SCENARIO & PROJECT EVALUATION TECHNICAL MEMORANDUM

COBB COUNTY | UPDATE 2040
COMPREHENSIVE TRANSPORTATION PLAN

The Cobb County Comprehensive Transportation Plan (CTP) will be a blueprint for the county's transportation future. While there are many projects that would improve county transportation in various ways, the CTP must be financially constrained. This requires that the projects selected in the CTP are those most closely aligned with the county goals and guiding principles. This report outlines the scenarios modeled and the evaluation of the projects included.

OVERVIEW OF SCENARIOS

Base Scenario

To evaluate the change and effect of various transportation projects, a Base Scenario must be evaluated to understand what conditions would be without implementation of any new projects. The Base Scenario will be the year 2040 Existing plus Committed (E+C) and is comprised of the existing transportation infrastructure along with any committed projects contained in the current FY 2014-2019 TIP, and any local capital improvement program projects expected to be completed by 2040. This scenario, as well as the two build scenarios discussed below, includes growth estimates for the year 2040 population and employment as contained in ARC's most recent regional forecasts. This scenario is used to identify deficiencies and need for new or innovative projects to be tested in the build scenario.

Status Quo Scenario

Two build scenarios were tested within the CTP evaluation framework: Status Quo and Innovation. Projects included were evaluated according to projected performance against the CTP guiding principles and associated objectives using project-level performance measures and scenario-level measures. The Status Quo scenario included all projects from the Base Scenario plus roadway capacity and transit projects that were included in the 2008 Cobb CTP as well as the most current PLAN 2040 TIP/RTP/Aspirations project lists. The total cost estimate for all the projects included in the Status Quo Scenario is about $4.1 billion.

Innovation Scenario

The Innovation Scenario included the Base Scenario projects plus an array of roadway capacity and transit projects that focused on economic development and innovation in key destinations and along major thoroughfares. The development of this scenario began with projects already identified in the Status Quo Scenario. That project list was then modified to include other

projects identified during the needs assessment, from recent plans and from input garnered from stakeholders during public involvement. Additionally, projects that do not support economic development or provide new innovative concepts were removed. In some cases, newly identified projects will be replacements to projects found in the Status Quo scenario. The total cost estimate for all the projects included in the Innovation Scenario is about $3.6 billion.

OVERVIEW OF PERFORMANCE MEASURES

The scenarios described above were evaluated against determined performance measures in order to evaluate the relative performance of each against current conditions and the future base scenario. This analysis included scenario-level measures as well as project-level measures for both roadway and transit projects. These measures are listed below.

Table 1: Scenario-Level Measures	
Performance Measure	**Description**
Congested Speed	PM peak period travel demand model expected speeds on Cobb County roadways.
Congestion Cost	Cobb County's average daily congestion cost per capita. The total daily congestion cost is calculated based on hours of delay in traffic and the wasted fuel associated with that delay.
Total Transit Trips	Total daily transit boardings in Cobb County.
Reliable Trips	Trips made on premium transit (BRT and express bus) or on managed lane facilities.
Vehicle Hours of Delay	Difference between estimated travel time under actual conditions and under uncongested conditions for each scenario and each hour of the day. Hourly delays per vehicle are multiplied by the annual average hourly traffic for each hour, and summed to get total daily vehicle hours of delay.
Accessibility	Population within a 30 minute automobile trip of employment centers in Cobb County (Town Center, Cumberland, Marietta).
	Population within a 45 minute transit trip of employment centers in Cobb County (Town Center, Cumberland, Marietta).
Crash Hotspots & Projects	Number of projects in crash hotspot locations/corridors.
ETA Areas & Projects	Number of projects in ETA areas
	Dollar amount of projects in ETA areas
Key Destinations & Projects	Number of projects in key destinations
	Dollar amount of projects in key destinations

Table 2: Roadway Capacity Measures		
Performance Measure	**Description**	**Scoring**
V/C Ratio	Volume to Capacity ratio gives an indication of the level of demand along a particular corridor and how sufficiently the capacity is available to meet that demand. The change in V/C ratio from the Base Scenario will be measured.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Vehicle Hours of Delay	Difference between estimated travel time under actual conditions and under uncongested conditions, for each segment and each hour of the day. Hourly delays per vehicle are multiplied by the annual average hourly traffic for each hour, and summed to get total daily vehicle hours of delay.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Annual Cost per User	Represents the total cost to each roadway user based on overall travel time (free-flow or congested). Travel time value is computed from travel demand model and multiplied by value of time. This cost is then annualized by using a factor of 250.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Is project located on regional top 10% congested corridor?	Prioritizes projects on Cobb County's most congested corridors.	Yes=3
		No=0
Is project located in corridor with crash hotspots?	Prioritizes projects that have potential to improve crash rates at Cobb County crash hotspot locations.	Yes=3
		No=0
Is project located in or connect to a key destination?	Key destinations include major employments centers, key resource, redevelopment area, EDGE cluster area, LCI community, etc.).	Yes=3
		No=0

Table 3: Transit Measures		
Performance Measure	**Description**	**Scoring**
Daily Boardings	Will quantify average number of transit riders using transit in Cobb County. Higher ridership is prioritized.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Vehicle Hours of Delay	Difference between estimated travel time under actual conditions and under uncongested conditions, for each segment and each hour of	Top 25%=3

Table 3: Transit Measures		
Performance Measure	**Description**	**Scoring**
	the day. Hourly delays per vehicle are multiplied by the annual average hourly traffic for each hour, and summed to get total daily vehicle hours of delay.	50-75%=2
		25-50%=1
		Bottom 25%=0
Population within ¼ mile of transit route	Locations with higher population are prioritized.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Employment within ¼ mile of transit reoute	Locations with higher employment are prioritized.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Environmental Justice (EJ) population within ¼ mile of transit route	Location with higher EJ populations are prioritized.	Top 25%=3
		50-75%=2
		25-50%=1
		Bottom 25%=0
Is project located on regional top 10% congested corridor?	Prioritizes projects on Cobb County's most congested corridors.	Yes=3
		No=0
Is project located in or connect to a key destination?	Key destinations include major employments centers, key resource, redevelopment area, EDGE cluster area, LCI community, etc.).	Yes=3
		No=0

EVALUATION OF BASE SCENARIO

Scenario-level Results

Table 4: Base Scenario		
Performance Measure	**2015 Existing**	**2040 Base Scenario**
Congested Speed	22.95	23.73
Congestion Cost	3.78	4.17
Total Transit Trips	n/a	42,638
Reliable Trips	n/a	16,470
Vehicle Hours of Delay	212,407	281,146
Accessibility	See below	See below

Table 5: 30 Minute Cobb County Automobile Travelshed Population		
Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**
From Cumberland 30 min	185,757	196,443
To Cumberland 30 min	101,293	81,527
From Marietta 30 min	205,389	146,624
To Marietta 30 min	148,664	113,789
From Town Center 30 min	161,260	125,259
To Town Center 30 min	130,407	106,288

Table 6: 30 Minute Regional Automobile Travelshed Population		
Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**
From Cumberland 30 min	231,533	216,024
To Cumberland 30 min	161,518	108,216
From Marietta 30 min	205,389	146,624
To Marietta 30 min	148,664	113,789
From Town Center 30 min	175,457	138,370
To Town Center 30 min	130,407	106,288

Table 7: 45 Minute Cobb County Transit Travelshed	
Transit Travelshed	**2040 Base Scenario Population**
From Cumberland 45 min	171,240
From Marietta 45 min	203,775
From Town Center 45 min	173,727

Table 8: 45 Minute Regional Transit Travelshed	
Transit Travelshed	**2040 Base Scenario Population**
From Cumberland 45 min	462,422
From Marietta 45 min	226,097
From Town Center 45 min	180,176

Summary

These measures, as compared to existing 2015 measures, demonstrate that continued growth in Cobb County without continued investment in transportation will result in increased congestion, decreased mobility, and decreased accessibility.

EVALUATION OF STATUS QUO SCENARIO

Scenario-level Results

Table 9: Status Quo				
Performance Measure	**2015 Existing**	**2040 Base Scenario**	**2040 Status Quo Scenario**	**SQ Total Projects**
Congested Speed	22.95	23.73	24.89	n/a
Congestion Cost	3.78	4.17	3.16	n/a
Total Transit Trips	n/a	42,638	63,131	n/a
Reliable Trips	n/a	16,470	39,453	n/a
Vehicle Hours of Delay	212,407	281,146	213,606	n/a
Accessibility	See below	See below	See below	n/a
	n/a	See below	See below	n/a
Crash Hotspots & Projects	n/a	n/a	19	58
ETA Areas & Projects	n/a	n/a	26	58
	n/a	n/a	$3,249,611,249	$4,111,696,353
Key Destinations & Projects (within a 1/4 mile)	n/a	n/a	35	58
	n/a	n/a	$3,510,631,249	$4,111,696,353

Table 10: 30 Minute Cobb County Automobile Travelshed			
Cobb County Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**	**2040 Status Quo Population**
From Cumberland 30 min	185,757	196,443	201,519
To Cumberland 30 min	101,293	81,527	102,870
From Marietta 30 min	205,389	146,624	148,059
To Marietta 30 min	148,664	113,789	125,905
From Town Center 30 min	161,260	125,259	169,737
To Town Center 30 min	130,407	106,288	119,970

Table 11: 30 Minute Regional Automobile Travelshed			
Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**	**2040 Status Quo Population**
From Cumberland 30 min	231,533	216,024	228,470
To Cumberland 30 min	161,518	108,216	132,915
From Marietta 30 min	205,389	146,624	148,059
To Marietta 30 min	148,664	113,789	125,905
From Town Center 30 min	175,457	138,370	182,848
To Town Center 30 min	130,407	106,288	119,970

Table 12: 45 Minute Cobb County Transit Travelshed		
Transit Travelshed	**2040 Base Scenario Population**	**2040 Status Quo Scenario Population**
From Cumberland 45 min	171,240	220,667
From Marietta 45 min	203,775	229,373
From Town Center 45 min	173,727	214,547

Table 13: 45 Minute Regional Transit Travelshed		
Transit Travelshed	**2040 Base Scenario Population**	**2040 Status Quo Scenario Population**
From Cumberland 45 min	462,422	774,505
From Marietta 45 min	226,097	468,219
From Town Center 45 min	180,176	241,812

Summary

The key takeaways from the evaluation of the Status Quo Scenario include:

- Congested speed in the PM peak is 24.89 mph which is a 4.89% increase over the Base Scenario and 8.45% increase over existing conditions
- Average daily congestion cost per capita is $3.16 which is a decrease of $1.01 over the Base Scenario and $0.62 over existing conditions
- There are 62,676 total transit trips in Cobb County in the Status Quo Scenario

- Reliable trips (on premium transit or in managed lanes) increase by 118% over the Base Scenario to 52,824 trips

Town Center

- The Cobb County population within 30 minutes by automobile traveling from Town Center increases by 5% to 169,737 or 20%
- The Cobb County population within 45 minutes by transit traveling from Town Center increases by 5% to 214,547 or 25%

Cumberland

- The Cobb County population within 30 minutes by automobile traveling from Cumberland increase by 1% to 201,519 or 24%
- The Cobb County population within 45 minutes by transit traveling from Cumberland increases by 6% to 220,667 or 26%

Marietta

- The Cobb County population within 30 minutes by automobile traveling from Marietta remained steady at 148,059 or 17%
- The Cobb County population within 45 minutes by transit traveling from Marietta increases by 3% to 229,373 or 27%

Of the 58 total projects ($4.11B) evaluated as part of the Status Quo Scenario:

- 25 were located on corridors with or in locations of crash hotspots
- 26 were located in ETA areas ($3.25B)
- 35 were located in or connect to key destinations ($3.51B)

The Status Quo Scenario performs well by reducing overall congestion and congestion cost per capita and increasing the number of reliable trips, but falls short on increasing accessiblity to the County's major centers via automobile. There is a slight increase in accessibility to the County's major centers via transit.

Project-level Results

The following pages displays tables containing the project-level performance evaluation scores for projects included in the Status Quo Scenario.

Table 14: Status Quo Roadway Project Performance Scores													
ID	Project Name	Category	Description	From	To	Cost Estimate	V/C Points	VHD Points	Annual Cost Per User Roadway Points	Roadway: ARC Top 10% Congested Corridor	Roadway: Crash Hotspots	Roadway: Key Destination	Roadway Performance Measure Score
AR-959	Revive 285 - I-75 North / I-285 Interchange Improvements	Interchange and Grade Separation	Flyover Ramp	I-75 Northbound	I-285 Westbound	$10,900,000	3	3	2	0	0	3	11
AR-960	Revive 285 - I-75 North / I-285 Interchange Improvements	Interchange and Grade Separation	Flyover Ramp	I-75 Southbound	I-285 Westbound	$28,100,000	0	3	0	0	0	3	6
AR-ML-200	I-285 North Managed Lanes and CD Improvements From I-75 North to I-85 North	Managed Lanes	Revive 285 is the name given to the improvement project on I-285 North	I-75	I-85	$2,178,000,000	3	3	3	0	0	3	12
ASP-CO-419	SR 293 (Main Street) Widening	Roadway Capacity	Widen from 2 to 4 lanes	Nance Road	Cowan Road	$11,300,000	3	1	1	0	0	0	5
ASP-CO-428A	Windy Hill Road Widening	Roadway Capacity	Widen from 4 to 6 lanes	Austell Road	S. Cobb Dr	$65,100,000	0	2	2	0	0	3	7
ASP-CO-428B	Windy Hill Road Widening	Roadway Capacity	Widen from 4 to 6 lanes	Atlanta Rd	Cobb Pkwy (US 41)	$9,888,000	0	2	2	0	0	3	7
CO-206D	Stilesboro Rd Widening	Roadway Capacity	Widen from 2 to 4 lanes	Rosehedge Way	Kennesaw Due West Rd	$28,000,000	3	1	3	0	0	0	7
CO-329	Metro Arterial Connector-SR 92 (Dallas Acworth Hwy)	Roadway Capacity	Widen from 2 to 4 lanes	Paulding County Line	US 41 (North Cobb Pkwy)	$15,625,424	3	1	2	0	3	0	9
CO-382	Windy Hill Road Widening - Westbound Only	Roadway Capacity	Widen from 2 to 3 lanes	East Of Powers Ferry Rd	Spectrum Circle	$2,014,057	0	0	0	0	0	3	3
CO-384A	Mulkey Rd Extension - West	New Connection	New 2 lane road	Near Cliff Place	East-West Connector	$4,400,000	0	1	0	0	0	3	4
CO-384B	Mulkey Rd Extension - East	New Connection	New 2 lane road	Brookwood Rd	Floyd Rd	$700,000	0	0	1	0	0	3	4
CO-454	Windy Hill Road Widening	Roadway Capacity	Widen from 5 to 6 lanes	US 41 (Cobb Pkwy)	I-75	$5,449,700	0	0	0	3	3	3	9
CO-AR-238	I-75 North From I-285 North to Delk Rd Interchange Improvements	Interchange and Grade Separation	Part of reconstruction of the interchange at I-75 North and Windy Hill Rd. It will be a ten lane CD system. Also, it will reconfigure the Delk Rd exit and provide HOV.	I-285 North	Delk Rd	$147,000,000	0	0	0	0	3	3	6
R-035	Oakdale Rd Widening	Roadway Capacity	Widen to 5 lanes; create dual LT lanes on Buckner Rd at Oakdale Rd.	Buckner Rd	Oak Dr	$10,500,000	2	3	3	3	0	3	14
R-243	Castle Lake Rd Extension/Intersection Improvement	New Connection	Construct new connector road from intersection of Old Hwy 41 & Stanley Rd to Hood Pkwy in Castle Lake.	Old 41 Hwy	Hood Pkwy	$856,793	0	2	2	0	0	0	4
R-256	South Barrett Reliever Phase 4	New Connection	Extend the Reliever over I-575 to tie into Barrett Pkwy across from Chastain Meadows. Design preferences: four lanes divided with median, sidewalks, and bicycle lanes.	Chastain Meadows Pkwy	Barrett Pkwy	$22,000,000	3	2	1	0	0	3	9
R-260	New Connection along Wilson Rd to Big Shanty Rd	New Connection	New connection to Big Shanty Rd and to Town Center Mall along Wilson Rd. Design preferences: two lanes divided with median and pedestrian/bicycle facilities.	From Wilson Road (end)	Town Center Dr	$6,800,000	0	1	1	0	0	3	5
R-261	Cobb Pkwy (US 41/SR 3)	Interchange and Grade Separation	Grade Separation/Flyover at Barrett Pkwy	n/a	n/a	$55,000,000	1	3	3	3	3	3	16
R-329	University Pkwy North Phase 1	New Connection	New complete street with two 12ft. lanes, 8ft. planted median, 4ft. bike lanes in both directions, 5ft. landscape strip and 5ft. sidewalks on both sides with lighting.	Cobb Plwy	Wylie Rd	$1,184,093	1	1	1	0	0	3	6
R-330	University Pkwy North Phase 2	New Connection	New complete street with two 12ft. lanes, 8ft. planted median, 4ft. bike lanes in both directions, 5ft. landscape strip, and 5ft. sidewalks on both sides with lighting.	Wylie Rd	Franklin Rd	$3,436,399	1	1	1	0	0	3	6
R-333	Delk Rd Widening	Roadway Capacity	Widen Delk Rd on south side to continue 3 lanes	Bentley Rd	Powers Ferry Rd	$1,000,000	2	0	0	0	0	3	5

Table 14: Status Quo Roadway Project Performance Scores													
ID	Project Name	Category	Description	From	To	Cost Estimate	V/C Points	VHD Points	Annual Cost Per User Roadway Points	Roadway: ARC Top 10% Congested Corridor	Roadway: Crash Hotspots	Roadway: Key Destination	Roadway Performance Measure Score
R-489	Barrett Pkwy	Interchange and Grade Separation	At Dallas Hwy	n/a	n/a	$40,500,000	3	3	2	3	3	0	14
R-492	Allgood Rd/ Scufflegrit Rd	Roadway Capacity	Widen To 4 Lanes	Cobb Pkwy (US 41/SR 3)	Sandy Plains Rd	$13,376,000	1	0	0	0	0	3	4
R-495	Clay Rd/Oglesby Rd Connector	New Connection	Connector (2 Lanes)	Eastern terminus of Oglesby Rd	Clay Rd at Austell Powder Springs Rd	$20,000,000	3	3	3	0	0	3	12
R-496	Oglesby Rd	Roadway Capacity	Widen To 4 Lanes	Brownsville Rd	CH James Pkwy	$20,000,000	3	3	3	0	0	3	12
R-499	Barrett Pkwy	Roadway Capacity	Widen from 4 To 6 Lanes	Chastain Meadows Pkwy	Piedmont Rd/Bells Ferry Rd	$28,000,000	2	0	0	0	3	3	8
R-502	Cumberland Blvd and I-285 Split Diamond	Interchange and Grade Separation	Cobb Pkwy and Cumberland Blvd Split Diamond			$30,000,000	0	2	2	0	0	3	7
R-503	Powers Ferry Rd (C-140)	Roadway Capacity	Widen (6 Lane Divided)	Delk Rd	Terrell Mill Rd	$6,844,000	2	0	0	0	0	3	5
ASP-CO-175A	SR 280 (South Cobb Drive)	Roadway Capacity	Widen from 4 to 6 lanes	SR 5 (Atlanta Road)	SR 70 (Bolton Road)	$67,200,000	0	3	3	0	3	3	12
ASP-CO-338A	SR 176 (Lost Mountain Road) Widening	Roadway Capacity	Widen from 2 to 4 lanes	SR 120 (Dallas Hwy)	SR 360 (Macland Road)	$38,600,000	2	2	3	3	3	0	13
ASP-CO-412	US 41 (Cobb Parkway) Widening	Roadway Capacity	Widen from 4 to 6 lanes	Third Army Rd Conn.	SR 5 Connector	$140,000,000	2	3	3	3	3	3	17
ASP-CO-414	SR 139 (Floyd Road / Mableton Pkwy) Widening	Roadway Capacity	Widen from 4 to 6 lanes	Dodgen Rd	Discovery Blvd	$18,000,000	2	1	1	0	0	0	4
ASP-CO-415	SR 360 (Macland Road) Widening	Roadway Capacity	Widen from 4 to 6 lanes	Macland / Windy Hill Connector	Lost Mountain Road / New Macland Road	$89,100,000	2	3	2	0	0	0	7
ASP-CO-417	SR 120 (Dallas Highway)	Roadway Capacity	Widen from 4 to 6 lanes	John Ward Road	SR 176 (Mars Hill Road)	$124,000,000	2	2	1	3	3	0	11
ASP-CO-418	SR 176 (Mars Hill Road / Lost Mountain Road) Widening	Roadway Capacity	Widen from 2 to 4 lanes	SR 120 (Dallas Highway)	US 41 (Cobb Parkway)	$80,000,000	1	3	3	3	3	0	13
ASP-CO-425	SR 120 (Dallas Highway)	Roadway Capacity	Widen from 4 to 6 lanes	SR 176 (Mars Hill Road)	Paulding County Line / East Paulding Drive	$25,800,000	2	2	2	0	3		9
ASP-CO-427	SR 139 (Floyd Road / Mableton Parkway) Widening	Roadway Capacity	Widen from 4 to 6 lanes	US 78 / 278 (Veterans Memorial Highway)	Dodgen Road	$22,600,000	2	2	2	0	3	3	12
CO-341	Due West Road Widening	Roadway Capacity	Widen from 2 to 4 lanes	Kennesaw Due West Rd	SR 120 (Dallas Highway)	$8,700,000	3	2	3	0	0	0	8
CO-344A	Cedarcrest Road Widening	Roadway Capacity	Widen from 2 to 4 lanes	Paulding County Line	Governor's Towne Drive	$3,116,902	1	0	0	0	0	0	1
CO-367	Sr 360 (Macland Road) Widening	Roadway Capacity	Widen from 2 to 4 lanes	SR120 (Marietta Hwy) in Paulding Co.	SR 176 New Macland Rd / Lost Mountain Rd	$41,804,750	1	2	2	0	0	0	5
R-130	Shallowford Rd	Roadway Capacity	Additional right lane added WB onto Shallowford Road.	Trickum Rd	Blackwell Rd	$1,242,000	3	2	3	0	0	0	8
R-209	Powder Springs Rd	Roadway Capacity	Widen from 4 to 6 lanes	Cedar Dr	Hurt Rd	$3,296,000	3	1	0	3	0	0	7
R-210	Austell Rd from Hurt Rd to Raes Creek Rd	Roadway Capacity	Widen from 4 to 6 lanes	Hurt Rd	Raes Creek Rd	$6,115,000	1	2	1	3	0	3	10
R-224	Barrett Pkwy Widening	Roadway Capacity	Continuing the widening and trail project that was started in the 2005 SPLOST before the scope was reduced. Widen from 4 to 6 lanes.	Burnt Hickory Road	Dallas Hwy (SR 120)	$13,376,000	2	3	3	3	3	0	14
R-225	East-West Connector Widening	Roadway Capacity	Widen from 4 to 6 lanes	Hicks Rd	Macedonia Rd	$20,000,000	1	1	1	0	3	3	9
R-249	Hickory Grove Rd Improvement Project	Roadway Capacity	Widen road; drainage improvement; add sidewalk along Hickory Grove.	Baker Rd	McEver Rd	$2,933,235	3	1	1	0	0	0	5

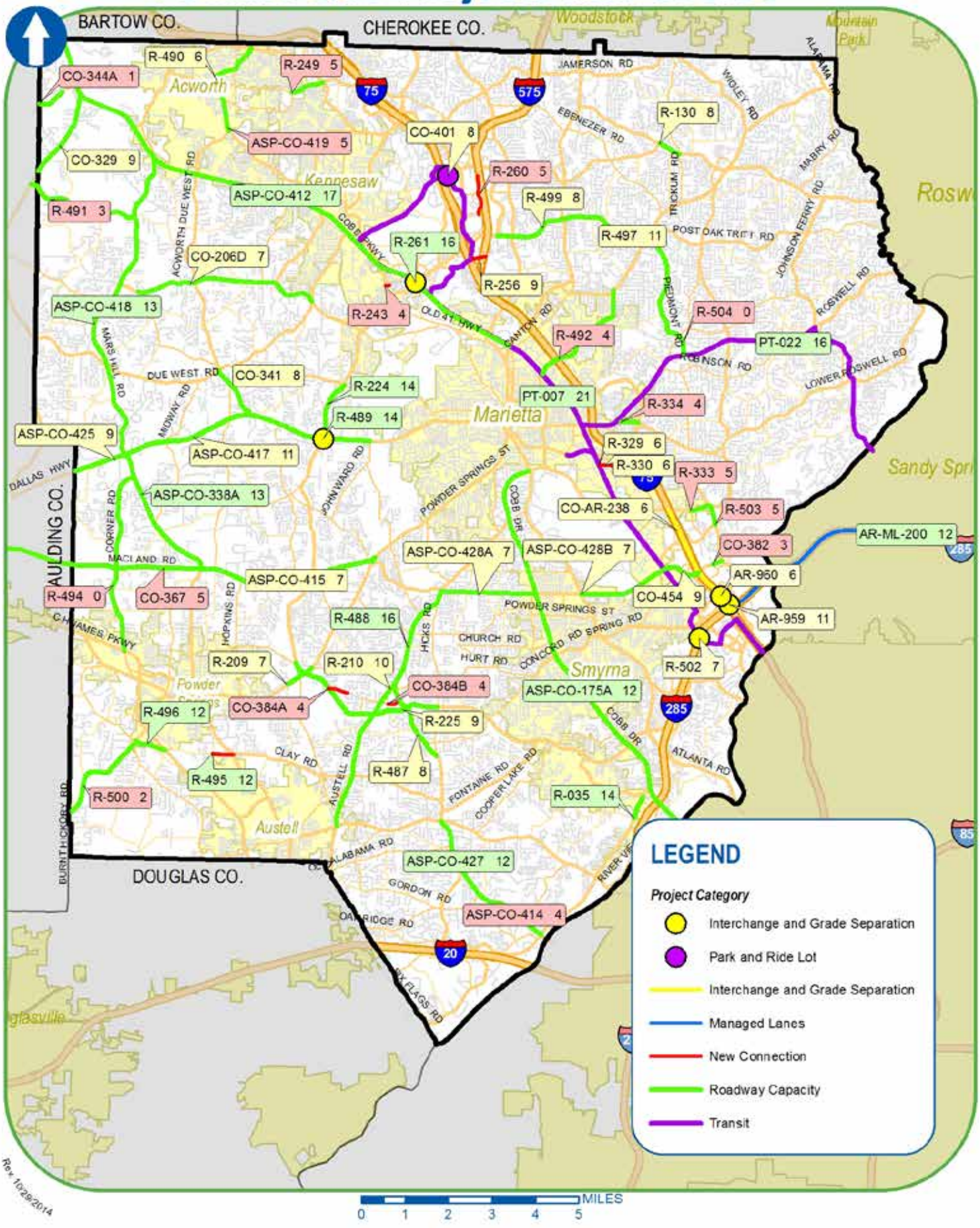
Table 14: Status Quo Roadway Project Performance Scores

ID	Project Name	Category	Description	From	To	Cost Estimate	V/C Points	VHD Points	Annual Cost Per User Roadway Points	Roadway: ARC Top 10% Congested Corridor	Roadway: Crash Hotspots	Roadway: Key Destination	Roadway Performance Measure Score
R-334	Lower Roswell Rd	Roadway Capacity	Widen to 4 lanes	Lott Ave	N Marrietta Pkwy	$1,600,000	1	0	0	0	0	3	4
R-487	Floyd Rd	Roadway Capacity	Widen To 4 Lanes	Austell Rd (SR 5)	Hicks Rd	$9,554,000	2	1	2	0	0	3	8
R-488	Austell Rd (SR 5)	Roadway Capacity	Widen To 6 Lanes	Windy Hill Rd	Veterans Memorial Hwy (US 278/US 78/SR 5)	$29,730,000	1	3	3	3	3	3	16
R-490	Cowan Rd	Roadway Capacity	Widen To 4 Lanes	Main St	Baker Rd	$6,210,000	3	1	2	0	0	0	6
R-491	Old Stilesboro Rd/County Line Rd	Roadway Capacity	Widen To 4 Lanes	SR 92	Mars Hill Rd (SR 176)	$12,898,000	2	0	1	0	0	0	3
R-494	Corner/Florence Rd	Roadway Capacity	Widen To 4 Lanes	CH James Pkwy	Lost Mountain Rd	$20,541,000	0	0	0	0	0	0	0
R-497	Piedmont Rd/East Piedmont Rd	Roadway Capacity	Widen To 6 Lanes	Bells Ferry Rd	Sewell Mill Rd	$29,140,000	1	2	2	0	3	3	11
R-500	Brownsville Rd	Roadway Capacity	Widen from 2 to 4 Lanes	Hiram Lithia Springs Rd	Burnt Hickory Rd	$12,000,000	1	0	1	0	0	0	2
R-504	East Piedmont Rd (C-62)	Roadway Capacity	Widen (6 Lane Divided)	Roswell Rd (SR 120)	Sewell Mill Rd	$3,165,000	0	0	0	0	0	0	0

Table 15: Status Quo Transit Project Performance Scores

ID	Project Name	Category	Description	From	To	Cost Estimate	Transit: Daily Boardings	Daily Boardings Points	VHD Points	Pop Points	Employment Points	EJ Points	Transit: ARC Top 10% Congested Corridor	Transit: Key Destination	Transit Performance Measure Score
PT-007	Connect Cobb High Capacity Transit (ART) Phase 1 (AR-475)	Transit	New Starts fixed guide way	Kennesaw	Cumberland	$494,000,000	23,401	3	3	3	3	3	3	3	21
PT-022	Bus Route Development - Connection to Perimeter Market	Transit	New route along Roswell Rd and Johnson Ferry Rd	Marietta Transfer Center	Perimeter Center	$6,000,000	4,758	2	2	2	2	2	3	3	16
CO-401	North Cobb Park and Ride Lot	Transit	Multi-level park and ride facility in northern Cobb County to accommodate transit, carpools and vanpools.	n/a	n/a	$15,000,000		1	1	1	1	1	0	3	8

FIGURE 1| Status Quo Projects and Scores



Summary

- The highest overall scoring roadway project is ASP-CO-412: Cobb Pkwy. (US 41) widening from 4 to 6 lanes from Third Army Road Connector to SR 5 Connector. It scored well in all measures except change in V/C ratio. It is also one of the most expensive projects at over $140 million. So, although this analysis suggests a clear need and potential benefit, potential alternatives should be explored which might serve that need at a lesser cost.
- The lowest overall scoring roadway projects are R-494: Corner/Florence Rd. widening from 2 to 4 lanes from C.H. James Pkwy. to Lost Mountain Rd., and R-504: East Piedmont Rd. widening from 4 to 6 lanes divided from Roswell Rd. (SR 120) to Sewell Mill Rd. Both scored poorly in all measures.
- Connect Cobb has 23,401 daily boardings, which is similar to other prior estimates and shows significant transit demand in the US 41 corridor.

COMPARISON OF STATUS QUO AND BASE SCENARIOS

Overall, the Status Quo Scenario performs very well as compared to the Base Scenario and even as compared to 2015 existing conditions. It does well to reduce congestion and improve mobility. Curiously, the Status Quo Scenario does not improve accessibility to jobs – in fact with this scenario; accessibility to jobs continues to decrease over time. This scenario includes some pretty extensive roadway improvements; the result suggests that further transit improvements and/or land use changes might have more of a positive impact to job accessibility.

Certain roadway projects evaluated performed well, but at a significant cost. Examples of this include the widening of US 41 near Kennesaw and Acworth and the widening of SR 120 (Dallas Highway) west to Paulding County. These results suggest the need to examine alternatives which might serve those needs at a lesser cost.

INFORMING DEVELOPMENT OF THE INNOVATION SCENARIO

The findings from the comparison of the Status Quo Scenario to the Base Scenario were used in developing the Innovation scenario project list. The Innovation Scenario includes the Base Scenario projects plus an array of roadway capacity and transit projects that focus on economic development and innovation in key destinations and along major thoroughfares. The development of this scenario began with projects already identified in the Status Quo Scenario. That project list was then modified to include other projects identified during the needs assessment, from recent plans and from input garnered from stakeholders during public involvement. Additionally, projects that do not support economic development or provide new innovative concepts were removed. In some cases, newly identified projects were replacements

to projects found in the Status Quo Scenario. The following recommendations were used to guide the development of the Innovation Scenario.

- Focus on innovation, key destinations and major thoroughfares
- Projects that are expensive/lengthy, have no convincing benefit to congestion/delay/cost per user, do not provide connections to key destinations or are not on a top 10% congested corridor are not recommended for inclusion in the Innovation Scenario.
    - Some of those roadway capacity projects not recommended for inclusion in the Innovation Scenario are suggested for operational improvements.
- Intersection grade separations are recommended in many locations in place of roadway capacity additions.
- Recommend enhancing transit connectivity to key destinations, sometimes in place of roadway capacity additions.
    - New transit service & modifications to existing/planned service

EVALUATION OF THE INNOVATION SCENARIO

Scenario-level Results

Table 16: Innovation Scenario						
Performance Measure	**2015 Existing**	**2040 Base Scenario**	**2040 Status Quo Scenario**	**SQ Total Projects**	**2040 Innovation Scenario**	**Innovation Total Projects**
Congested Speed	22.95	23.73	24.89	n/a	24.63	n/a
Congestion Cost	3.78	4.17	3.16	n/a	3.58	n/a
Total Transit Trips	n/a	42,638	63,131	n/a	83,292	n/a
Reliable Trips	n/a	16,470	39,453	n/a	55,699	n/a
Vehicle Hours of Delay	212,407	281,146	213,606	n/a	241,635	n/a
Accessibility	See below	See below	See below	n/a	See below	n/a
	n/a	See below	See below	n/a	See below	n/a
Crash Hotspots & Projects	n/a	n/a	19	58	22	55
ETA Areas & Projects	n/a	n/a	26	58	27	55
	n/a	n/a	$3,249,611,249	$4,111,696,353	$3,011,216,249	$3,420,974,466
Key Destinations & Projects (within a 1/4 mile)	n/a	n/a	35	58	43	55
	n/a	n/a	$3,510,631,249	$4,111,696,353	$3,270,292,249	$3,420,974,466

Table 17: 30 Minute Cobb County Automobile Travelshed Population				
Cobb County Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**	**2040 Status Quo Population**	**2040 Innovation Population**
From Cumberland 30 min	185,757	196,443	201,519	198,144
To Cumberland 30 min	101,293	81,527	102,870	88,030
From Marietta 30 min	205,389	146,624	148,059	148,059
To Marietta 30 min	148,664	113,789	125,905	121,610
From Town Center 30 min	161,260	125,259	169,737	153,742
To Town Center 30 min	130,407	106,288	119,970	115,576

Table 18: 30 Minute Regional Automobile Travelshed Population				
Regional Roadway Travelshed	**2015 Existing Population**	**2040 Base Scenario Population**	**2040 Status Quo Population**	**2040 Innovation Population**
From Cumberland 30 min	231,533	216,024	228,470	227,388
To Cumberland 30 min	161,518	108,216	132,915	114,808
From Marietta 30 min	205,389	146,624	148,059	148,059
To Marietta 30 min	148,664	113,789	125,905	121,610
From Town Center 30 min	175,457	138,370	182,848	166,853
To Town Center 30 min	130,407	106,288	119,970	115,576

Table 19: 45 Minute Cobb County Transit Travelshed Population			
Cobb County Transit Travelshed	**2040 Base Scenario Population**	**Status Quo Scenario Population**	**Innovation Scenario Population**
From Cumberland 45 min	171,240	220,667	325,782
From Marietta 45 min	203,775	229,373	373,562
From Town Center 45 min	173,727	214,547	309,201

Table 20: 45 Minute Regional Transit Travelshed Population			
Regional Transit Travelshed	**2040 Base Scenario Population**	**Status Quo Scenario Population**	**Innovation Scenario Population**
From Cumberland 45 min	462,422	774,505	1,047,972

Table 20: 45 Minute Regional Transit Travelshed Population			
Regional Transit Travelshed	**2040 Base Scenario Population**	**Status Quo Scenario Population**	**Innovation Scenario Population**
From Marietta 45 min	226,097	468,219	732,658
From Town Center 45 min	180,176	241,812	333,888

Summary

The major takeaways from the Innovation Scenario included:

- Eliminating numerous roadway expansion projects (as compared to the Status Quo Scenario) does have an impact on congestion levels. However, even with more limited roadway expansion, congestion levels can be managed at or below current levels.
- Additional expansion of transit service in Cobb (as compared to the Status Quo Scenario) shows great potential to improve access to job centers and to increase overall transit use. In fact, daily transit use in the Innovation Scenario is double that with the current system and services.
- Transit expansion should target only those areas which demonstrate greatest potential for use – those areas with more urban density and mix of uses and those corridors accessing town centers and employment centers.
- In all future scenarios tested, the growth forecast was held constant – these analyses did not test alternate land use scenarios. However, changes in transportation infrastructure alone will have limited affect in reducing personal auto travel without a complimentary land use plan. Future land use planning by the County and each of the cities should examine a greater mix and intensity of uses along the US 41 corridor. From a transportation perspective, these changes should further improve transit use, decrease auto travel per capita, and improve job accessibility.

Project-level Results

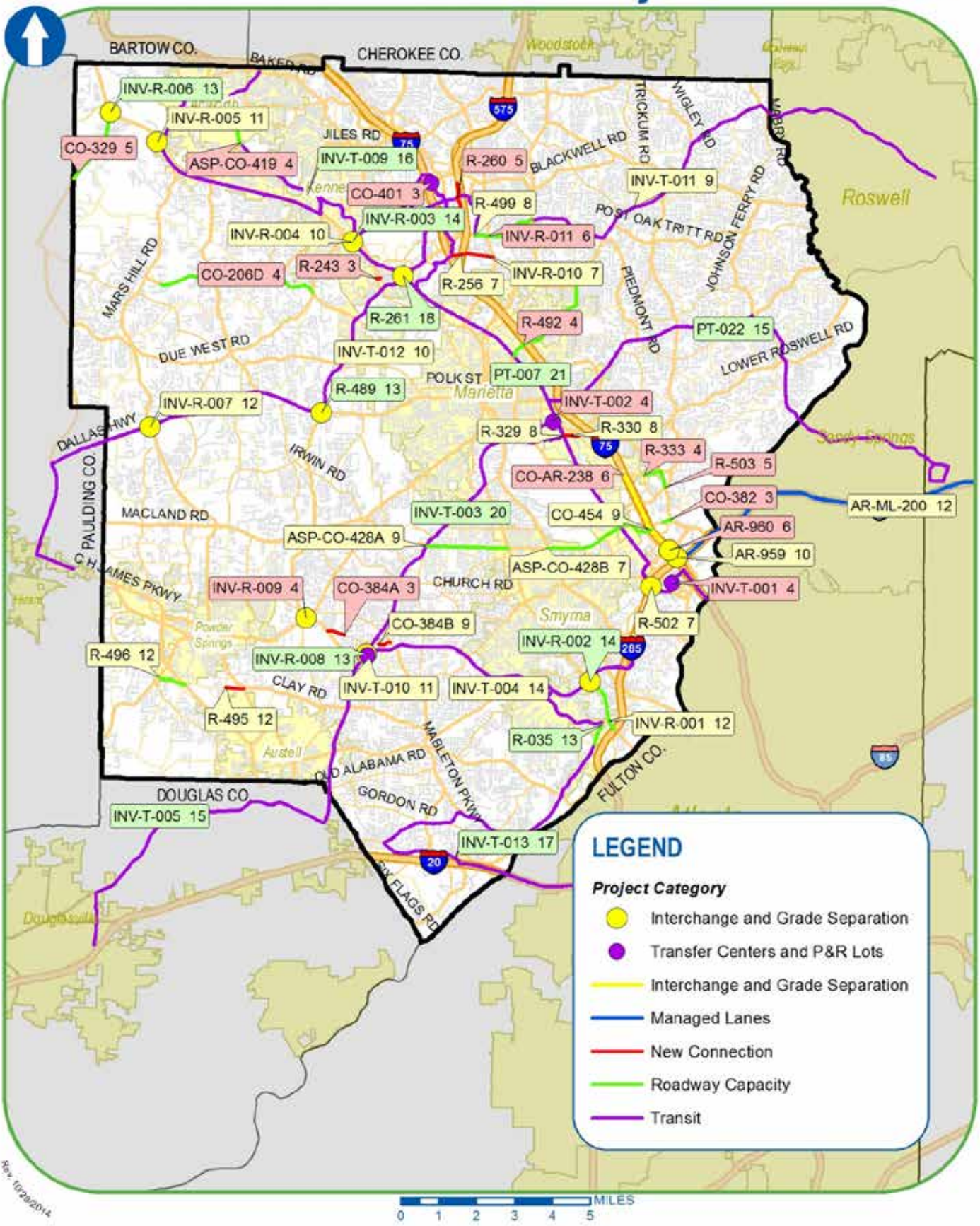
The following pages display tables containing the project-level performance evaluation scores for projects included in the Status Quo Scenario.

Table 21: Innovation Roadway Project Performance Scores													
ID	Project Name	Category	Description	From	To	Cost Estimate	V/C Points	VHD Points	Annual Cost Per User Roadway Points	Roadway: ARC Top 10% Congested Corridor	Roadway: Crash Hotspots	Roadway: Key Destination	Roadway Performance Measure Score
AR-959	Revive 285 - I-75 North / I-285 Interchange Improvements	Interchange and Grade Separation	Flyover Ramp	I-75 Northbound	I-285 Westbound	$10,900,000	3	3	3	0	0	3	12
AR-960	Revive 285 - I-75 North / I-285 Interchange Improvements	Interchange and Grade Separation	Flyover Ramp	I-75 Southbound	I-285 Westbound	$28,100,000	0	3	0	0	0	3	6
AR-ML-200	I-285 North Managed Lanes and CD Improvements From I-75 North to I-85 North	Managed Lanes	Revive 285 is the name given to the improvement project on I-285 North	I-75	I-85	$2,178,000,000	3	3	3	0	0	3	12
ASP-CO-419	SR 293 (Main Street) Widening	Roadway Capacity	Widen from 2 to 4 lanes	Nance Road	Cowan Road	$11,300,000	3	3	3	0	0	0	9
ASP-CO-428A	Windy Hill Road Widening	Roadway Capacity	Widen from 4 to 6 lanes	Austell Road	S. Cobb Dr	$65,100,000	3	3	3	0	0	3	12
ASP-CO-428B	Windy Hill Road Widening	Roadway Capacity	Widen from 4 to 6 lanes	Atlanta Rd	Cobb Pkwy (US 41)	$9,888,000	3	3	3	0	0	3	12
CO-206D	Stilesboro Rd Widening	Roadway Capacity	Widen from 2 to 4 lanes	Rosehedge Way	Kennesaw Due West Rd	$28,000,000	3	3	3	0	0	0	9
CO-329	Metro Arterial Connector - SR 92 (Dallas Acworth Hwy)	Roadway Capacity	Widen from 2 to 4 lanes	Paulding County Line	US 41 (North Cobb Pkwy)	$15,625,424	3	3	3	0	3	0	12
CO-382	Windy Hill Road Widening - Westbound Only	Roadway Capacity	Widen from 2 to 3 lanes	East Of Powers Ferry Rd	Spectrum Circle	$2,014,057	3	3	3	0	0	3	12
CO-384A	Mulkey Rd Extension - West	New Connection	New 2 lane road	Near Cliff Place	East-West Connector	$4,400,000	0	3	0	0	0	3	6
CO-384B	Mulkey Rd Extension - East	New Connection	New 2 lane road	Brookwood Rd	Floyd Rd	$700,000	3	3	3	0	0	3	12
CO-454	Windy Hill Road Widening	Roadway Capacity	Widen from 5 to 6 lanes	US 41 (Cobb Pkwy)	I-75	$5,449,700	3	3	3	3	3	3	18
CO-AR-238	I-75 North From I-285 North to Delk Rd Interchange Improvements	Interchange and Grade Separation	This project is part of reconstruction of the interchange at I-75 North and Windy Hill Rd. It will be a ten lane CD system. Also, the project will reconfigure the Delk Rd exit at I-75 North and provide HOV in the corridor.	I-285 North	Delk Rd	$147,000,000	3	0	0	0	3	3	9
INV-R-001	SR 280 (South Cobb Drive)	Roadway Capacity	Widen from 4 to 6 lanes	East West Conn	I-285	$14,100,000	3	3	3	3	0	3	15
INV-R-002	SR 280 (South Cobb Drive) at East West Conn	Interchange and Grade Separation	Grade separation at South Cobb Drive and East West Connector (Button hook model)	n/a	n/a	$13,600,000	3	3	3	3	0	3	15
INV-R-003	US 41 (Cobb Pkwy) at McCollum Pkwy	Interchange and Grade Separation	Grade separation at Cobb Pkwy and McCollum Pkwy (Button hook model)	n/a	n/a	$13,600,000	3	3	3	0	3	3	15
INV-R-004	McCollum Pkwy to Kennesaw Due West Rd	New Connection	New connection connecting McColum Pkwy to Kennesaw Due West Rd over RR tracks	McCollum Pkwy	Kennesaw Due West Rd	$6,100,000	3	3	3	0	0	3	12
INV-R-005	US 41 (Cobb Pkwy)	Interchange and Grade Separation	Grade separation at Cobb Pkwy and Lake Acworth Dr (SR 92) (Button hook model)	n/a	n/a	$13,600,000	3	3	3	0	3	0	12
INV-R-006	US 41 (Cobb Pkwy)	Interchange and Grade Separation	Grade separation at Cobb Pkwy and Hiram Acworth Hwy (SR 92) (Button hook model)	n/a	n/a	$13,600,000	3	3	3	3	3	0	15
INV-R-007	Dallas Hwy	Interchange and Grade Separation	Grade separation at Dallas Hwy and Mars Hill Rd (Button hook model)	n/a	n/a	$13,600,000	3	3	3	3	3	0	15
INV-R-008	East West Conn	Interchange and Grade Separation	Grade separation at East West Conn and Austell Rd (SR 5) (Button hook model)	n/a	n/a	$13,600,000	3	3	3	3	3	3	18
INV-R-009	East West Conn	Interchange and Grade Separation	Grade separation at East West Conn and Powder Springs Rd (Button hook model)	n/a	n/a	$13,600,000	3	3	3	0	3	0	12

Table 21: Innovation Roadway Project Performance Scores													
ID	Project Name	Category	Description	From	To	Cost Estimate	V/C Points	VHD Points	Annual Cost Per User Roadway Points	Roadway: ARC Top 10% Congested Corridor	Roadway: Crash Hotspots	Roadway: Key Destination	Roadway Performance Measure Score
INV-R-010	South Barrett Reliever Phase 5	New Connection	New connection from Roberts Ct to Bells Ferry Rd	Roberts Ct	Bells Ferry Rd	$12,000,000	3	3	3	0	0	3	12
INV-R-011	Piedmont Rd	Roadway Capacity	Widen to 6 lanes	Bells Ferry Rd	Canton Rd	$12,600,000	3	3	3	0	0	3	12
R-035	Oakdale Rd Widening	Roadway Capacity	Widen to 5 lanes; create dual LT lanes on Buckner Rd at Oakdale Rd.	Buckner Rd	Oak Dr	$10,500,000	3	3	3	3	0	3	15
R-243	Castle Lake Rd Extension/Intersection Improvement	New Connection	Construct new connector road from the intersection of Old Hwy 41 & Stanley Rd to Hood Pkwy in Castle Lake.	Old 41 Hwy	Hood Pkwy	$856,793	0	3	3	0	0	0	6
R-256	South Barrett Reliever Phase 4	New Connection	Extend the Reliever eastward over I-575 northward to tie into Barrett Pkwy across from Chastain Meadows. Design preferences include four lanes divided with median, sidewalks, and bicycle lanes	Chastain Meadows Pkwy	Barrett Pkwy	$22,000,000	0	3	3	0	0	3	9
R-260	New Connection along Wilson Rd to Big Shanty Rd	New Connection	Build new connection to Big Shanty Road and to Town Center Mall along Wilson Road. Design preferences include two lanes divided with median and pedestrian/bicycle facilities.	From Wilson Road (end)	Town Center Dr	$6,800,000	0	3	3	0	0	3	9
R-261	Cobb Pkwy (US 41/SR 3)	Interchange and Grade Separation	Major Intersection Improvements (Grade Separation/Flyover) at Barrett Pkwy.	n/a	n/a	$55,000,000	3	3	3	3	3	3	18
R-329	University Pkwy North Phase 1	New Connection	New complete street with two lanes, with 12 ft. travel lanes, a 8 ft planted median, 4 ft. bike lanes in both directions, 5 ft. landscape strip and 5 ft sidewalks on both sides with lighting.	Cobb Plwy	Wylie Rd	$1,184,093	3	3	3	0	0	3	12
R-330	University Pkwy North Phase 2	New Connection	New complete street with two lanes with 12 ft travel lanes, a 8 ft. planted median, 4 ft. bike lanes in both directions, 5 ft landscape strip, and 5 ft sidewalks on both sides with lighting.	Wylie Rd	Franklin Rd	$3,436,399	3	3	3	0	0	3	12
R-333	Delk Rd Widening	Roadway Capacity	Widen Delk Rd on south side to continue 3 lanes	Bentley Rd	Powers Ferry Rd	$1,000,000	3	3	0	0	0	3	9
R-489	Barrett Pkwy	Interchange and Grade Separation	At Dallas Hwy	n/a	n/a	$40,500,000	3	3	3	3	3	0	15
R-492	Allgood Rd/Scufflegrit Rd	Roadway Capacity	Widen To 4 Lanes	Cobb Pkwy (US 41/SR 3)	Sandy Plains Rd	$13,376,000	3	3	3	0	0	3	12
R-495	Clay Rd/Oglesby Rd Connector	New Connection	Connector (2 Lanes)	Eastern terminus of Oglesby Rd	Clay Rd at Austell Powder Springs Rd	$20,000,000	3	3	3	0	0	3	12
R-496	Oglesby Rd	Roadway Capacity	Widen To 4 Lanes	Brownsville Rd	CH James Pkwy	$20,000,000	3	3	3	0	0	3	12
R-499	Barrett Pkwy	Roadway Capacity	Widen from 4 To 6 Lanes	Chastain Meadows Pkwy	Piedmont Rd/Bells Ferry Rd	$28,000,000	3	3	3	0	3	3	15
R-502	Cumberland Blvd and I-285 Split Diamond	Interchange and Grade Separation	Cobb Pkwy and Cumberland Blvd Split Diamond			$30,000,000	3	3	3	0	0	3	12
R-503	Powers Ferry Rd (C-140)	Roadway Capacity	Widen (6 Lane Divided)	Delk Rd	Terrell Mill Rd	$6,844,000	3	3	3	0	0	3	12

Table 22: Innovation Transit Project Performance Scores														
ID	Project Name	Category	Description	From	To	Cost Estimate	Daily Boardings Points	VHD Points	Pop Points	Employment Points	EJ Points	Transit: ARC Top 10% Congested Corridor	Transit: Key Destination	Transit Performance Measure Score
CO-401	North Cobb Park and Ride Lot	Transit	Multi-level park and ride facility in northern Cobb County to accommodate transit, carpools and vanpools.	n/a	n/a	$15,000,000			3	3	0	0	3	9
INV-T-001	Cumberland Transfer Center Relocation	Transit	Relocate Cumberland Transfer Center to US 41 at Akers Mill Rd	n/a	n/a	$15,000,000			3	3	0	0	3	9
INV-T-002	Marietta Transfer Center	Transit	Relocate Marietta Transfer Center to US 41 at South Marietta Pkwy	n/a	n/a	$15,000,000			3	3	1	0	3	10
INV-T-003	Austell Rd BRT	Transit	New route along Austell Rd from new Marietta Transfer Center to new Austell Rd/East West Conn Transfer Center	Marietta Transfer Center	Austell Rd Transfer Center	$210,000,000	3	3	3	3	3	3	3	21
INV-T-004	East West Conn Local Express Bus	Transit	New express bus route from Austell Rd/East West Conn Transfer Center to Cumberland Transfer Center	Austell Rd Transfer Center	Cumberland Transfer Center	$1,100,000	3	0	3	3	3	0	3	15
INV-T-005	Austell Rd Local Express Bus	Transit	New express bus route from Austell Rd/East West Conn Transfer Center to Douglas Co Transfer Center	Austell Rd Transfer Center	Douglas County P&R	$1,100,000	3	0	3	3	1	3	3	16
INV-T-006	Local Bus Service	Transit	Redirect local bus service to relocated and new trasfer centers	n/a	n/a	n/a								0
INV-T-007	Bus Service Frequency	Transit	Increase service frequency for key local bus routes	n/a	n/a	$1,700,000								0
INV-T-008	Connect Cobb Local Bus Service	Transit	Provide local bus service to compliment Connect Cobb BRT	n/a	n/a	$1,100,000								0
INV-T-009	Acworth to KSU Local Service Route	Transit	Provide local bus service from Acworth to KSU	Acworth	KSU	$1,100,000	3	0	3	3	2	3	3	17
INV-T-010	Austell Transfer Center	Transit	Install Austell Transfer Center to accommodate Austell Rd BRT	n/a	n/a	$10,000,000	3	0	3	3	0	3	3	15
INV-T-011	NE CCT Express bus route from KSU	Transit	Traditional express bus route	KSU	92 & Hwy 9	$1,100,000	3	0	3	3	2	0	3	14
INV-T-012	West Express Route	Transit	Traditional express bus route	KSU	Dallas 278	$1,100,000	3	0	3	3	1	3	3	16
INV-T-013	Local Skip Stop Bus Service	Transit		Cumberland Transfer Center	MARTA H.E. Holmes Station	$1,100,000	3	0	3	3	3	3	3	18
PT-007	Connect Cobb High Capacity Transit (ART) Phase 1 (AR-475)	Transit	New Starts fixed guide way	Kennesaw	Cumberland	$494,000,000	3	0	3	3	3	3	3	18
PT-022	Bus Route Development - Connection to Perimeter Market	Transit	New route along Roswell Rd and Johnson Ferry Rd	Marietta Transfer Center	Perimeter Center	$6,000,000	3	0	3	3	3	3	3	18

FIGURE 2 | Innovation Scenario Projects and Scores



Summary

In the Innovation Scenario, certain major projects were tested differently than in the Status Quo Scenario, with some showing promise of improving performance or lowering costs:

- Lengthy widening projects can sometimes be replaced with targeted intersection grade-separations. These results suggest this to be true particularly on SR 120 (Dallas Highway) and US 41 (Cobb Parkway) north of Marietta. A small number of grade separations seem to offer similar overall mobility benefits as lengthy widening projects, but at much lesser cost.
- Further expansion of CCT service will be beneficial in certain areas, but not cost-effective in other areas of the county:
    - § Transit service expansion or improvement in service shows promise along Austell Road, in certain portions of south Cobb, and further north connecting Kennesaw and Acworth to Town Center and to Marietta.
    - § Transit service expansion northeast (Sandy Plains Road) toward Roswell and west (Dallas Highway) did not show promising results.
    - § Improving frequency on key transit routes also shows promise in further increasing ridership and improving service.

The combination of adding some transit coverage and increasing frequency on key routes demonstrated daily ridership twice the current levels.

SCENARIO EVALUATION FIGURES AND MAPS

The following maps provide a comparison of the 30 minute roadway travelshed for the 2015 existing model, 2040 Base Scenario model, 2040 Status Quo Scenario, and the 2040 Innovation Scenario. The 45 minute transit travelshed maps include the 2040 Base Scenario, 2040 Status Quo Scenario, and the 2040 Innovation Scenario.

FIGURE 3 | 2040 AM Peak 30 Minute Automobile Travelshed to Cumberland

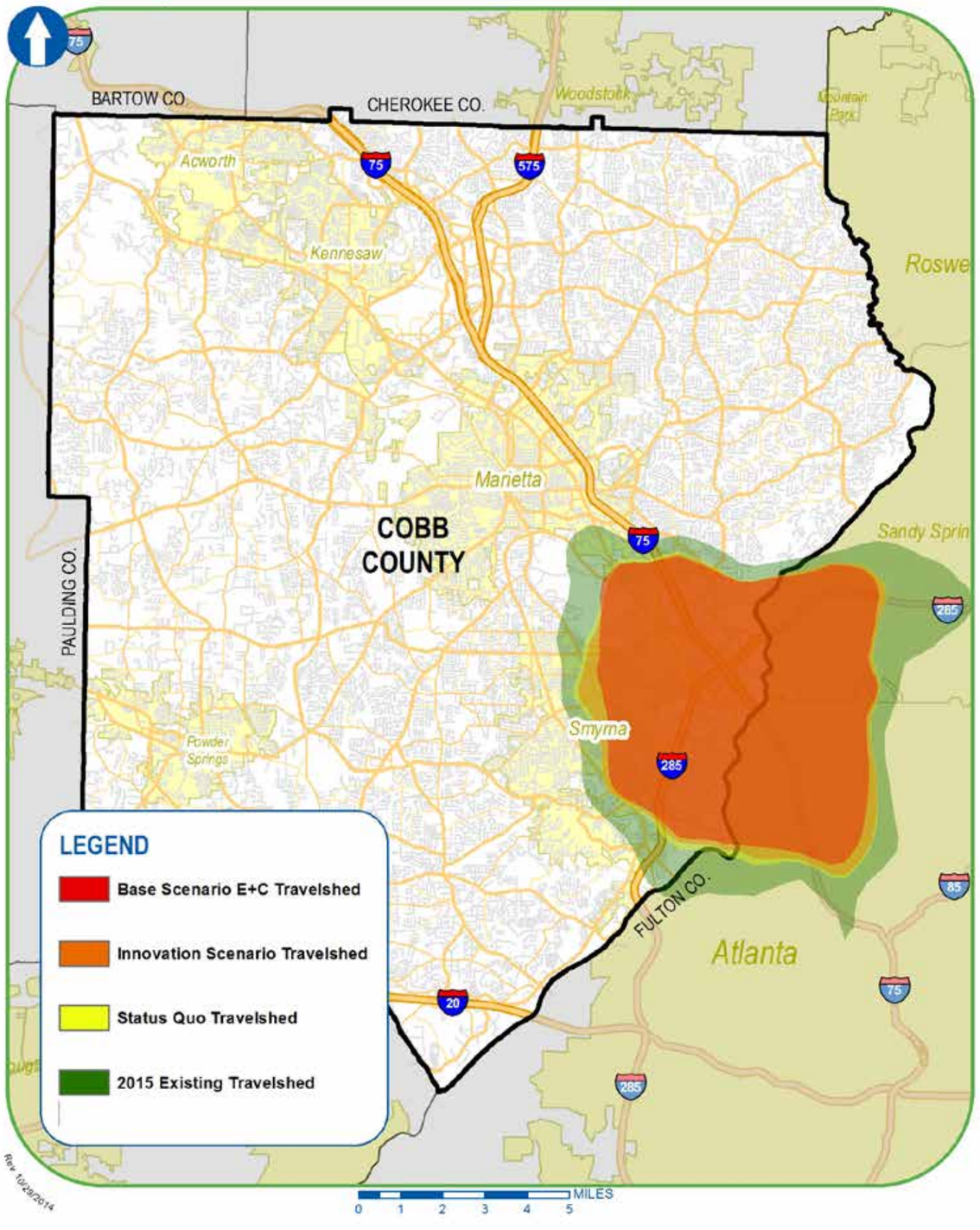


FIGURE 4 | 2040 AM Peak 30 Minute Automobile Travelshed from Cumberland

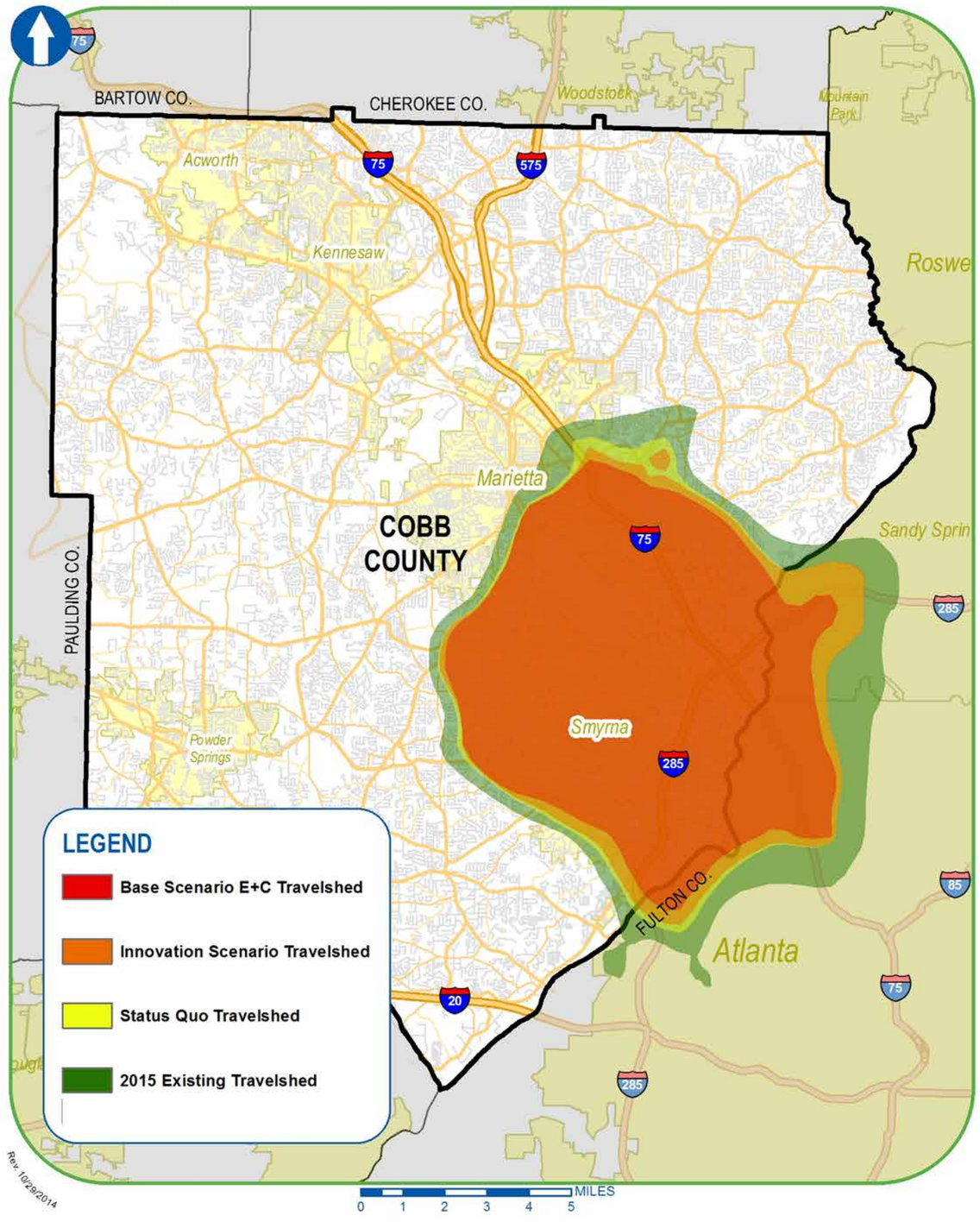


FIGURE 5 | 2040 AM Peak 30 Minute Automobile Travelshed to Marietta

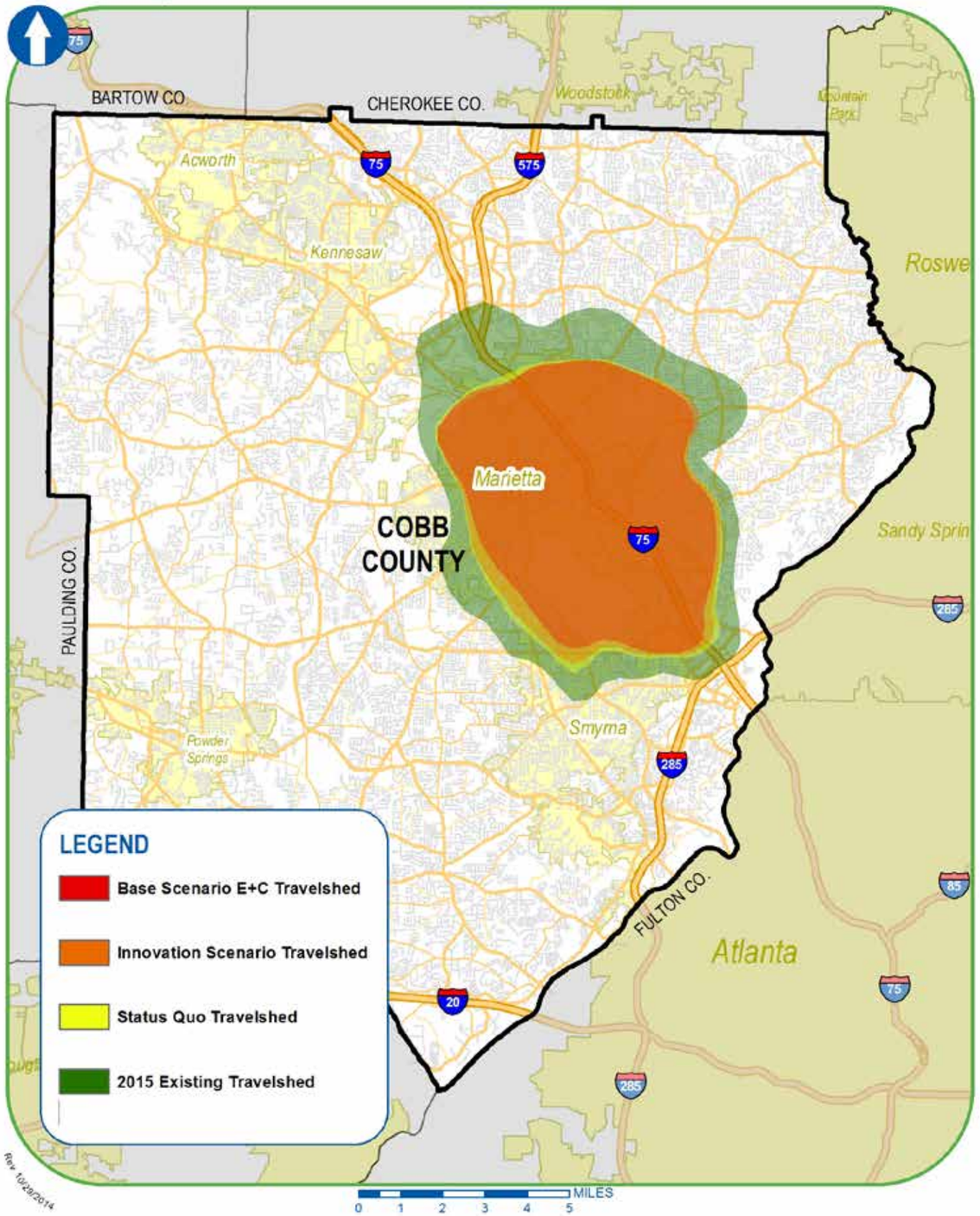


FIGURE 6 | 2040 AM Peak 30 Minute Automobile Travelshed from Marietta

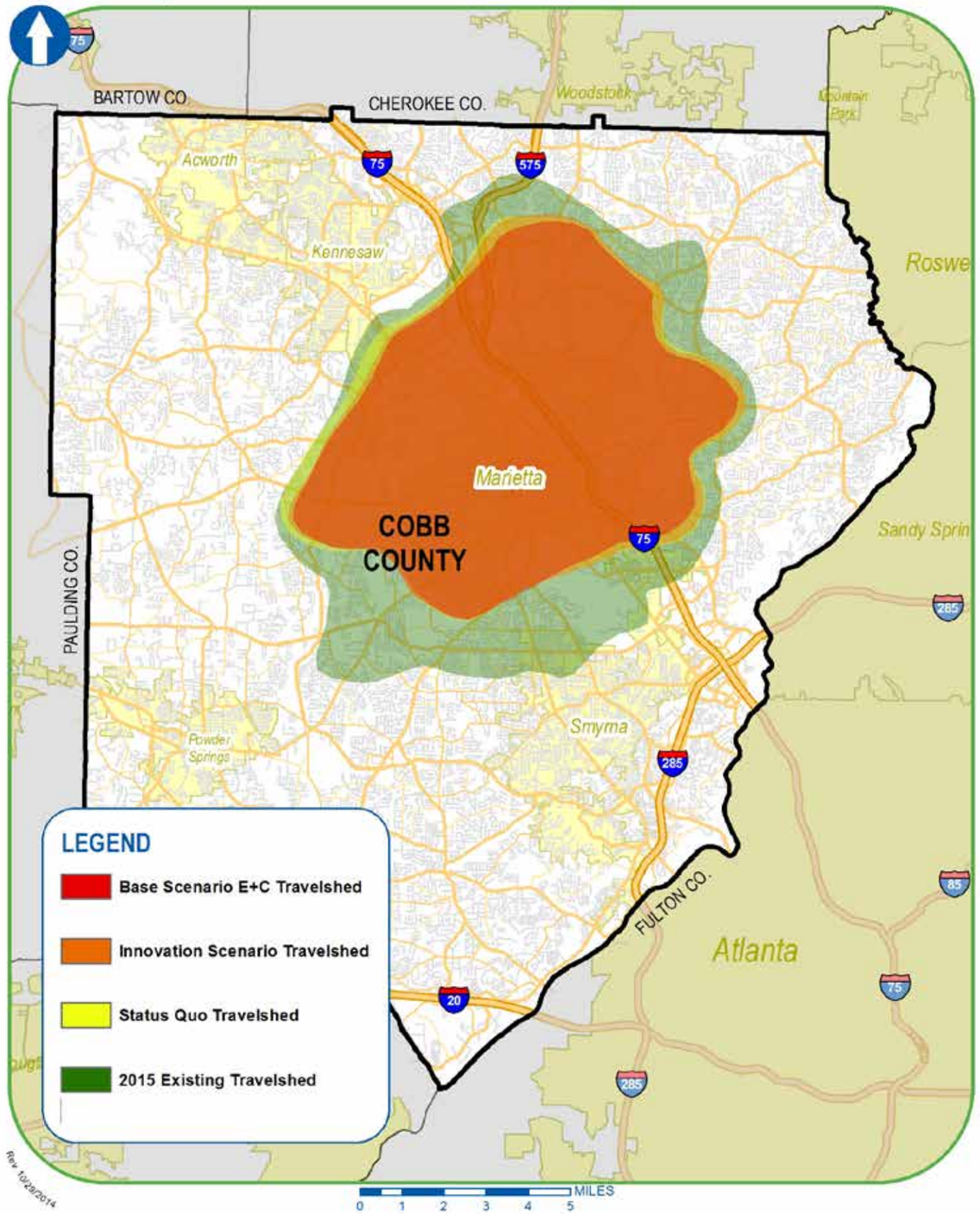


FIGURE 7 | 2040 AM Peak 30 Minute Automobile Travelshed to Town Center

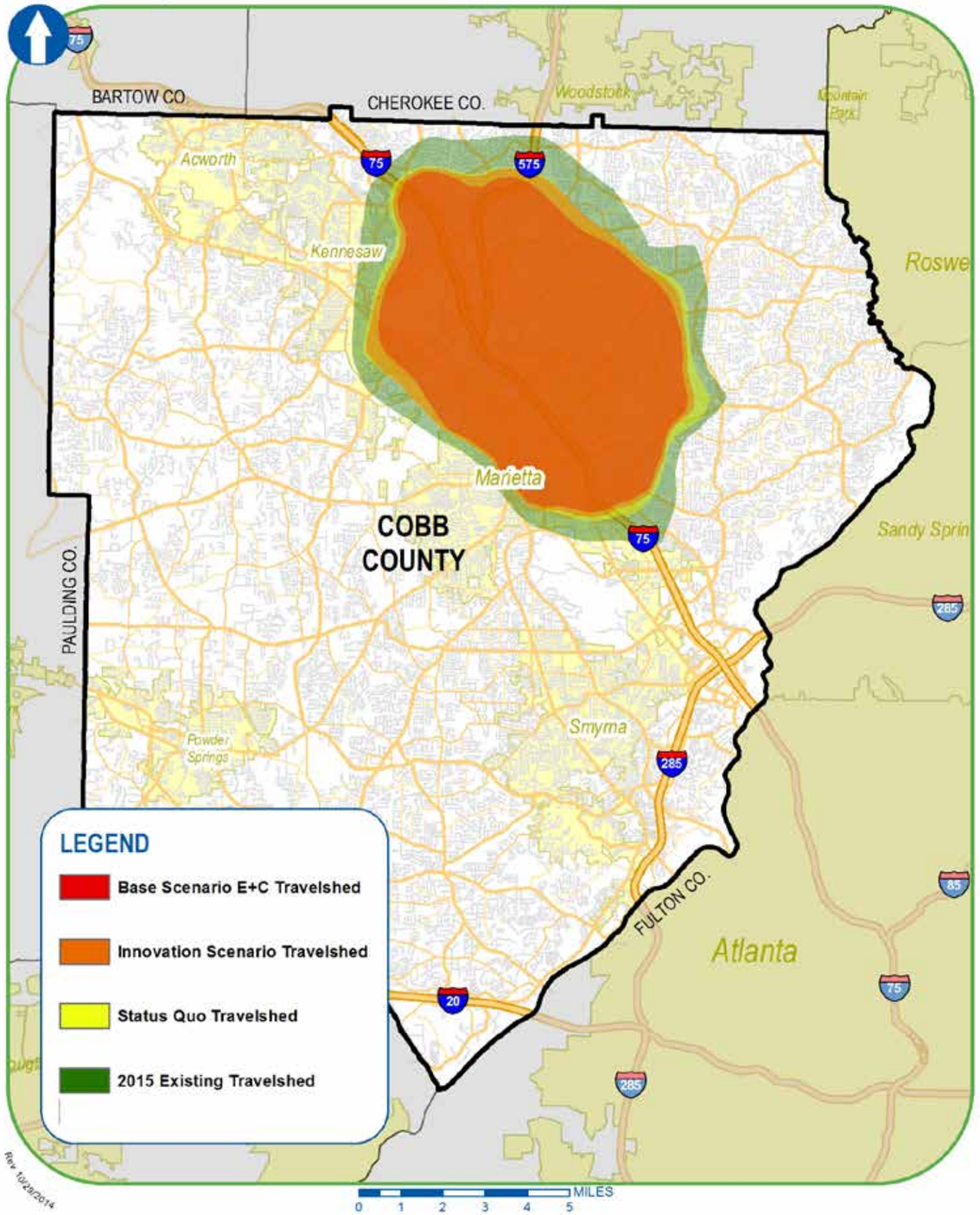


FIGURE 8 | 2040 AM Peak 30 Minute Automobile Travelshed from Town Center

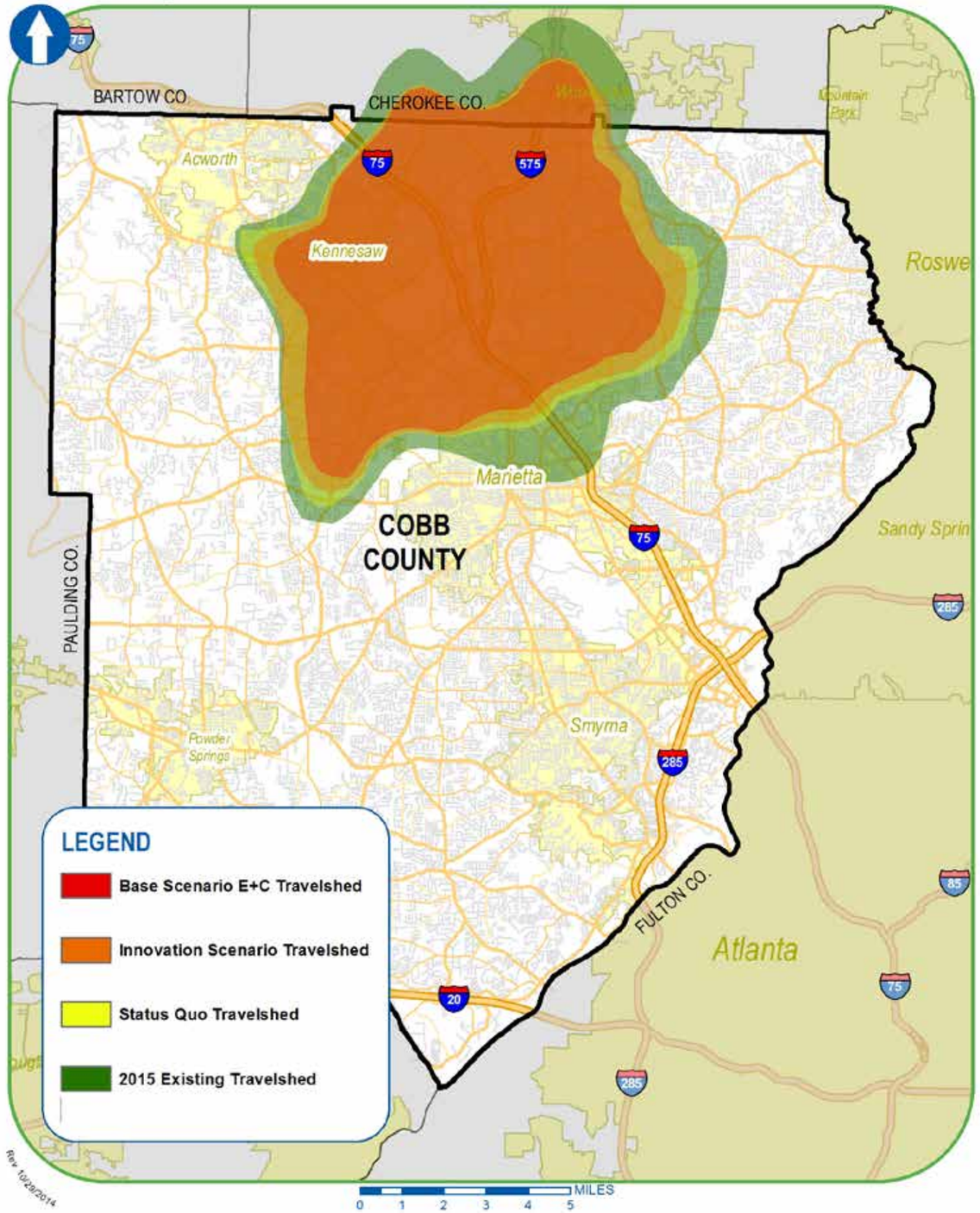


FIGURE 9 | 2040 Cumberland 45 Minute AM Peak Transit Travelshed

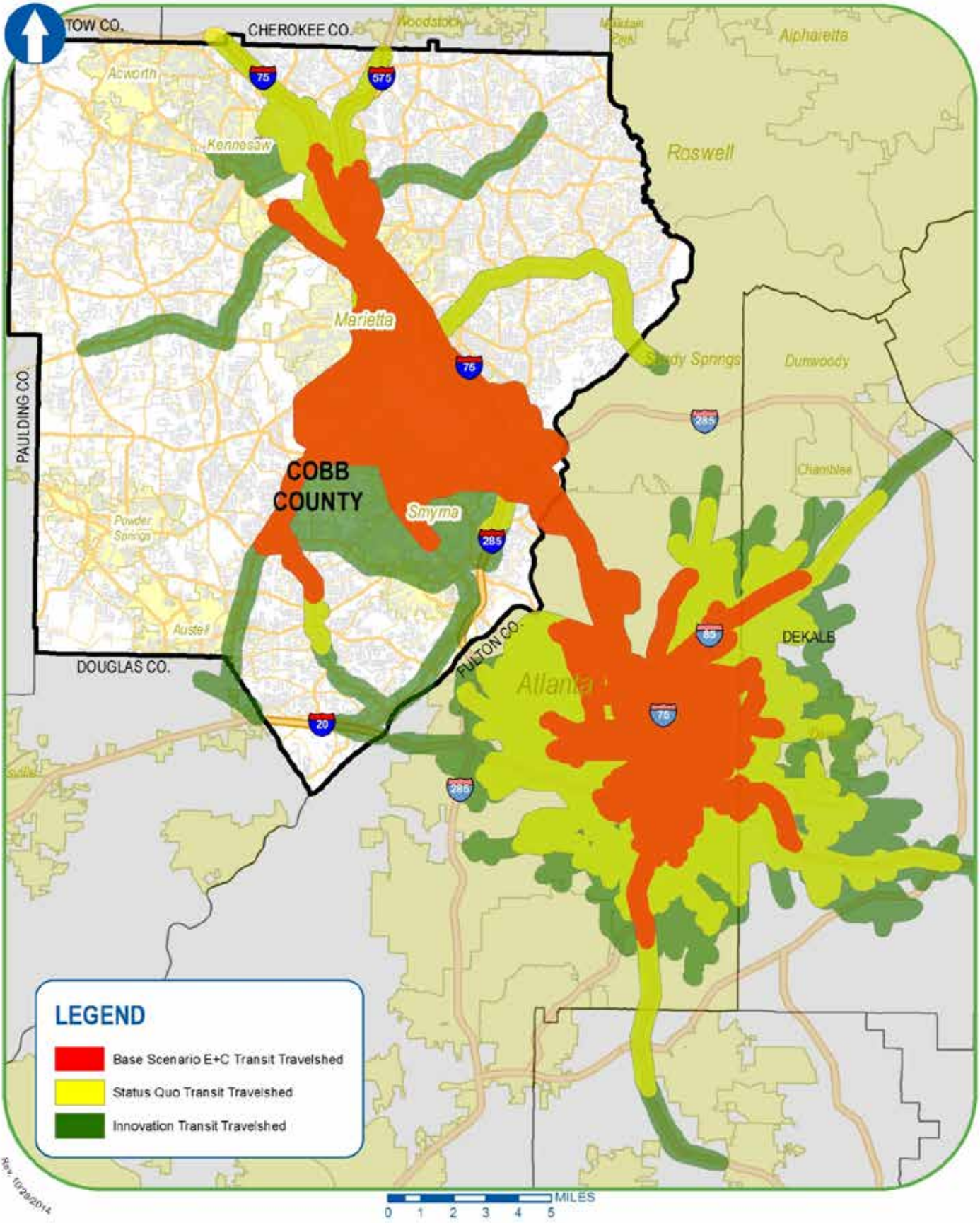


FIGURE 10 | 2040 Marietta 45 Minute AM Peak Transit Travelshed

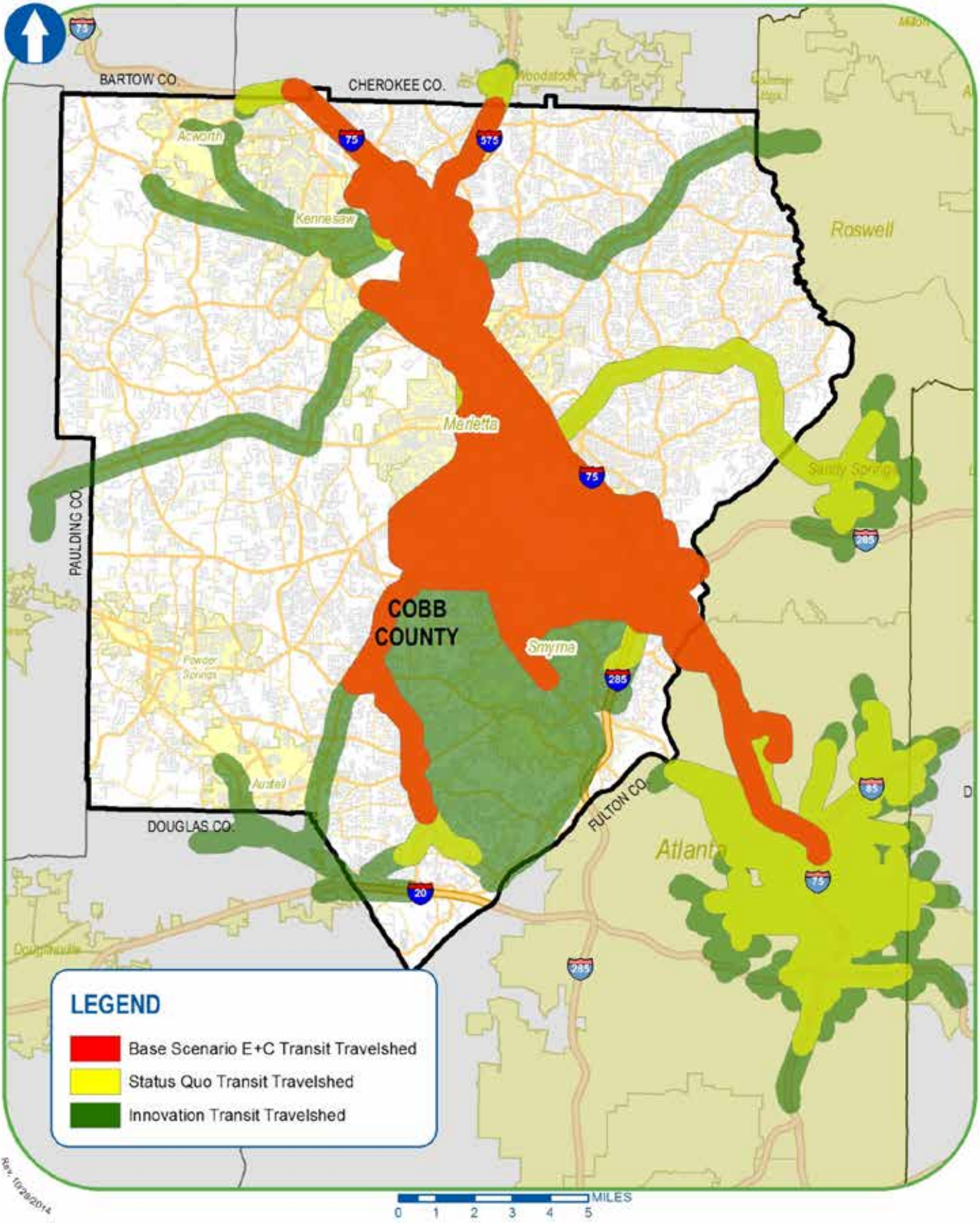
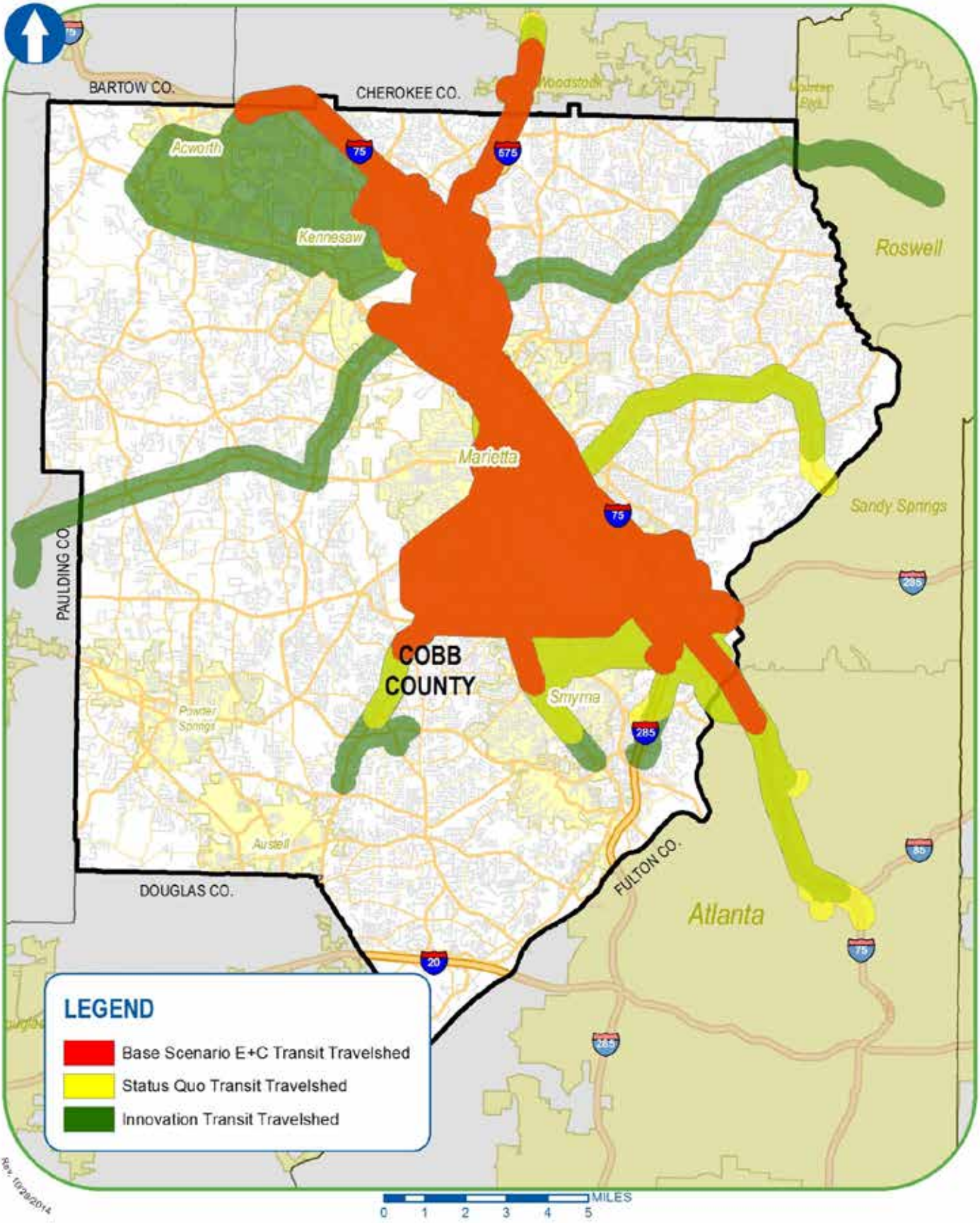


FIGURE 11 | 2040 Town Center 45 Minute AM Peak Transit Travelshed



COMPARSION OF INNOVATIVE TO BASE AND STATUS QUO SCENARIOS

The Innovation Scenario reduces congestion and improves mobility over the Base Scenario and the 2015 existing conditions, but not quite to the same extent as the Status Quo Scenario. However, the Innovation Scenario costs less and makes improvements in access to jobs and to transit service in the County. The Innovation Scenario, like the Status Quo Scenario, does not improve accessibility to jobs by automobile. However, it does increase access to jobs via transit as compared to both the Base and Status Quo Scenarios. The Innovation Scenario includes a more focused strategy for roadway expansions and grade separations on corridors that serve employment centers, paired with extensive transit service expansion and targeted transit operational enhancements; suggesting that further transit improvements and a focus on operational efficiencies at major intersection can have a more positive impact on job accessibility.

Several innovative projects were tested and found to be feasible and more cost effective. For example, grade separation projects at intersections cost considerably less than large widening for miles of roadway. However, in many cases traditional roadway expansion was found to be the most appropriate solution. Examples of include South Cobb Drive near I-285, Windy Hill Road, and Barrett Parkway. It should be noted, too, that provisions for walking and biking can be accommodated along wider roads as was completed recently along Barrett Parkway near Kennesaw. Certain transit projects evaluated performed well, but at a significant cost. Examples of this include the Austell Road BRT. These results suggest the need to examine alternatives and phased approaches to implementing transit expansion which might serve those needs at a lesser cost.

LESSONS LEARNED

There are always limits to a quantitative scoring system. The scoring system used has flaws, however if the limitations of the system are well understood the scores are still valuable and can be used accordingly in making recommendations. Some of the limitations of the scoring system include:

- Within transit projects, stations and park and ride improvement do not score well because they are only in a small geographic location and do not have the opportunity to pick up points in all the categories due to the physical size of the project. These projects should be reviewed for possible recommendation despite their low scores.

- Many of the innovation projects do not score well because they did not exist in the previous scenario, and therefore cannot show any improvement. So, careful evaluation and planning judgment should be used in concert with the quantitative measures.
- Some projects may have scored well because of the existence of other adjacent projects. If one of those projects is not implemented, then the success of the project may not be as high as the score suggests.

APPENDIX

Travel Demand Model Documentation

Atlanta Regional Commission (ARC) maintains a regional travel demand model for the 20-county, ARC region. The model, which is based in Cube, contains socioeconomic data and roadway geometries for all roads classified as collector or above. The base model (2015) reflects roadway geometries and locations and projects in network year 2015. The 2040 model reflects existing facilities along with any committed projects contained in the current fiscal year 2014-2019 TIP.

Roadway links use attributes such as number of lanes, area type, facility type, existence of medians, and existence of shoulders to develop a theoretical capacity for the link. The ARC model does not provide intersection capacities so only link capacities are used.

The model works by using population and employment data to generate trip productions and attractions for small areas called traffic analysis zones (TAZs). Information such as household size, household income, and number of vehicles per household is used to determine the number of trips produced in a zone while information such as the number of jobs by industry is used to determine the number of trips attracted to a zone. Additionally, the trips are split into different modes (single occupancy vehicle, high occupancy vehicle, walk, and transit) by a factor which represents access to alternative modes.

The trips are then assigned to the roadway network by searching for the shortest and fastest path. While roadway segments, or links, are allowed to exceed capacity, a factor is used to reduce the speed on links as they become more congested. This results in alternative paths becoming more attractive as demand increases on the network. The network is loaded in an iterative method so that trips are balanced throughout the network.

The regional model is revised regularly to reflect the current transportation improvement plan (TIP) and to improve the accuracy of results. The January 2013 script was used with the spring 2014 network.