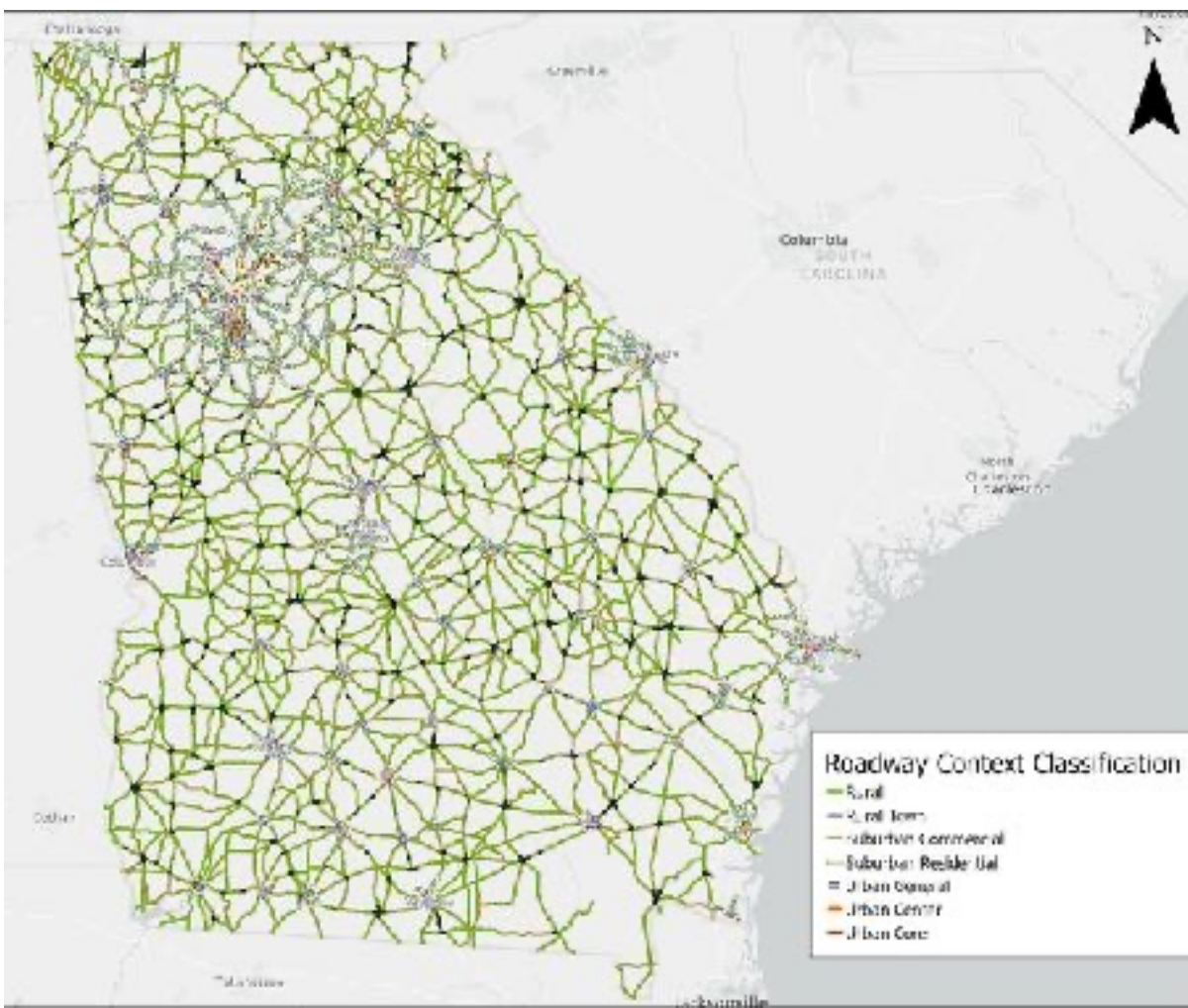


Context Classification of State Routes

A consistent, data-driven
framework for Georgia



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Today's Story

1

WHY?

Why context classification matters

2

WHAT?

Seven roadway context classes

3

HOW?

Uniform grid and hierarchical evaluation

4

WHERE?

Georgia sample locations

5

NEXT?

Model deployment and stakeholder engagement



Project Summary

The GDOT Context Classification project establishes a consistent, data-driven framework for categorizing roadway environments across the state.



Planning

Design

Operations

Safety

Supports context-sensitive decision-making across the project lifecycle

Why Context Matters

RURAL



C2: State HW 94

RURAL TOWN



THE RIGHT TRANSPORTATION SOLUTION DEPENDS ON THE SURROUNDING CONTEXT.

Why Context Matters

SUBURBAN RESIDENTIAL



THE RIGHT TRANSPORTATION SOLUTION DEPENDS ON THE SURROUNDING CONTEXT.

Why Context Matters

SUBURBAN COMMERCIAL



THE RIGHT TRANSPORTATION SOLUTION DEPENDS ON THE SURROUNDING CONTEXT.

Why Context Matters

URBAN CORE



THE RIGHT TRANSPORTATION SOLUTION DEPENDS ON THE SURROUNDING CONTEXT.

Putting Context Classification to Work

1

Planning and Investment

Prioritize investments

2

Design and Operations

Select appropriate improvements

3

Safety

Establish context-sensitive strategies accommodating roadway users

4

Statewide Analytics

Compare conditions statewide



CLASSIFY THE PLACE TO INFORM THE DECISION

Context Classification Schemes - NCHRP

Green Book 1-6	Rural			Urban						
SmartCode (2005)/ FID/CNU (2006)	Natural	Rural		Suburban			General Urban	Urban Center	Urban Core	Special District
Massachusetts (2006)	Rural Natural	Rural Developed	Rural Village	Low Density	Town Center	High Density	Urban Residential	Urban Park	Commercial Business District	
Pennsylvania/New Jersey (2006)	Rural			Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core	
California (2006)	Natural	Developing	Rural Main Street	Suburban Low Density		Suburban High Density	Urban Low Density		Urban High Density	
Florida (2007)	Natural	Rural	Rural Town	Suburban Residential		Suburban Commercial	Urban General	Urban Center	Urban Core	Special District
Minnesota (2008)	Natural	Rural	Rural Crossroad	Suburban Residential		Suburban Commercial	Urban Residential	Urban Commercial	Urban Core	Industrial Warehouse
Green Book 7/ NCHRP 655 (2011)	Rural		Rural Towns	Suburban			Urban		Urban Core	
Oregon (2010)			Rural Community	Suburban Fringe	Suburban Residential Corridor	Suburban Commercial Corridor	Urban Mix		Downtown/ Commercial Business District	
Washington (2010)	Rural			Suburban			Urban		Urban Core	
AASHTO TGD (2010)	Rural & Natural Areas		Rural Towns	Suburban			Urban		Urban Core	Industrial, Warehouse, or Port
Maryland (2010)	Rural		Traditional Town Center	Suburban		Suburban Activity Center	Urban Center		Urban Core	
Pennsylvania (2020)	Rural		Rural Towns	Suburban			Urban		Urban Core	
NCHRP 75-72 (2021)	Rural		Rural Towns	Suburban			Urban		Urban Core	Special Context



Seven Context Classes

Rural

Low-density, undeveloped, and primarily agricultural or natural landscapes.

Rural Town

Compact small-town development surrounded by rural land.

Suburban Residential

Predominantly residential areas with moderate development intensity.

Suburban Commercial

Commercial-focused suburban areas with concentrated business activity.

Urban General

Mixed-use urban areas with moderate density and activity levels.

Urban Center

High-density activity centers with significant residential, employment, or commercial presence.

Urban Core

Highest-density urban environments with concentrated development intensity.

Why Move Beyond Census Blocks?



- Boundary effects from irregular geography
- Inconsistent spatial framework
- Harder to repeat and scale statewide

The transition focuses on consistency, scalability, and repeatability.

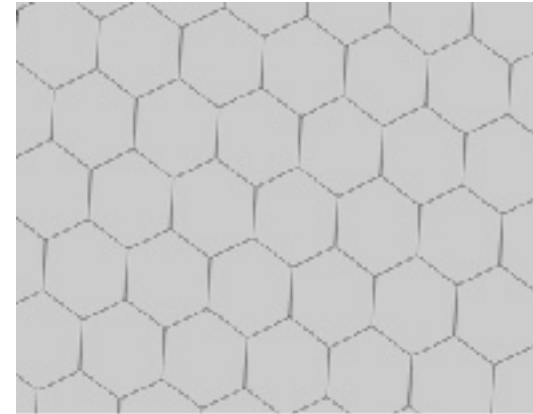
Framework Evolution

Census Blocks



Irregular shapes

Uniform Hexagonal Grid



Uniform cells

A more consistent, scalable, and analytically robust foundation

Benefits of a Uniform Grid



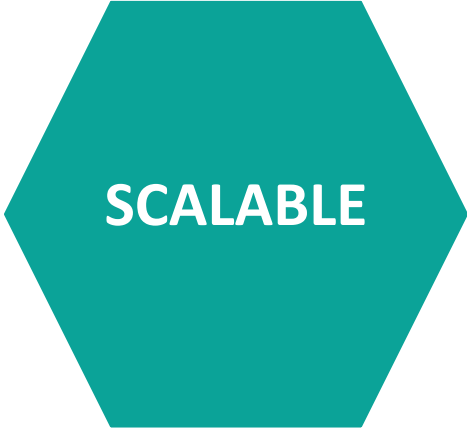
CONSISTENT

Uniform analysis
units statewide



REDUCED

Fewer boundary
effects



SCALABLE

Repeatable statewide
classification

Uniform cells create a common spatial foundation for statewide analytics.

Classification Logic

Inputs and measures



Evaluation Measures

1 Building Area Density (Total Building Area Footprint / Sq. Mile)

≤ 0.01	Rural
0.01 – 0.02	Rural Town / Suburban
0.02 – 0.026	Urban
> 0.026	Urban Core



2 Intersection Density (Intersections / Sq. Mile)

≤ 78	Rural
> 78	Rural Town
≤ 195	Suburban
> 195	Urban Branch



3 Population Density (People / Sq. Mile)

> 1410	Urban Center
> 2959	Urban Core



4 Commercial Density (Commercial Area / Sq. Mile)

> 1330	Urban Center
> 3042	Urban Core



5 Job Density (Jobs / Sq. Mile)

> 2779	Urban Center
> 6603	Urban Core



6 Tall Buildings (Buildings ≥ 4 Stories Tall)

≥ 5	Urban Center
≥ 11	Urban Core



7 Land Use Dominance



Commercial Area ≥ Single Family Area

Single Family Area > Commercial Area

Suburban Commercial

Suburban Residential

Residential Override

Urban areas remain classified as Suburban Residential when all the following conditions apply:

✓ Predominantly single-family development

✓ Limited employment activity

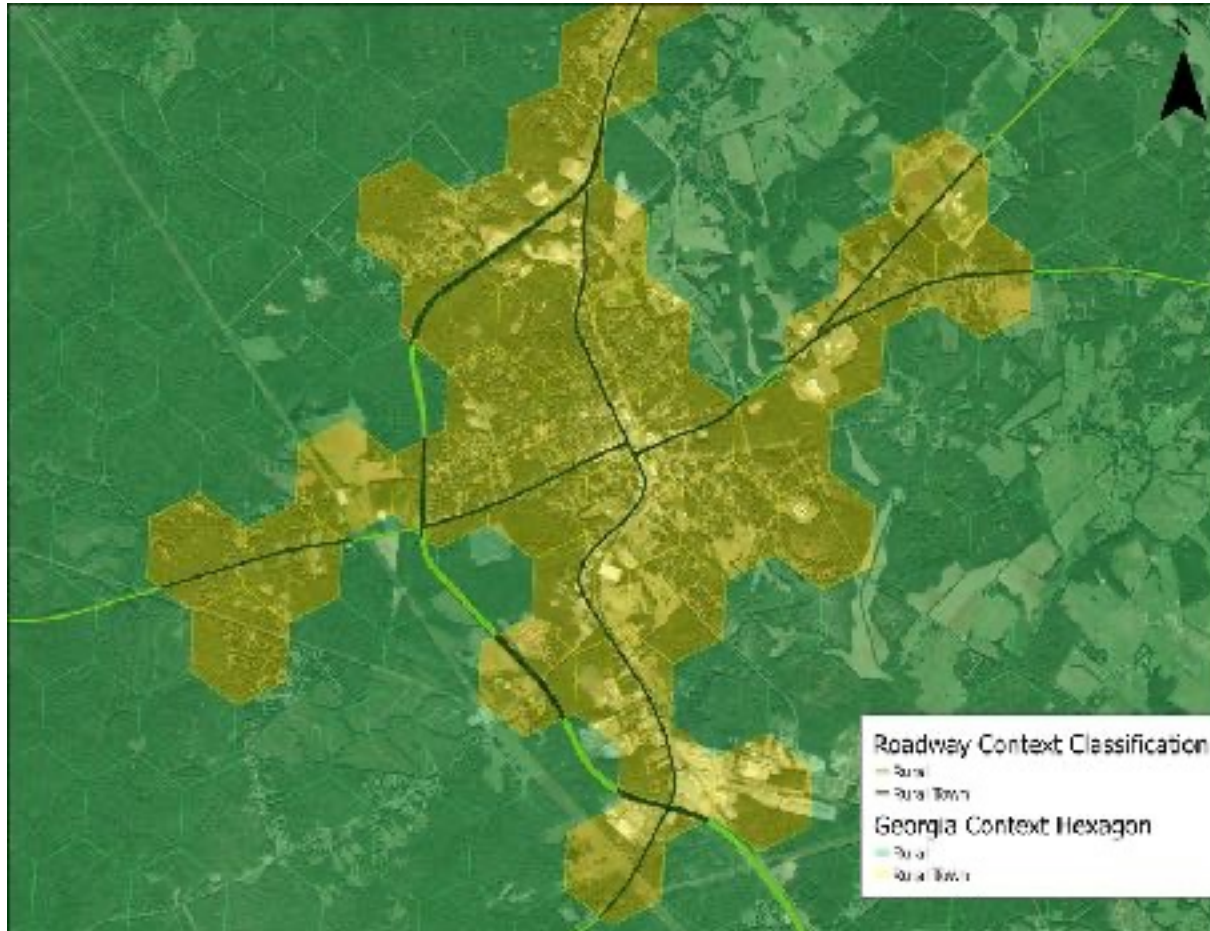
✓ Limited commercial activity

✓ 5 or fewer tall buildings



SUBURBAN RESIDENTIAL

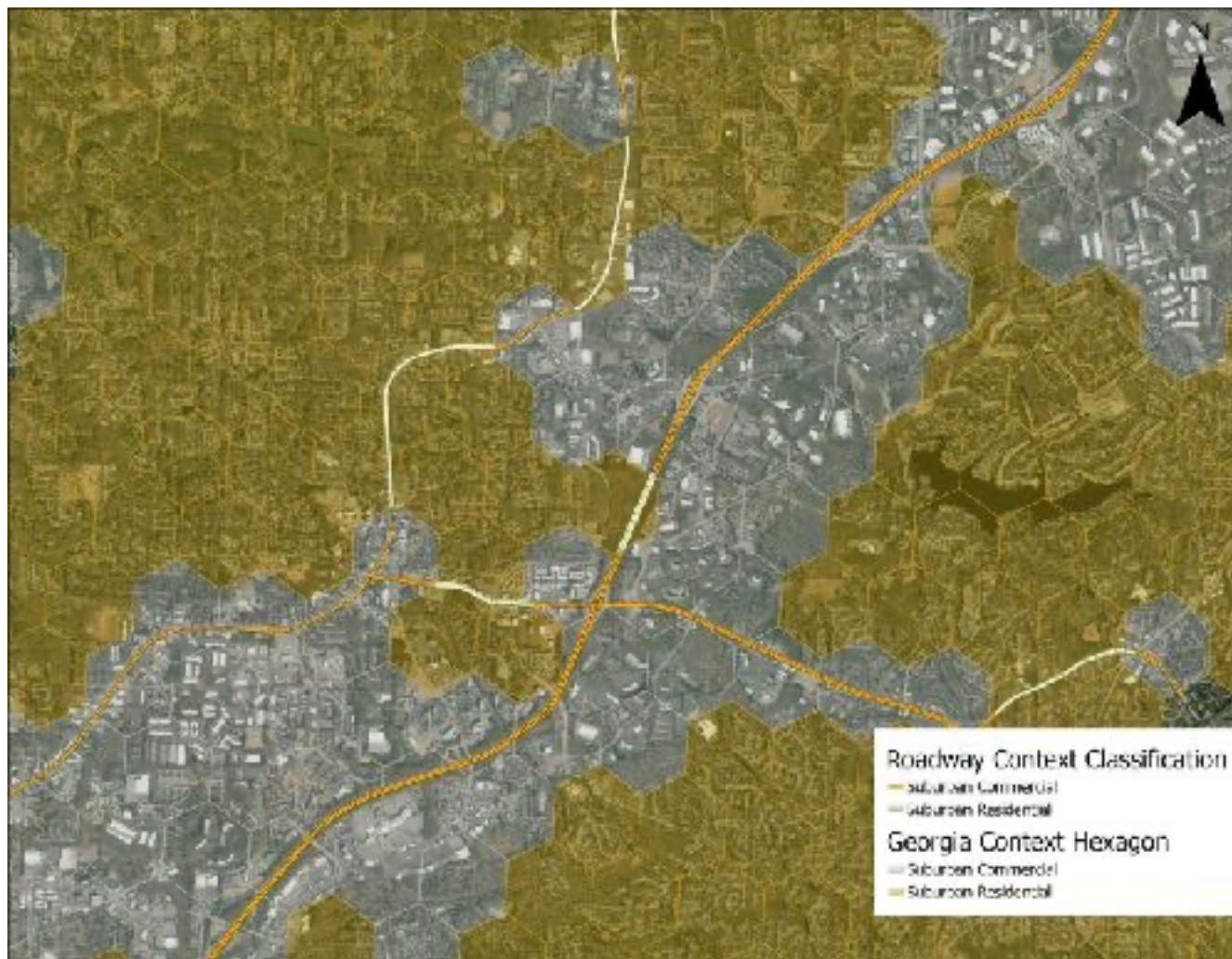
Eatonton, Georgia – Rural/Rural Town



Key Characteristics

- Sparse Development
- Large undeveloped areas
- Low intersection density
- Limited commercial activity

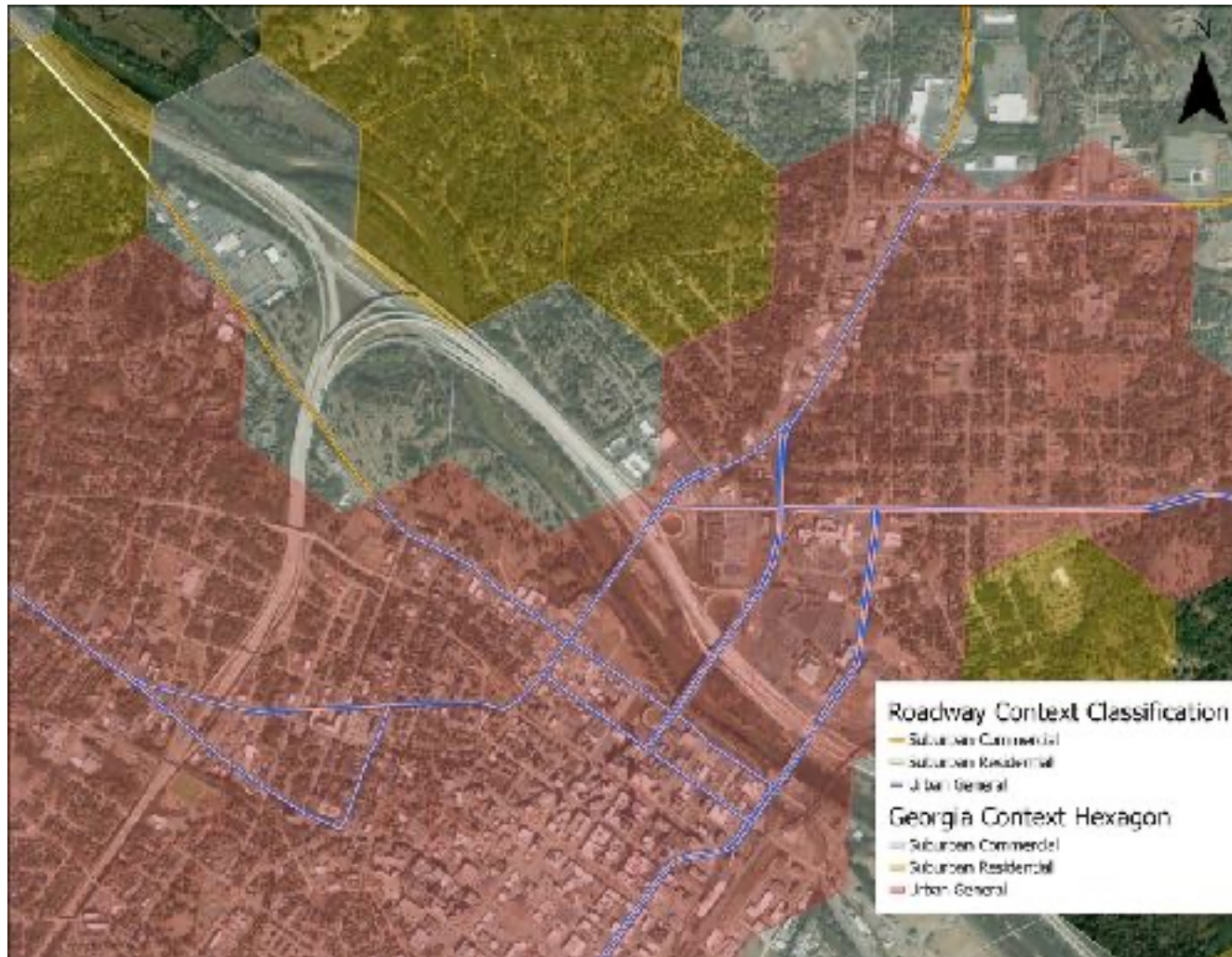
Alpharetta, Georgia – Suburban Residential/Commercial



Key Characteristics

- Moderate building density
- Moderate intersection density
- Predominantly single-family development or commercial development
- Limited tall buildings

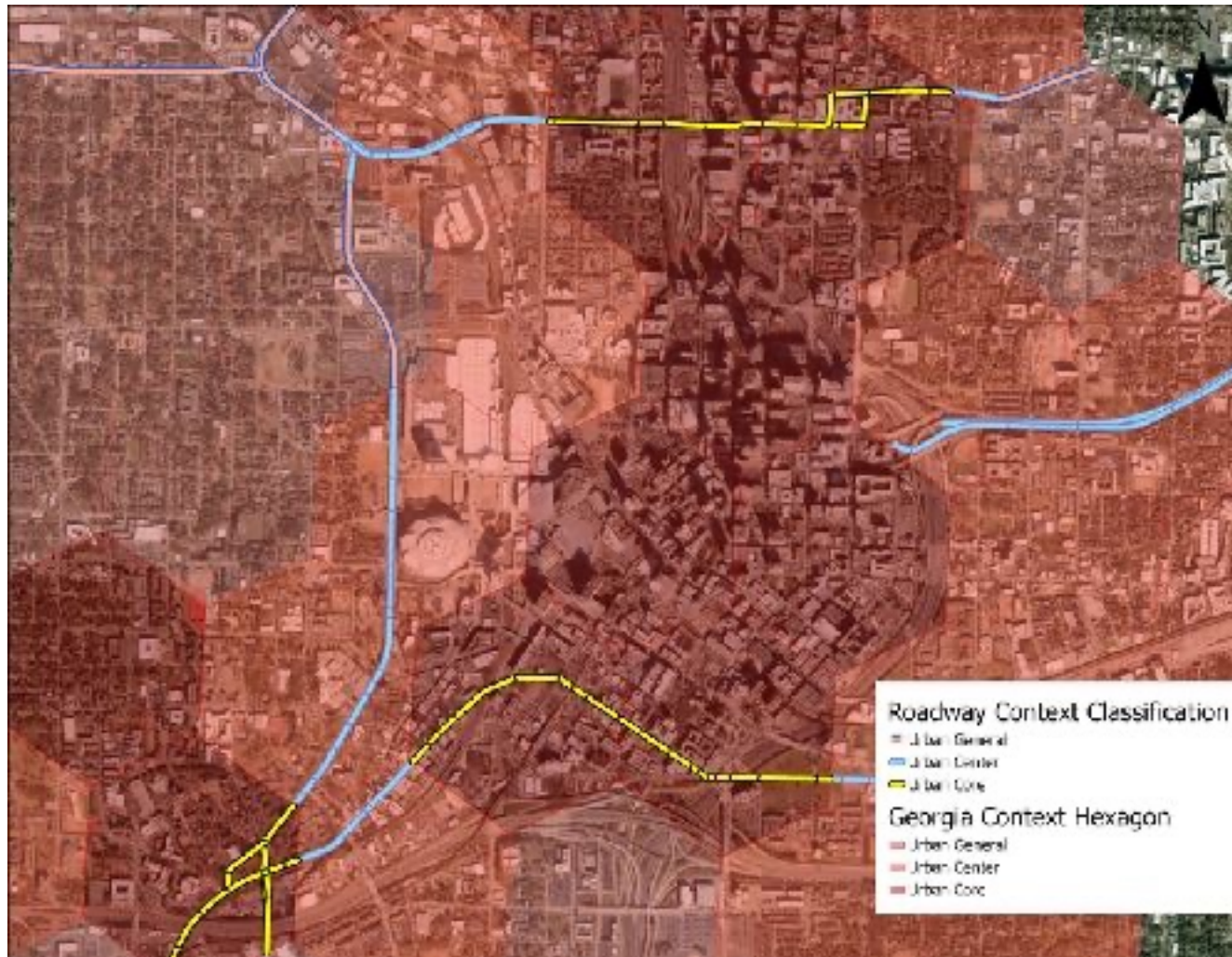
Macon, Georgia – Suburban and Urban Class



Key Characteristics

- Higher building density
- Higher intersection density
- Connected street network
- Mixed land uses
- Moderate jobs/commercial activity

Atlanta, Georgia – Urban Core



Key Characteristics

- Highest building density
- Highest intersection density
- Dense employment
- Numerous tall buildings

Key Takeaways

1

STATEWIDE

A consistent, data-driven framework for Georgia state routes.

2

UNIFORM

A hexagonal grid improves consistency and scalability.

3

CONTEXT-SENSITIVE

The framework supports planning, design, operations, and safety decisions.



Rural Statewide Active Transportation Plan

GPA Fall Conference | Augusta, GA
September 2026



Takeaways

- 1 The Statewide Rural Active Transportation Plan will:**
 - Identify competitive projects in rural areas with population <5,000
 - Re-evaluate the State Bicycle Route Systems
 - Update ped/bike design policy and guidance
 - Identify systemic improvement strategies for rural facilities

- 2 Active Transportation facilities facilitate GDOTs goals of safety, connectivity, mobility public health, and economic vitality**

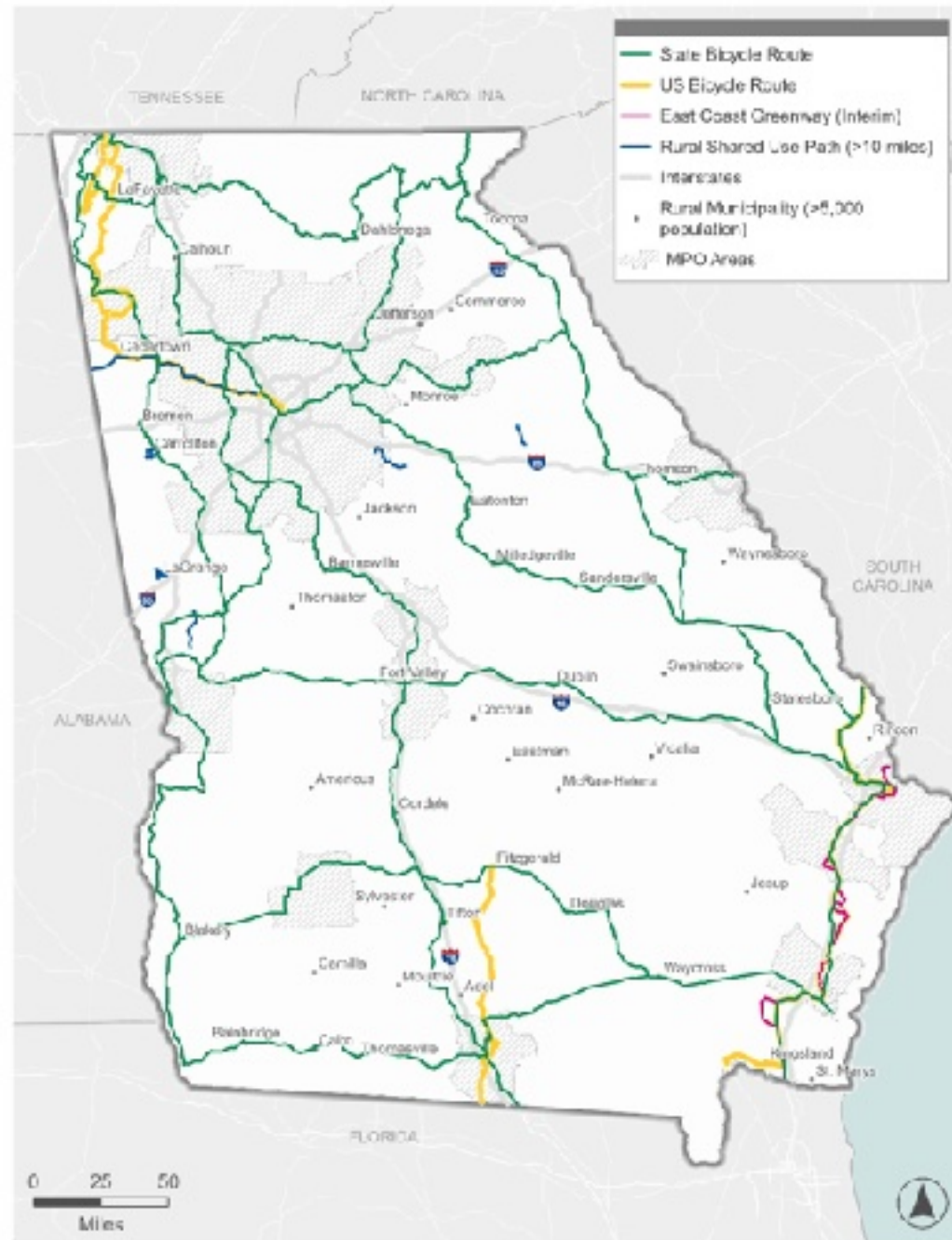
- 3 A variety of datasets including roadway, crash, demographic, census, and telematic data sources are leveraged to complete the plan analysis and develop strategies for implementation**

Why A Rural ATP?

Statewide plan for Active Transportation with a focus on “rural” areas of Georgia

Objectives

1. Identify competitive projects in rural areas with population <5,000
2. Re-evaluate the Stake Bicycle Route Systems connecting rural hubs outside of MPOs
3. Update design policy and guidance related to bicycle and pedestrian design
4. Identify systemic improvement strategies for rural facilities



Existing Active Transportation Network

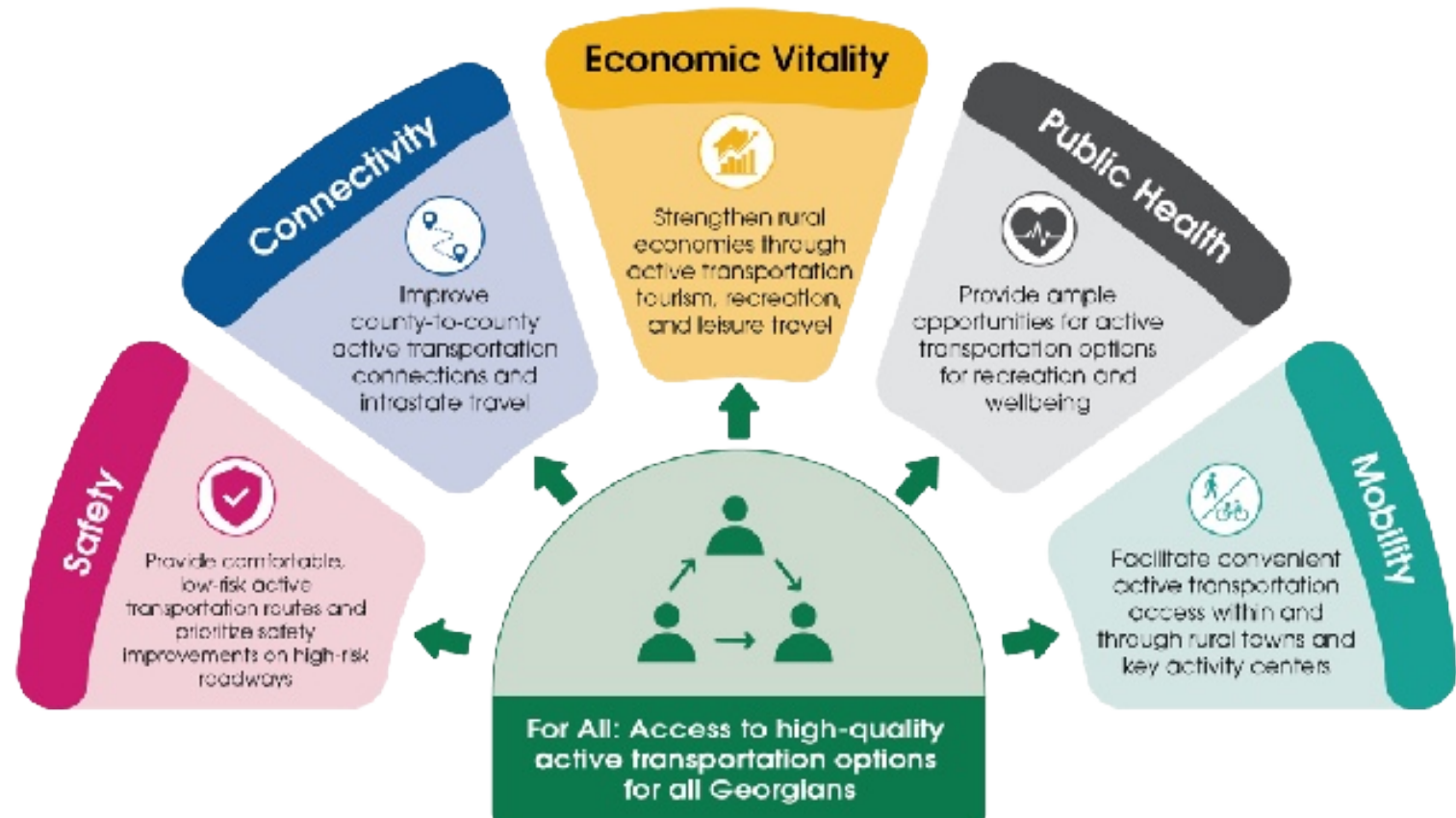
Where We Are Now

Plan Process



Vision & Goals

Vision: Georgia's rural communities will have safe and well-connected walking and biking routes for all Georgians, strengthening local economies and enhancing quality of life.



Existing Conditions

Three Primary Lenses

- Safety
- Connectivity
- Bicycle Level of Comfort



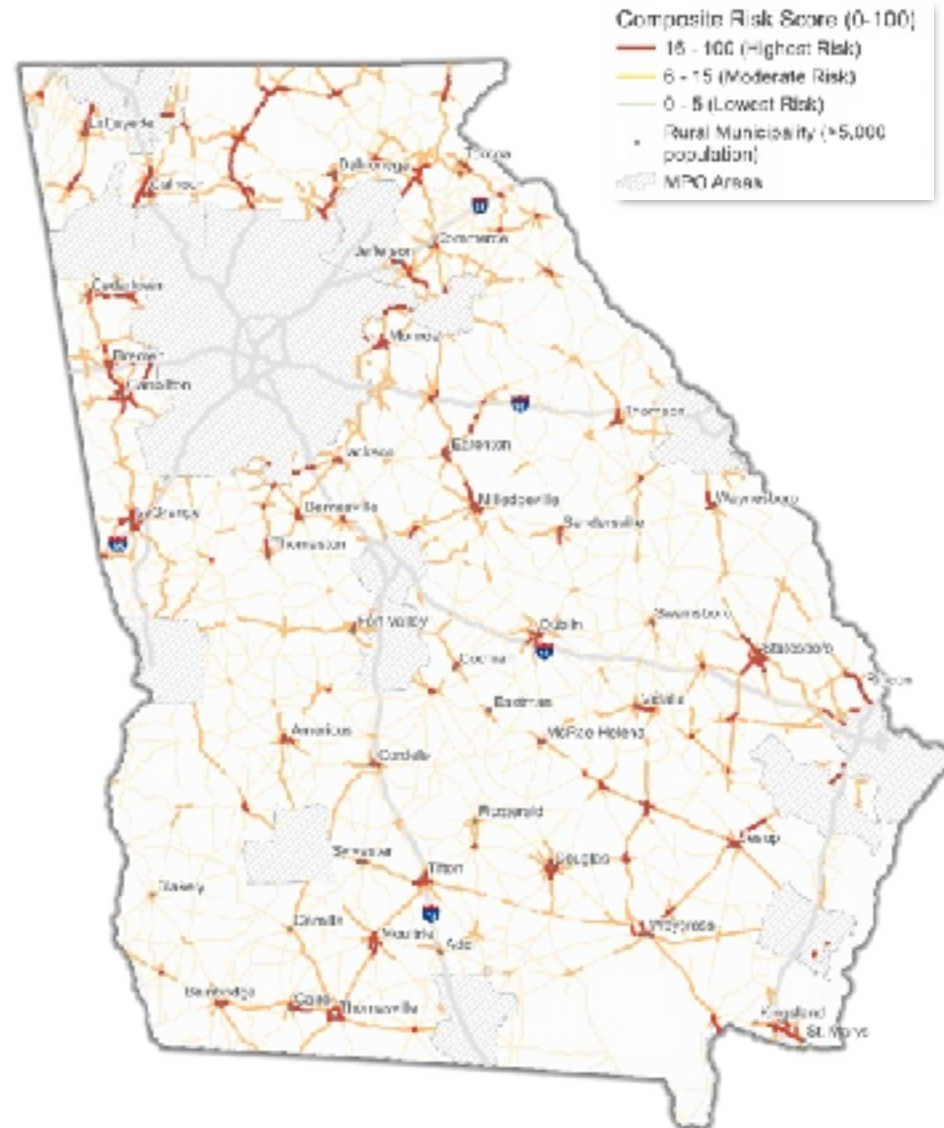
Safety as a Starting Point

Rural ATP's Composite Safety Risk score comprised of:

- Crash history
- Pedestrian crash probability (risk)
- Bicycle crash probability (risk)

Risk Assessment Indicators

Vehicular Traffic	Median Household Income
Number of Lanes	Signalized Intersection
Functional Classification	Number of Intersection Legs
Population/ Employment Density	Land Use Mix



Connectivity

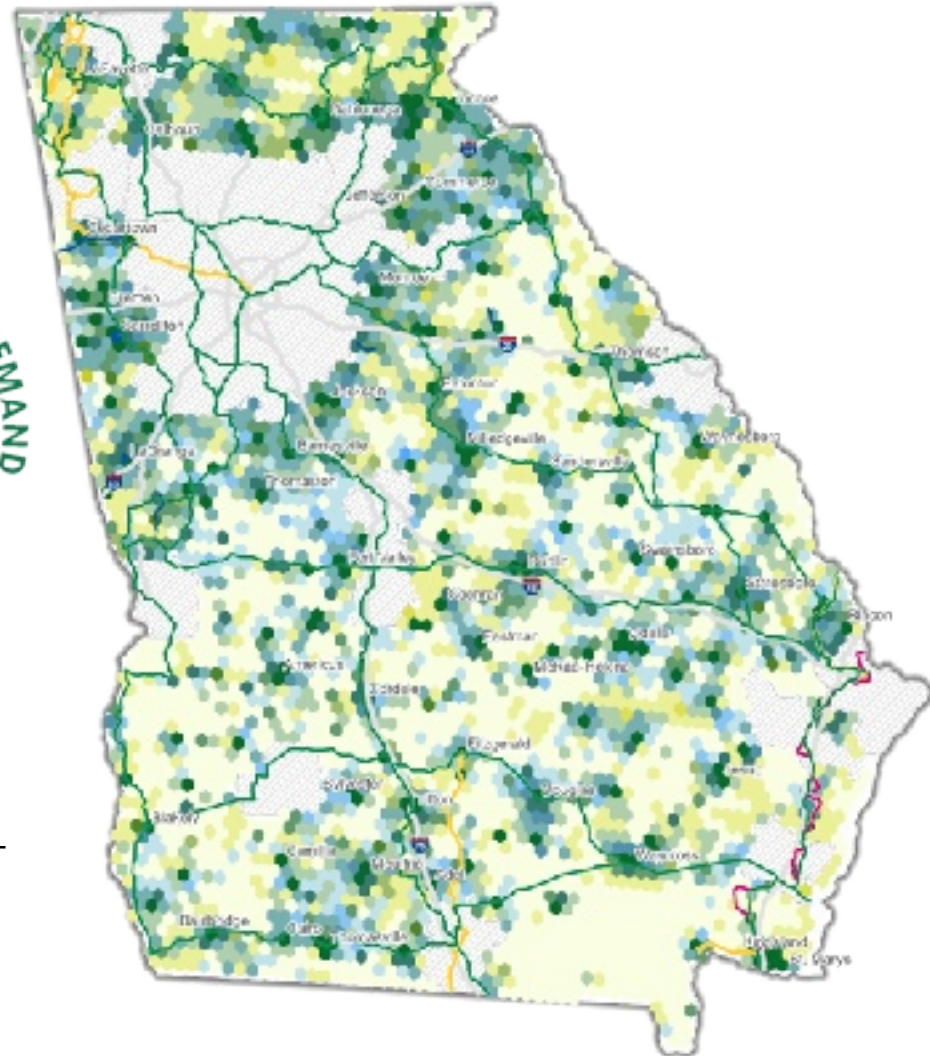
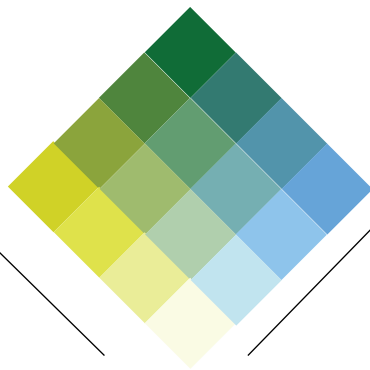


High/High

High Existing –
Low Potential

Low Existing –
High Potential

Low/Low



Bicycle Level of Comfort

	Typical Level of Traffic Stress Score	Comfort Category
High Level of Comfort Low	1	✓ Comfortable
	2	✓ Relatively Comfortable
	3	⚠ Bikeable but Uncomfortable
	4	⚠ Bikeable but Uncomfortable (with bikeable shoulder)
	4	⊘ Non-Bikeable (without bikeable shoulder)



Challenges



Pedestrians and cyclists in rural Georgia face a **higher risk of death or serious injury** than those traveling on urban roadways.



Most state roads and highways in Georgia are **unsafe and uncomfortable** for Georgia walkers and bikers.



The network of Georgia State Bicycle Routes is **not consistently safe and comfortable** for most users.



Safety studies conducted and countermeasures implemented **unevenly prioritize urban over rural areas.**



Access to comfortable, well-designed active transportation facilities, **particularly shared-use paths, remains limited across rural Georgia.**



Active transportation in rural Georgia is **hindered by outdated design guidance and inconsistent consideration** in the planning and design process.

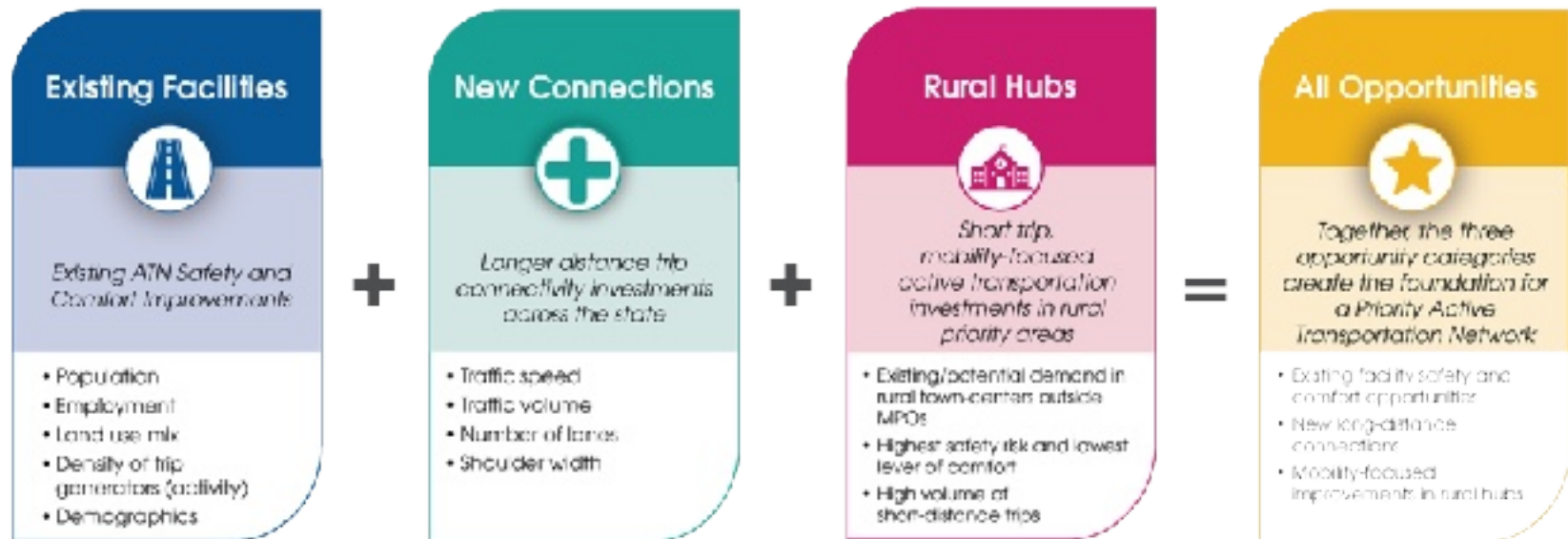


Funding for **active transportation** has **not kept pace** with existing and potential demand across all of Georgia.



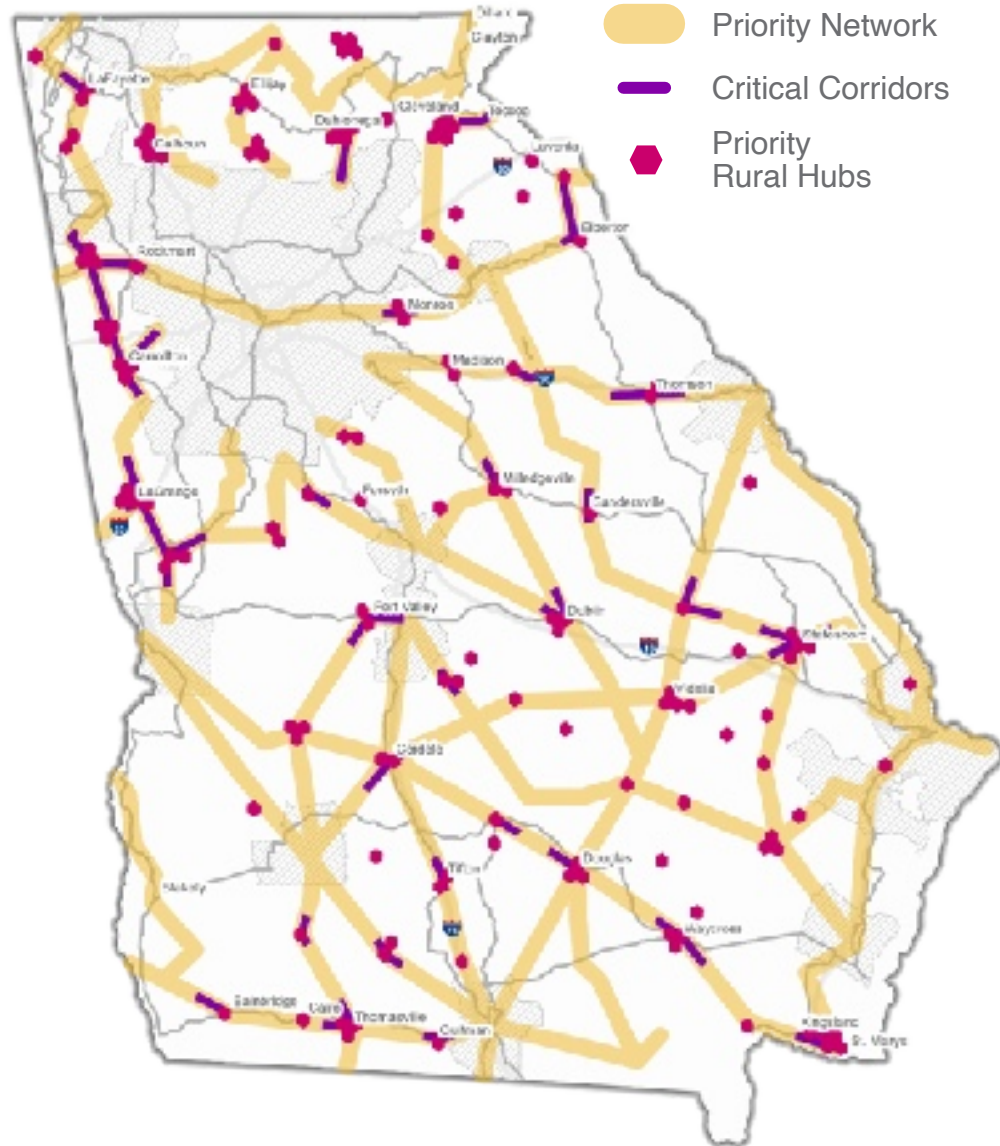
Active transportation messaging is **inconsistent and incomplete**, contributing to limited understanding of the broad proven benefits.

Opportunities

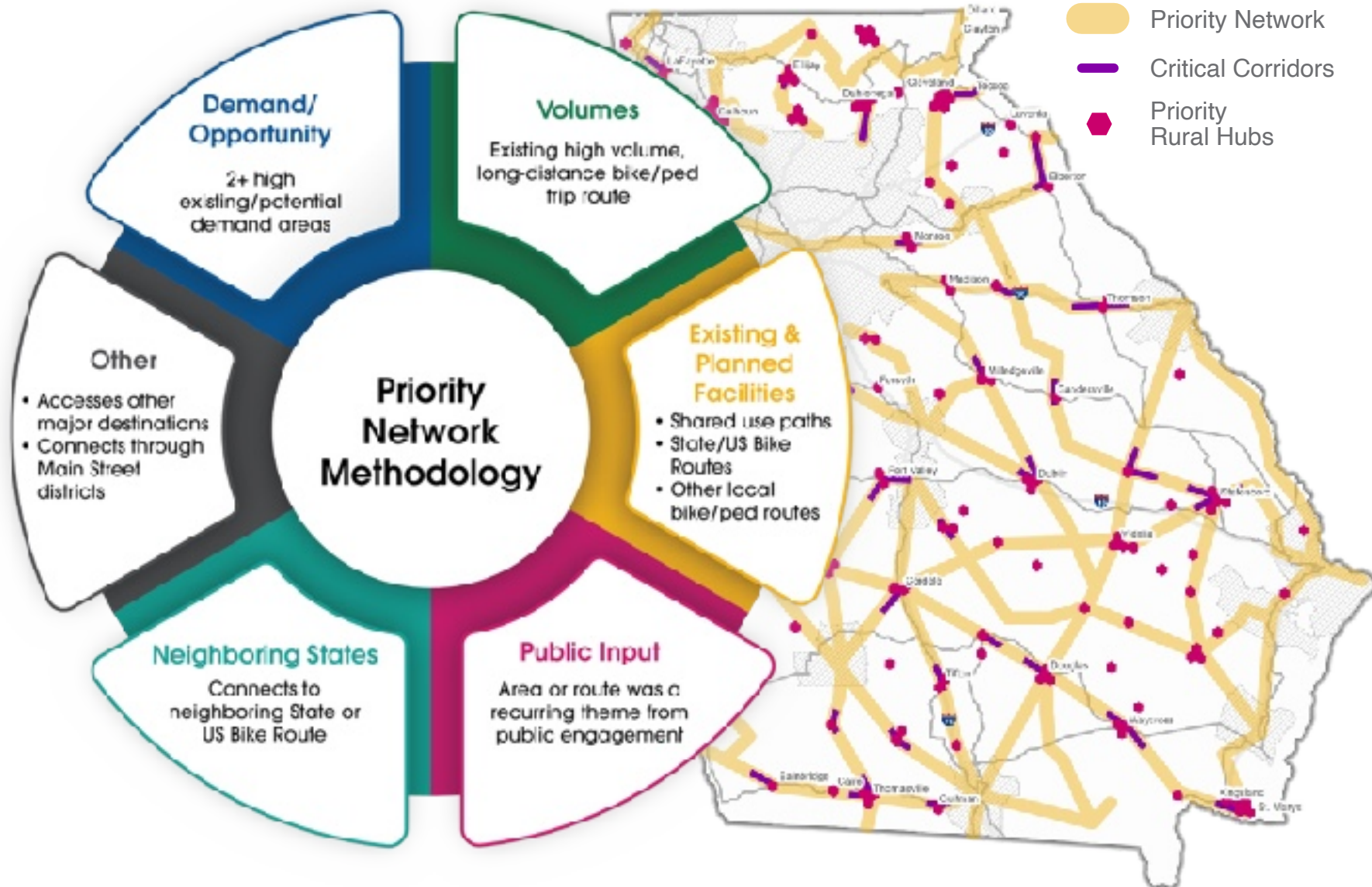


Providing Focus

-
- Priority Network
 Critical Corridors
 Priority Rural Hubs

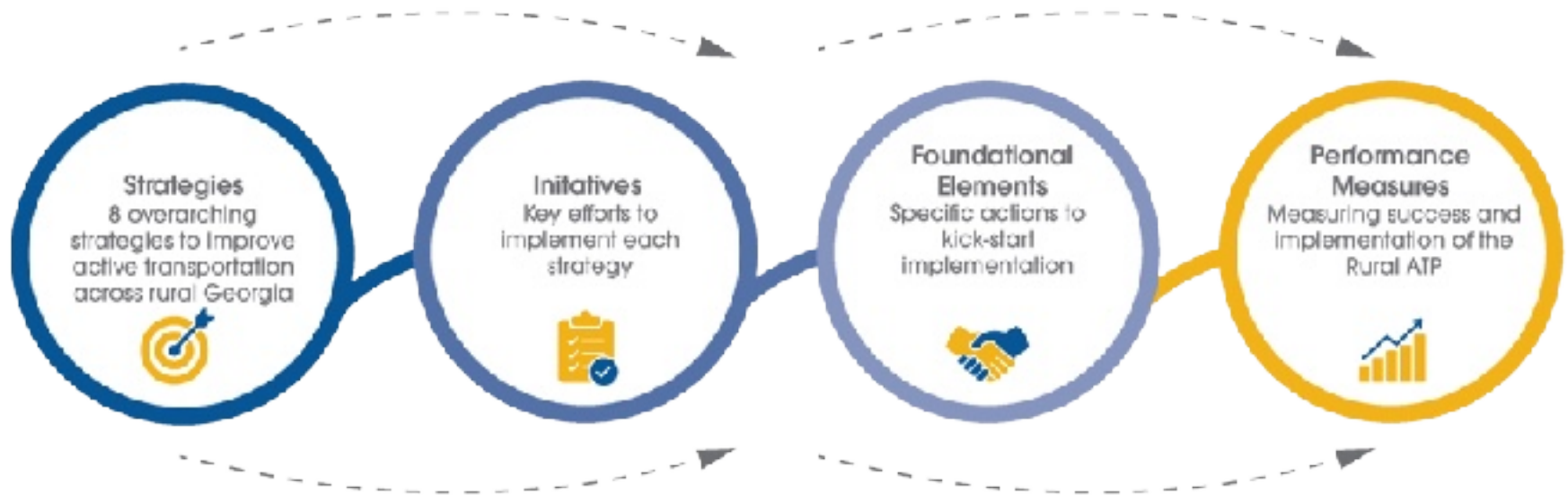


How We Got Here



Shifting Towards Implementation

Implementation Framework



Core Strategies



Build a Connected Rural
Active Transportation Network



Build the Data and Tools
Needed to Target Investments



Modernize and Expand the
State Bicycle Route Network for
Rural Comfort



Make Active Transportation
Routine in Project
Development and Delivery



Eliminate Vulnerable Road
User Fatalities and Serious
Injuries



Increase and Target Funding
to Rural Needs and Outcomes



Build Partnerships That Support
Delivery of Projects and
Programs



Improve Rural-Focused
Messaging, Education, and
Encouragement

Priority Initiatives



Close “last-mile gaps” first

Integrate shared-use paths



State Bike Route reroutes/upgrades



Rural systemic safety program

Prioritize speed management



Statewide AT asset inventory

Rural AT crash data collection/quality

AT monitoring program



Hardwire AT into project scoping

Make resurfacing key delivery mechanism



Dedicated rural AT project pipeline

Expand local grant support efforts



Rural implementation partnership (RCs)

Engage tourism/economic development partners



Rural-specific communications tool-kit

Rural SRTS promotion/delivery

Foundational Elements

Common actions that support each overarching strategy

1. Governance

Create an implementation team across GDOT offices, districts, Regional Commissions, and partners.

2. Core data foundation

Build and maintain inventory, gap, safety-risk, and priority-corridor information.

3. Scoping + resurfacing review

Screen routine projects for walk/bike opportunities and use standard design templates.

4. Project pipeline + grant support

Help low-capacity rural communities move from concept to fundable project.

5. Early demonstration pilots

Show visible quick wins that build support and test delivery models.

What Success Looks Like

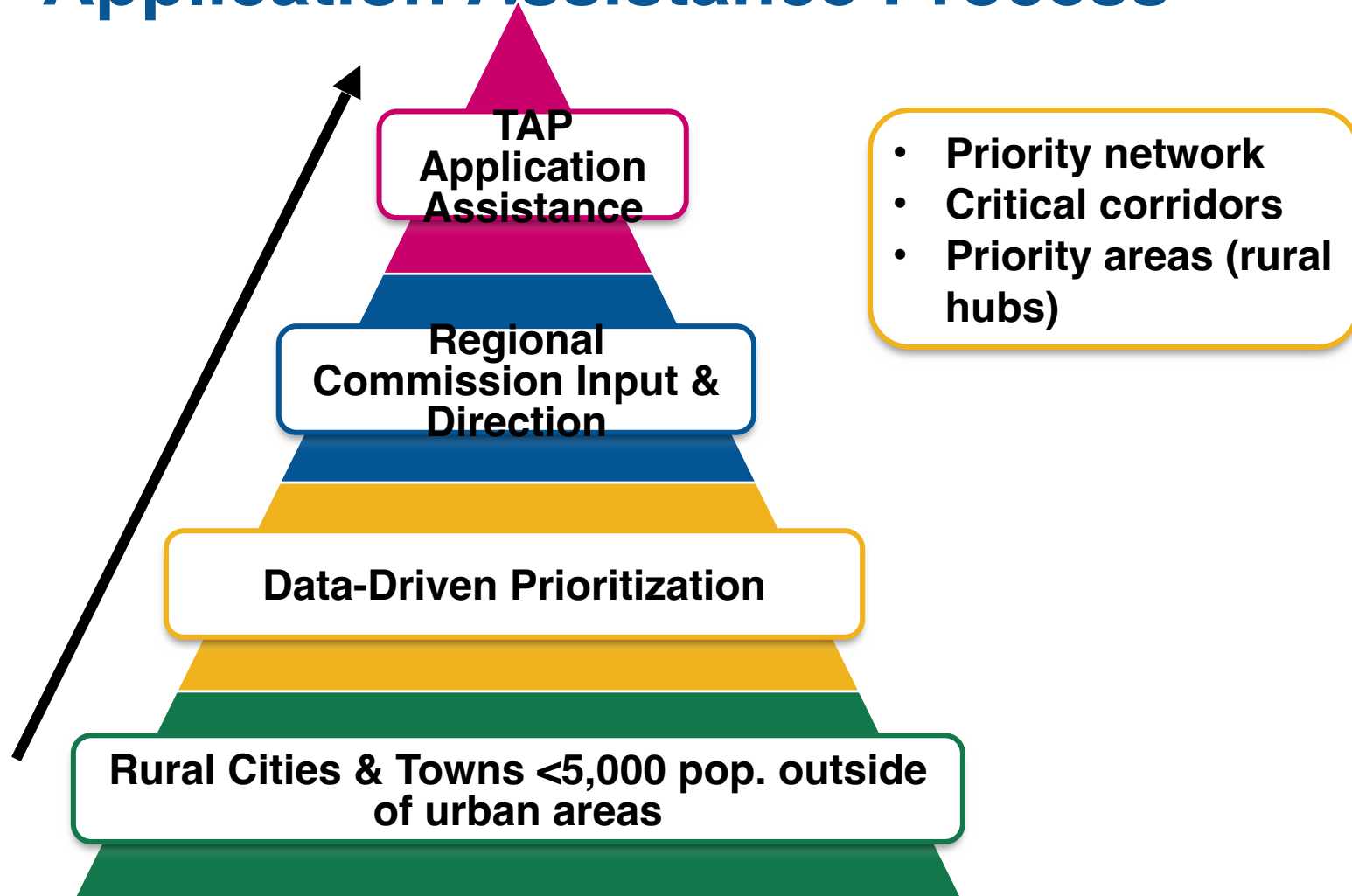
Performance Measure		Metrics
	Number of Active Transportation Crashes, Fatalities, and Serious Injuries	- Active transportation (AT) fatalities and serious injuries by year - AT crashes statewide by year - AT crashes on rural state routes and active transportation network (ATN) by year
	Active Transportation Percent of Trips	- AT trips in rural areas and rural hubs - AT mode share in rural areas and rural hubs - Count of AT trips on rural ATN and shared-use paths
	Miles of Statewide Rural Active Transportation Network	- Total mileage and annual growth rate of the rural ATN - Total mileage and annual growth rate of the statewide ATN - Rural ATN connectivity – population and destinations within 1-mile of ATN
	Active Transportation Project Investments	% of statewide transportation funds spent on ATN projects and AT facilities across all project types - Number of AT projects programmed statewide - Number of projects programmed on rural state routes and the rural ATN - Number of projects programmed in rural hubs
	GDOT Capacity and Coordination	- Number of GDOT AT Staff (FTE) - Number of AT and VFRU-focused training sessions - Let of GDOT policies that support AT - Number of road safety audits, safety walks, or corridor studies conducted along rural ATN - Number of VFRU Task Team meetings and attendance
	External and Partner Metrics	Health: Levels of physical activity, chronic disease, and risk factors within rural areas Engagement: Number of residents reached through education and outreach Legislation: New Georgia laws that support safer AT travel



Ongoing Strategies

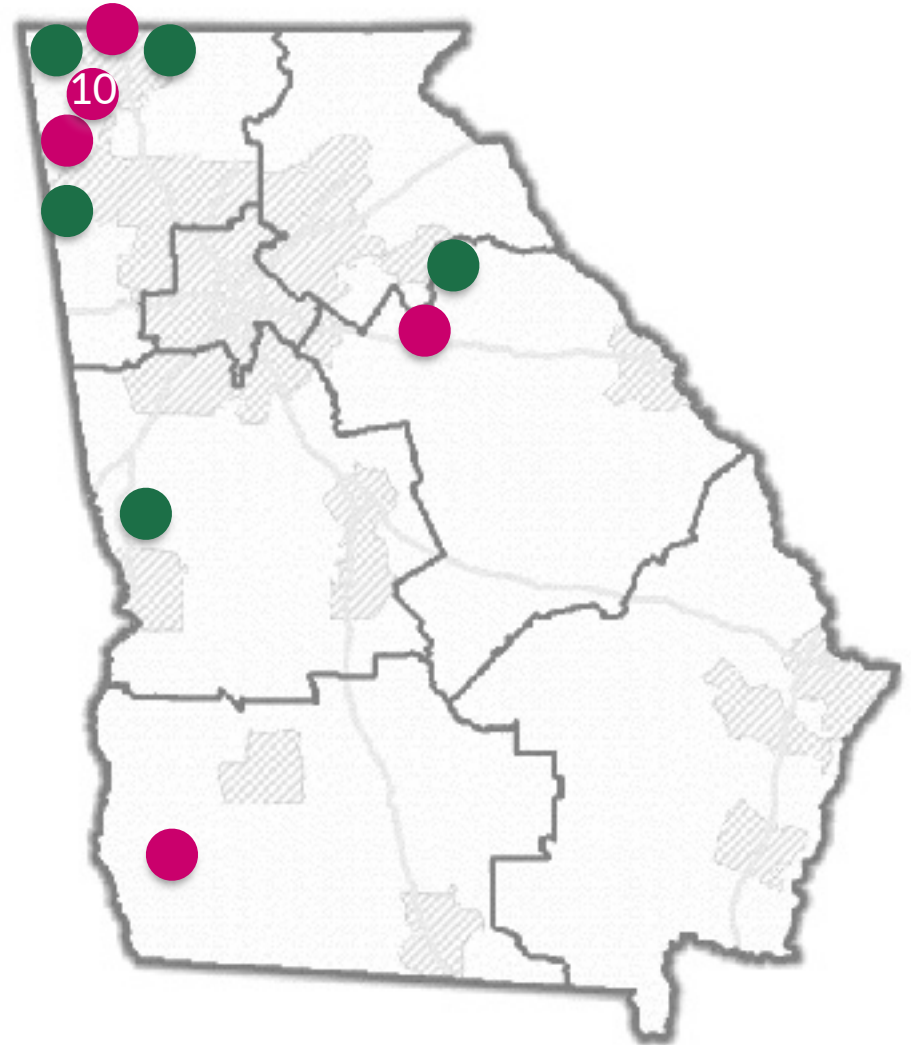
1. Local Grant Assistance
 2. Systemic trail crossing improvements
 3. Island connectivity
 4. Policy and guideline updates
 5. Quick Response Projects
6. Systemic school zone upgrades
 7. Rumble strip policies for bikes

TAP Application Assistance Process



TAP Applications: Submitted & Awarded

- Cave Spring
- Cohutta
- Greensboro
- Chickamauga*
- Trenton
- Crawford
- Hamilton
- Colquitt
- Summerville*
- 10 ● Chattooga County



**Under 5,000 but in Urbanized Area*

Trail Crossing Analysis

Identify Top 10 highest risk trails in Georgia

Ranking trails based on

1. Crash history
2. Crash risk
3. Crash history

Carrollton Greenbelt (#1)



Appalachian Trail (#3)



The Thread Trail (#8)



Systemic Trail Crossing Analysis

Countermeasure Selection



Previous GDOTS Trails Crossing Analysis

Source Google Maps

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT < 9,000			Vehicle AADT 9,000–15,000			Vehicle AADT > 15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 or 3 total lanes No Median	Raised X-walk	RRFB	PHB	RRFB	PHB	PHB	RRFB	PHB	PHB
2 or 3 total lanes median									
4 total lanes median	RRFB	PHB	PHB	PHB	PHB	PHB	PHB	PHB	PHB
4 total lanes no median									
> 4 Lanes	PHB								

Countermeasure Selection Matrix

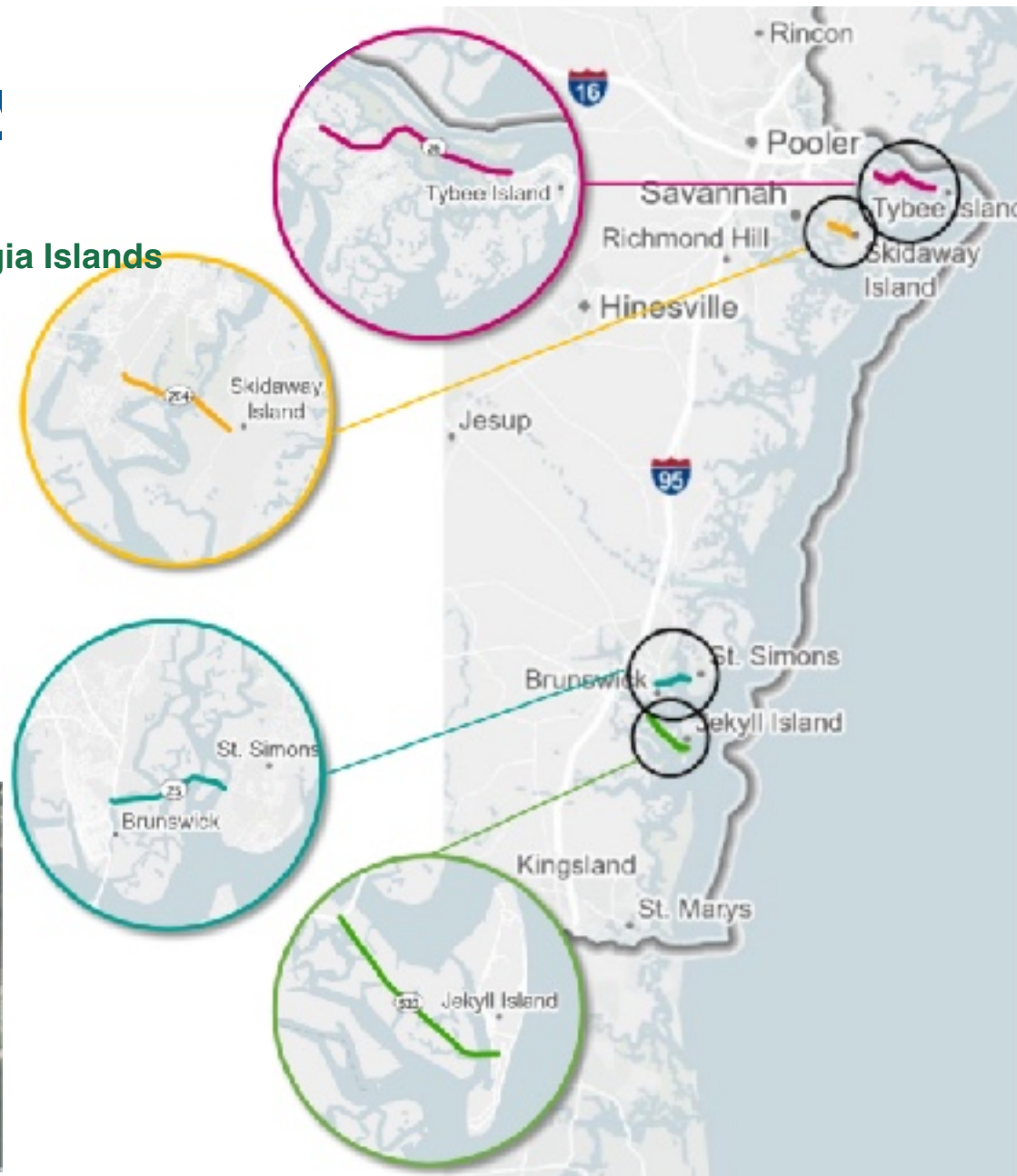


RRFB Example

Island Connectivity

Provide multimodal connections to Georgia Islands

1. Review existing infrastructure
2. Assess usage
3. Analyze safety
4. Identify multimodal enhancements



Incorporate what we learn into policy and guidance

Pedestrian & Streetscape Guide

[illegible]

Design Policy Manual

State of Georgia
Department of Transportation

Pedestrian and Streetscape Guide

GDOT
Georgia Department of Transportation

Pedestrian and Streetscape Guide
6/20/2021
Update 1.2
Atlanta, Georgia 30330

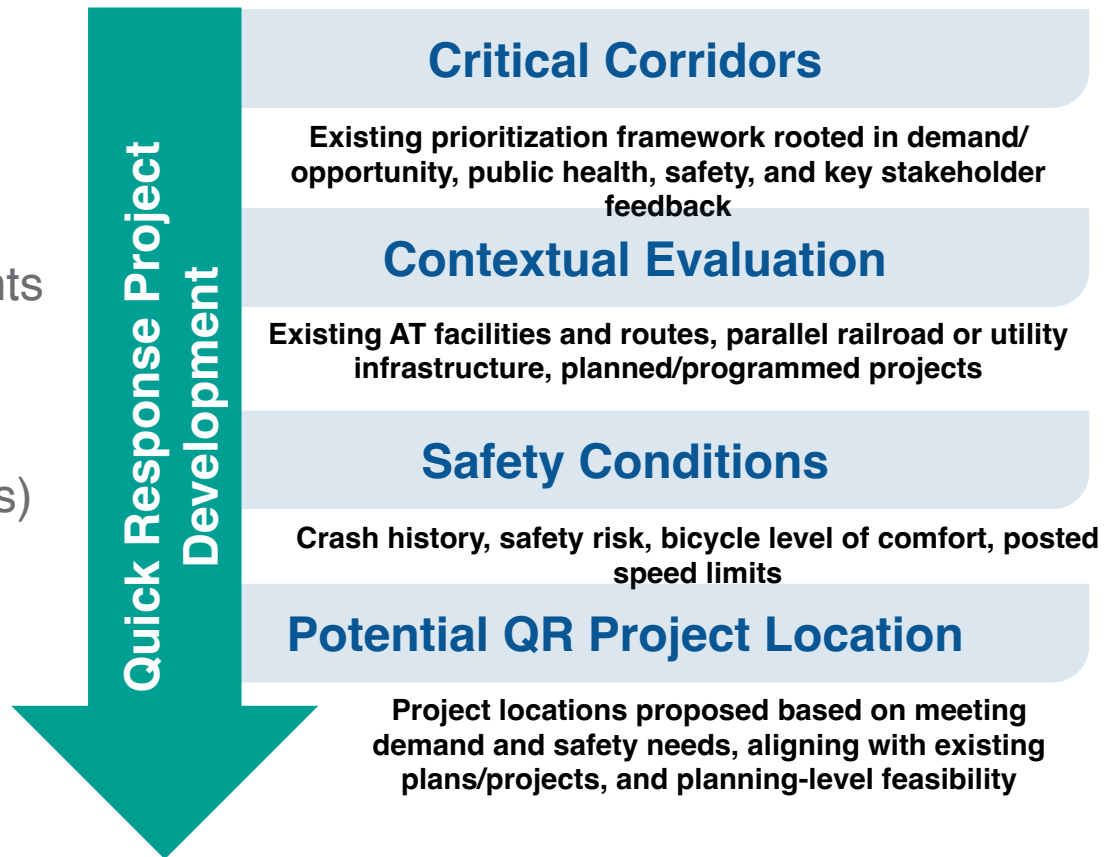
GDOT
Georgia Department of Transportation

High-Impact, Low-Cost Projects

Applying the Priority Network to Identify Quick Win Projects

Project Types:

- Intersection Improvements (curb ramps, traffic control)
- Roadway Improvements
- Railroad Crossing Improvements
- Signals (PHBs, RRFBs)
- Signing & Marking (transition zones, bike facilities)
- Sidewalks



Takeaways

- 1 The Statewide Rural Active Transportation Plan will:**
 - Identify competitive projects in rural areas with population <5,000
 - Re-evaluate the State Bicycle Route Systems
 - Update ped/bike design policy and guidance
 - Identify systemic improvement strategies for rural facilities

- 2 Active Transportation facilities facilitate GDOTs goals of safety, connectivity, mobility public health, and economic vitality**

- 3 A variety of datasets including roadway, crash, demographic, census, and telematic data sources are leveraged to complete the plan analysis and develop strategies for implementation**

Bringing the Plan Together

Visit our Engagement Hub for more information on plan findings, recommendations, and updates on

Scan Me!





Thank You!

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