

Sustainable Pixels

A Residential Development Land Suitability Model
for Coastal Mississippi

July 29, 2009



GCCDS

Gulf Coast Community Design Studio

Mississippi State University College of Architecture Art + Design

CATEGORY: Location

Addresses the siting of projects to encourage investment in existing communities, protect natural areas from development, and promote alternatives to driving.

REQUIRED POINTS

ADDITIONAL POINTS

	CRITERIA	STANDARD		
A1	Infill Development	1 Site is in a developed area with added value for brownfield sites, renovation and adaptive reuse of existing buildings, previously developed sites, and other projects that reuse and revitalize existing neighborhoods	20	10
OR				
A2	Non-Infill Development	1 Site does not have a primary role in maintaining the ecological function and natural beauty of the area.	5	
		2 Site does not include wetlands, water bodies, or land within 100 feet of these areas; OR if the project site includes wetlands, water bodies, or land within 100 feet of these areas, and local, state, and federal laws permit impact to these areas, compensate for any wetland or water body loss with on- or off-site mitigation of equal or greater amounts. Limit impact to high quality wetlands and water bodies to 20% of their extent on site.	5	
		3 Site is adjacent to existing communities or in an area that does not excessively contribute to the use of automobiles for daily trips.	8	6
		4 Site is within walking distance of existing necessary retail and community services.	2	4

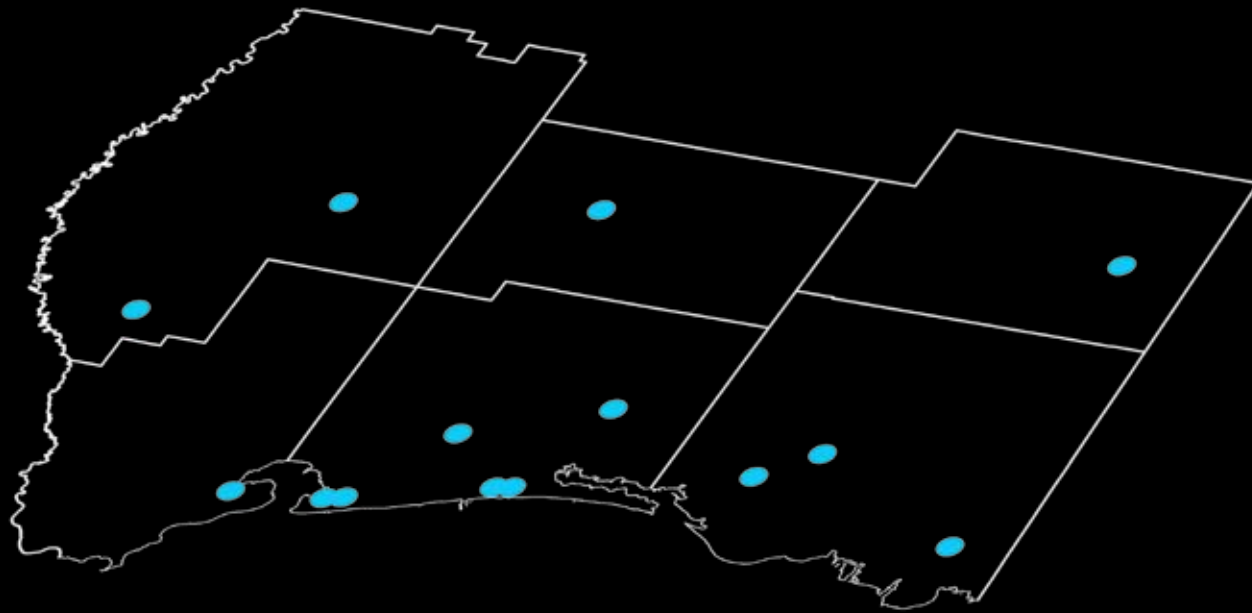
CATEGORY: Program

Ensures that the project is both compatible with and needed by the community.

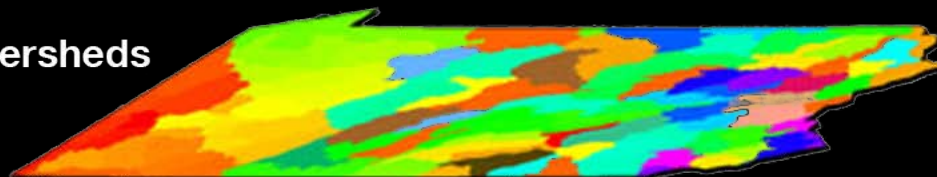
D	Neighborhood services	1 Program either includes on site or is within walking distance of services such as necessary shopping, playgrounds, public open spaces, community services, and public transportation.	5	5
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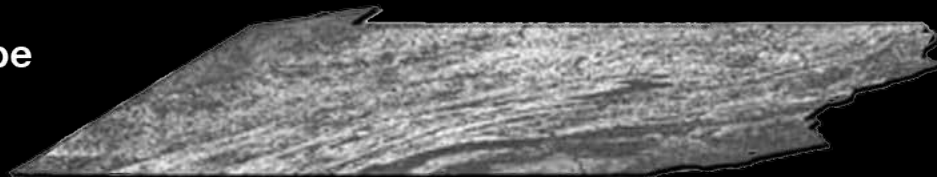
Land Trust for the Mississippi Coastal Plain



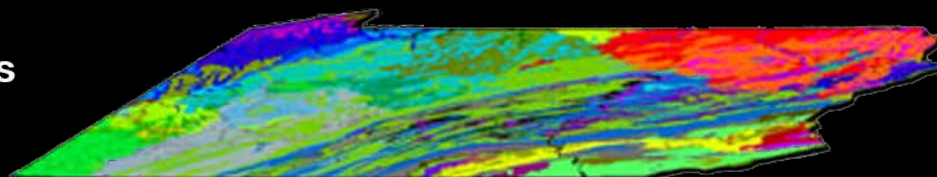
Watersheds



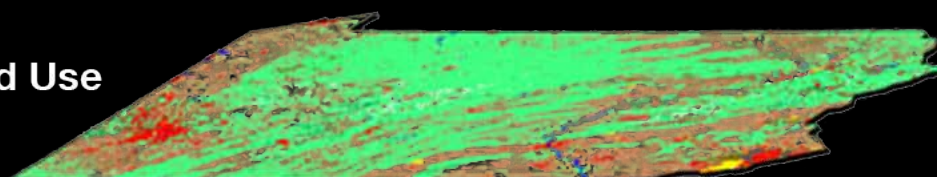
Slope



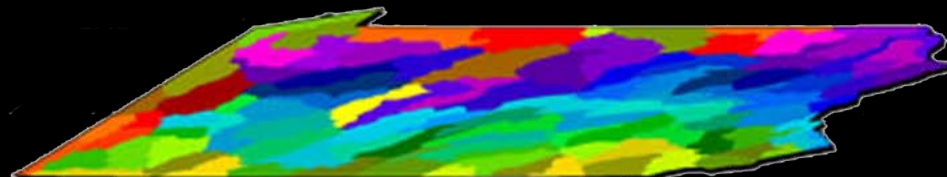
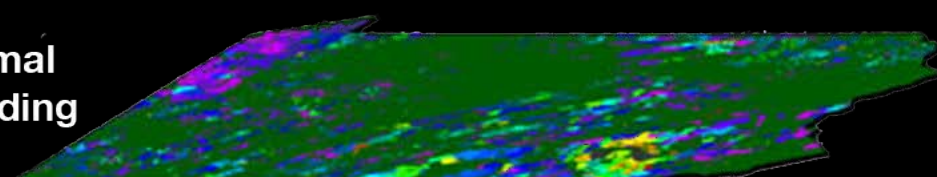
Soils



Land Use



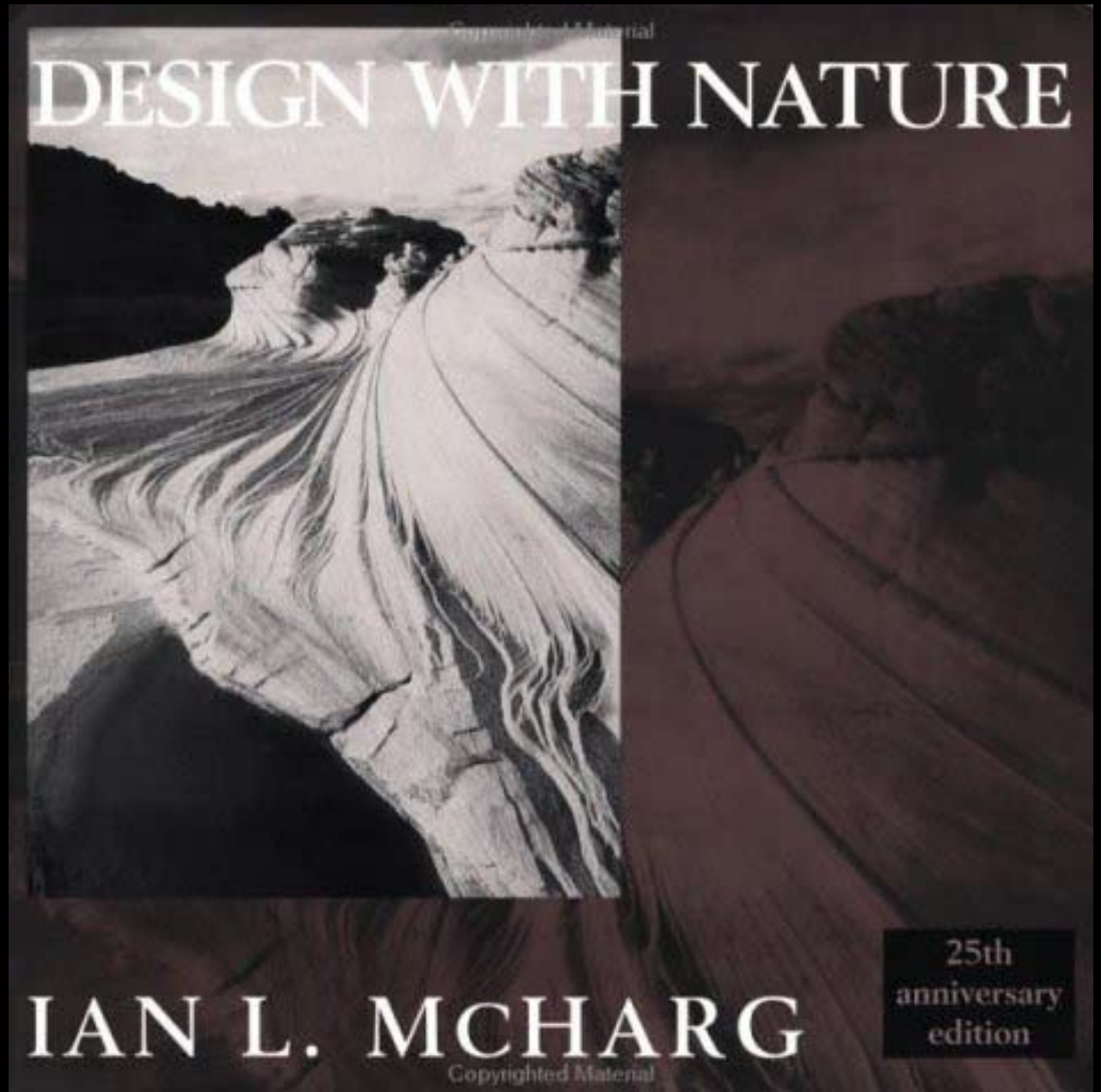
Animal Loading



Agricultural Pollution Potential



University of Pennsylvania

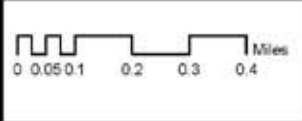


Proposed No Build Zones in East Biloxi

March 2008



- Areas not suitable for development
- Areas under considerable hazard advisement



Mississippi Comprehensive Resource Management Plan

Potential Land Use Suitability

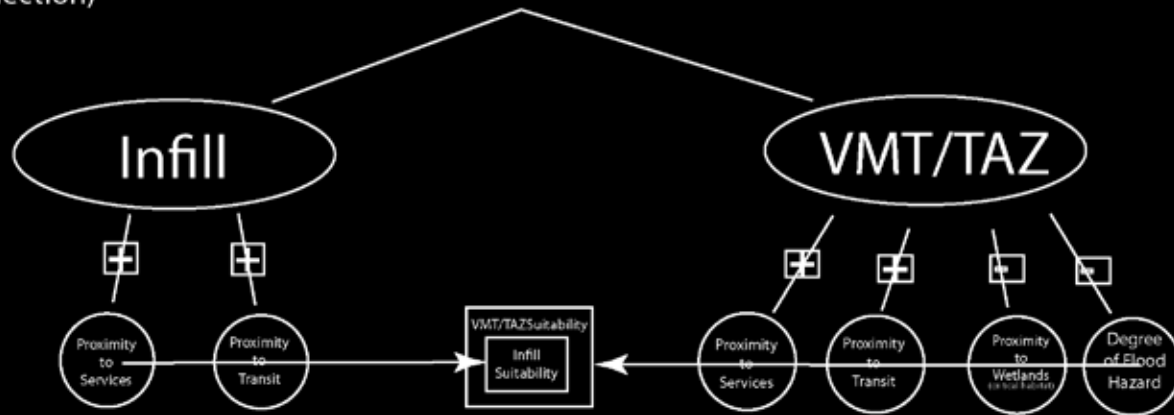


Suitability for Conservation/Restoration

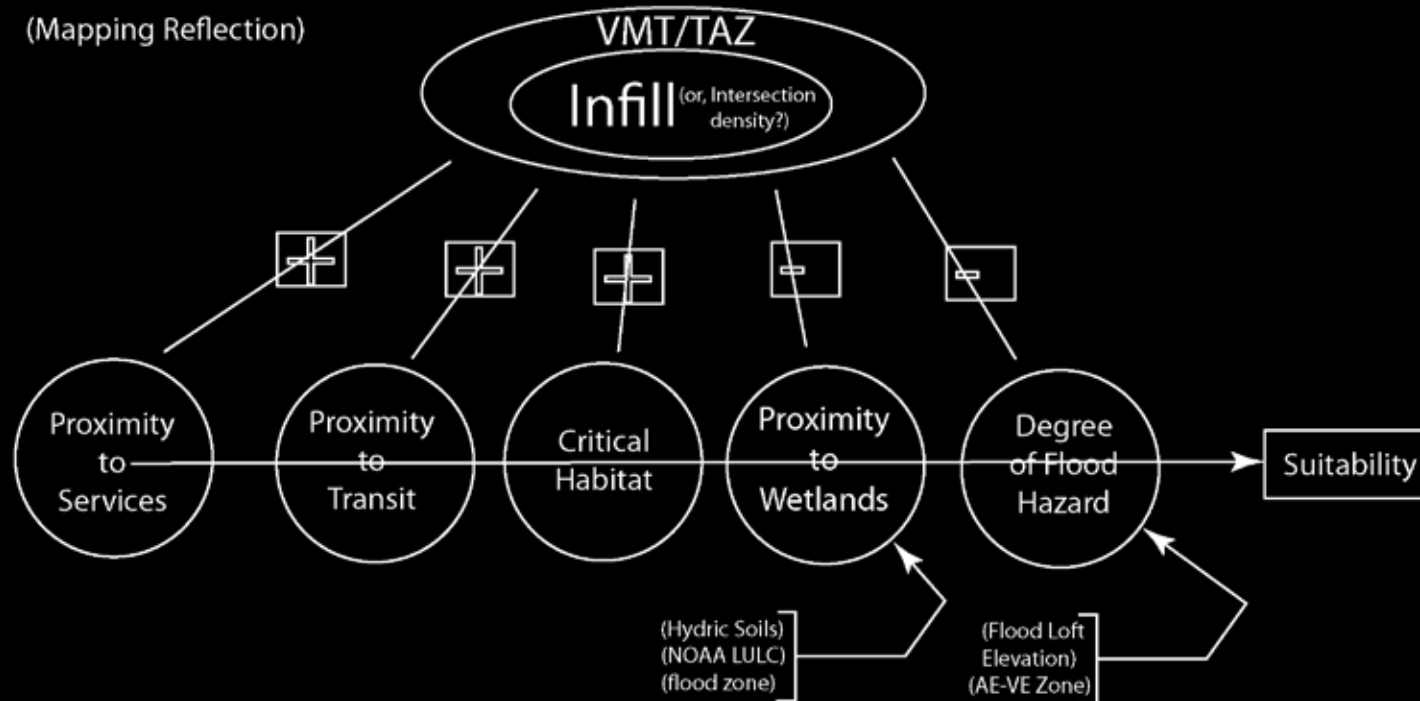
- 1 - Least important
- 2
- 3
- 4
- 5 - Neutral
- 6
- 7
- 8
- 9 - Most important



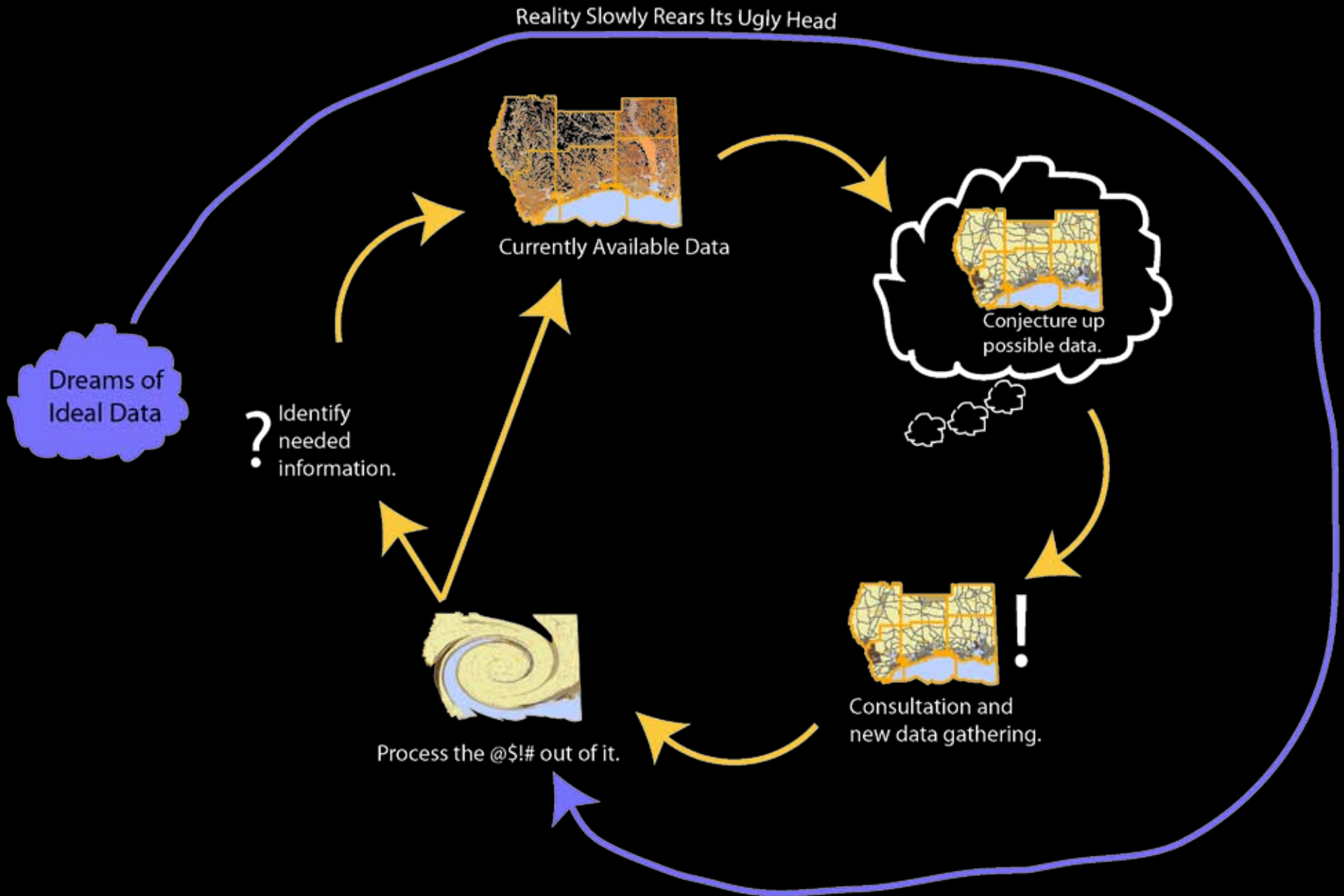
Visualization 1
(Standards Reflection)



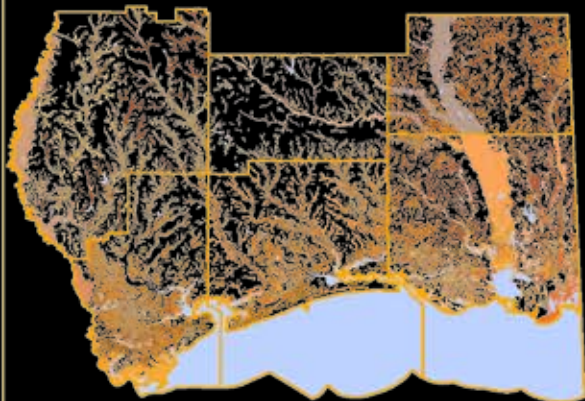
Visualization 2
(Mapping Reflection)



The Process



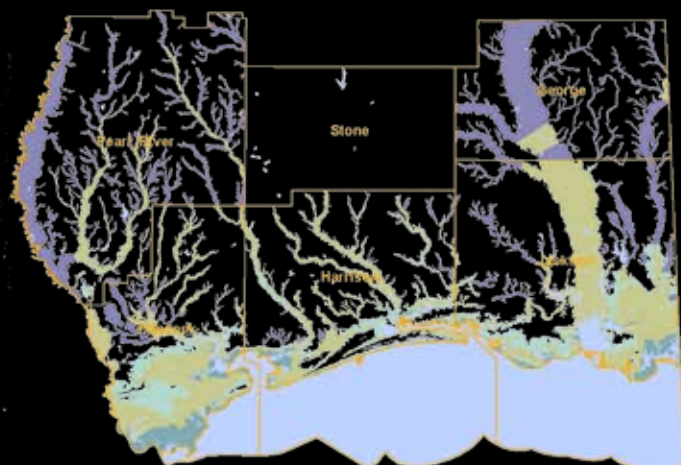
Hydric Soils (NRCS)



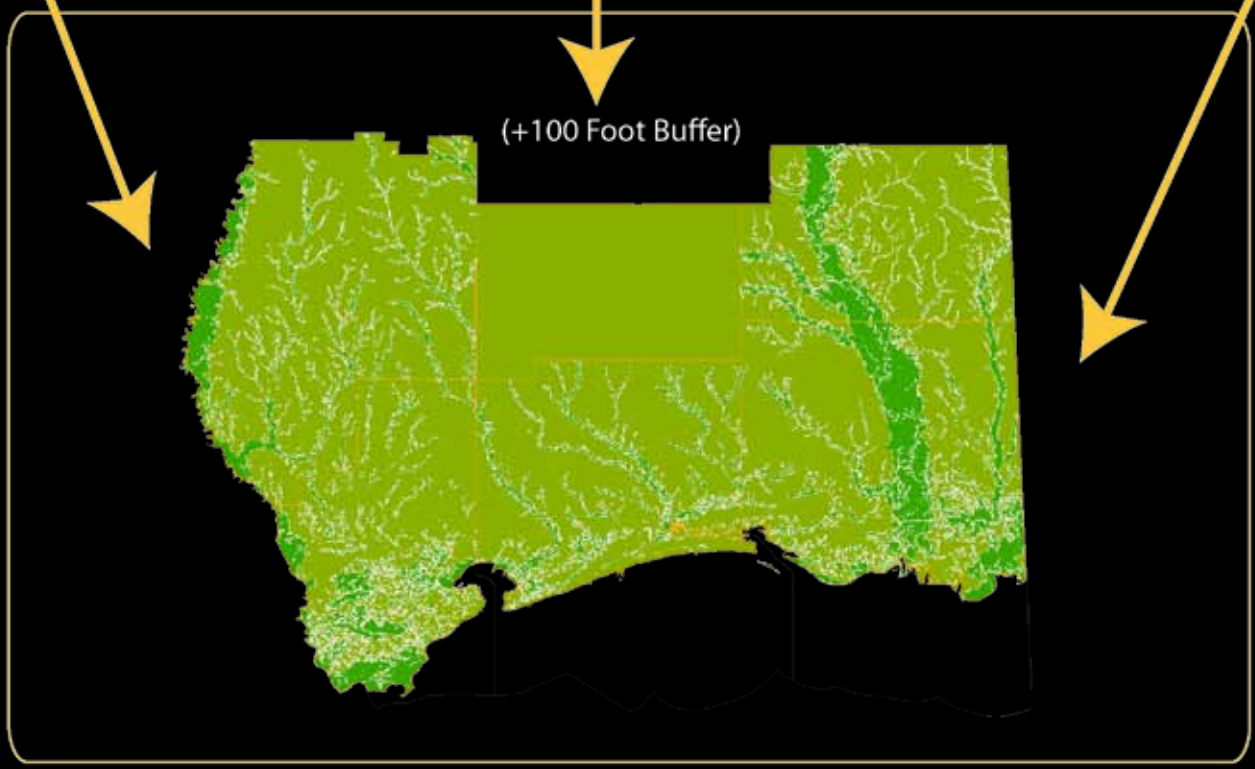
Coastal Land Cover (NOAA)



Flood Zones (FEMA)

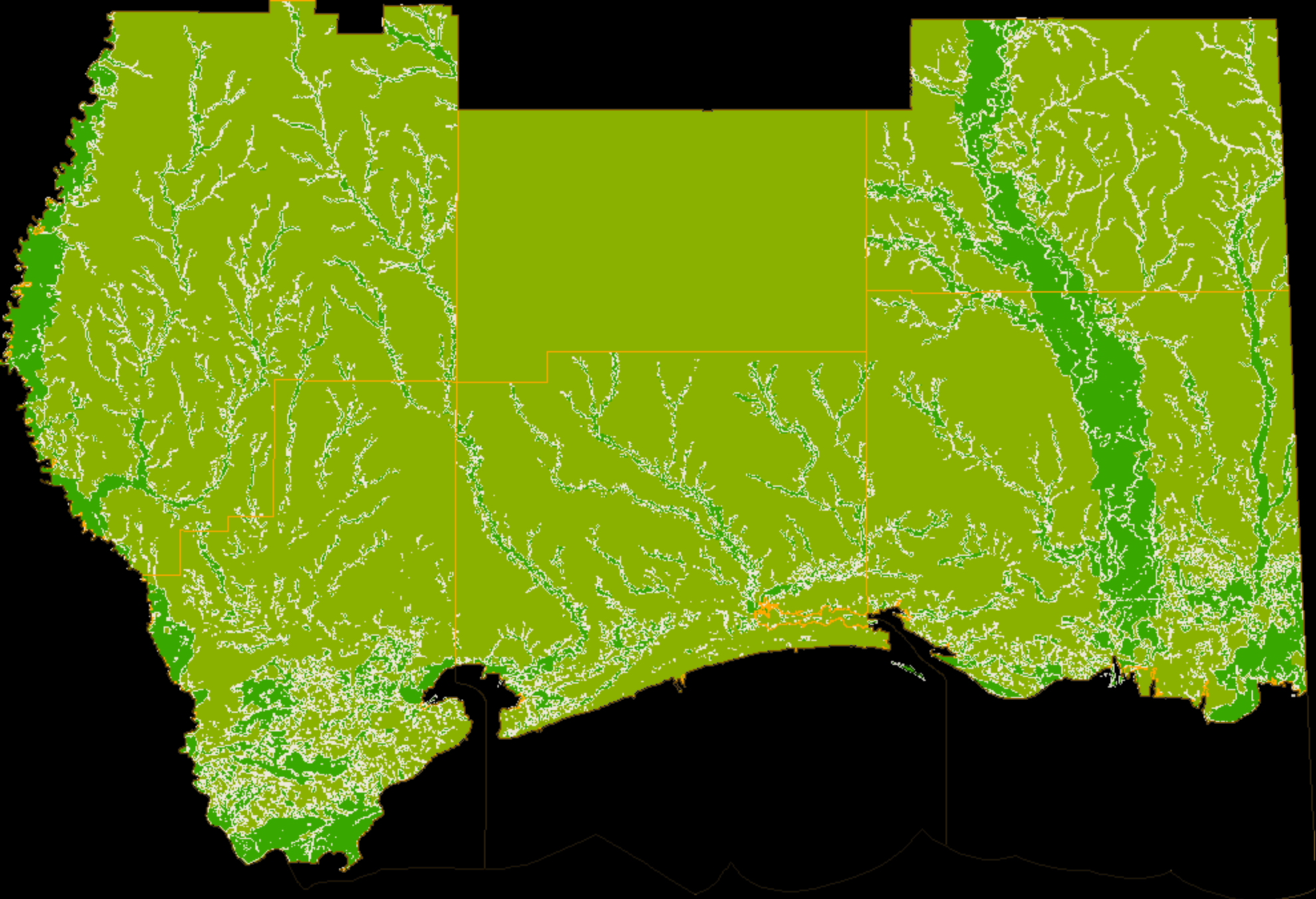


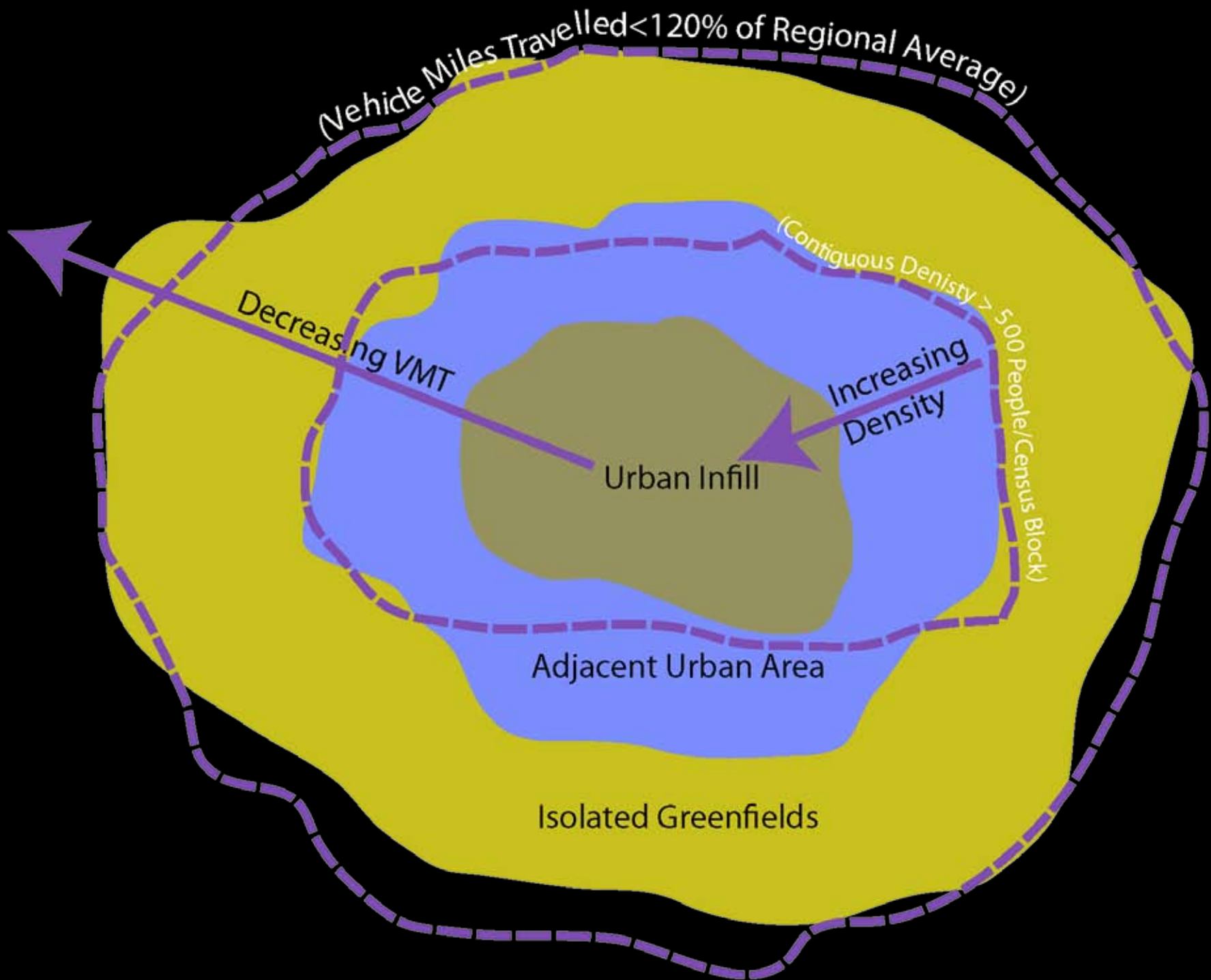
Data



Analysis

Wetlands

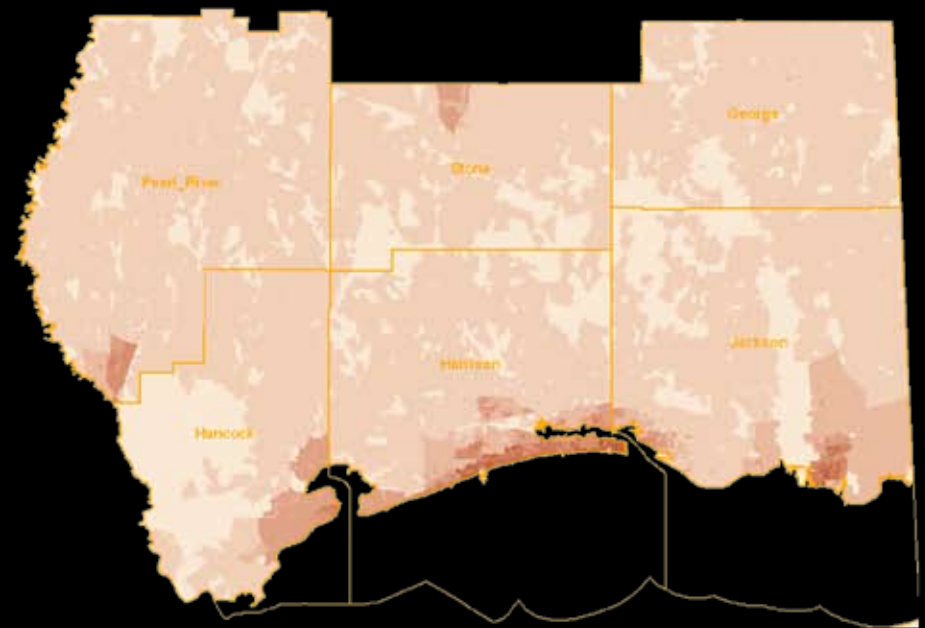




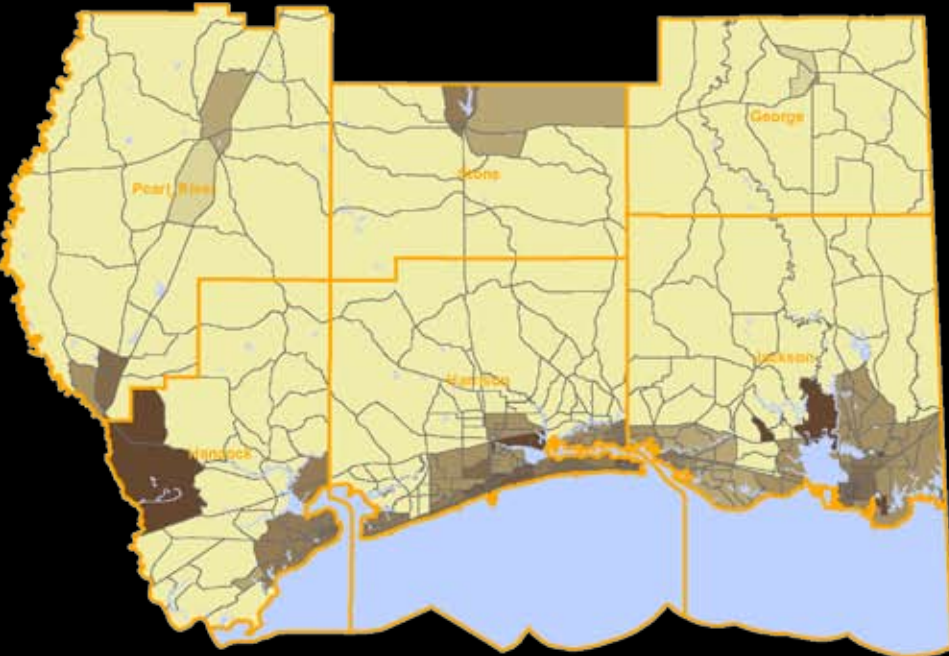
Gross Density Proxy for Infill



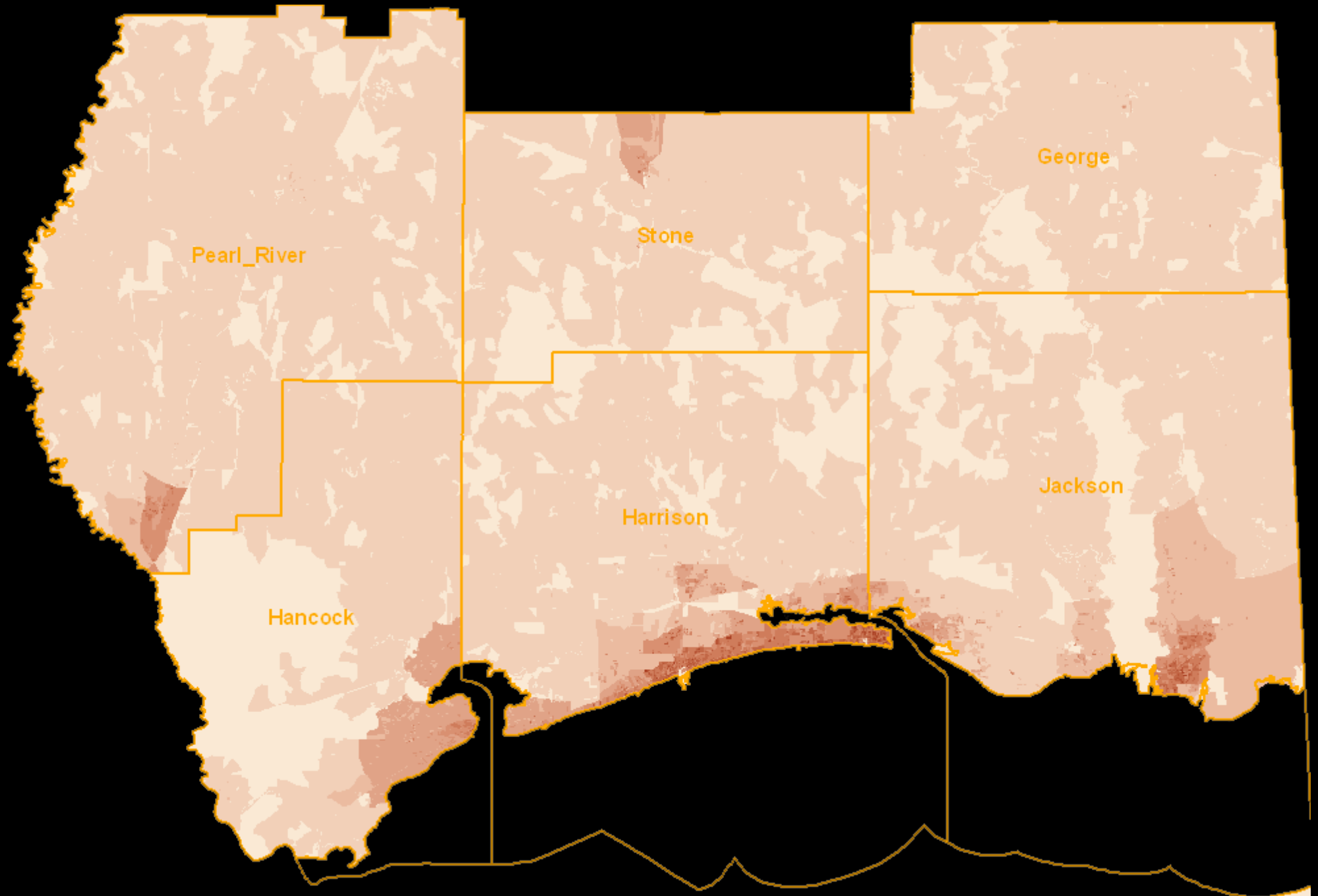
Potential Development Areas



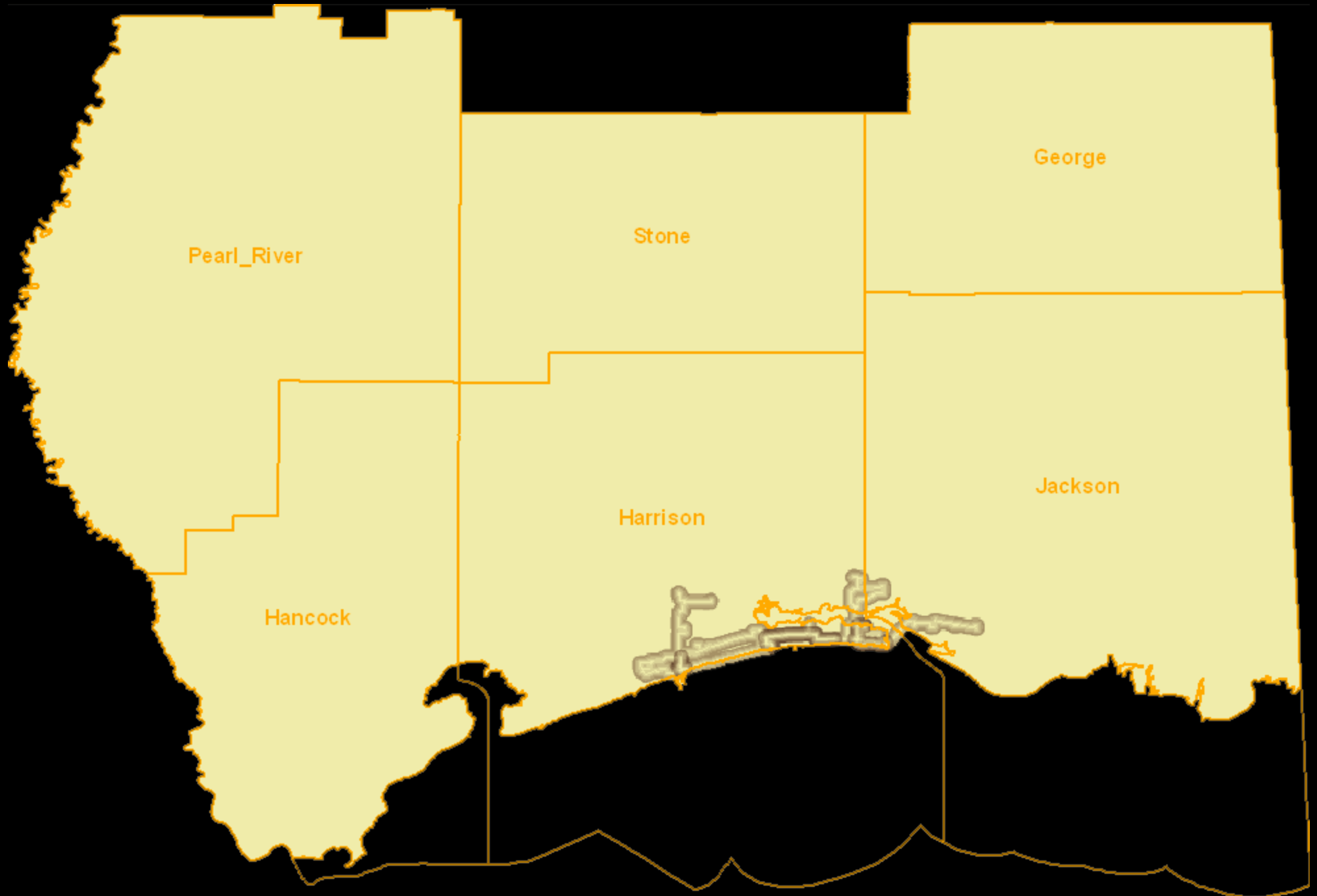
VMT Proxy for Adjacent Urban Development



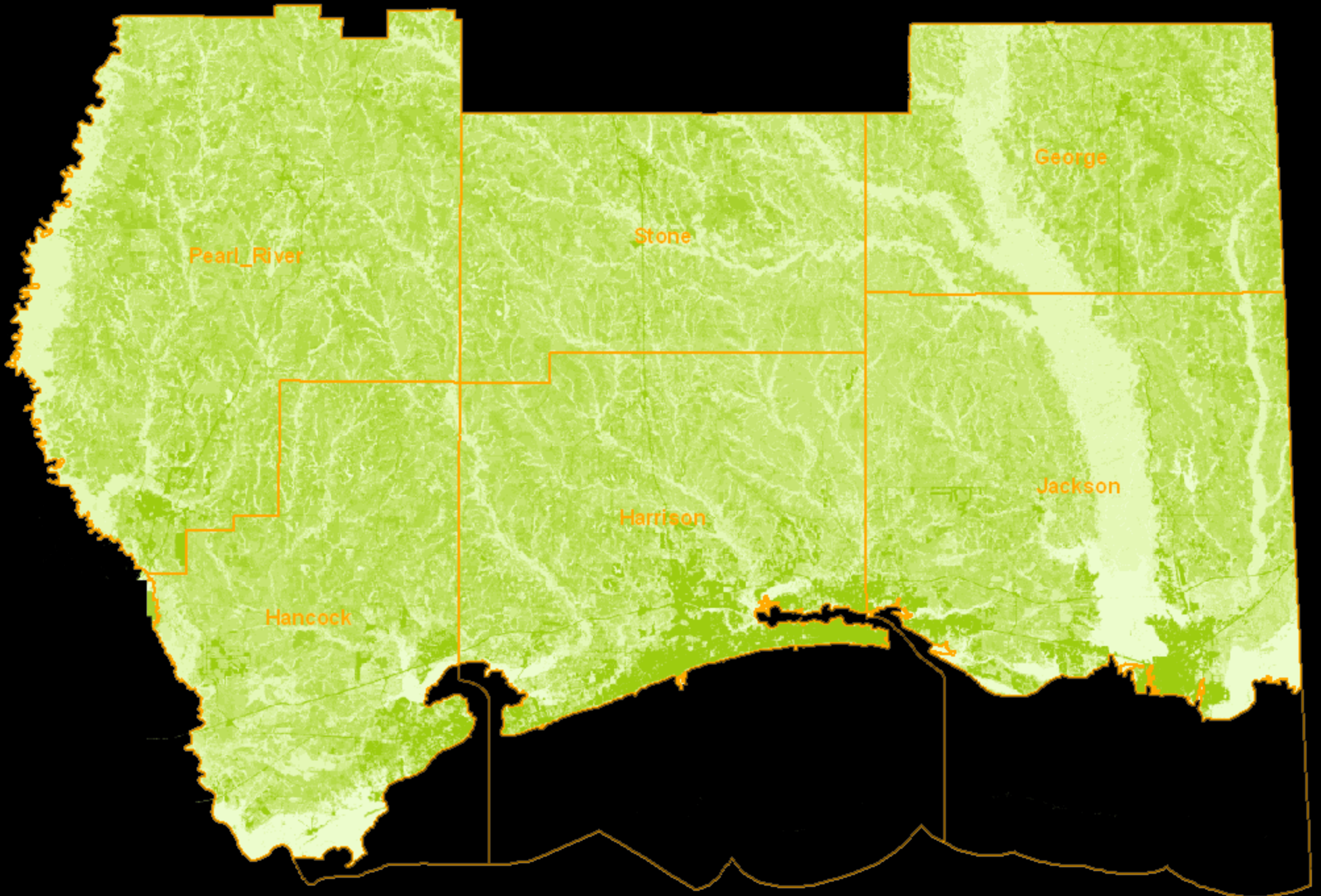
Gross Population Density / VMT



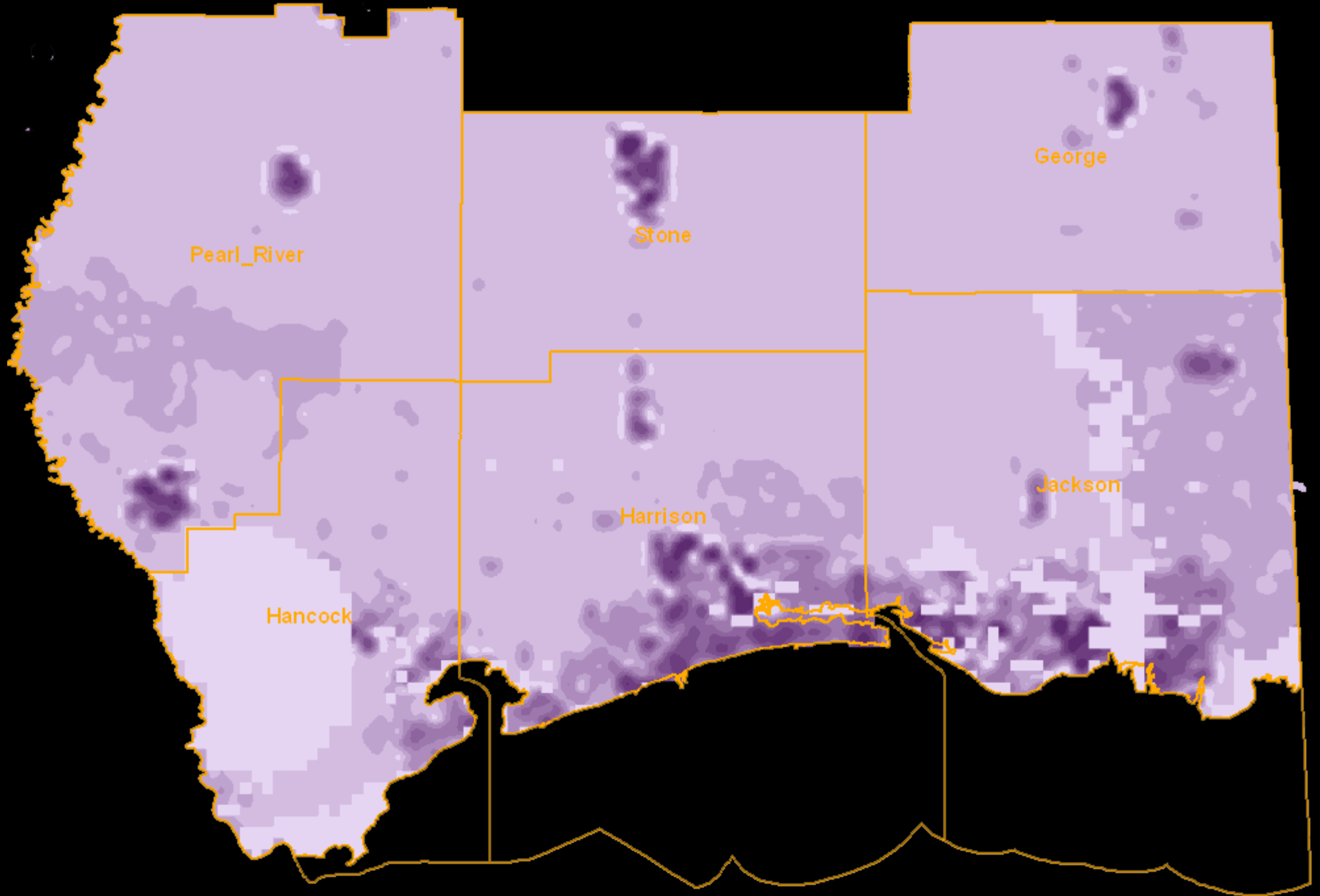
Proximity to Transit



Habitat Conservation Value

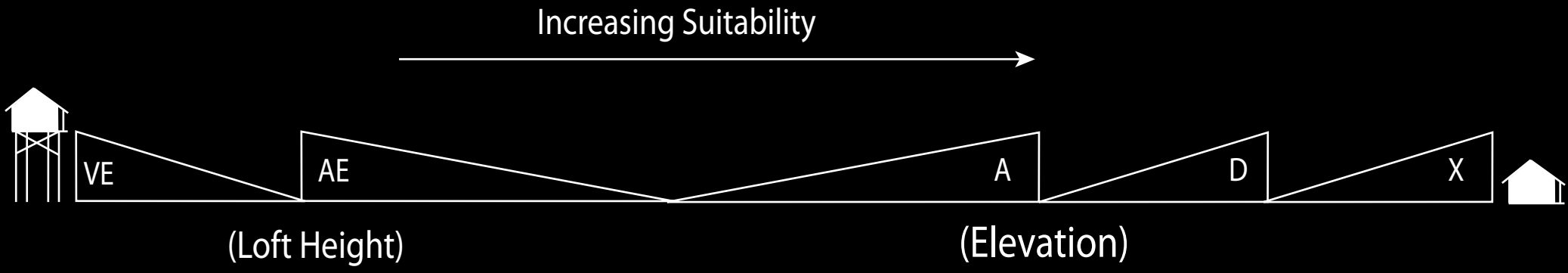


Proximity to Services

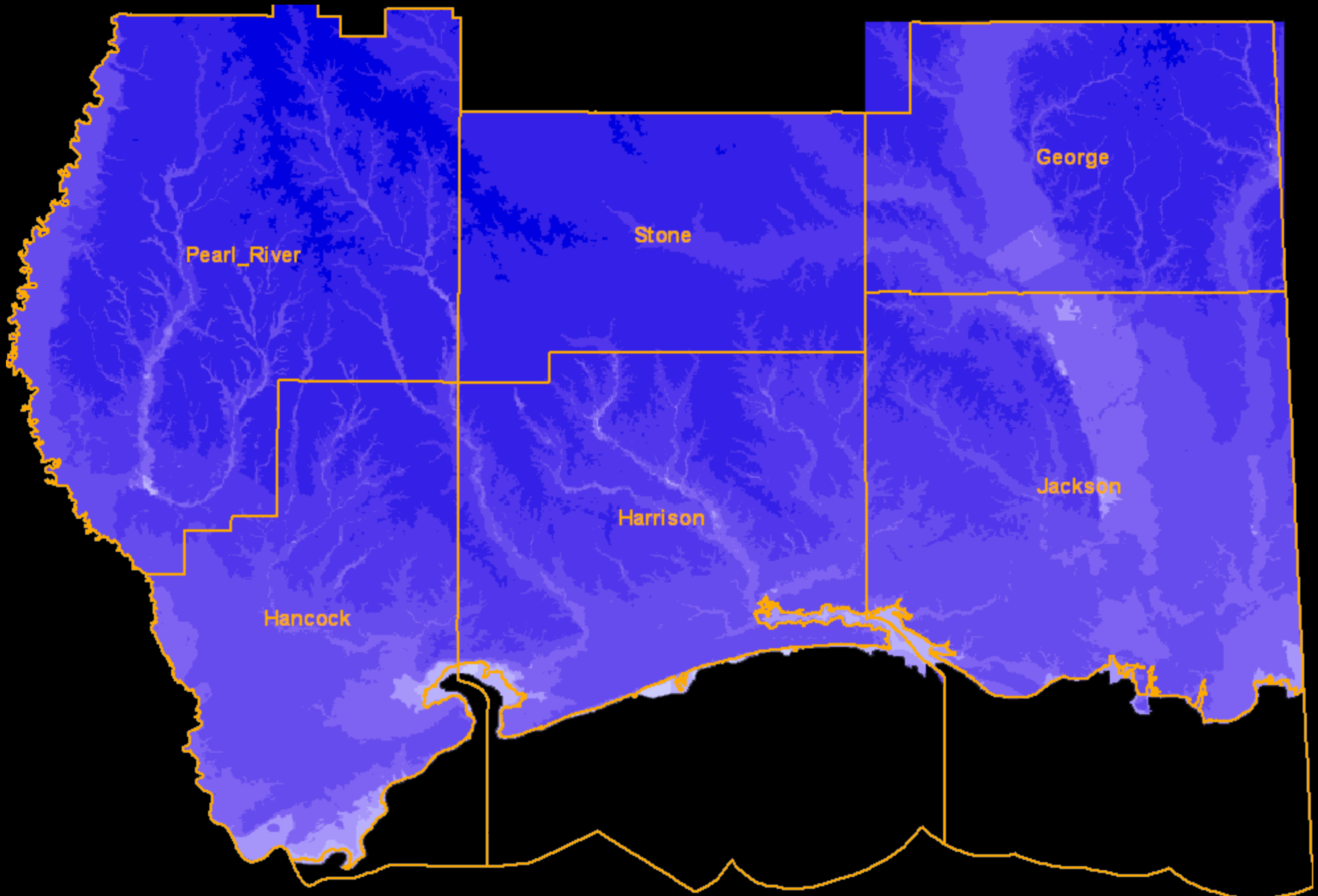


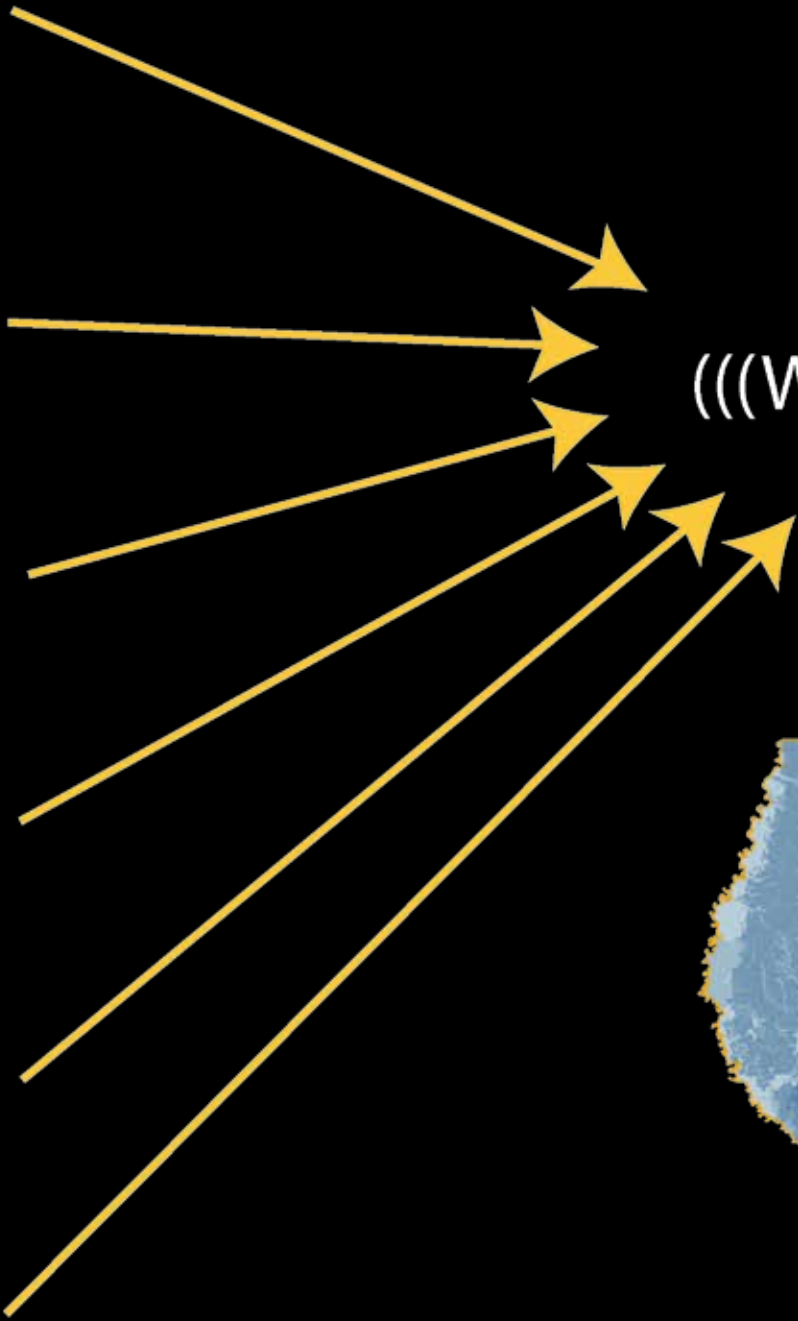


Flood Hazard Suitability Diagram



Flood Hazard





(((Weighting Scheme)))



Renaissance Guiding Principles

1. Create a range of housing types and affordable price levels.
2. Foster distinctive, attractive communities with a strong sense of place.
3. Encourage developments that strengthen existing communities.
4. Mix land uses.
5. Create walkable neighborhoods.
6. Encourage public and private collaborations shaped by community and stakeholder participation.
7. Make development decisions predictable, fair, sustainable, and cost effective.

8. Preserve open space, farmland, natural beauty, and critical environmental areas.
9. Consider transportation needs and encourage a variety of transportation options.
10. Take advantage of compact building design.
11. Create developments with low environmental impact.
12. Create energy efficient buildings incorporating Energy Star or greater standards.
13. Create healthy living spaces.



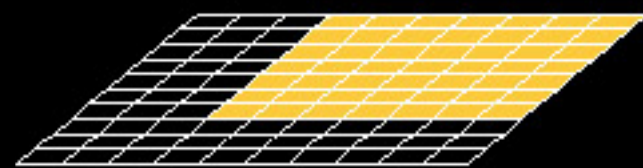
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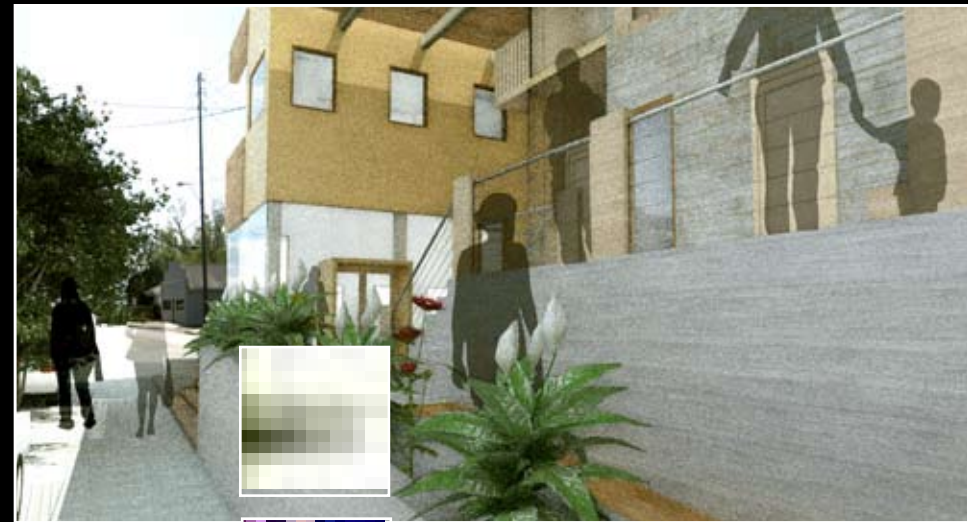
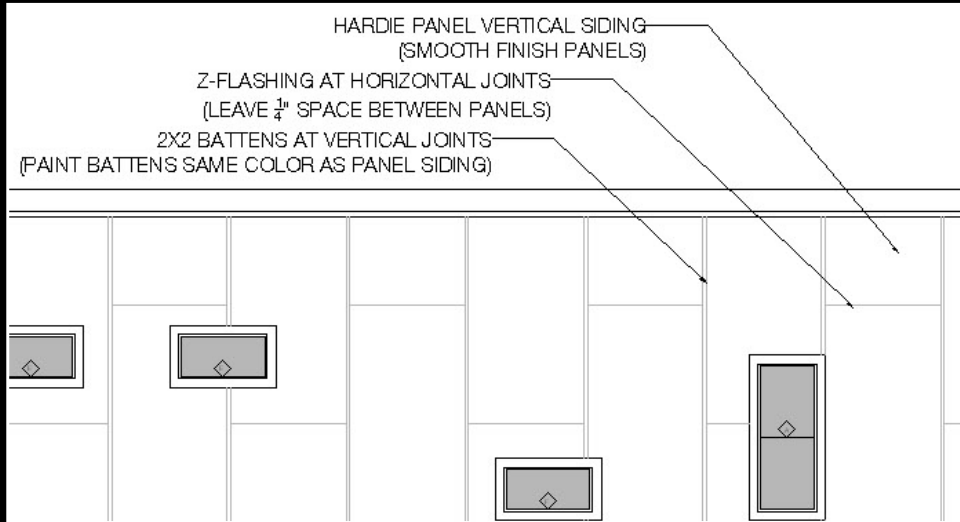


CAD

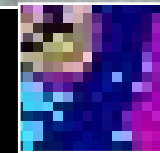
Vector

Raster

Photoshop



Points
Lines
Polygons



GIS



GIS

