2050 MTP

Appendix E:

Technical Analysis

MACORTS

2050 Metropolitan Transportation Plan Update

Technical Subcommittee Meeting #2

April 25, 2024

Presentation Agenda

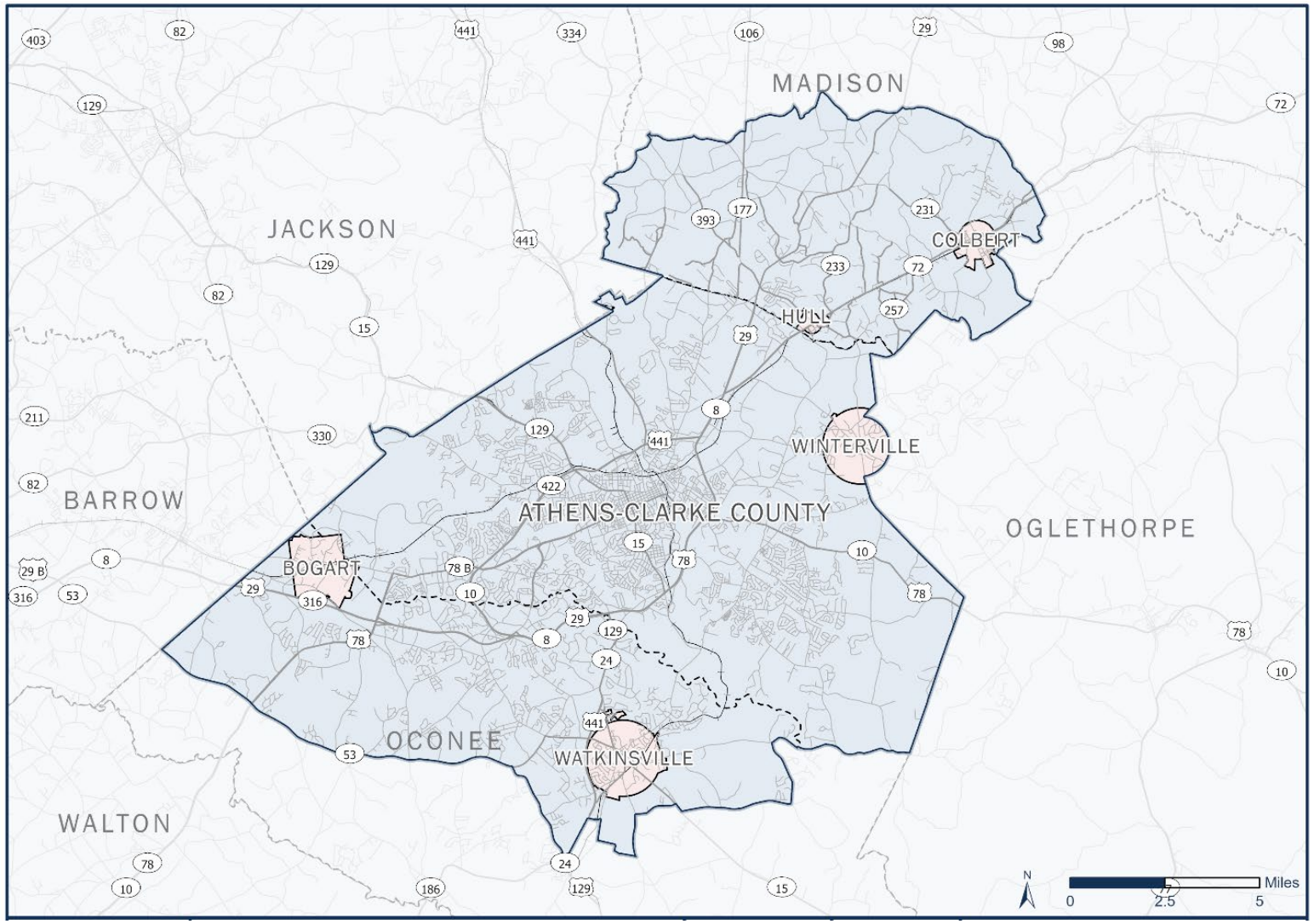
- Project Status Update
- Public and Stakeholder Engagement Results
- Needs Assessment and Financial Projections
- Project Considerations
- Recap of Goals and Objectives
- Prioritization Process Review/Endorsement
- Next Steps
- General Discussion/Questions

Project Status Update

Study Overview & Schedule

MACORTS

- Includes Athens-Clarke, Madison, and Oconee Counties
- Governed by a Policy Board comprised of elected officials
- Responsible for Federally mandated planning products



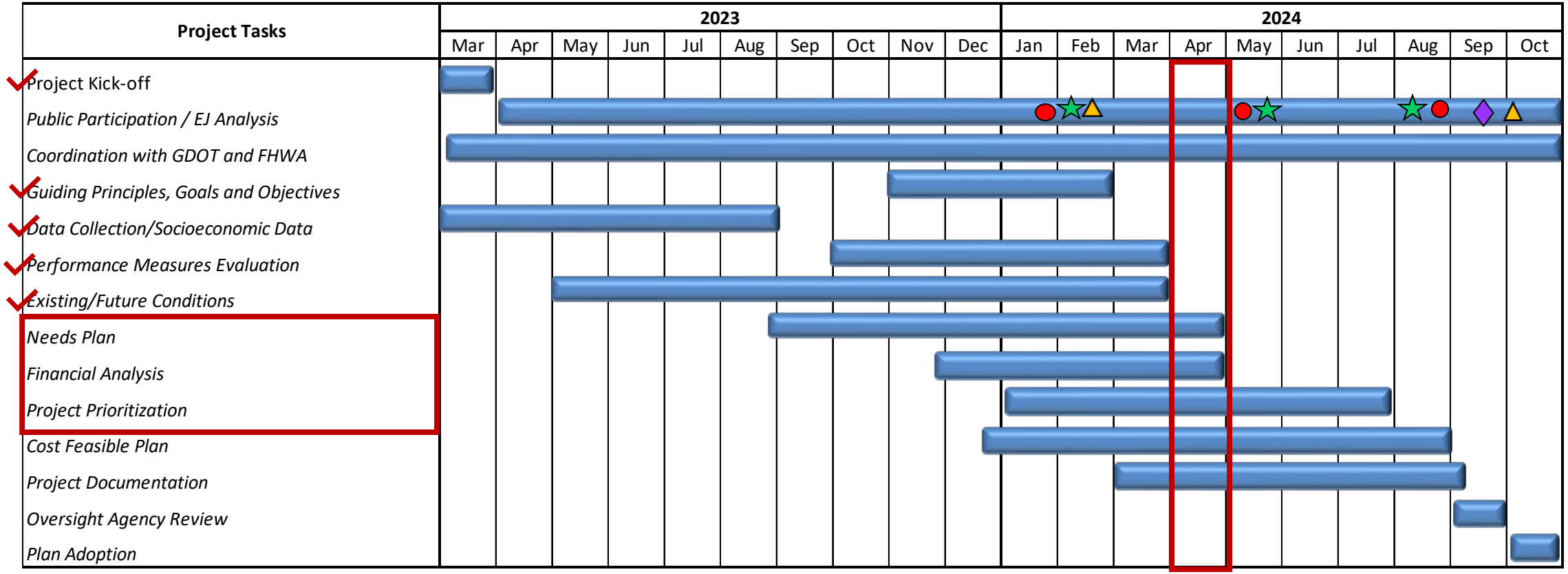
Study Overview & Schedule

What is a Long Range/Metropolitan Transportation Plan?

- Federal legislation requires updates every 5 years to remain eligible for transportation funding
- The MTP covers a 20-year planning horizon with fiscal constraint
- Provides MPOs the opportunity to:
  - Assess existing transportation network performance
  - Estimate future demands
  - Identify needs and investments

Study Overview & Schedule – MTP Schedule

MACORTS 2050 METROPOLITAN TRANSPORTATION PLAN SCHEDULE



*Schedule is subject to change

Key Responsibilities

Technical Subcommittee – Key Responsibilities

Review and provide comment/guidance on the following project elements:

- ✓ Goals, objectives, and measures of effectiveness
- ✓ Existing conditions and needs assessment results
- ✓ Identification of projects for consideration
- ✓ Modal Considerations (Bike, Ped, Transit, Freight, Air)
- Project assessment and prioritization criteria
  - Modal Considerations (Bike, Ped, Transit, Freight, Air)
- Prioritized and cost constrained project list
- Plan document

Public & Stakeholder Engagement

Public and Stakeholder Engagement Results

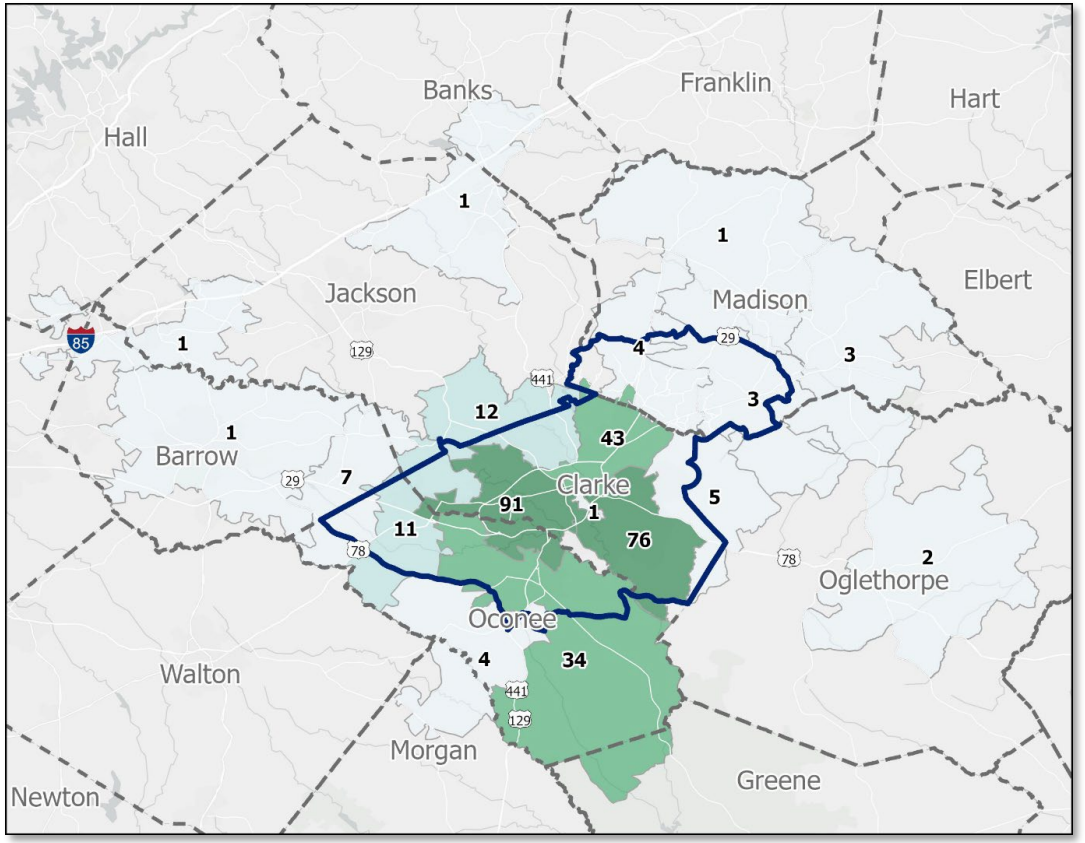
Public Engagement Tactics

- Stakeholders Committee
  - Project Emissaries
- Public Engagement “Pop-up” Meetings
- Public Survey
- Interactive Mapping
- Interactive Prioritization
- Social Media Publications
- Newspaper Advertisements
- Press Releases

Public and Stakeholder Engagement Results

Public Survey

- February 5 – March 31, 2024
- 321 responses: including English (317) and Spanish (4)
- Mapping component enabled participants to provide site-specific feedback
  - 101 points and 93 comments

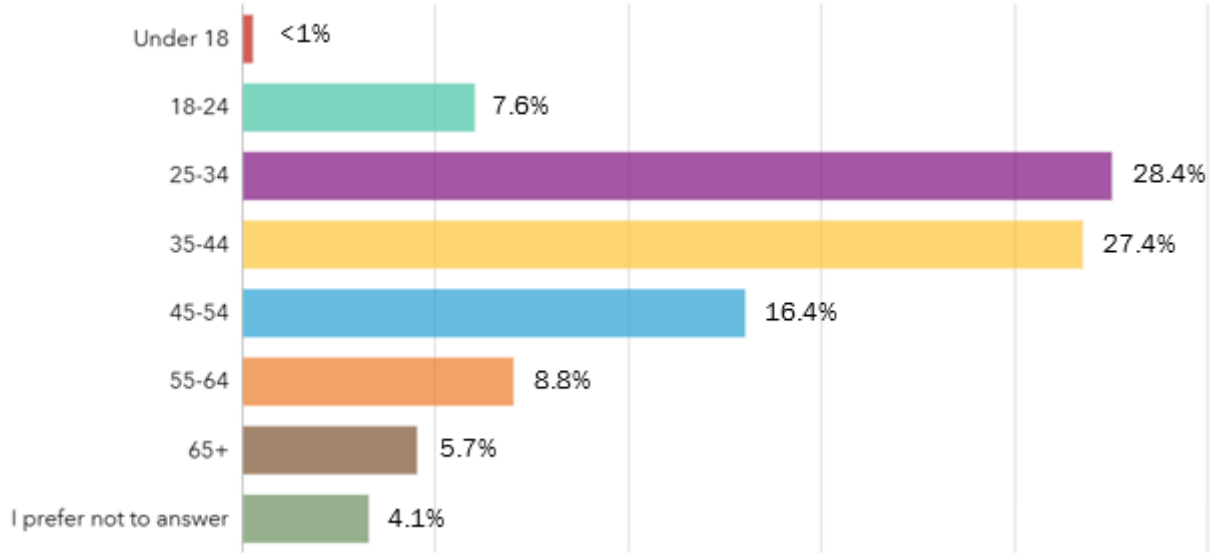


Survey Respondent Zip Codes

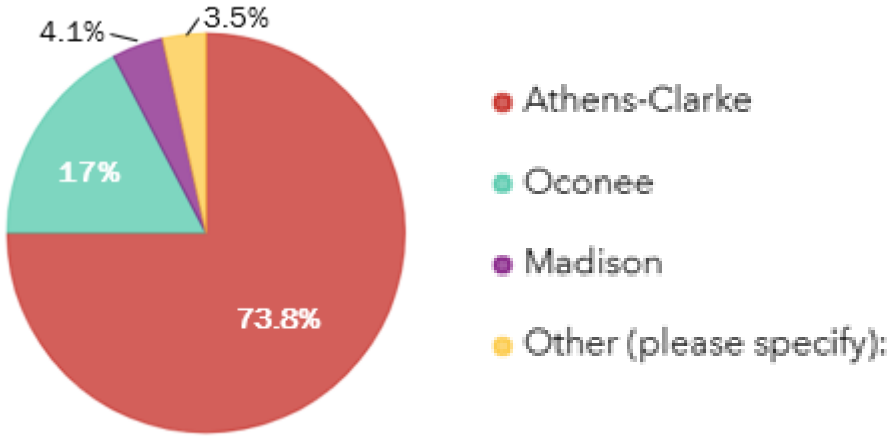
Public and Stakeholder Engagement Results

Who Responded?

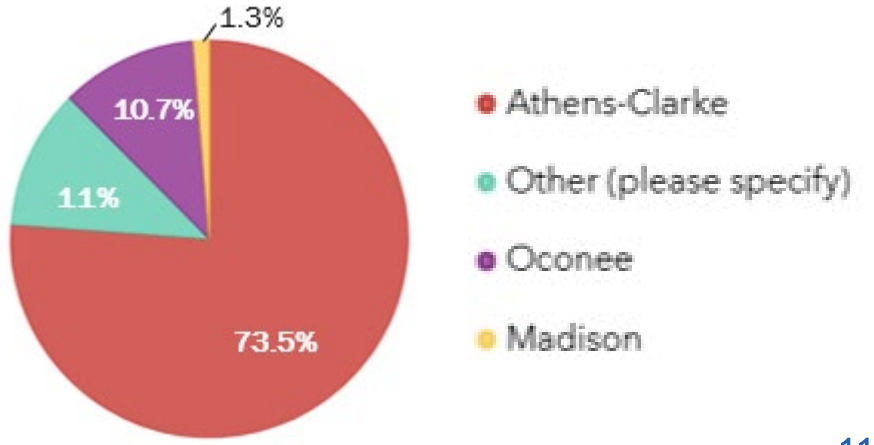
Survey Respondents Age



Where Respondents Live



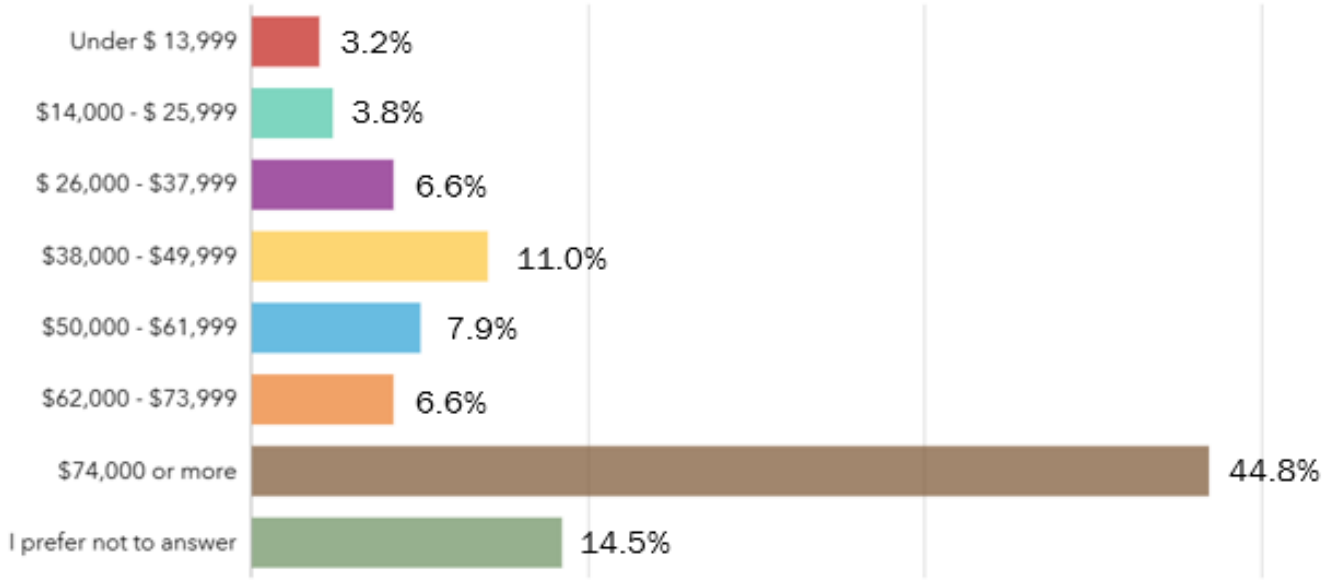
Where Respondents Work / Go to School



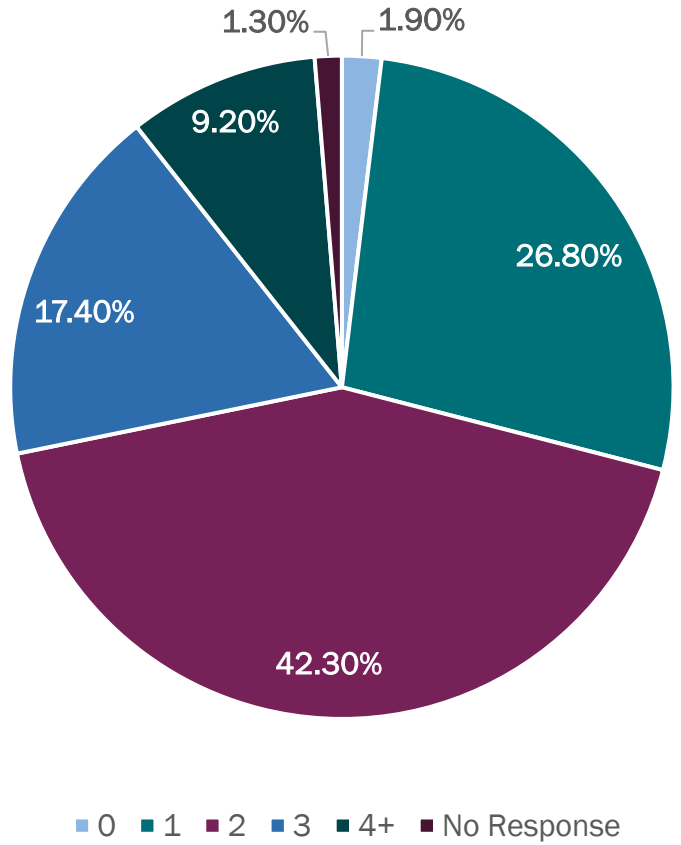
Public and Stakeholder Engagement Results

Who Responded?

Survey Respondents Income (2022 HH Income)



Respondents' vehicle access (per household)



Public and Stakeholder Engagement Results

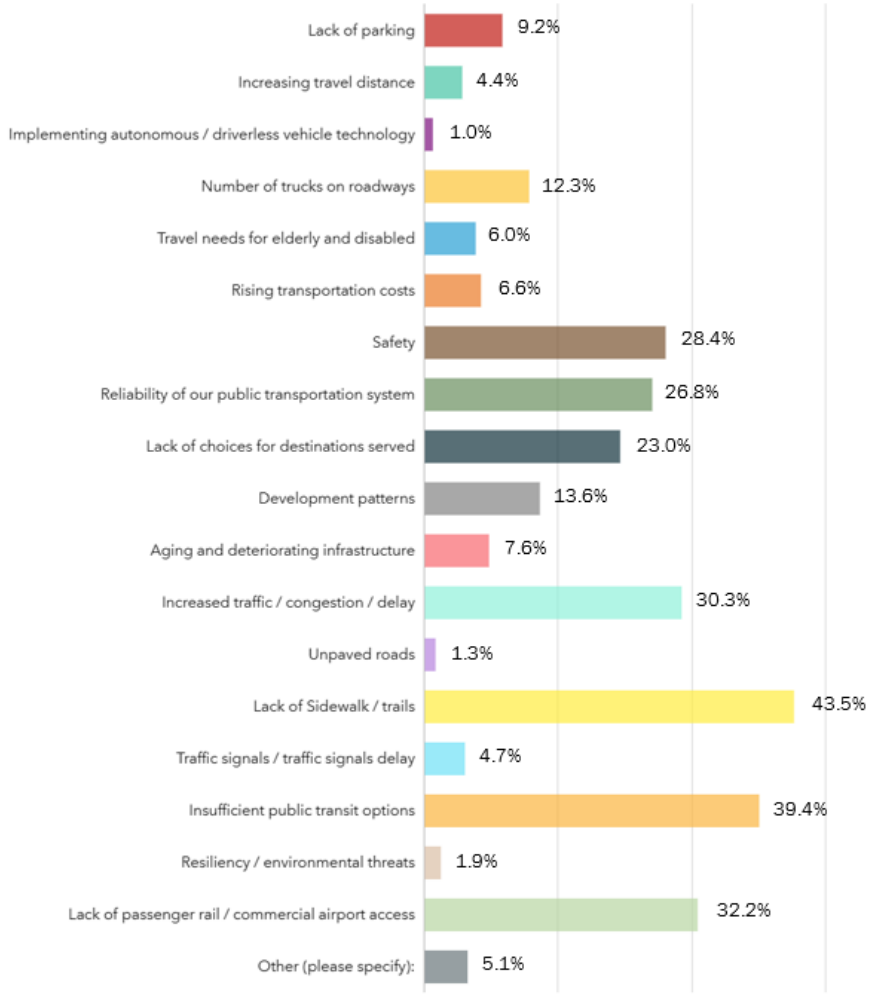
Key Survey Themes:

- Higher conflict areas are in more urban sectors of the study area
- Improved sidewalks, bike lanes, transit, and trails are common priorities
- Priorities/perspectives on transportation needs vary between Counties
- Access management and traffic flow improvements are common needs

Public and Stakeholder Engagement Results

Survey Question: What are the top 3 challenges your community faces with regards to transportation?

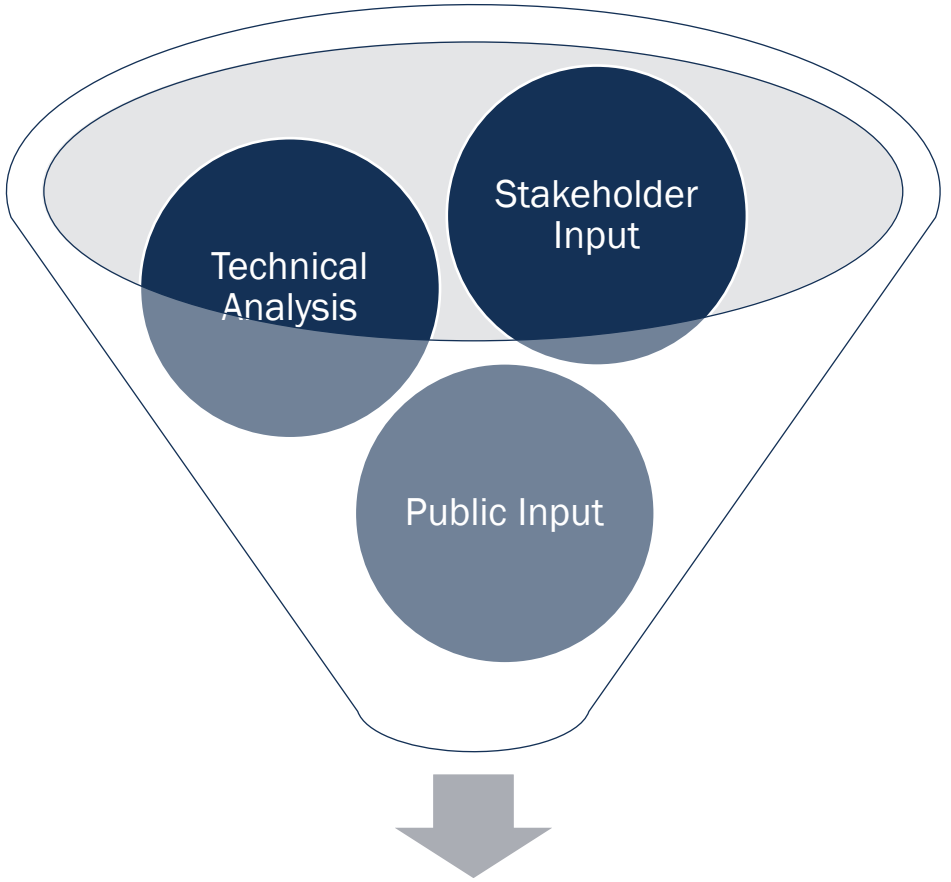
1. Lack of Sidewalks (43.5%)
2. Insufficient Public Transit Options (39.4%)
3. Lack of Passenger Rail/Commercial Airport Access (32.2%)
4. Increased Traffic/Congestion/Delay (30.3%)
5. Safety (28.4%)
6. Reliability of Public Transportation System (26.8%)
7. Lack of Choices (23%)



Needs Assessment & Financial Projections

2050 MTP Needs Assessment

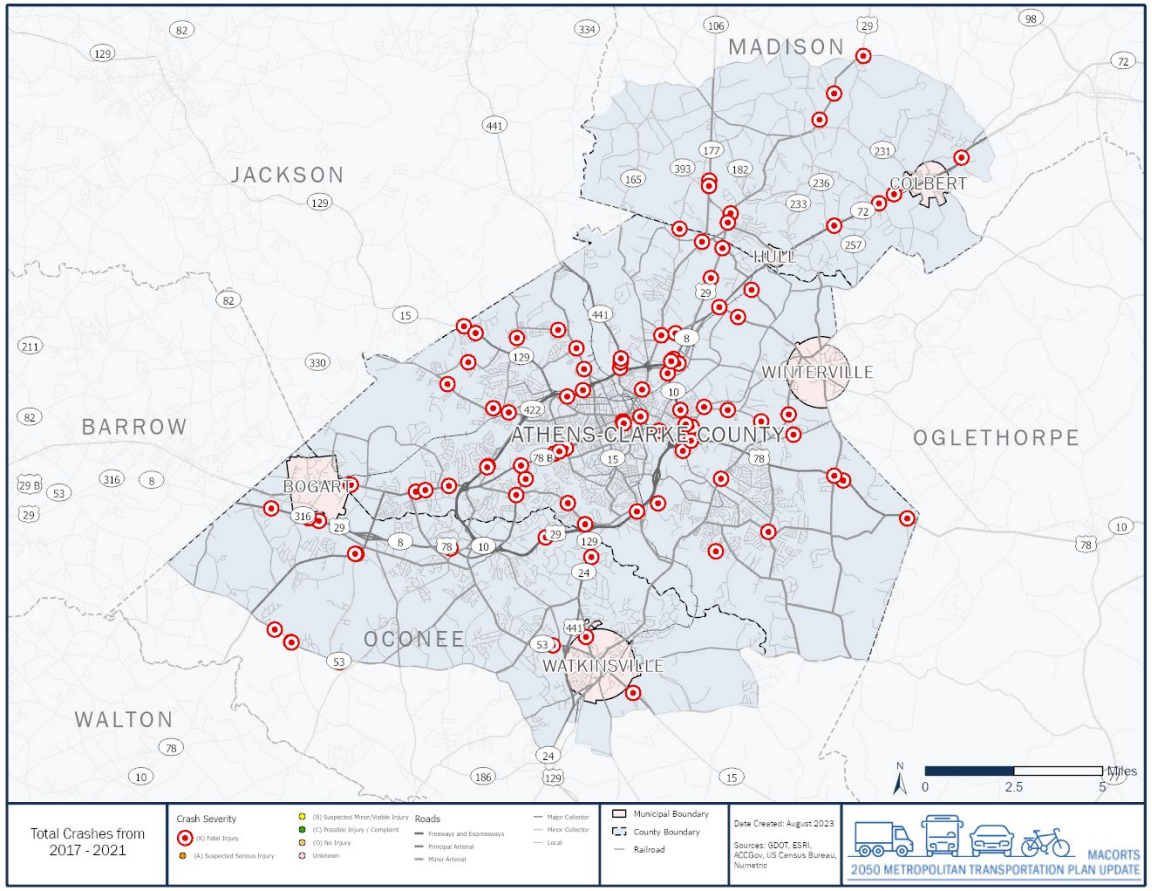
- ✓ Existing Conditions
- ✓ Travel Demand Model Outputs
- ✓ Public and Stakeholder Engagement
- ✓ Local Call for Projects
- ✓ Previous Plan Recommendations



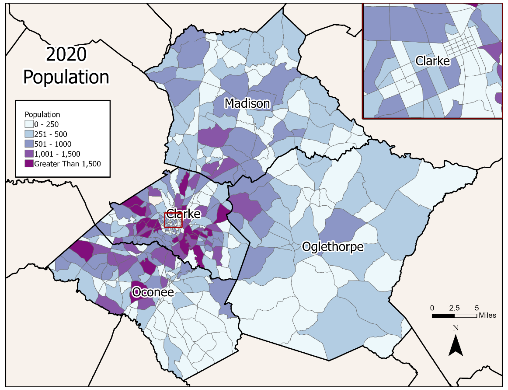
Needs Assessment

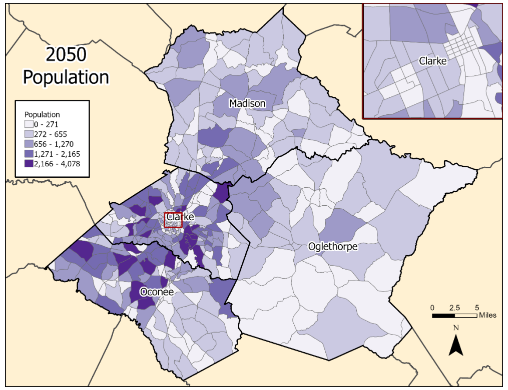
Needs Assessment: Existing Conditions Analysis

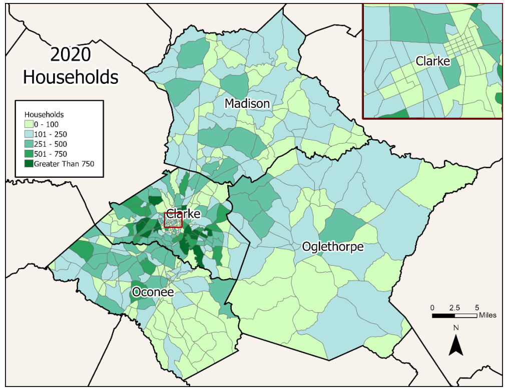
- Past and related studies
- Local Comprehensive Plans
- Demographic data: 2020 US Census and American Community Survey (ACS)
- Roadway network, functional classification, and Level of Service (LOS)
- Bicycle, pedestrian, and transit facilities
- Rail, freight, and airport infrastructure
- Crash statistics

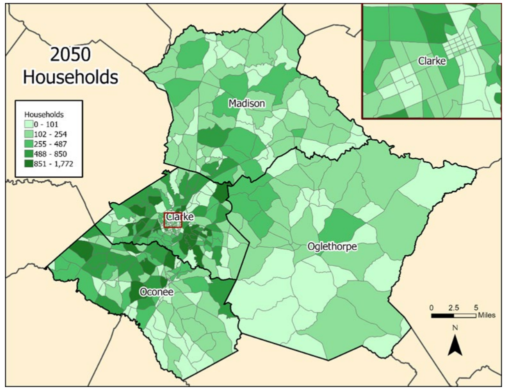


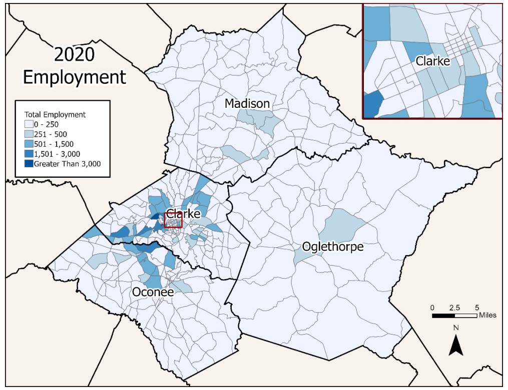
Needs Assessment: Existing Conditions Analysis

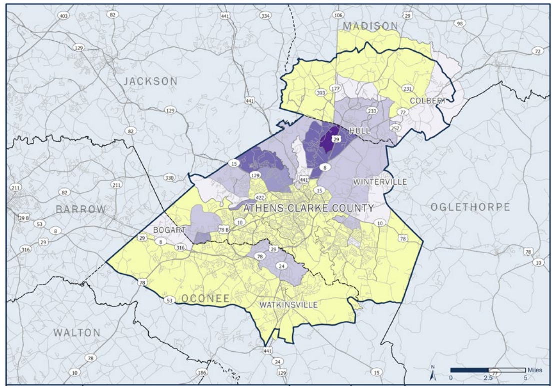


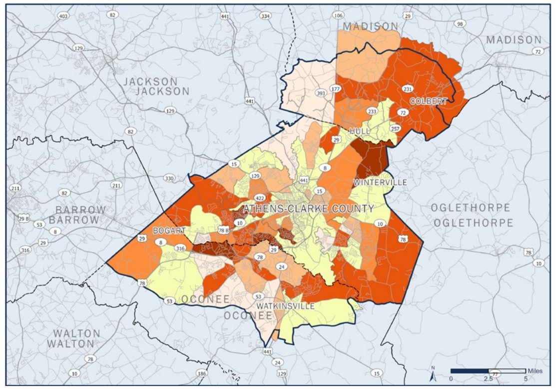


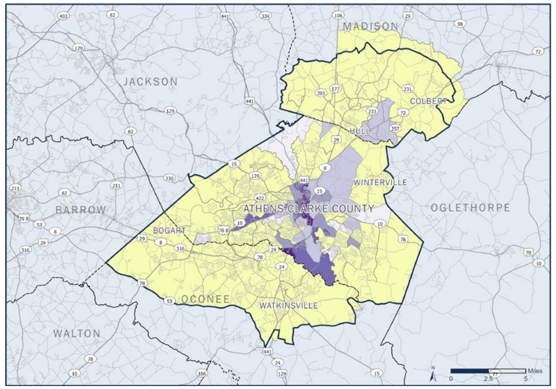


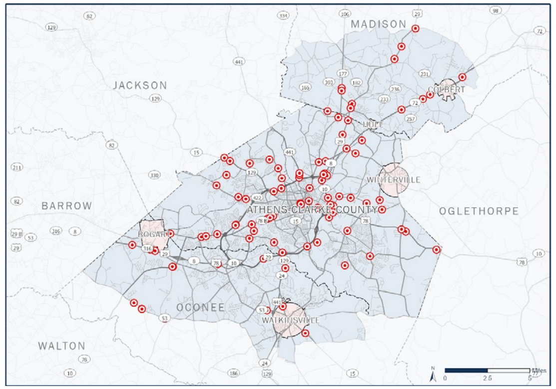


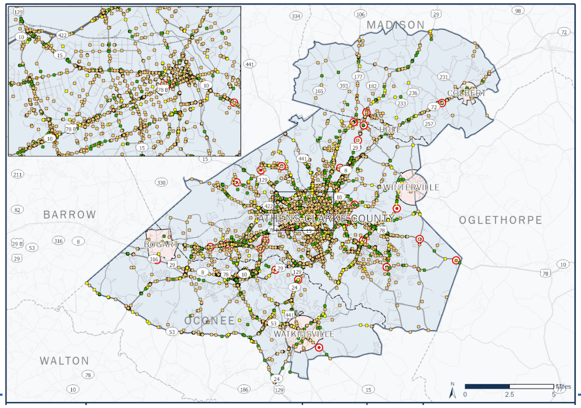


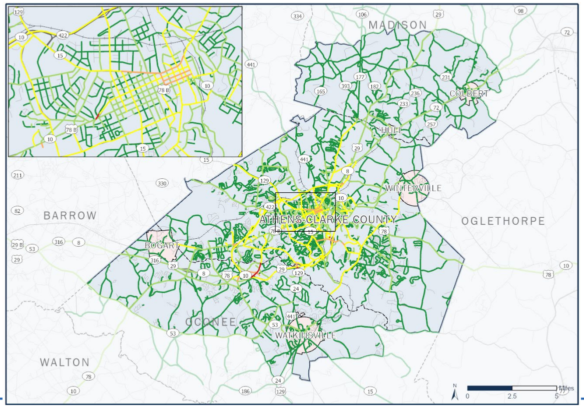


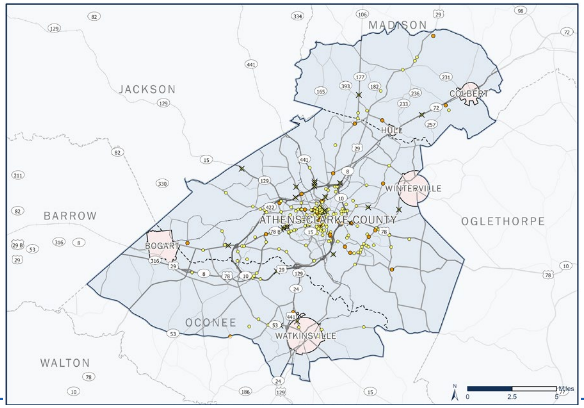


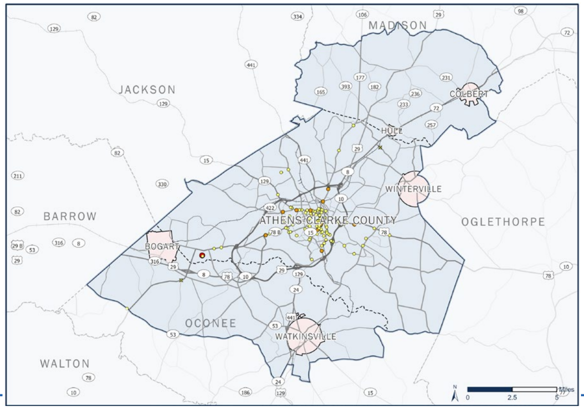








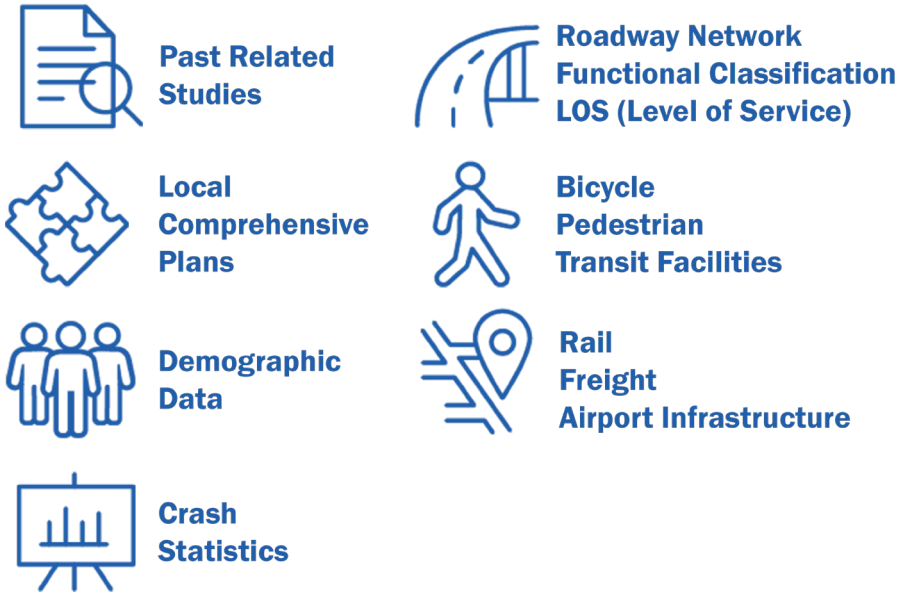




Needs Assessment: Existing Conditions Analysis

Top 10 Takeaways

1. Jobs increased by 2.9% overall; Madison showed -20.7% decrease
2. Total number of households decreased from 2015
3. Regional population increased by 4.4% from 2015; Oconee showed most growth (12.3%)
4. Athens-Clarke and Northern Oconee are major employment centers
5. Severe crashes occur around SR 10 Loop and SR 29 into Madison
6. Most bicycle crashes occur in Athens, and on/near arterial roads
7. Tri-county comprehensive plan updates since last MTP
8. Potential increase of freight traffic in north Georgia (Gainesville Inland Container Port facility)
9. Greenway/trail system is an opportunity to promote connectivity of existing bicycle/pedestrian infrastructure
10. Identified stakeholder desire for connectivity, accessibility, and safety



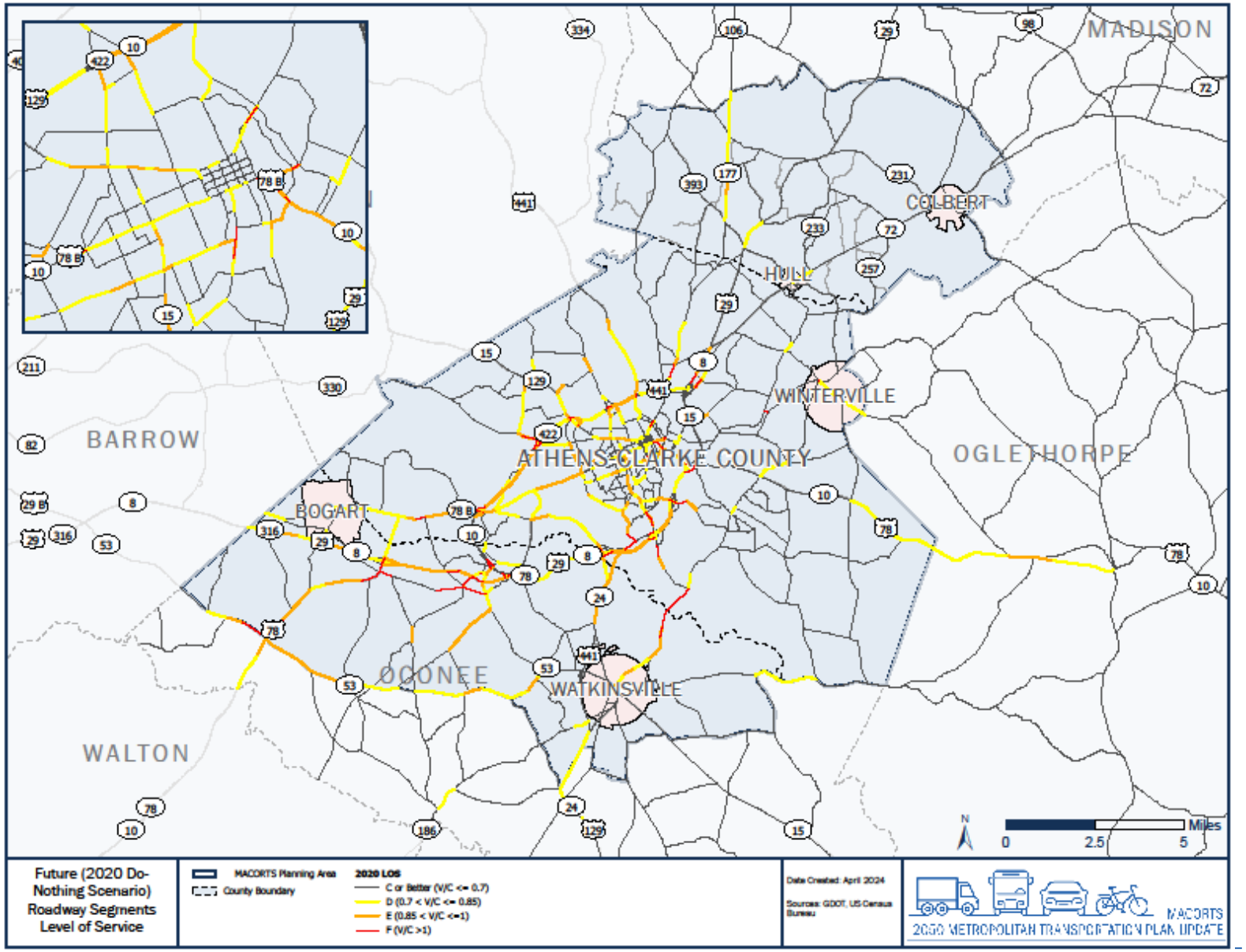
Existing Conditions Elements

NEW

Needs Assessment: Travel Demand Model Results

2020 LOS D - F

1. 4,008 segments
2. 728 with a LOS of D - F
3. US 78 and US 441 Interchange is the area with highest V/C and low LOS
4. Atlanta Hwy/S Athens Perimeter Hwy W Interchange is another area with high V/C and low LOS

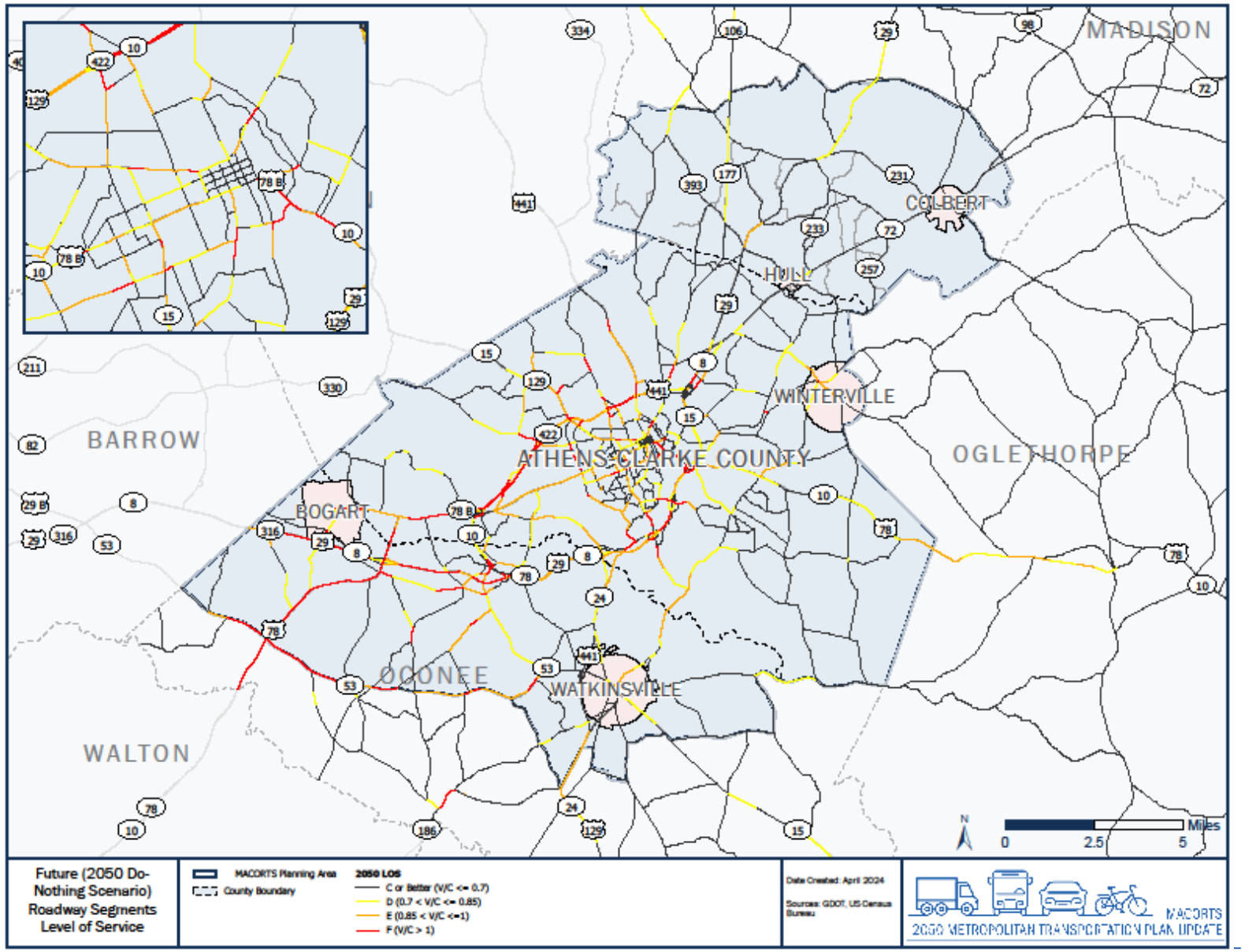


NEW

Needs Assessment: Travel Demand Model Results

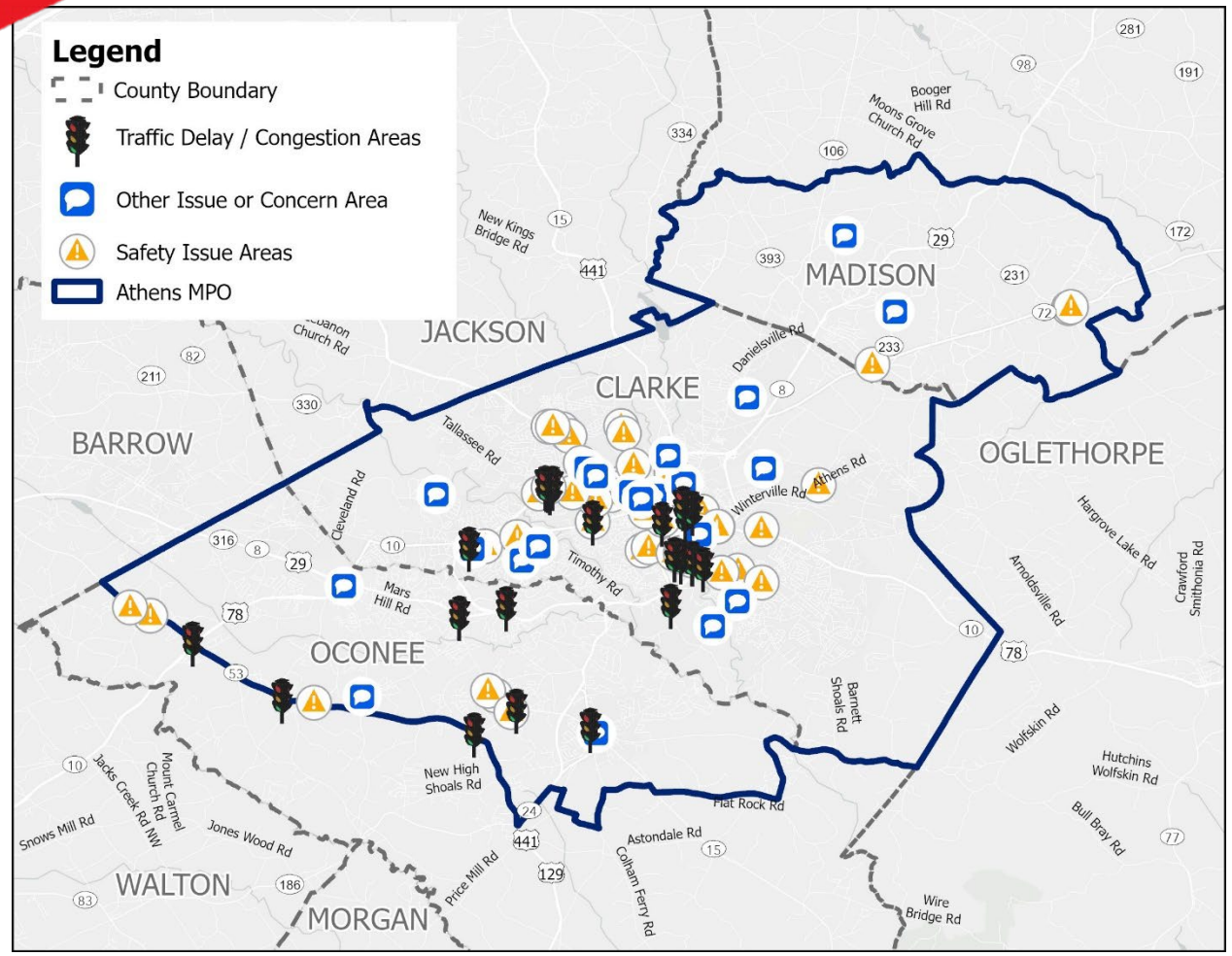
2050 LOS D - F

1. 4,008 segments
2. 1,202 at LOS D - F
3. Decrease in LOS on SR 10 Loop
4. Decrease in LOS on major roadways in south ACC and north Oconee
5. 65.1% increase in roadways with LOS D - F



NEW

Needs Assessment: Public Input



Safety Issues

- Jefferson Rd/US 129/SR 15 near Camak Dr. (ACC) – Turn Lanes and Freight
- Oglethorpe Ave between Loop 10 and GA-15 (ACC) – Bike/Ped Safety
- College Station Rd near Loop 10 (ACC) – Speeds & Bike/Ped Safety
- Mars Hill Rd & Hog Mountain Rd. (Oconee) – Left Turns and School Traffic
- Hog Mountain Road (Oconee) – Congestion and General Safety Issues
- GA-72 and S 4th St (Madison) – Left turns on GA-72 and Freight Conflicts

Issues and Areas of Concern

- GA-15 / Prince Ave inside Loop 10 – multimodal
- Upgrades to signs, intersections, paths, walkways and roads
- Improved sidewalks, bike lanes and trail infrastructure
- Signal timing improvements for accessing 441

NEW

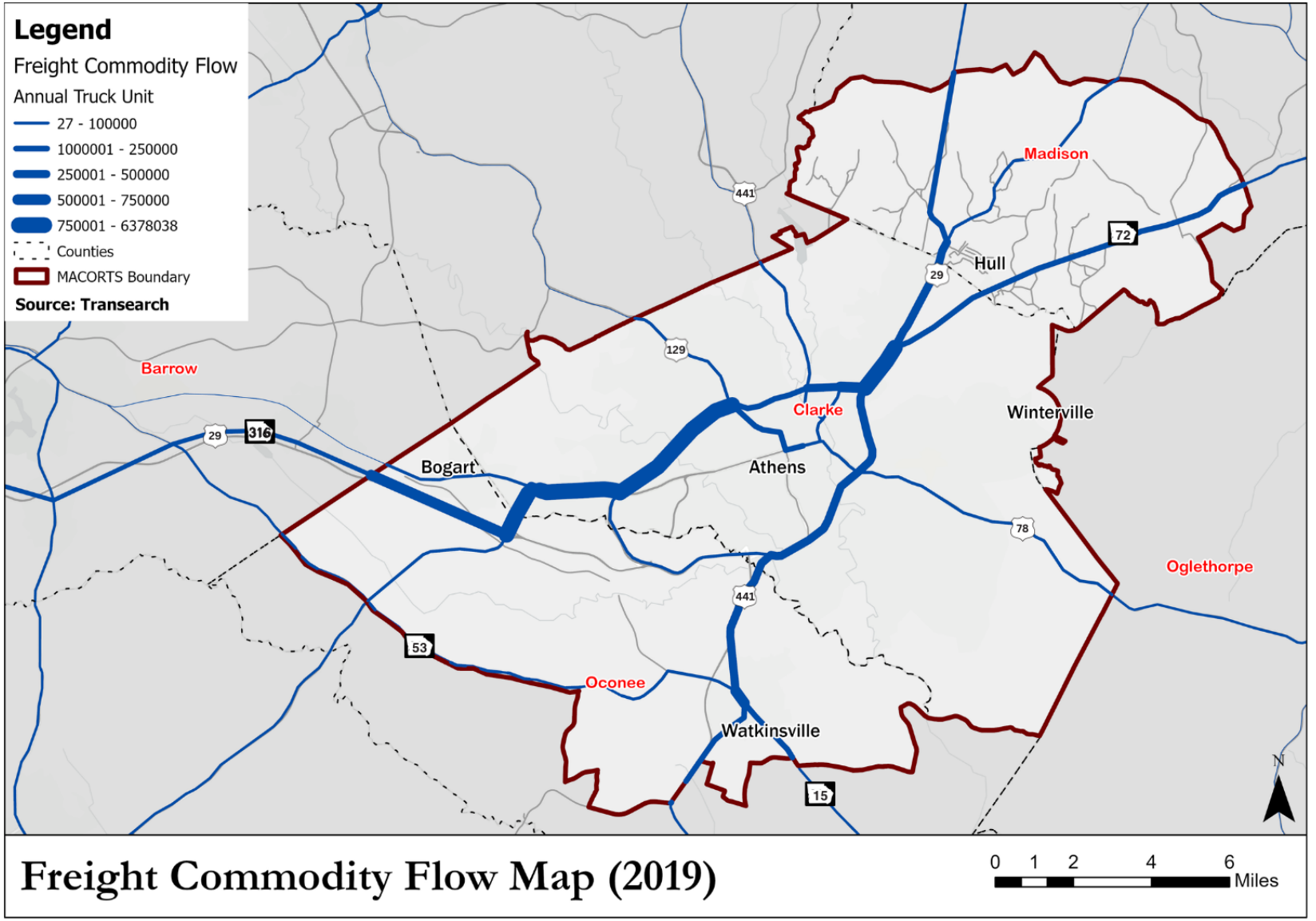
Needs Assessment: Freight Analysis

- Freight Focus Groups
- Truck Bottleneck Analysis
- Freight intensive Land Use
- Commodity Flows
- Freight Route Network
- Truck Parking Inventory
- Freight Project Recommendations

Needs Assessment: Freight Commodity Flows

NEW

- Highest flows are in Athens-Clarke County
- SR 10 Loop, W. US 78, and N. US 29 carry the highest flows
- US 441 in Oconee and Athens-Clarke and US 29 in Madison County also carry significant flows

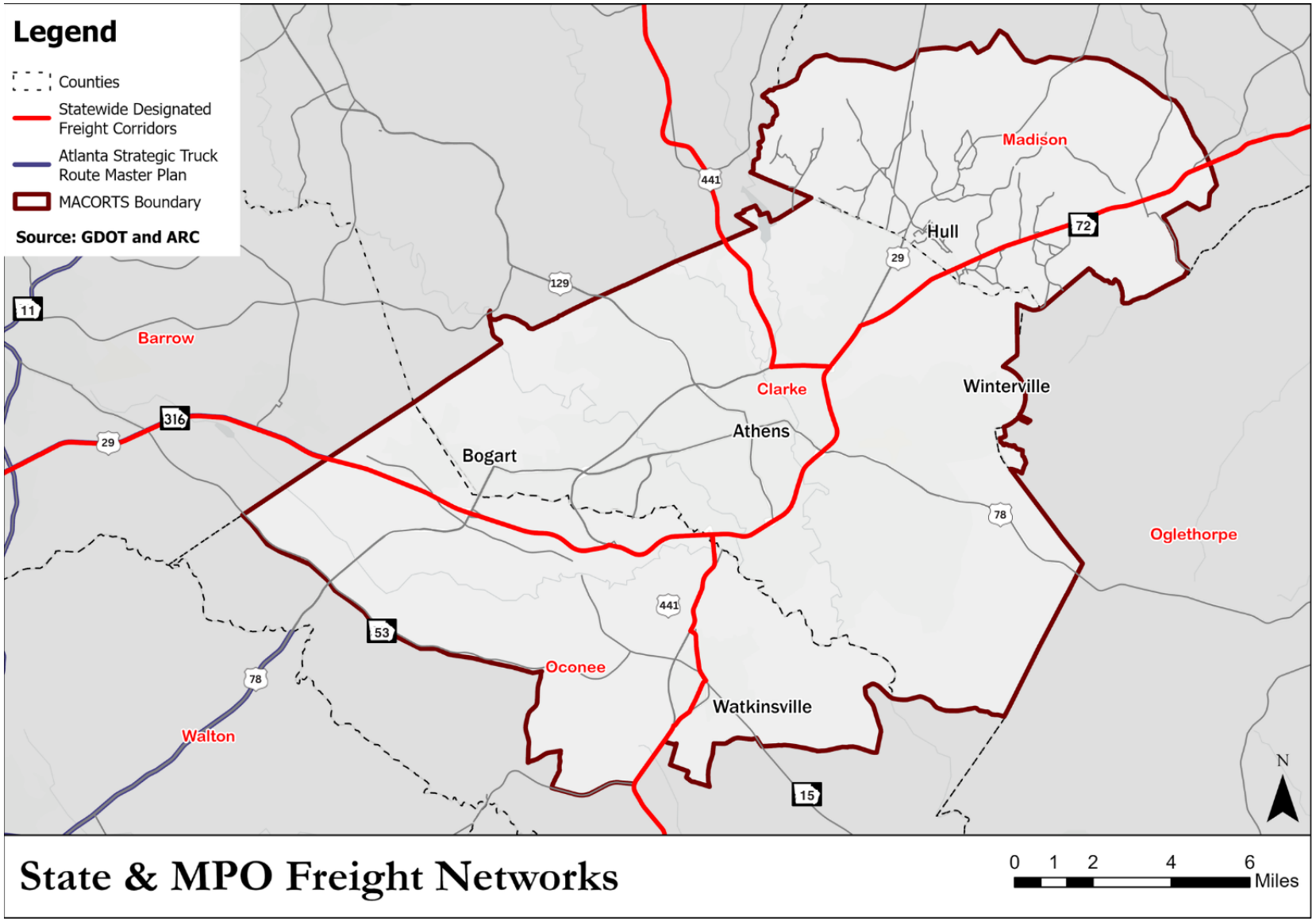


Freight Commodity Flow Map (2019)

NEW

Needs Assessment: State & MPO Freight Networks

- Statewide Designated Freight Corridors
  - US 441 (also a GRIP corridor)
  - SR 72
  - SR 316
- Atlanta Strategic Truck Route Master Plan (ASTRoMaP) – ARC
- Gainesville-Hall MPO Regional Freight Network

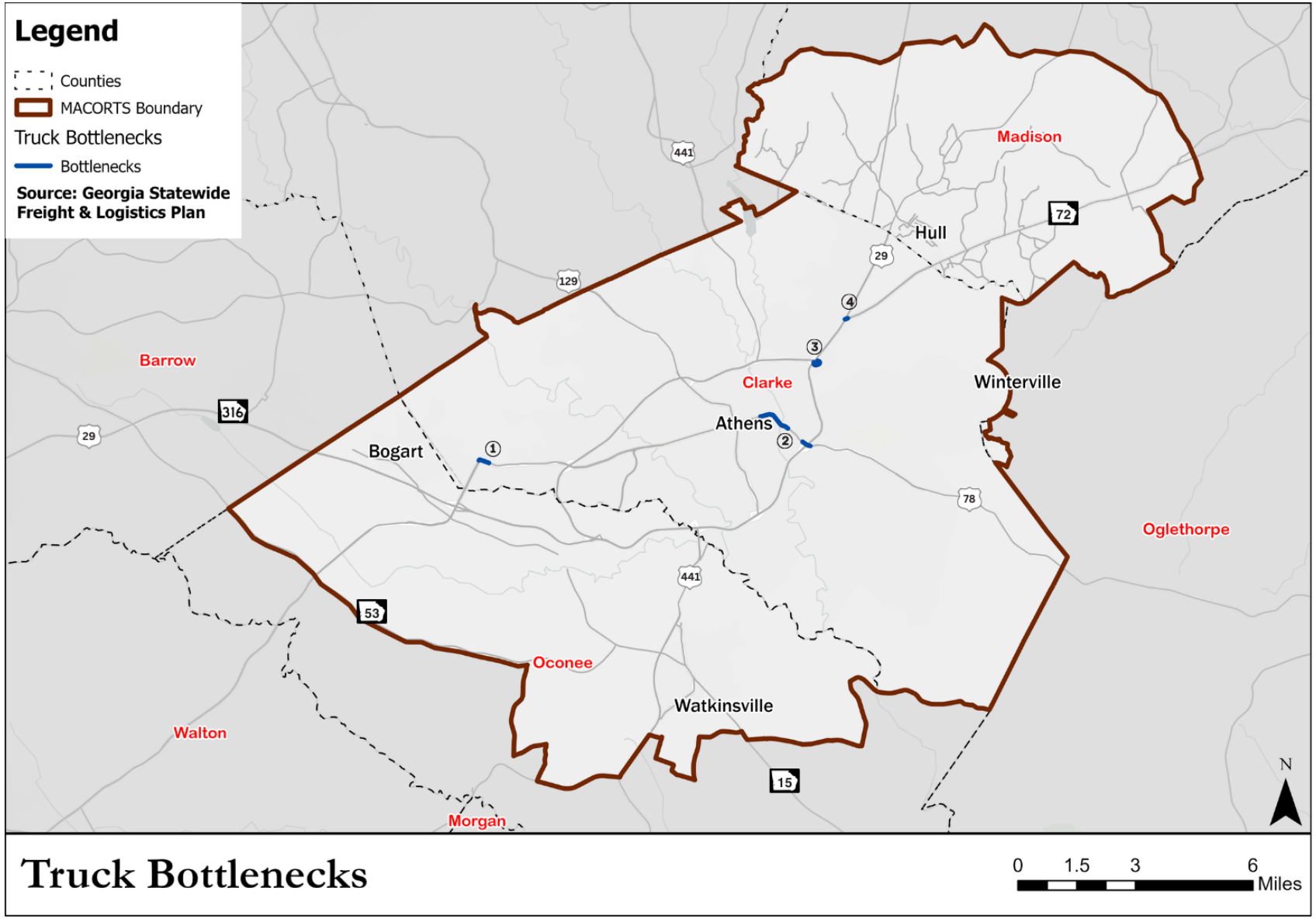


Needs Assessment: Truck Bottlenecks

NEW

#	Bottleneck Locations
1	US 78 (Monroe Hwy) at Atlanta Hwy
2	US 78 (Oconee St) between Lumpkin St and US 441/SR 10 (Outer Loop)
3	US 441/SR 10 (Outer Loop) northeast junction
4	US 29 at SR 72

- Bottlenecks are in the top 5% of cost/mile for urban non-Atlanta areas
- Cost = total cost of delays to freight companies
  - Due to reduction in speed and reliability

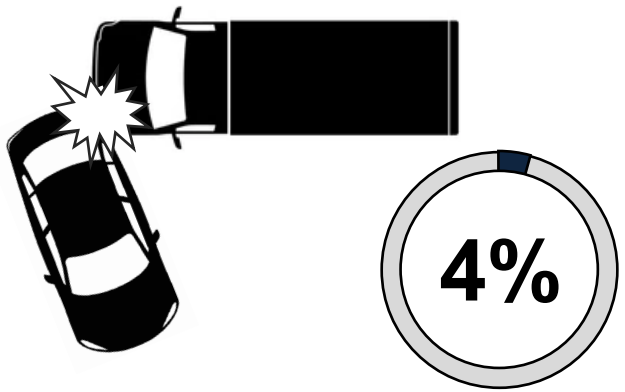


NEW

Needs Assessment: Truck-Related Crashes

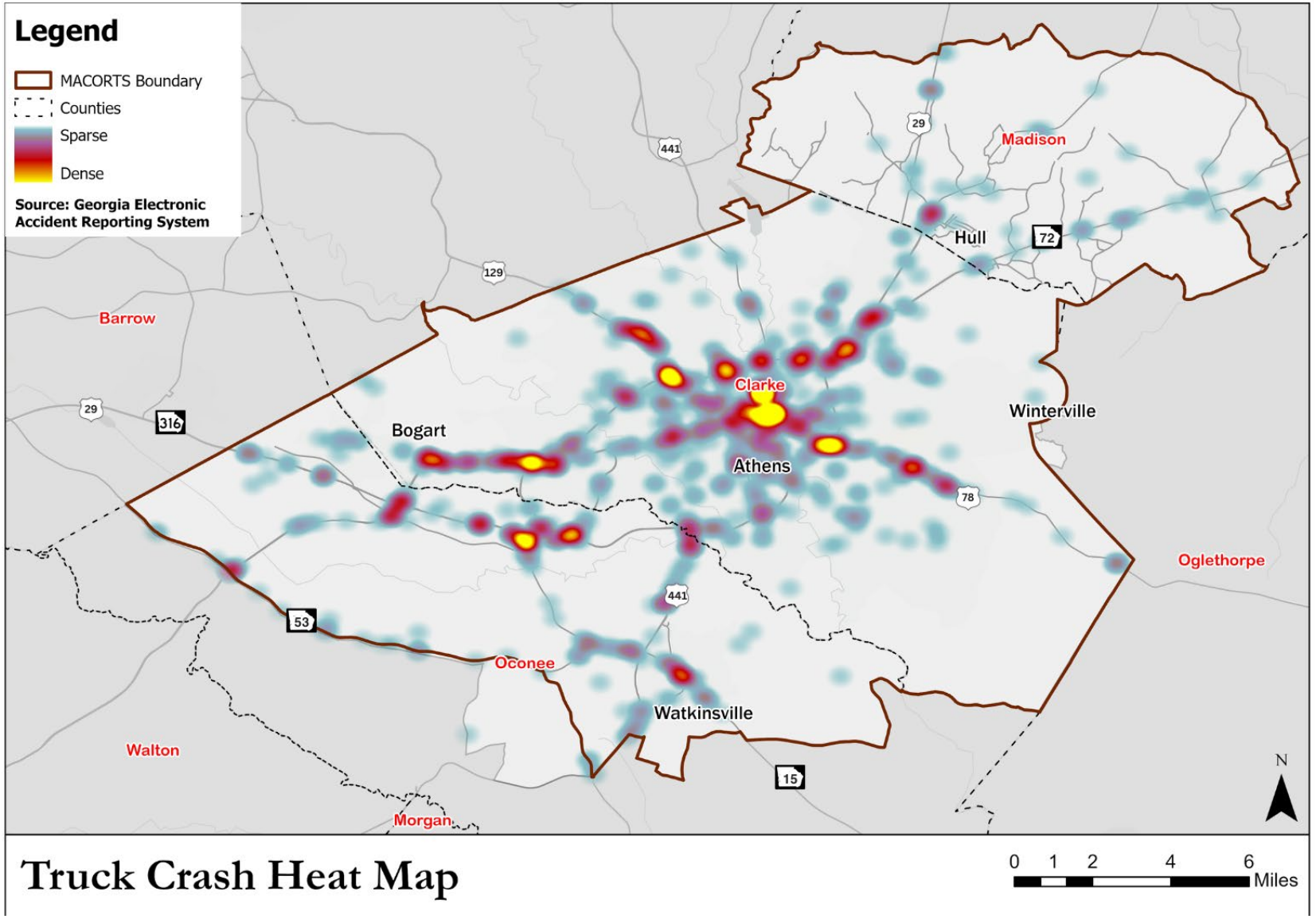
1,129

Truck-Related Crashes



31,435

Total Crashes



Truck Crash Heat Map

2050 MTP Financial Projections

Sources of Funding

- Federal Funding
- State Funding
- SPLOST/TSPLOST
- Discretionary Funding

Funding Considerations

- Funding increases at 2% annually; 1% annually after 2026
- Project costs increase at 5% annually

2025-2050 Financial Projections: GDOT

	Projects Estimate	*Maintenance Estimate*	*Total Estimate*
2025	$20,935,098	$1,336,030	***$22,271,128***
2026	$21,353,800	$1,362,751	***$22,716,551***
2027	$21,567,338	$1,376,378	***$22,943,716***
2028	$21,783,012	$1,390,142	***$23,173,154***
2029	$22,000,842	$1,404,043	***$23,404,885***
2030	$22,220,850	$1,418,084	***$23,638,934***
2031	$22,443,059	$1,432,265	***$23,875,323***
2032	$22,667,489	$1,446,587	***$24,114,077***
2033	$22,894,164	$1,461,053	***$24,355,217***
2034	$23,123,106	$1,475,664	***$24,598,770***
2035	$23,354,337	$1,490,420	***$24,844,757***
2036	$23,587,880	$1,505,324	***$25,093,205***
2037	$23,823,759	$1,520,378	***$25,344,137***
2038	$24,061,997	$1,535,582	***$25,597,578***
2039	$24,302,617	$1,550,937	***$25,853,554***
2040	$24,545,643	$1,566,447	***$26,112,090***
2041	$24,791,099	$1,582,111	***$26,373,210***
2042	$25,039,010	$1,597,932	***$26,636,943***
2043	$25,289,400	$1,613,912	***$26,903,312***
2044	$25,542,294	$1,630,051	***$27,172,345***
2045	$25,797,717	$1,646,351	***$27,444,069***
2046	$26,055,695	$1,662,815	***$27,718,509***
2047	$26,316,251	$1,679,443	***$27,995,694***
2048	$26,579,414	$1,696,237	***$28,275,651***
2049	$26,845,208	$1,713,200	***$28,558,408***
2050	$27,113,660	$1,730,332	***$28,843,992***
Total	***$624,034,742***	***$39,824,467***	***$663,859,210***

Project Considerations

Project Considerations: 2050 Unconstrained List

2045 Projects included in 2050 Unconstrained List

Typical Project Types	Number in the 2050 MTP
Access Management	7
Bridge	16
Intersection/Interchange	39
New Roadway	7
Other	6
Passenger Rail	1
Safety Improvements	7
Widening	32
Transit	1
Signals	3

- 67 projects in Athens-Clarke County
- 47 in Oconee County, 10 in Madison County, 4 in ACC/Oconee
- Includes Watkinsville Bypass project
- 10 projects currently in FY 24-27 TIP
- Build on foundation provided by the 2045 projects
  - 7 were added to 2045 MTP as amendments

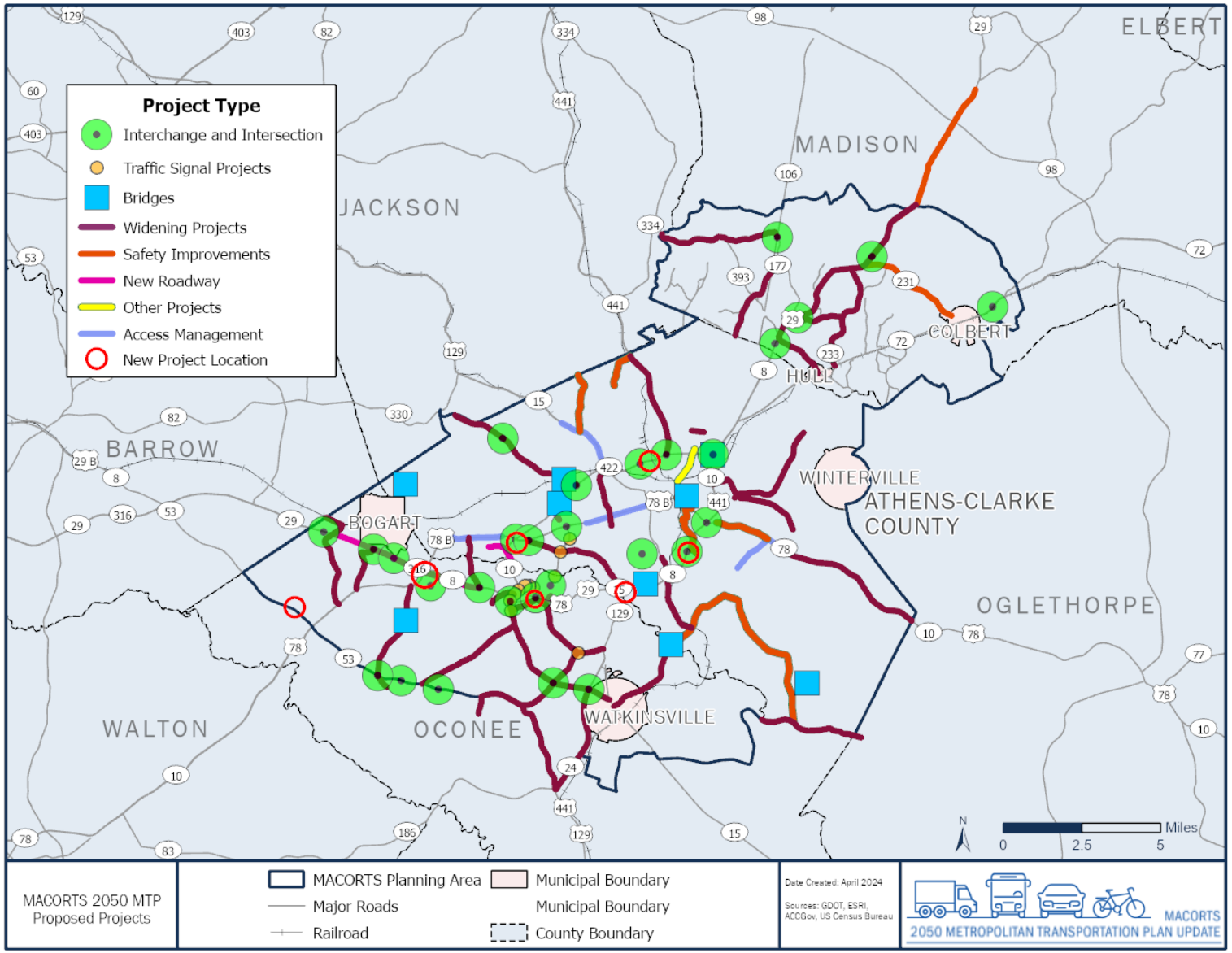
Project Considerations: 2050 Unconstrained List

New 2050 Projects

County	Project Description	Project Type
Oconee	Hog Mountain Road Widening	Widening
Oconee	Epps Bridge Pkwy Widening	Widening
ACC/Oconee	SR 15/Macon Rd Widening	Widening
ACC	SR 10 LOOP from S. Milledge Ave & US 441	Widening
Oconee	US 78 from Clotfelter Rd to Oconee Co. Border	Widening
ACC	SR 10 LOOP from US 441 to Epps Bridge Pkwy	Widening
ACC	SR 10 LOOP from US 441 to N Chase St	Widening
ACC	US 29 N From Hull Rd to SR 10 Loop	Widening
ACC	US 78 Off/On Ramps at Lexington Rd & SR 10 LOOP	Access Management
ACC	Timothy Rd/US 129 Off/On Ramps at SR 10 LOOP S	Access Management

- Developed by using TDM outputs and Level of Service for 2020 and 2050
- Corridors were analyzed on crashes with serious injuries and fatalities
- Freight projects were incorporated as recommended

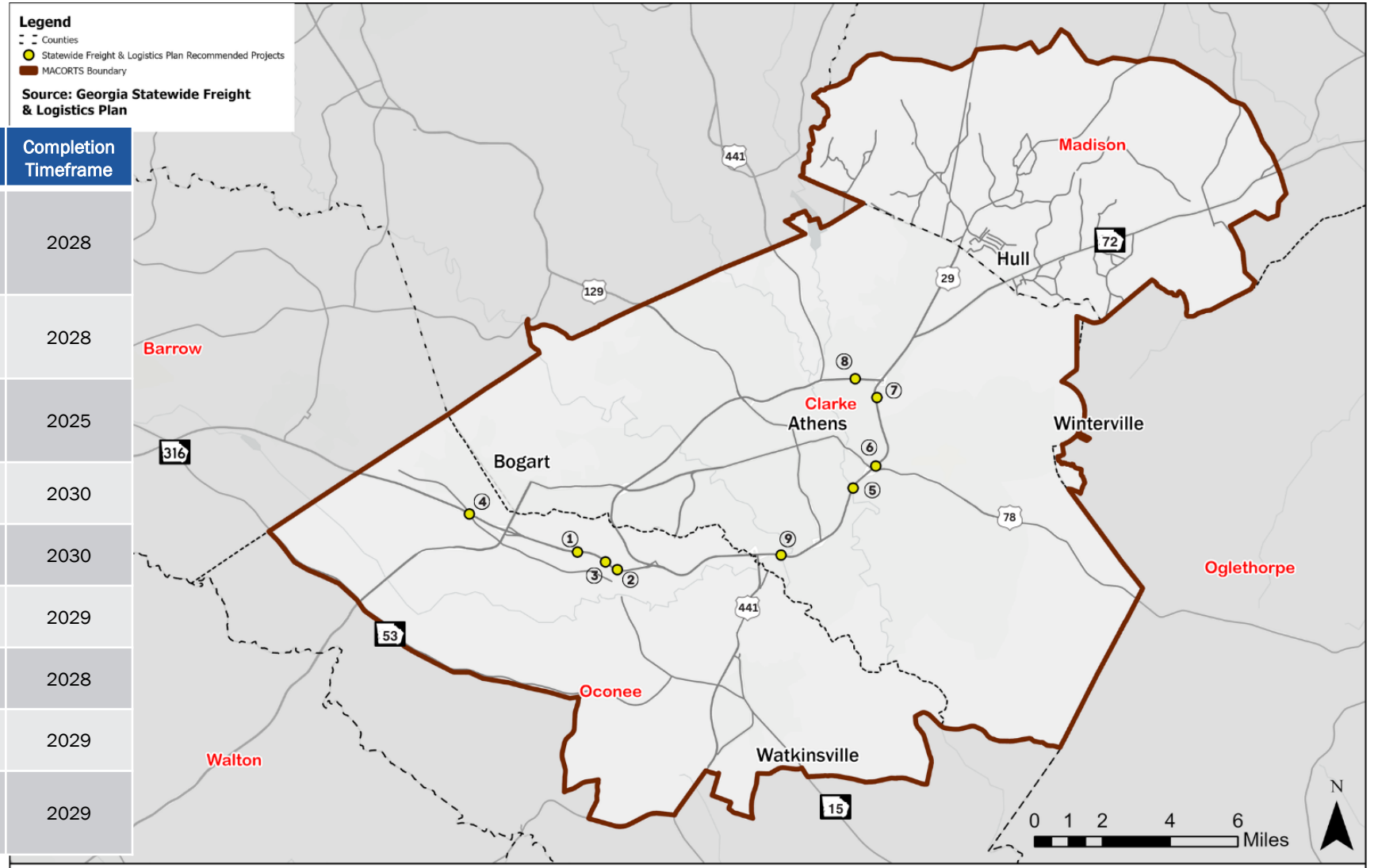
Project Considerations: 2050 Unconstrained List



Project Considerations: Statewide Freight & Logistics Plan Recommended

Foundational Projects

Number	Type	Name	Description	Completion Timeframe
1	Interchange Reconstruction	SR 316 @ Jimmy Daniel Rd	Reconstruct as grade-separated diamond interchange	2028
2	Interchange Reconstruction	SR 316 @ Oconee Connector	Reconstruct as grade-separated interchange	2028
3	Grade Separation	SR 316 @ Virgil Langford Pkwy	Create a bridge for Virgil Langford Pkwy to cross over SR 316	2025
4	Grade Separation	SR 316 @ Mars Hill Rd	Grade separation	2030
5	Bridge Replacement	SR 10 @ North Oconee River	Bridge replacement	2030
6	Bridge Replacement	SR 10 @ CSX Railroad	Bridge replacement	2029
7	Bridge Replacement	SR 10 @ CSX Railroad	Bridge replacement	2028
8	Bridge Replacement	SR 10 @ North Ave	Bridge replacement	2029
9	Bridge Replacement	SR 10 @ Middle Oconee River	Bridge replacement	2029

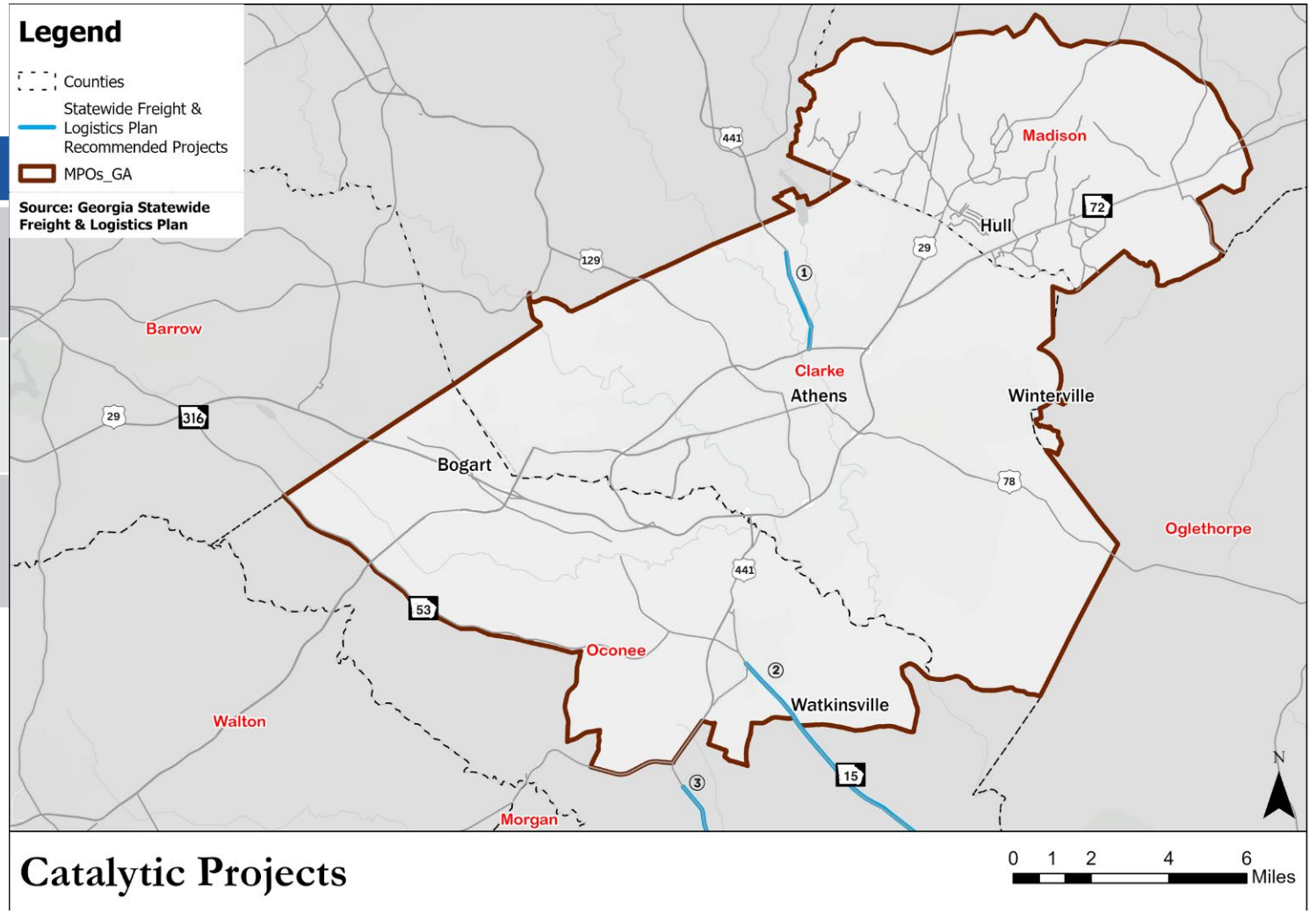


Statewide Freight & Logistics Plan Recommended Projects

Project Considerations: Statewide Freight & Logistics Plan Recommended

Catalytic Projects

Number	Type	Name	Description
1	Widening	US 441 from SR 10 to Clarke County Line	Widening from two to four lanes
2	Widening	SR 15 from Antioch Church Rd to US 129	Widening from two to four lanes
3	Widening	US 441 from Apalachee River to Astondale Rd	Widening from two to four lanes



Prioritization Process Review & Endorsement

2050 MTP: Prioritization Process Review

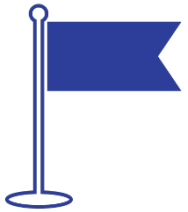
Performance Based Project Screening Tool

Built on

- Federal Planning Factors
- Statewide Goals
- Public and Stakeholder Input
- Adopted Local Goals

Incorporates

- Established Objectives
- Adopted Performance Metrics and Targets



Goals

Objectives

2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

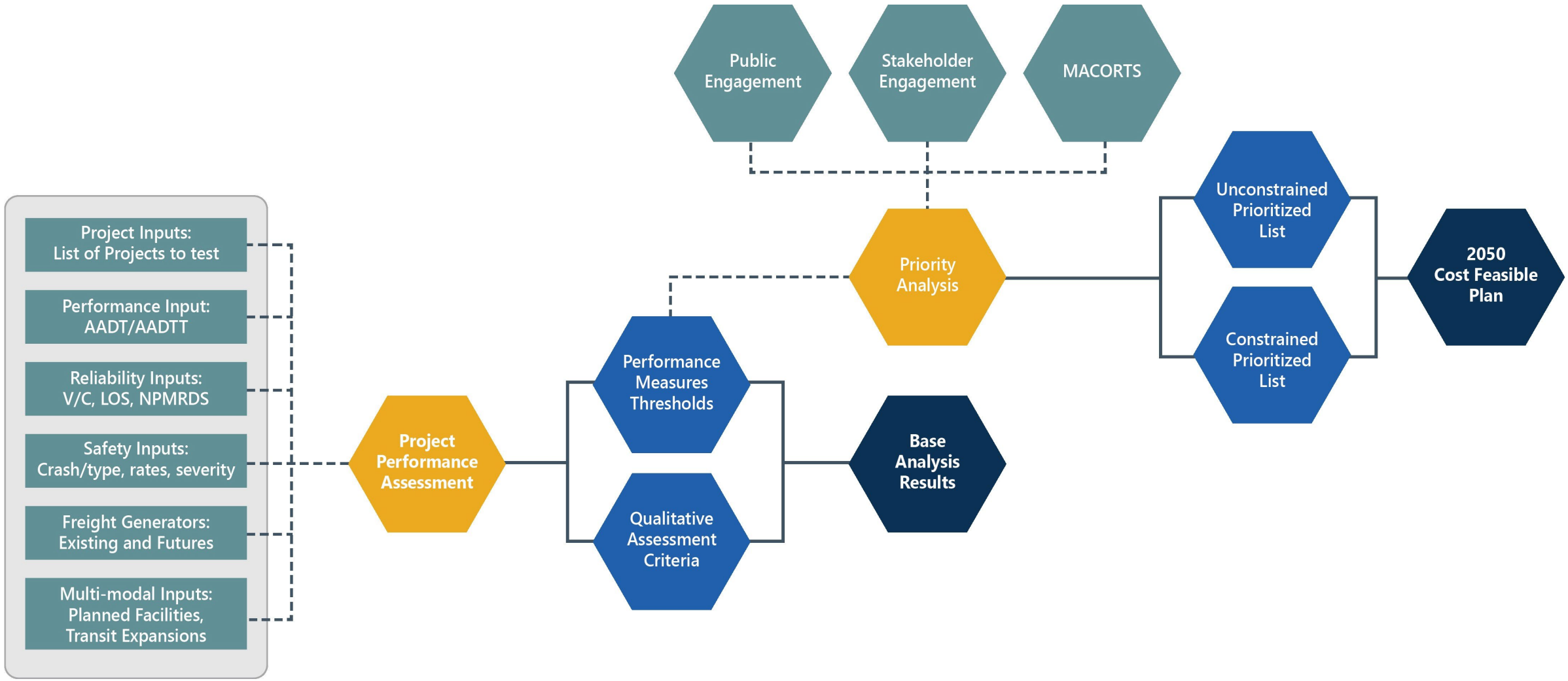
Excel-based

- Data inputs from approved measures of effectiveness
- Incorporates quantitative and qualitative factors
- Results in Project Prioritization “Dashboard”
- Includes goals met by each project
- Easily updated for future MTP Amendments

Qualitative

Quantitative

2050 MTP: Prioritization Process Review



2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

Quantitative Tool Inputs:

- Average Annual Daily Traffic/Average Annual Daily Truck Traffic (AADT/AADTT)
- Level of Service (LOS)/Vehicle to Capacity Ratio (V/C)
- Total Vehicle Crashes, Injury Crashes, and Fatal Crashes
- Vehicle, Injury, and Fatal Crash Rates (per 100MVMT)
- Bicycle Crashes, Injury Crashes, and Fatal Crashes
- Pedestrian Crashes, Injury Crashes, and Fatal Crashes
- Replica Bicycle/Pedestrian Movements (volumes)

2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

Qualitative Tool Inputs (Yes/No):

- Supports Access to Freight Generators and Attractors
  - GDOT and MACORTS Freight Plan Data
- Supports Access to Tourism Attractions
  - Attractions Identified from Convention and Visitors Agencies
- Multimodal Elements
  - Access to Planned Bicycle/Pedestrian Facilities
  - Recommended Projects from Bicycle/Pedestrian Plans
  - Connections to Existing/Planned Regional Multimodal Facilities
- Access to Existing/Planned Transit Service
  - Data from Transit Plans
- Supports Improved Airport Access

Yes	Somewhat	No
2	1	0

2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

- Project Performance Summary Table (Example Only)

Project Performance Summary

	AADT/AADTT		RELIABILITY		2013 - 2017 CRASH DATA									FREIGHT ECONOMY	TOURISM	MULTIMODAL ELEMENTS				
PROJECT ID	BASE AADT	BASE %TRUCK	BASE LOS	BASE V/C	TOTAL VEHICLE CRASHES	CRASH RATE (PER 100M VMT)	TOTAL BIKE /PED. CRASHES	# OF CRASHES WITH BIKE/PED INJURIES	# OF CRASHES WITH BIKE/PED FATALITIES	# OF VEHICULAR CRASHES WITH INJURY	# OF VEHICULAR CRASHES WITH FATALITY	RATE OF FATALITIES (PER 100M VMT)	RATE OF INJURIES (PER 100M VMT)	SUPPORTS ACCESS TO FREIGHT GEN/ATT	SUPPORTS ACCESS TO TOURISM ATTRACTOR	PLANNED BICYCLE FACILITIES	PLANNED PEDESTRIAN FACILITIES	EXISTING/ PLANNED TRANSIT SERVICE	SUPPORTS REGIONAL MULTIMODAL CONNECTIONS	SUPPORTS IMPROVED ACCESS TO PUBLIC AIRPORT
R-1	20,625	3%	C	0.59	120	127.52	1	1	0	44	0	0	0	Yes		Yes	No	No	-	Yes
R-2	32,575	4%	0	0.00	0	0.00	0	0	0	0	0	0	0	-		No	No	-	-	No
R-3	29,840	9%	D	0.62	227	148.87	1	1	0	64	0	0	0	Yes		Yes	Yes	Somewhat	-	No
R-4	27,487	8%	E	0.80	413	514.56	4	3	1	87	0	0	0	-	Yes	Yes	Yes	Yes	-	No
R-5	27,400	2%	D	0.61	23	25.55	0	0	0	5	0	0	0	Yes		Yes	Yes	No	-	No
R-6	52,030	5%	D	0.61	36	37.91	1	1	0	9	0	0	0	-		No	No	Yes	-	No
R-7	30,607	3%	E	0.86	443	1321.81	5	5	0	104	0	0	0	Yes	Yes	Somewhat	Somewhat	Yes	-	Yes
R-8	36,315	9%	D	0.75	520	181.62	1	1	0	95	3	0	0	Yes		No	Yes	Yes	-	No

2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

- Project Performance Ranking Table (Example Only)

		FREIGHT ECONOMY	RELIABILITY	SAFETY AND SECURITY					FREIGHT ECONOMY	TOURISM	MULTIMODAL ELEMENTS				
Total Score	PROJECT ID	BASE %TRUCK	BASE V/C	CRASH RATE (PER 100M VMT)	TOTAL BIKE /PED. CRASHES	# OF CRASHES WITH BIKE/PED FATALITIES	RATE OF FATALITIES (PER 100M VMT)	RATE OF INJURIES (PER 100M VMT)	SUPPORTS ACCESS TO FREIGHT GEN / ATT	SUPPORTS ACCESS TO TOURISM ATTRACTOR	PLANNED BICYCLE FACILITIES	PLANNED PEDESTRIAN FACILITIES	EXISTING/ PLANNED TRANSIT SERVICE	SUPPORTS REGIONAL MULTIMODAL CONNECTIONS	SUPPORTS IMPROVED ACCESS TO PUBLIC AIRPORT
159.6	R-1	3%	28	127.52	1	0	0	0	1.0		1.0	-	-	-	1.0
0.04	R-2	4%	0	0.00	0	0	0	0	-		-	-	-	-	-
185.5	R-3	9%	31	148.87	1	0	0	0	1.0	1.0	1.0	1.0	0.5	-	-
569.6	R-4	8%	47	514.56	4	1	0	0	-		1.0	1.0	1.0	-	-
58.57	R-5	2%	30	25.55	0	0	0	0	1.0		1.0	1.0	-	-	-
69.96	R-6	5%	29	37.91	1	0	0	0	-	1.0	-	-	1.0	-	-
1381	R-7	3%	50	1321.81	5	0	0	0	1.0		0.5	0.5	1.0	-	1.0
225.7	R-8	9%	41	181.62	1	0	0	0	-		-	1.0	1.0	-	-

2050 MTP: Prioritization Process Review

Performance Based Project Screening Tool

- Prioritization Dashboard (Example Only)
  - Quick reference to how projects contribute to prioritized goals

ID	Project Type	Jurisdiction	Cost	MACORTS MTP Goals & Objectives										
				Enhance Landuse	Safety and Security	Transit	Mobility	Environment and Quality of Life	Multimodal Connectivity	System Preservation and Maintenance	System Management and Operation	Reliability and Resiliency	Travel and Tourism	Economic Vitality
R-1	Widening	ACC	$ 28,446,000	●	●	◕	◔	◑	○	●	◕	◑	◔	○
R-2	New Roadway	ACC	$ 8,521,000	◕	◕	◔	●	◑	●	◕	◔	◔	○	●
R-3	Widening	ACC	$ 23,600,000	◑	◑	○	◔	◕	●	◔	○	●	◔	◑
R-4	Widening	ACC	$ 31,664,000	◔	◕	●	◕	◑	◔	○	◔	●	◑	○
R-5	New Roadway	ACC	$ 4,800,000	○	●	◑	◑	◕	◔	◔	○	◔	●	◕

2050 MTP: Prioritization Process Review

Prioritizing the Plan

Performance-based Prioritization

- Projects with more significant need rank higher (Fatalities)
- Projects that respond to multiple goals/needs rank higher (Crash Rate = 2, LOS = 2, Bike/Ped Improvements = 2)

MACORTS Priorities

- Multipliers applied to ranking scores
- Adjustments to tool outputs to reflect local needs

2050 MTP: Prioritization Process Review

Multipliers Approach

Performance-based Prioritization Based On:

- Public Input (Meetings and Survey)
- Stakeholders (Mentimeter Survey)
- MACORTS Staff

Priorities: High to Low

- Multimodal Connectivity
- Transit
- Safety and Security
- Mobility
- Environment and Quality of Life
- Reliability and Resiliency
- Economic Vitality
- System Preservation and Maintenance
- System Management and Operation
- Travel and Tourism
- Enhance Land Use

Upcoming Activities & Next Steps

Upcoming Activities & Next Steps – Public Engagement

Public Engagement Schedule

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
STAKEHOLDERS COMMITTEE										
PUBLIC ENGAGEMENT										
TECHNICAL SUB-COMMITTEE										
PUBLIC COMMENT PERIOD										
GDOT/FHWA COORDINATION										

Note: Dates are estimated and subject to change

Upcoming Activities & Next Steps

Next Steps

- Complete Project Prioritization and Circulate for Review
- Host Committee Meetings to Refine Initial Prioritized List
- Complete Financial Plan and Constrain Project List
- Complete Draft MTP Report and Circulate for Review
- Host 30-Day Public Comment Period
- MACORTS Adoption

Questions?