNR's support for the IMP will cease

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

city of
Columbia
Sewer & Stormwater Utilities

Community Input will Continue to Inform Phase 2 Planning Priorities

Environmental Objectives

Social Objectives

Economic Objectives

- ✓ Protect Public Health and Safety
- ✓ Improve Quality of Life
- ✓ Improve Water Quality in City Streams
- ✓ Achieve Regulatory Compliance
- ✓ Provide Sustainable Services for the Future

Please take our survey!

CoMo.gov/IMPsurvey

Integrated Management Plan Open House
August 21, 2024
5:30 – 7:30
ARC, 1701 West Ash

Greater Bonne Femme Watershed Initiative

We are now launching the Greater Bonne Femme Watershed Initiative (GBFWI), which takes a broad approach to restoration and protection of water quality in the GBFW. The overall goal of the GBFWI is to create a watershed management plan that will be adopted by Boone County, the City of Columbia and the City of Ashland. Working with project partners, we will integrate four conceptual pillars into the language of the plan.

Four Pillars of the GBFWI

Pillar One, Implementation of the Watershed Based Plan (WBP)

This involves voluntary installation of best management practices (BMPs), such as cover crops, by agricultural landowners in the watershed and installation of demonstration projects. BMPs will increase the amount of living vegetation on the ground to slow, spread, and infiltrate runoff. Demonstration projects will allow the public to view the best management practices in action.

Pillar Two, Creation of a Watershed-wide Wildlife Habitat Restoration Project

The County will collaborate with agency partners, including the Missouri Department of Conservation and private wildlife groups, to work with landowners in the watershed to improve wildlife habitat on their property. Wildlife habitat restoration is projected to have similar water quality benefits to installation of agricultural best management practices.

Pillar Three, Outreach and Communication

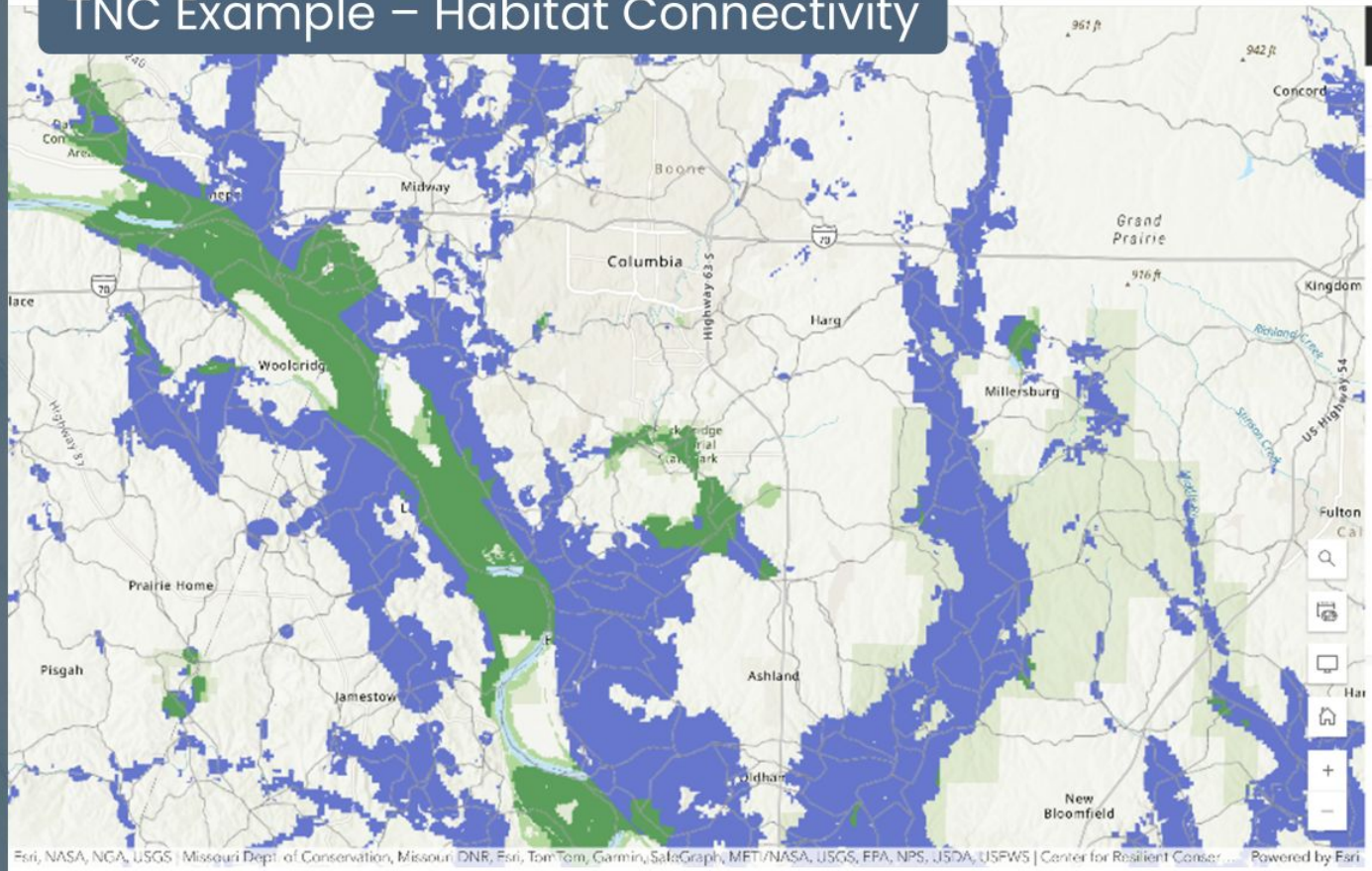
This element is more focused on residential landowners than the WBP, encouraging protection of riparian corridors and the use of more native vegetation in landscaping.

Pillar Four, One Health Integration

Human health (the benefits of spending time outdoors), environmental health (the benefits of eating local food) and animal and plant health (how is the ecosystem doing?) will be the focus of this element, incorporating a variety of concepts from regenerative agriculture to increasing health benefits from recreation in the GBFW.

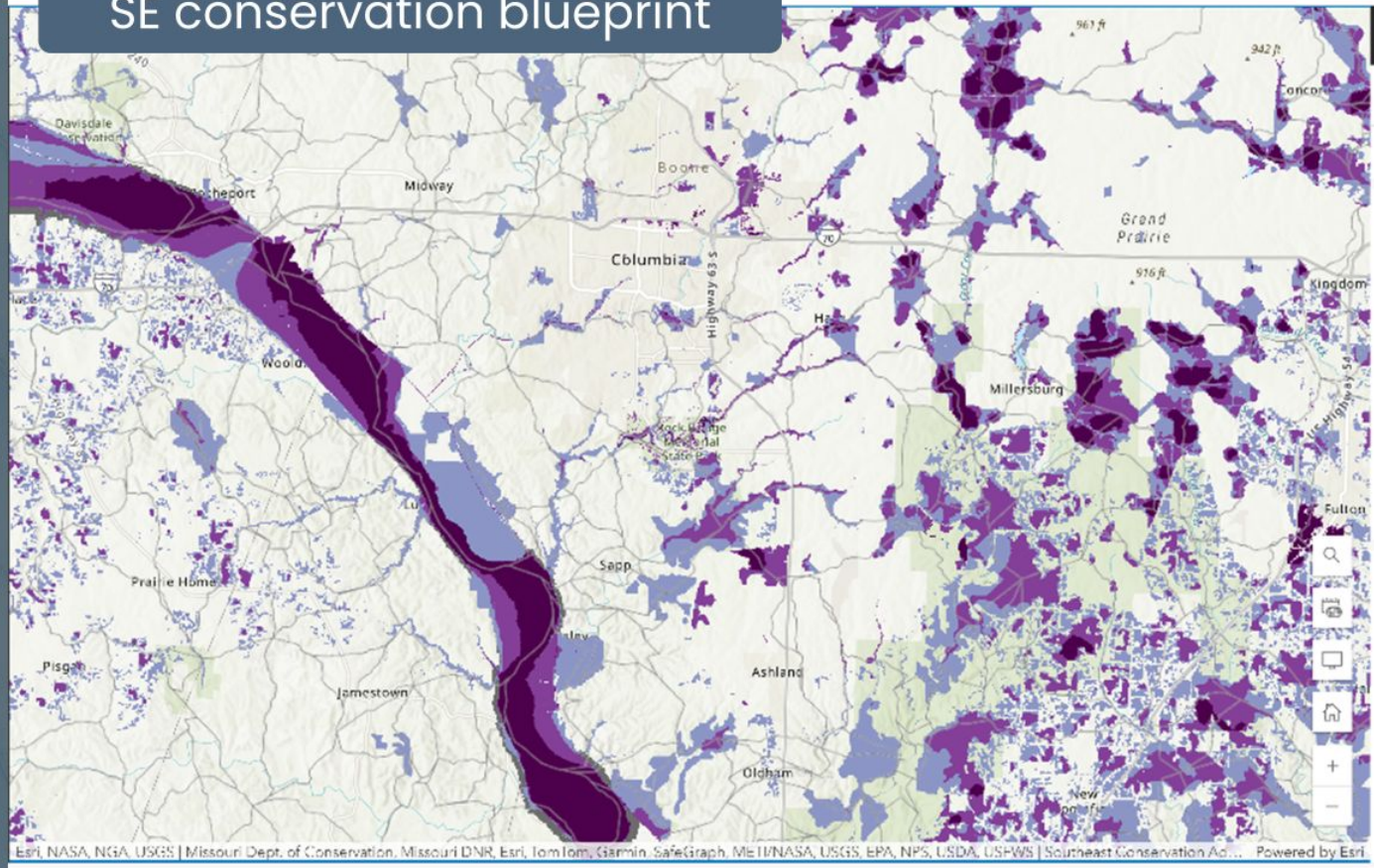
GIS Process Examples

TNC Example – Habitat Connectivity



GIS Process Examples

SE conservation blueprint



Parking lot

- Did the 3.2.2 “detailed studies to ID high risk for flooding” happen? (25K in CAAP report) Maybe with the housing team?

Good Stewards-Natural Resources

Focuses on the natural areas that the City of Columbia manages, including parks and right-of ways.

- 2021 Progress: Good Stewards-Natural Resources completed the inventory and review of city-owned lands and land management practices to inform the development of a conservation management strategy.
- 2022 Priorities: Good Stewards-Natural Resources will continue to develop citywide sustainable land management guidelines for city-owned lands and explore pathways for their implementation.

Recommendations

- Create intermediary between R1 - special conservation zoning

Precedent: Charleston SC

03. Support land conservation around the edges of the Urban Growth Boundary, specifically along …XYZ

04. Develop a Greenbelt prioritization plan and work with surrounding jurisdictions to preserve more green spaces, particularly along the Urban Growth Boundary.

05. Create incentives for the use of conservation easements, including developing a toolkit for green space preservation.

06. Ensure land development regulations adequately protect the city's farms, prime soils for farming, natural resources and rural areas.

07. Continue to promote planning and zoning policies that align with the "living with water approach" outlined in the Dutch Dialogues Charleston study, including encouraging the use of green infrastructure in landscaping practices and stormwater management. Green infrastructure includes features such as bioswales, porous pavements, rain gardens, and wetland buffers; and other practices that leave existing natural features and ecosystems undisturbed.

08. Dedicate staff and resources to support collaboration between Stormwater Management, Parks and Planning to oversee preservation, creation and maintenance of green infrastructure.

11. Increase incentives and educational opportunities for residents to increase and maintain green infrastructure on their properties.

Sec. 29-5.1. - Subdivision standards.

Avoidance of sensitive areas

- Land analysis map by proposer
  - Stream Corridors are top of bank to top of bank
  - 25% over more than 10 feet
  - Floodway as defined by *FIRM*
- *Floodplain FP-O (floodplain overlay district)*