



Pikes Peak Area
Council of Governments
Communities Working Together



Pikes Peak Area Council of Governments
Moving Forward Update
2035 Long Range Transportation Plan

January 2012



bike
transit
drive
walk

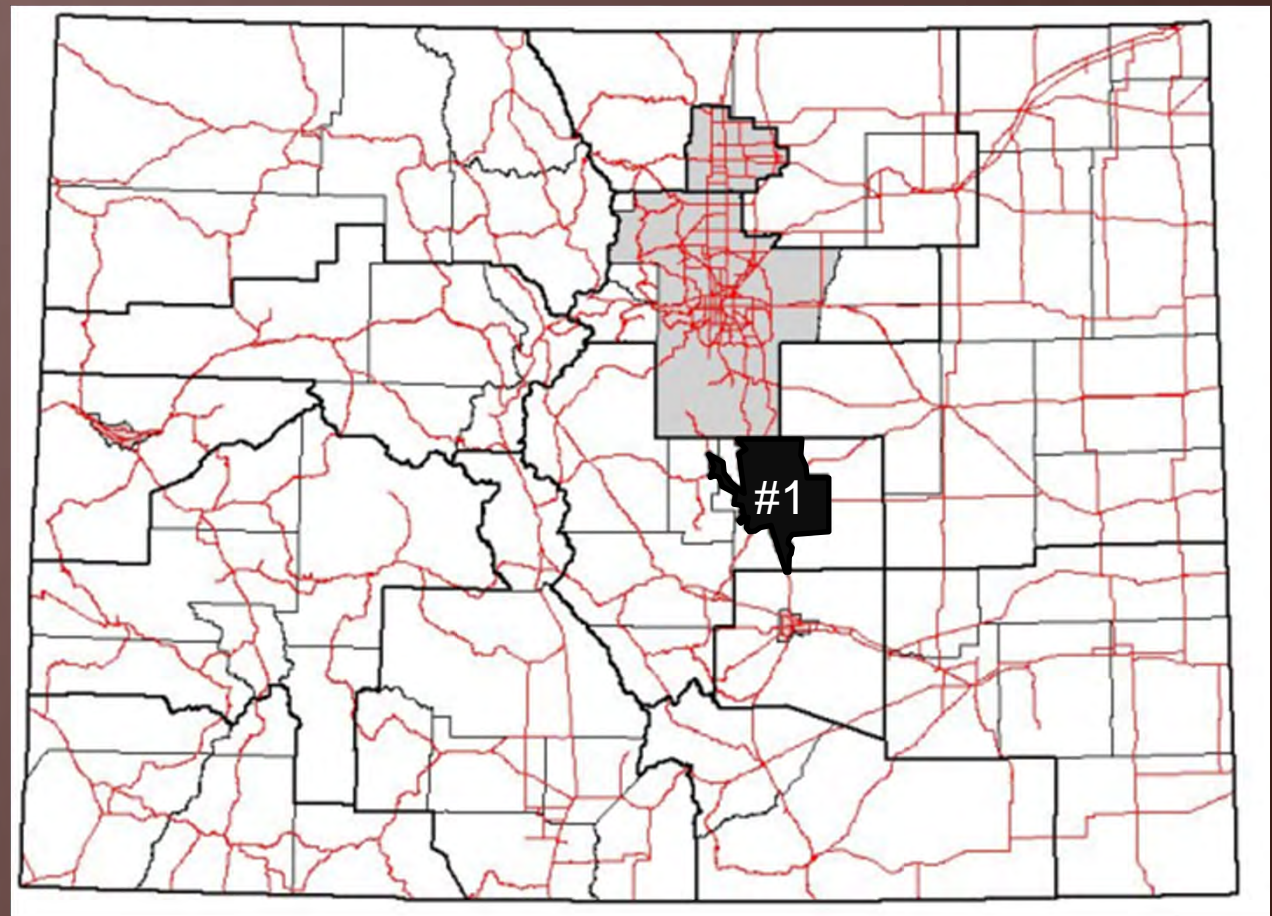


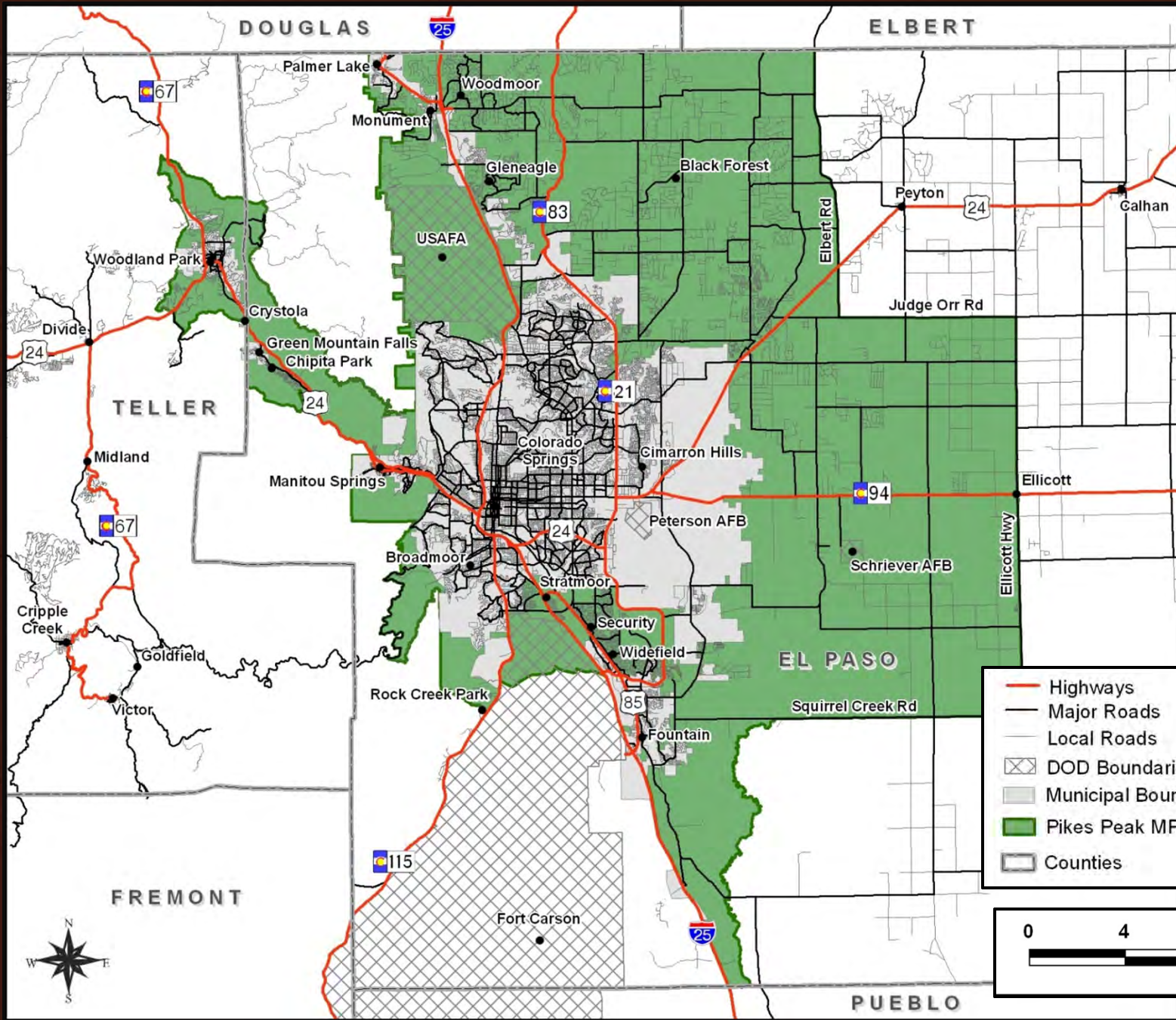
PIKES PEAK AREA LONG RANGE TRANSPORTATION PLAN



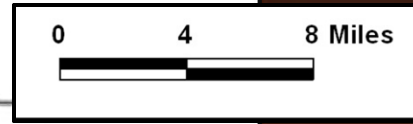
Pikes Peak Area
Council of Governments
Communities Working Together

**MOVING
FORWARD**
Update
2035 REGIONAL TRANSPORTATION PLAN





- Highways
- Major Roads
- Local Roads
- DOD Boundaries
- Municipal Boundaries
- Pikes Peak MPO Boundary
- Counties



PLANNING FRAMEWORK

www.transportationforcommunities.com

LONG RANGE TRANSPORTATION PLANNING

LRP-1 Approve scope of LRTP process	LRP-2 Approve vision and goals	LRP-3 Approve evaluation criteria, methodology, & performance measures	LRP-4 Approve transportation deficiencies	LRP-5 Approve financial assumptions	LRP-6 Approve strategies	LRP-7 Approve plan scenarios	LRP-8 Adopt Preferred Plan Scenario	LRP-9 Adopt Finding of Conformity by MPO
LRP-10 Adopt LRTP by MPO	LRP-11 Approve* conformity analysis							

PROGRAMMING

PRO-1 Approve revenue sources	PRO-2 Approve methodology for identifying project costs and criteria for allocating revenue	PRO-3 Approve project list drawn from adopted plan scenario	PRO-4 Approve project prioritization	PRO-5 Reach Consensus on Draft TIP	PRO-6 Adopt TIP by MPO	PRO-7 Approve TIP by Governor and incorporate into Draft STIP	PRO-8 Reach Consensus on Draft STIP	PRO-9 Approve STIP with respect to conformity and fiscal constraint
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CORRIDOR PLANNING

COR-1 Approve scope of corridor planning process	COR-2 Approve problem statements and opportunities	COR-3 Approve goals for the corridor	COR-4 Reach Consensus on scope of env. review & analysis (social, cultural, natural)	COR-5 Approve evaluation criteria, methodology & performance measures	COR-6 Approve range of solutions sets	COR-7 Adopt preferred solution set	COR-8 Approve evaluation criteria, methodology & performance measures for prioritization	COR-9 Adopt priorities for implementation
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ENVIRONMENTAL REVIEW / NEPA MERGED WITH PERMITTING

ENV-1 Reach Consensus on scope of environmental review	ENV-2 Approve Notice of Intent	ENV-3 / PER-1 Approve Purpose and Need Reach Consensus on Project Purpose	PER-2 Approve Public Notice	ENV-4 Reach Consensus on study area	ENV-5 Approve evaluation criteria, methodology, & performance measures	ENV-6 / PER-3 Approve Full Range of Alternatives Approve Full Range of Alternatives	ENV-7 / PER-4 Approve Alternatives to be Carried Forward Approve Alternatives to be Carried Forward	ENV-8 Approve* Draft EIS
ENV-9 Approve Preferred Alternative	PER-5 Reach Consensus on Jurisdictional Determination	ENV-10 Approve* Final NEPA Document	ENV-11 / PER-6 Approve* the ROD Render* Permit Decision					

FACILITATED COLLABORATION



SCENARIO DEVELOPMENT WORKSHOPS



PLAN VISION AND GOALS

Plan Vision

- Create a sustainable multi-modal transportation system that meets regional mobility and accessibility expectations as essential elements of the Pikes Peak Area's quality of life.

Plan Goals

- Used **S.M.A.R.T.** format
 - Specific
 - Measureable
 - Agreed Upon
 - Realistic
 - Time Constrained



PLAN GOALS

Use transportation investments to incentivize infill in, and redevelopment of, existing communities.

Objectives

- By 2015
 - Establish baseline for comparison
 - Decrease in number of lane miles per person and land consumption per capita by 5% over 2010 levels

- By 2025
 - Decrease in number of lane miles per person and land consumption per capita by 10% over 2010 levels

- By 2035
 - Decrease in number of lane miles per person and land consumption per capita by 15% over 2010 levels

Performance Measures

- Decrease number of lane miles per person
- Decrease land consumption per capita

Improve, protect and mitigate impacts of critical habitat and connecting corridors suitable for threatened, endangered, and imperiled species.

Objectives

- By 2015
 - Establish baseline for comparison
 - Maintain habitat and habitat linkages at 2010 levels

- By 2025
 - Maintain habitat and habitat linkages at 2010 levels

- By 2035
 - Maintain habitat and habitat linkages at 2010 levels

Performance Measures

- Acres of connected habitat for threatened, endangered, and imperiled species

Minimize the amount of stormwater runoff and transportation-associated pollutants that enter the region's streams.

Objectives

- By 2015
 - Establish baseline for comparison
 - Reduce transportation-associated pollutant levels by 10% from 2005 level

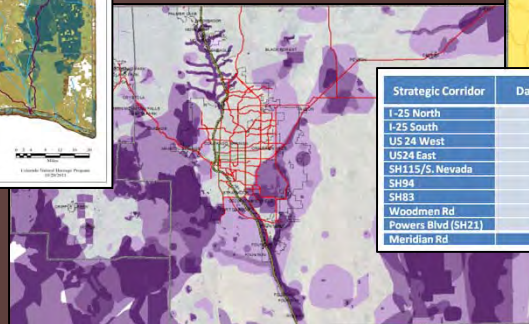
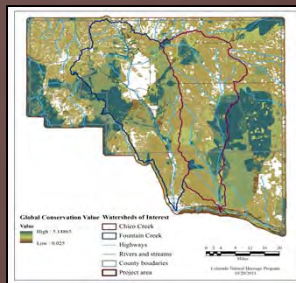
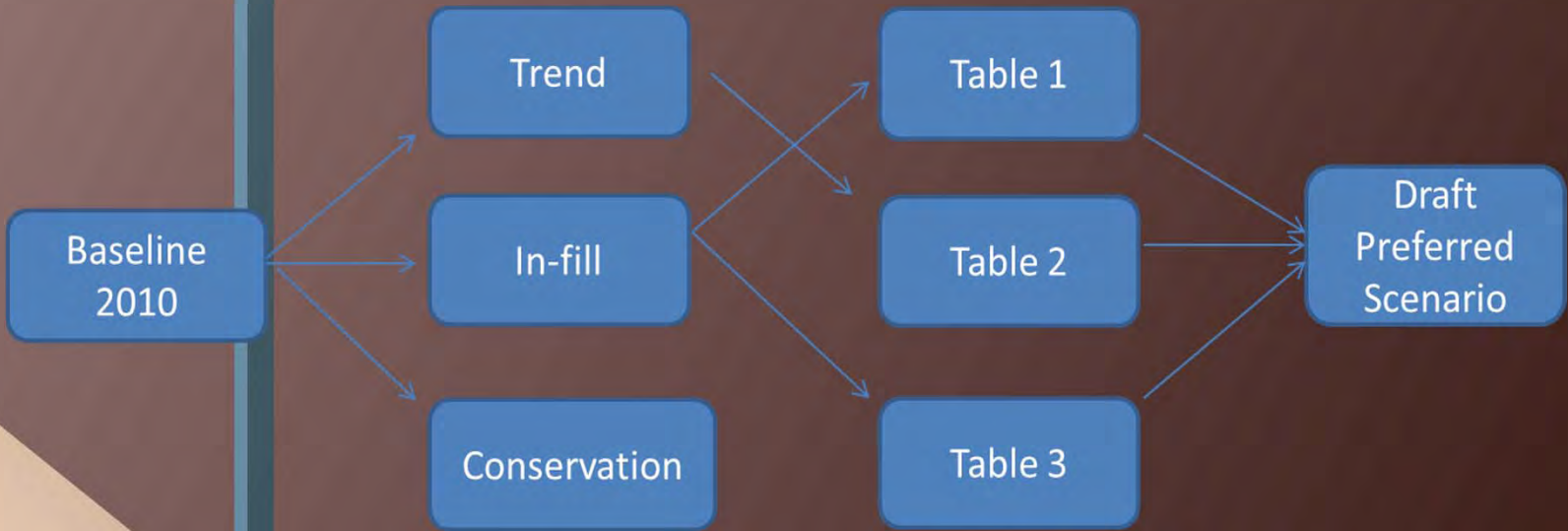
- By 2025
 - Reduce transportation-associated pollutant levels by 20% from 2005 levels

- By 2035
 - Reduce transportation-associated pollutant levels by 30% from 2005 levels

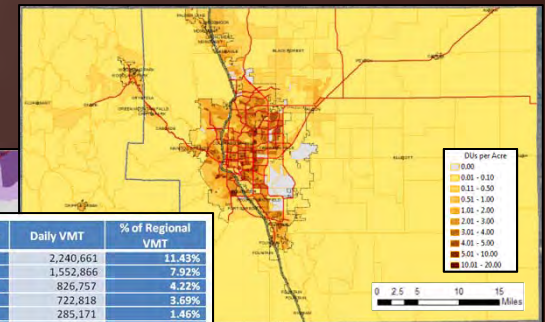
Performance Measures

- Percent of impervious surface area
- Pollutants entering the surface water system by type

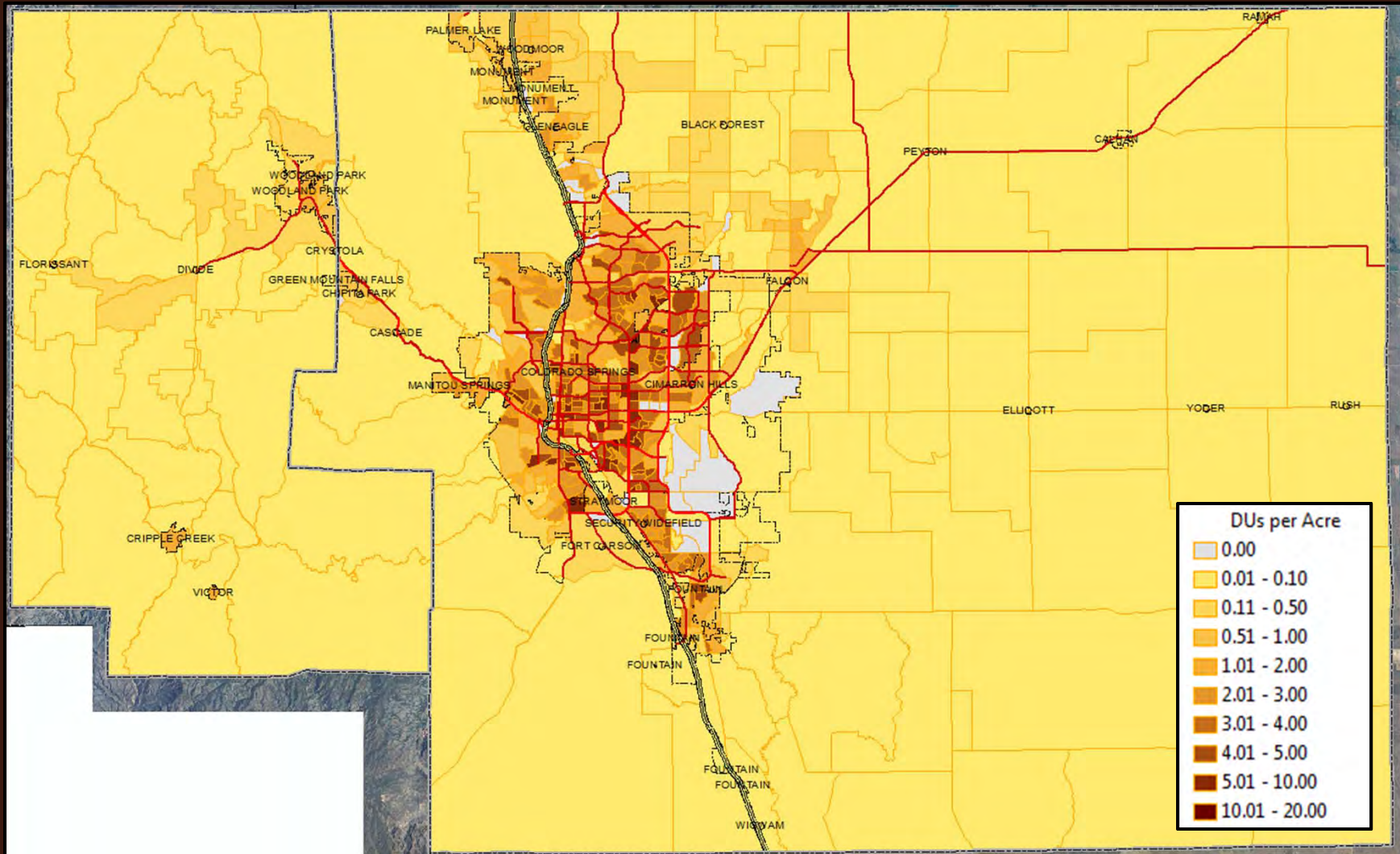
SCENARIO PLANNING



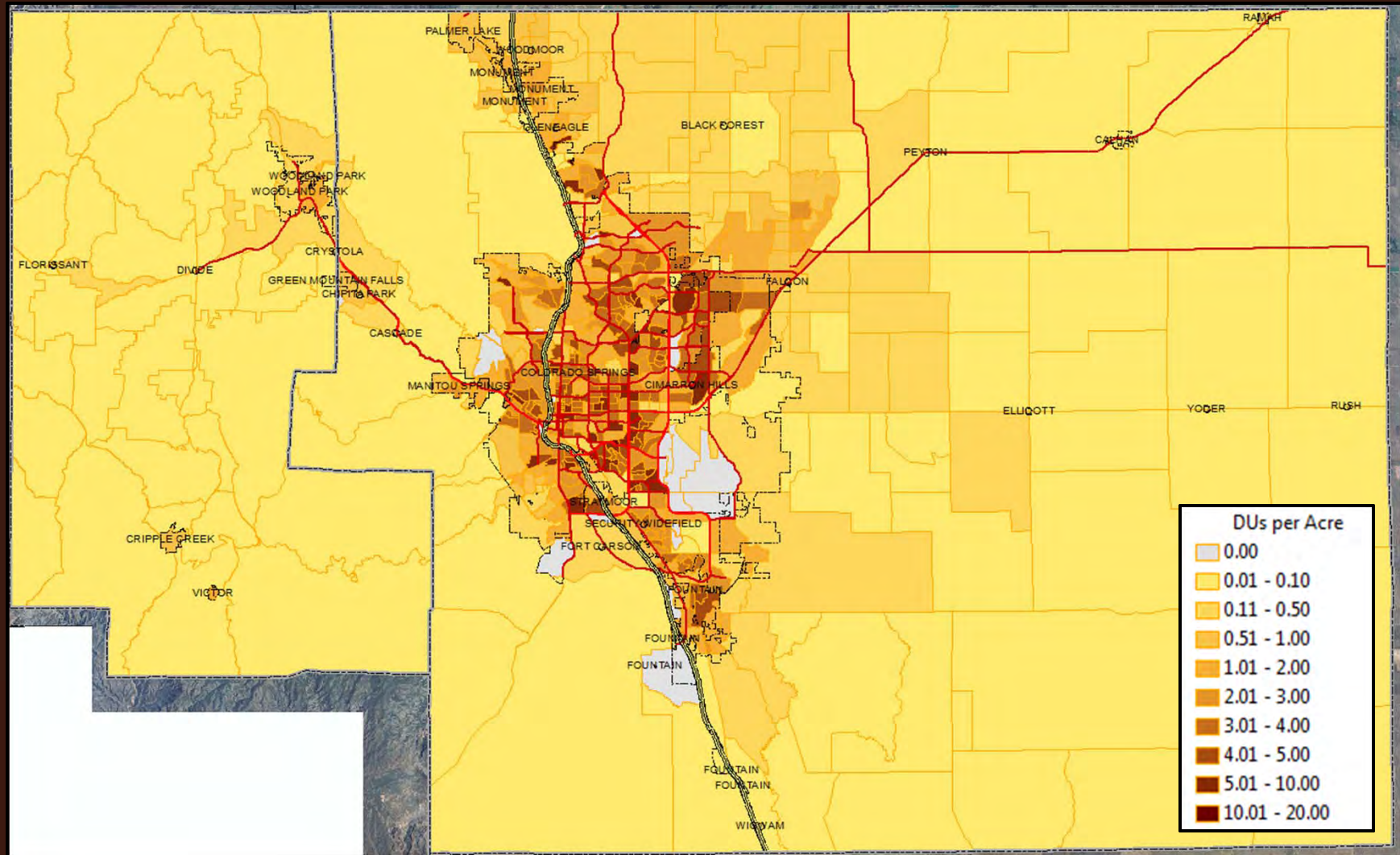
Strategic Corridor	Daily VMT	% of Regional VMT
I-25 North	2,240,661	11.43%
I-25 South	1,552,866	7.92%
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US24 East	722,818	3.69%
SH115/S. Nevada	285,171	1.46%
SH94	420,427	2.15%
SH83	328,448	1.68%
Woodmen Rd	605,173	3.09%
Powers Blvd (SH21)	1,126,314	5.75%
Meridian Rd	186,115	0.95%



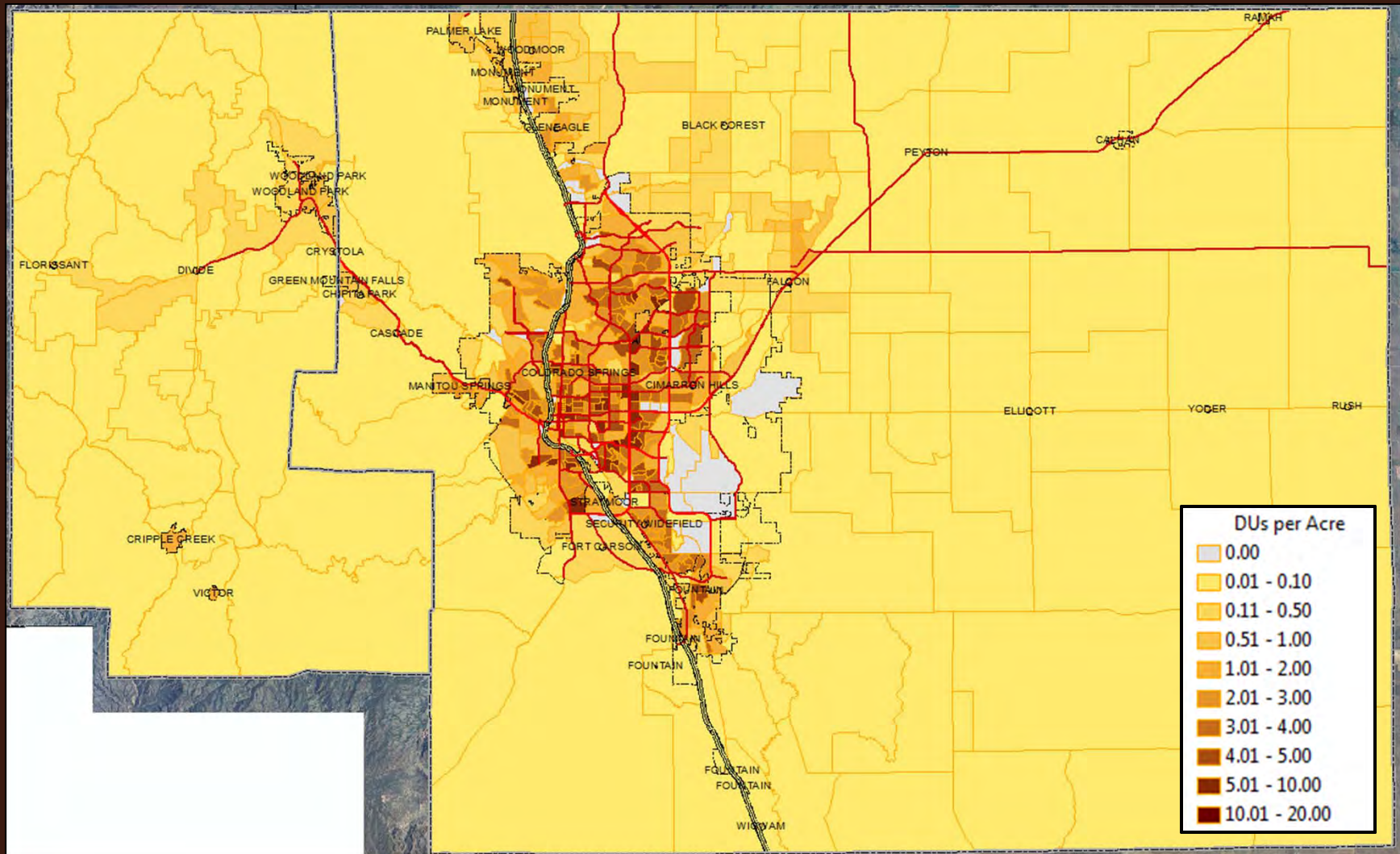
RESIDENTIAL DENSITY 2010



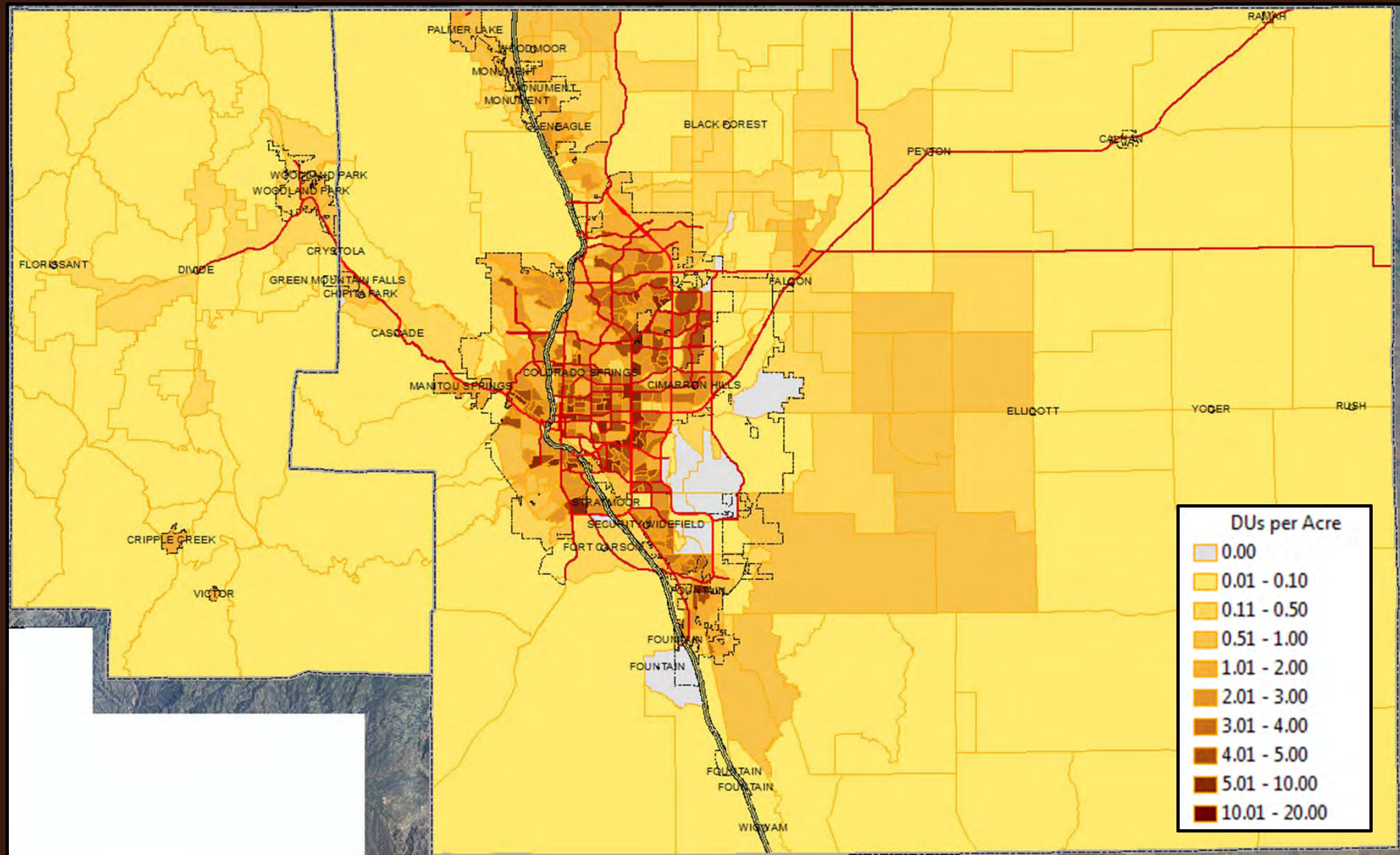
CURRENT TREND 2035 – RESIDENTIAL DENSITY



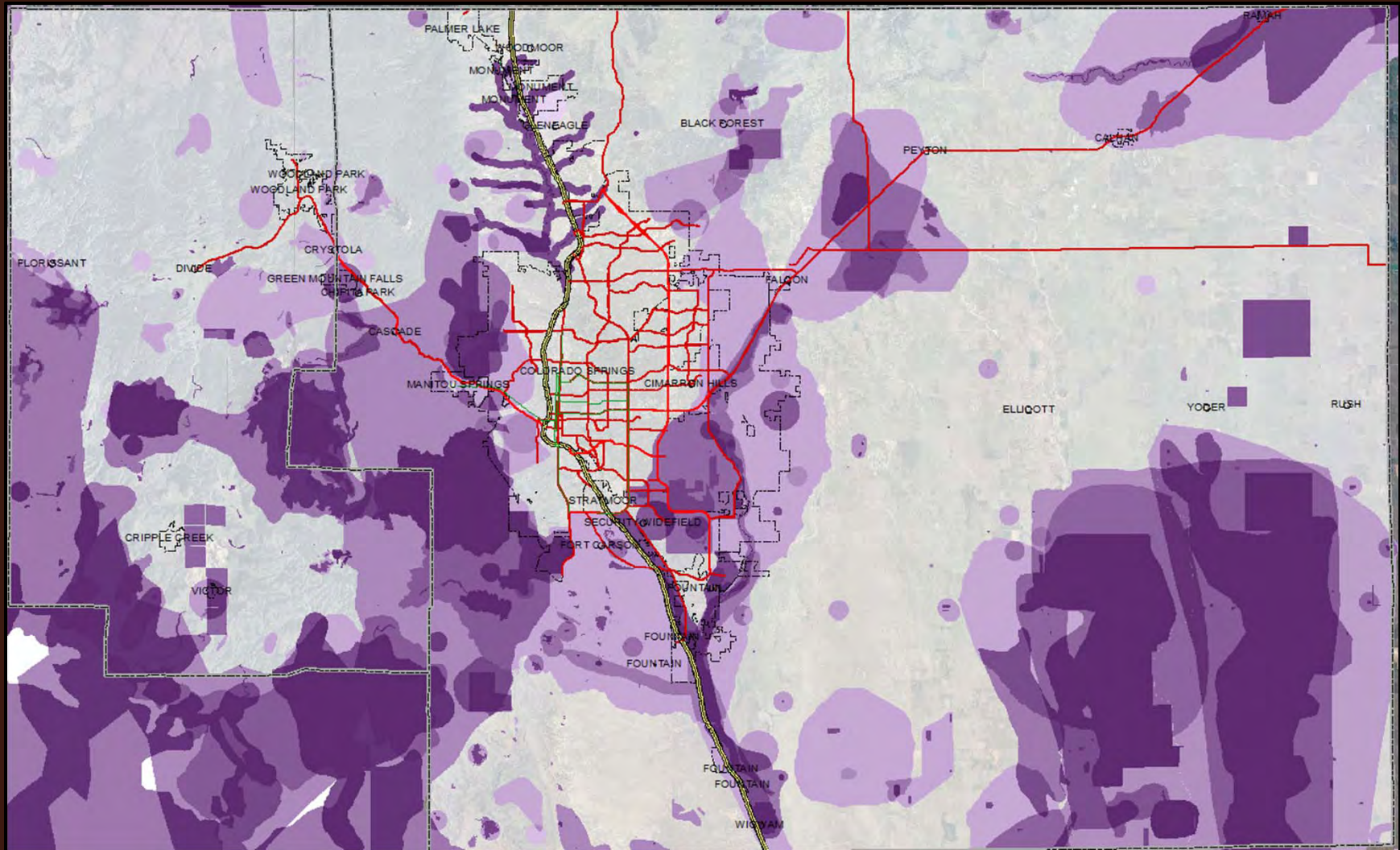
RESIDENTIAL DENSITY 2010

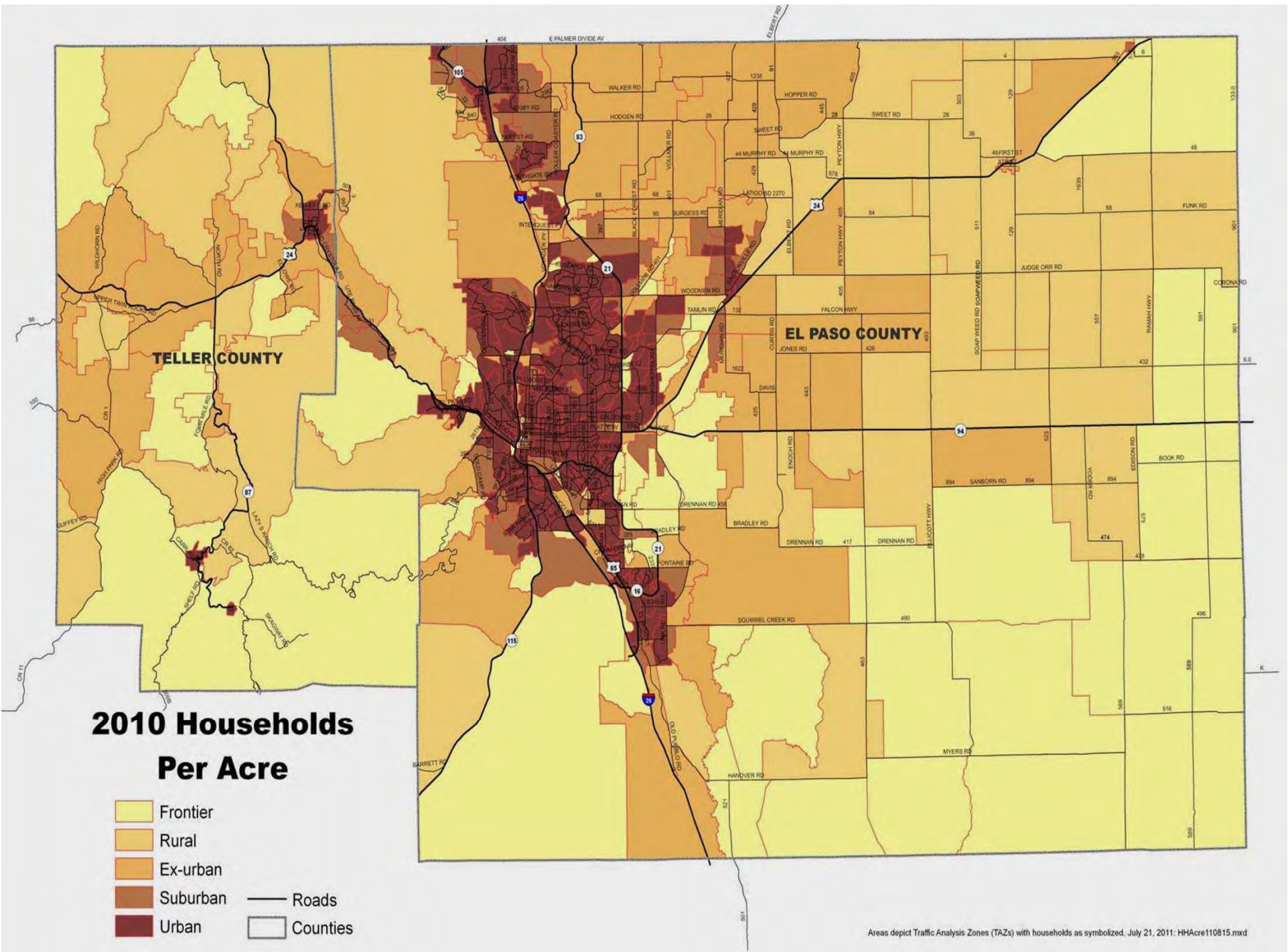


CONSERVATION 2035 – RESIDENTIAL DENSITY

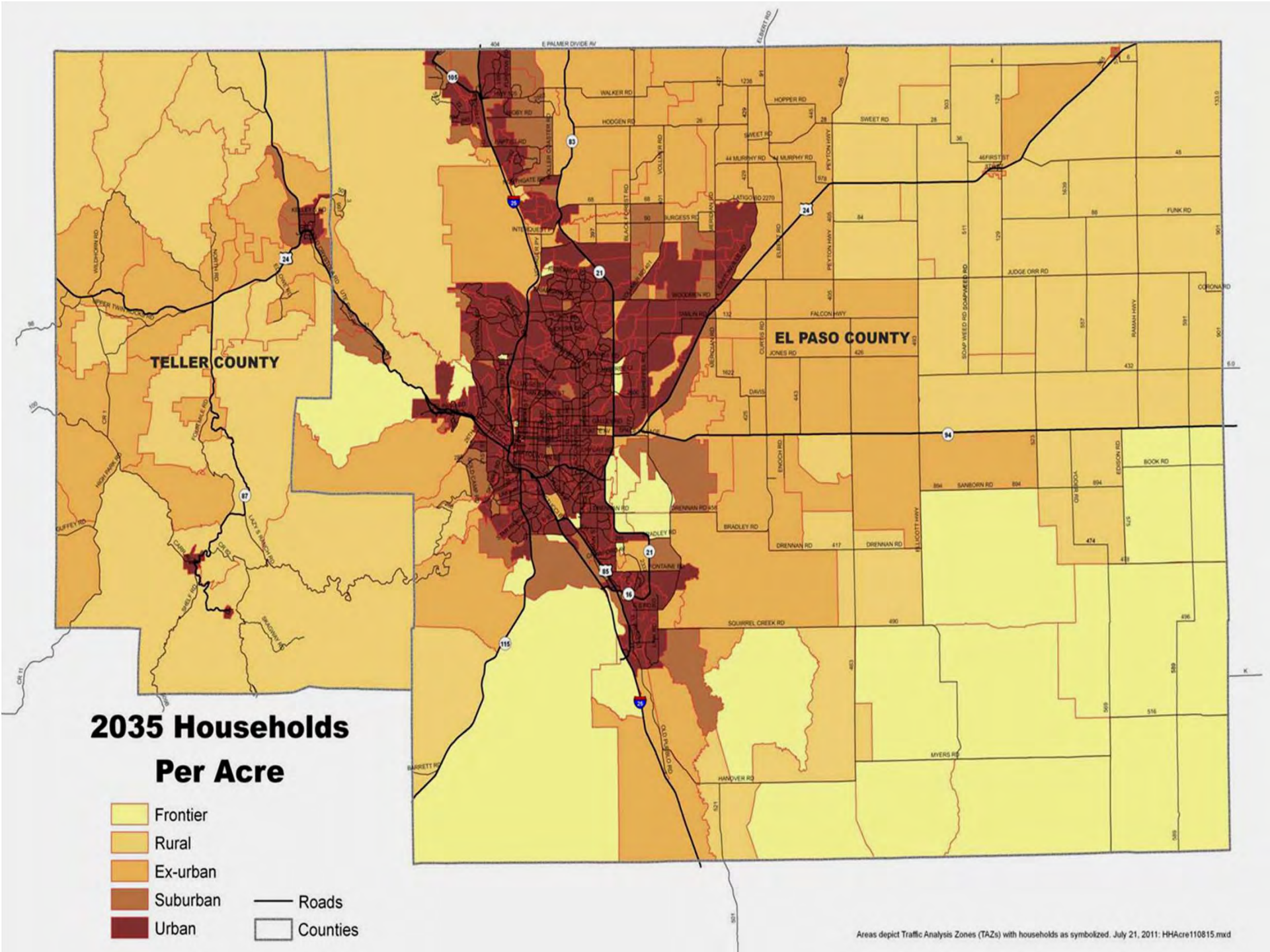


CONSERVATION VALUES

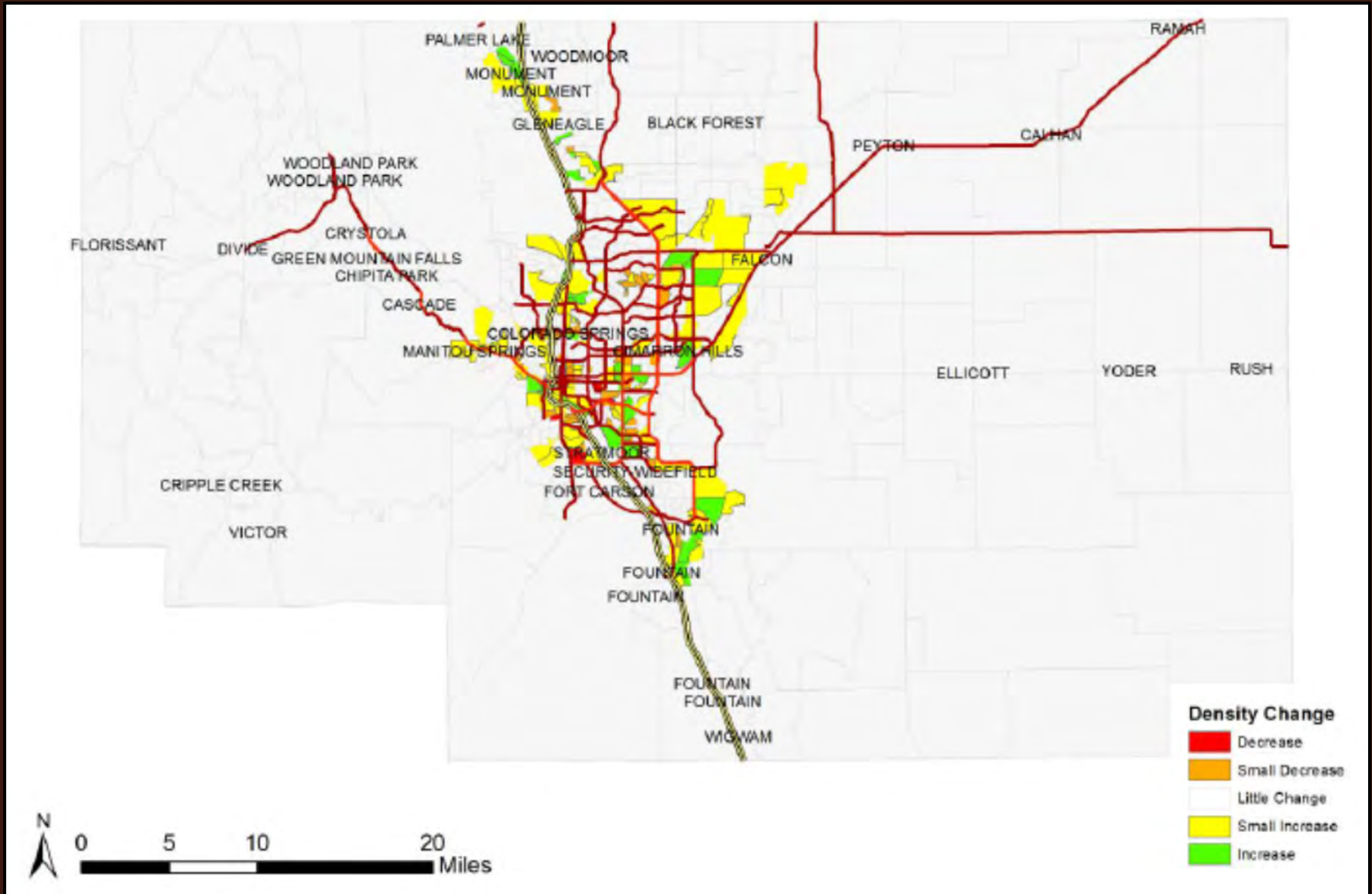




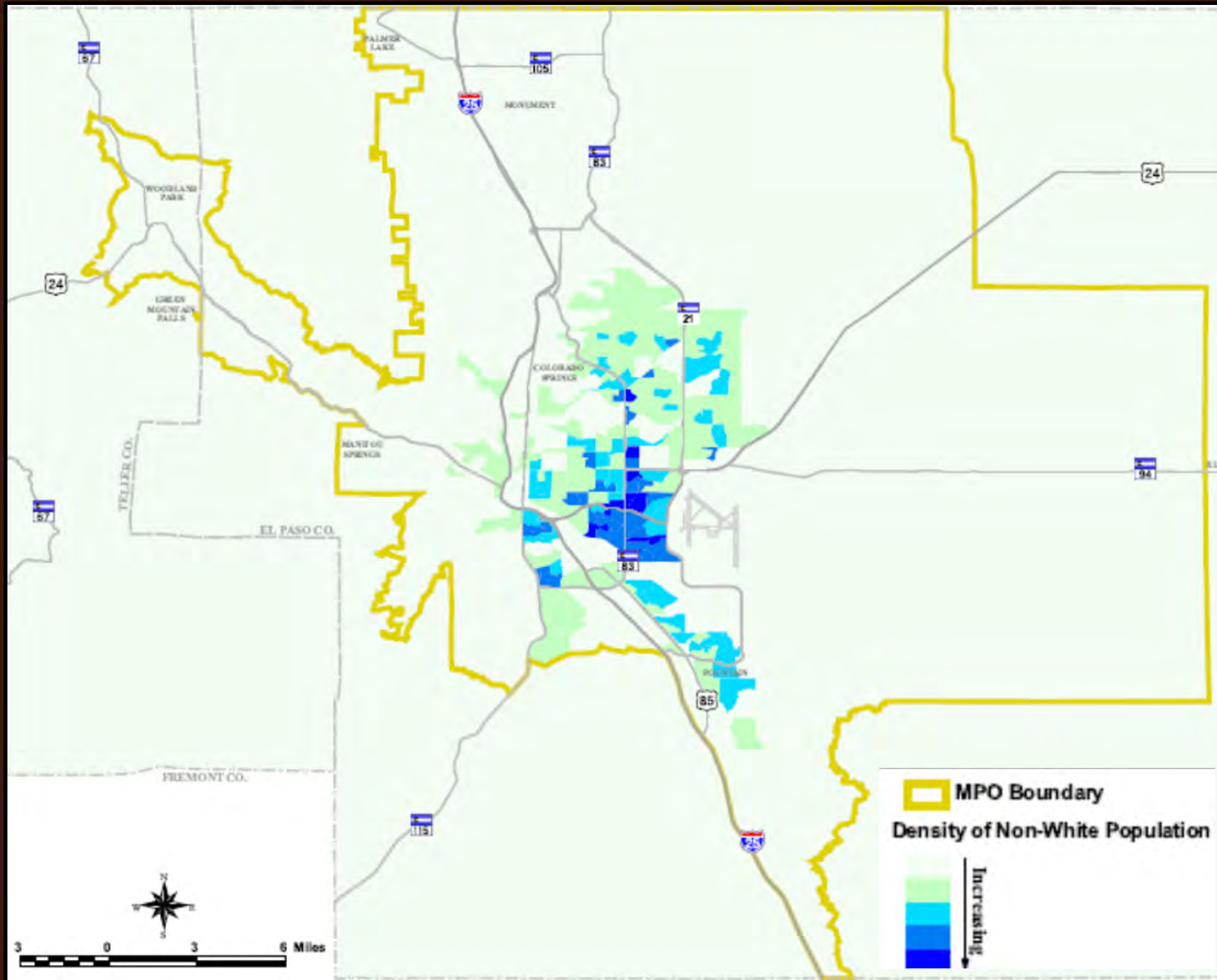
Areas depict Traffic Analysis Zones (TAZs) with households as symbolized. July 21, 2011: HHAcres110815.mxd



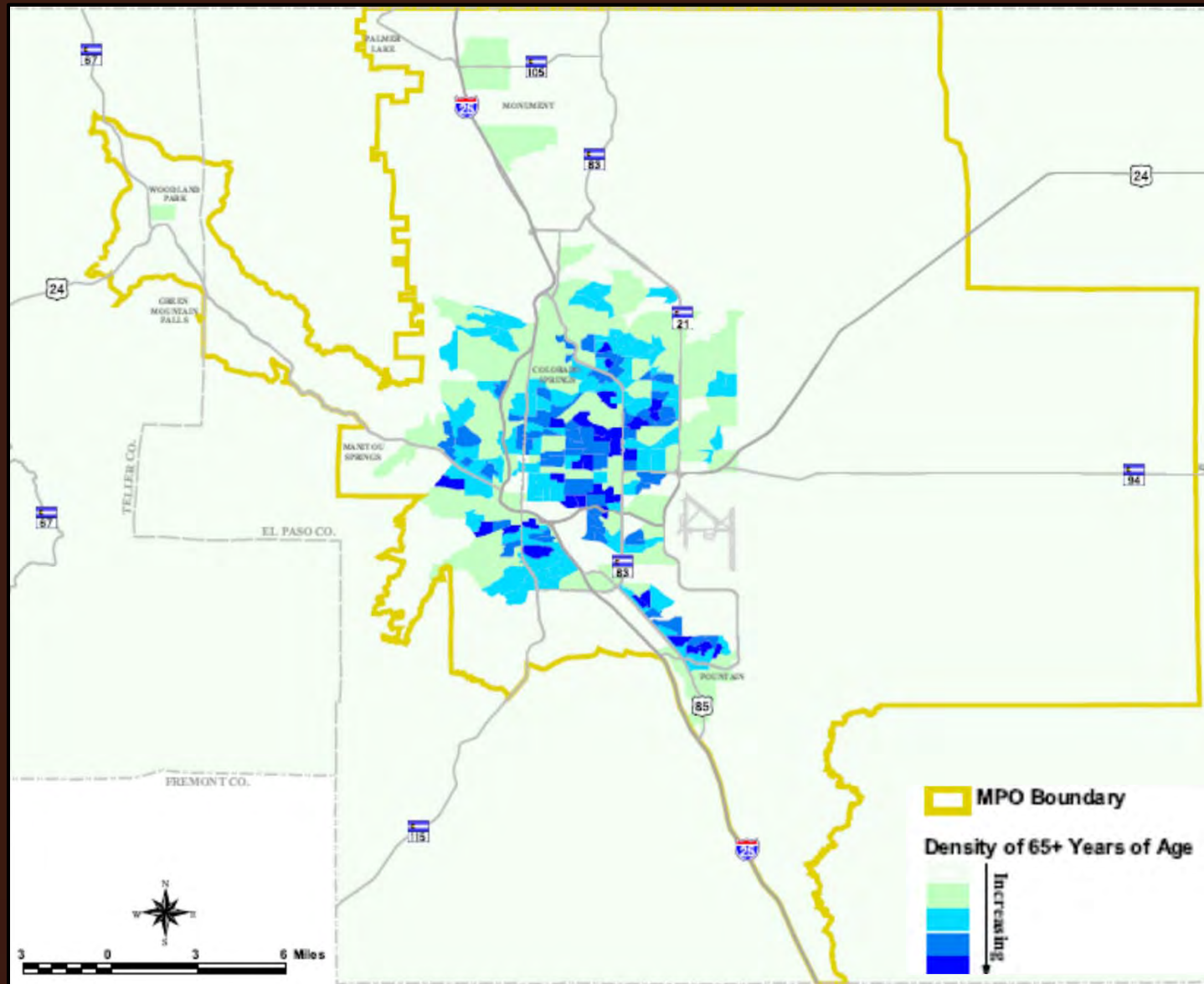
RESIDENTIAL DENSITY CHANGE 2010 TO 2035 PREFERRED SCENARIO



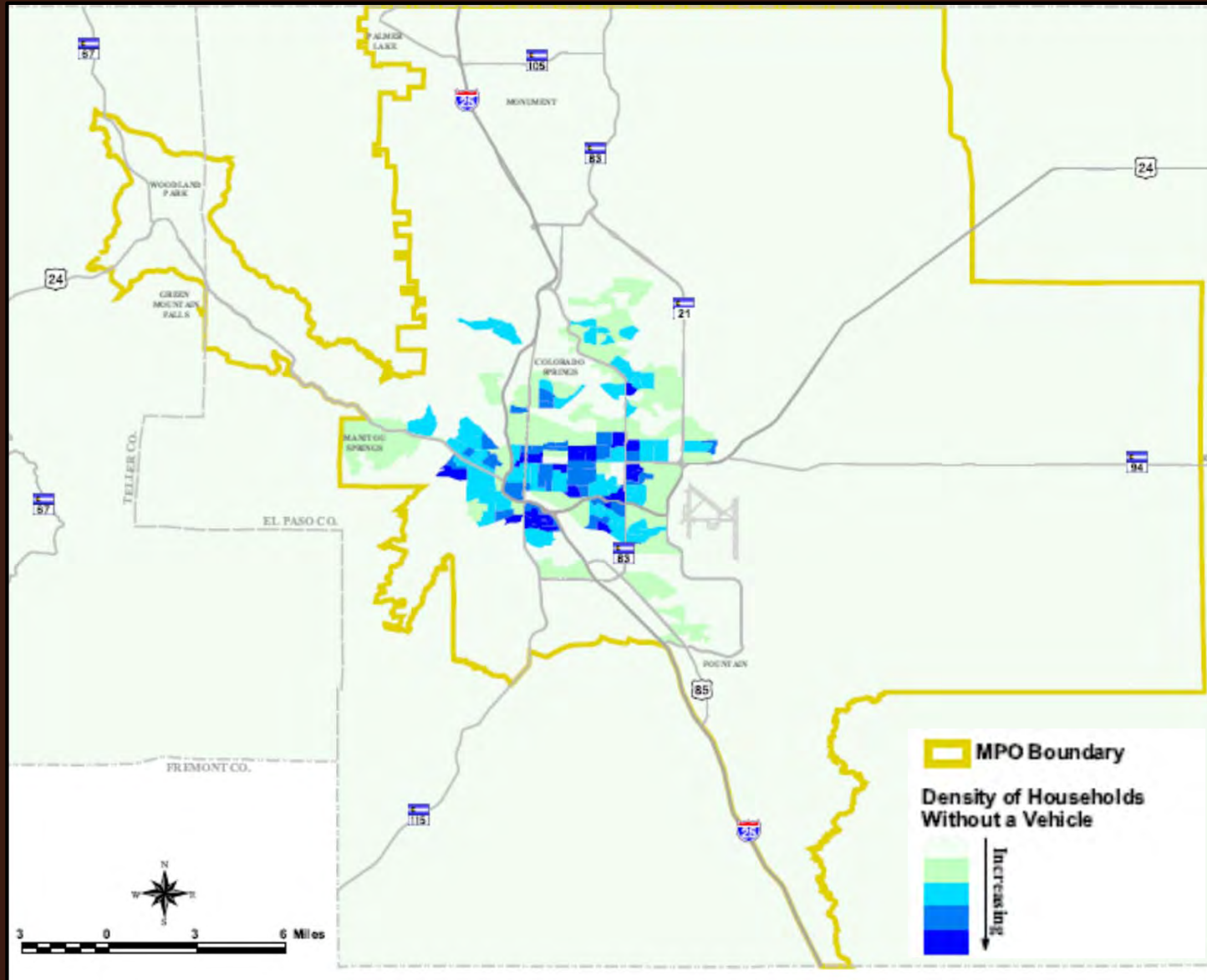
DENSITY OF NON-WHITE POPULATION (CENSUS BLOCK GROUPS – 2010 SF1)



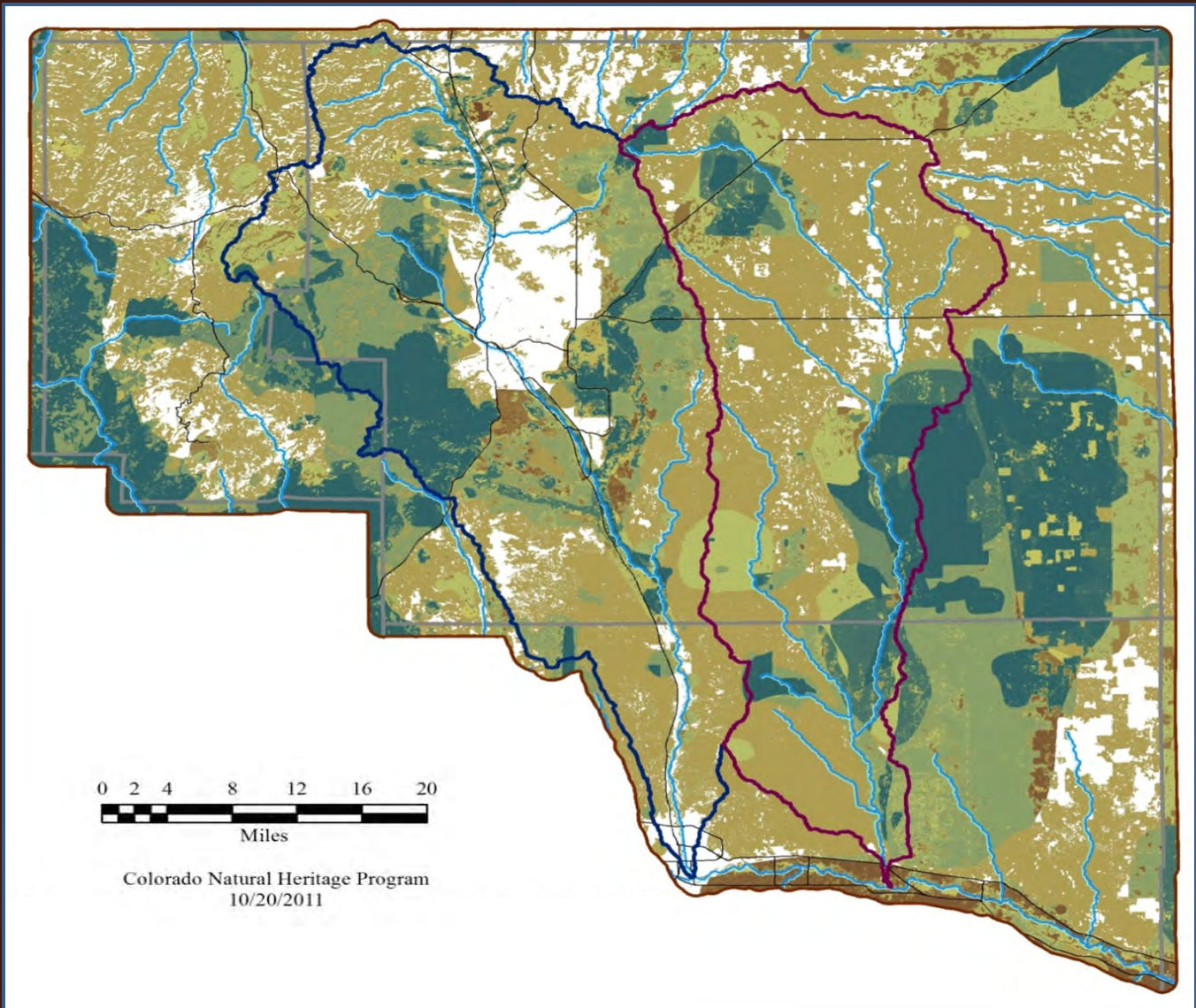
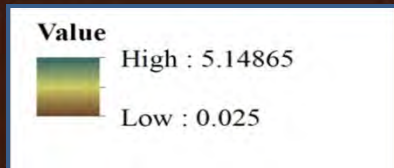
DENSITY OF PERSONS OVER 65+ YEARS OF AGE (CENSUS BLOCK GROUPS – 2010 SF1)



DENSITY OF HOUSEHOLDS WITHOUT VEHICLES (2009 ACS BLOCK GROUPS)



GLOBAL CONSERVATION VALUE WATERSHEDS OF INTEREST



GREEN INFRASTRUCTURE

Workshop Results

Team B Points

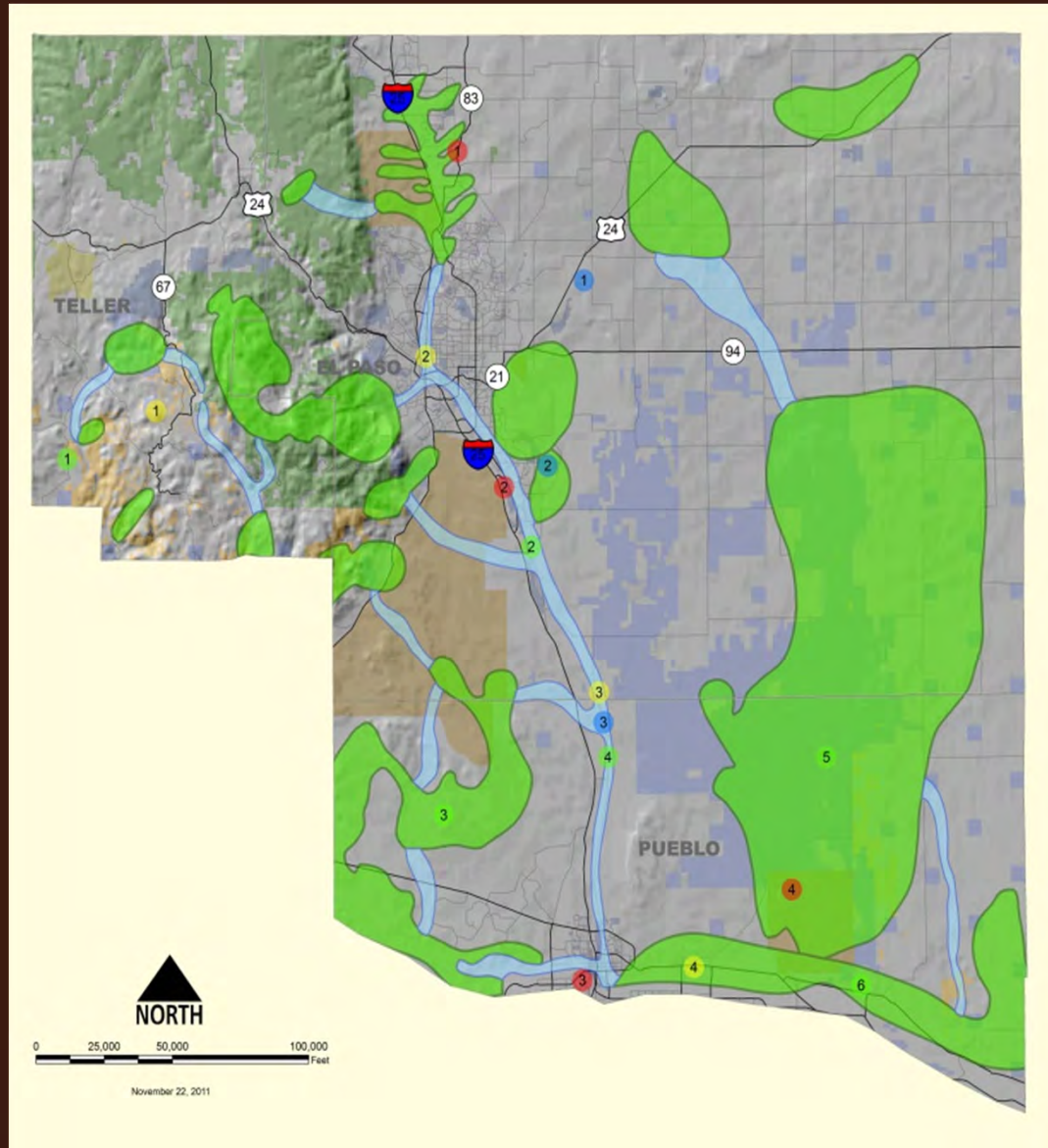
- Infrastructure Planning
- Land Conservation
- Management & Restoration
- Outreach & Partnership

Team B Areas

- Hub
- Link

Public Lands

- BLM
- State
- Local
- Other Federal
- NPS
- USFS - PIKE
- Private
- Highway

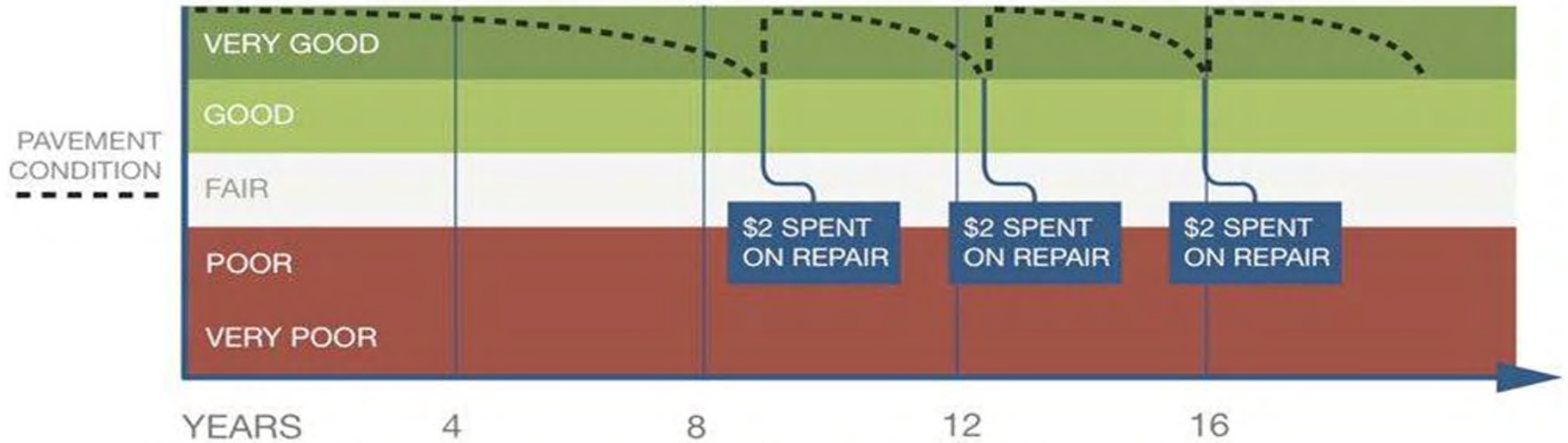


WEIGHTS OF GOALS

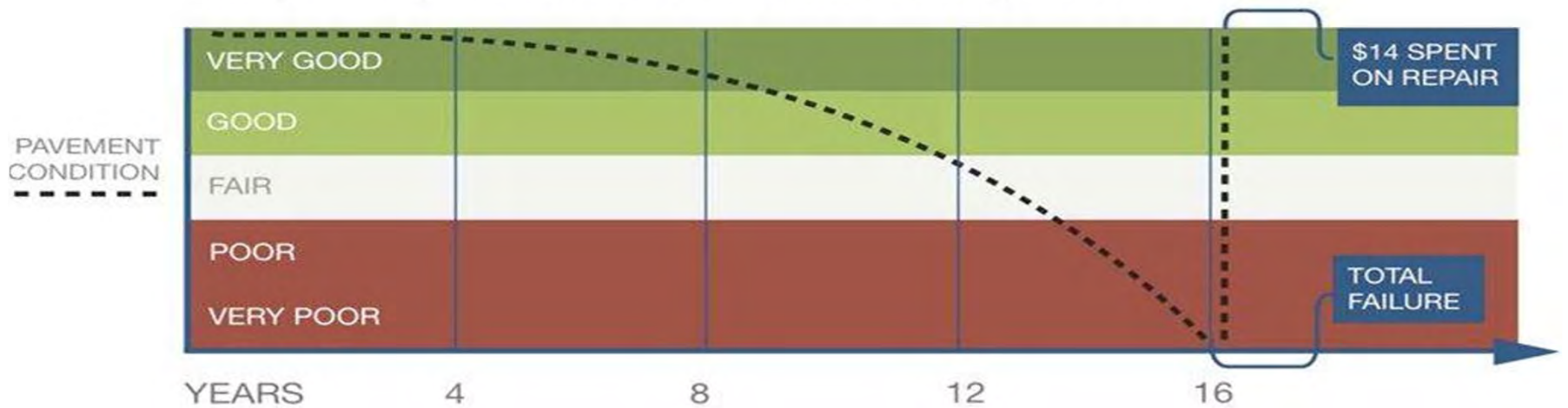
Goal (by number and name)	Combined Weight			Avg. of three efforts	
	TAC Results	CAC Results	Phone Survey Results		
1	Transportation System Condition Preservation and Rehabilitation	10.4	10.5	7.7	9.5
4	System Connectivity	7.8	9.8	6.7	8.1
2	Regional Mobility Improvement or Regional Congestion Reduction	6.8	9.7	6.8	7.8
5	Safety	9.9	6.2	6.6	7.6
3	Cost Effectiveness	7.5	7.6	6.6	7.2
7	Multimodal Use	6.4	5.6	6.5	6.2
17	Regional Collaboration	6.9	5.0	6.2	6.0
11	Economic Vitality	5.5	6.6	5.0	5.7
14	Protect Streams and Reduce Stormwater	4.0	5.0	6.6	5.2
9	Environmental Justice	4.8	4.5	5.9	5.1
8	Private Partnership	6.0	2.8	6.2	5.0
13	Protect Wildlife Habitat	3.2	4.1	7.5	4.9
16	Carbon Monoxide (CO) Reduction	4.4	3.9	6.4	4.9
10	Adverse Transportation Impact Reduction	4.5	5.4	3.9	4.6
12	Infill/Redevelopment	4.4	5.9	2.9	4.4
6	Security	4.2	4.0	4.7	4.3
15	Greenhouse Gas Emissions	3.5	3.3	3.8	3.5

PREFERRED VS DEFERRED

Asset-management: Cost-effective Repair Policy



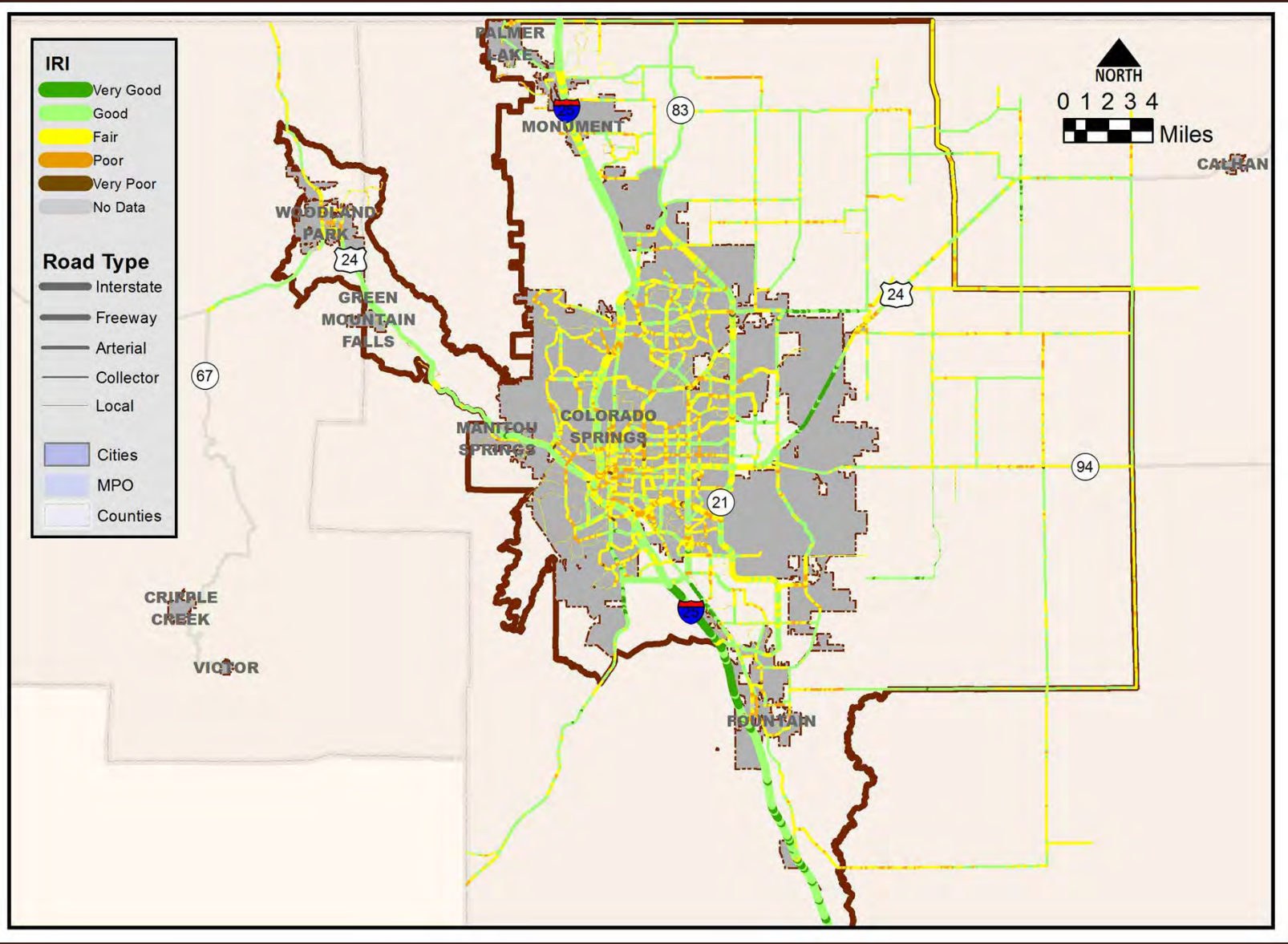
Delayed Repair: Current Practice in Many Places



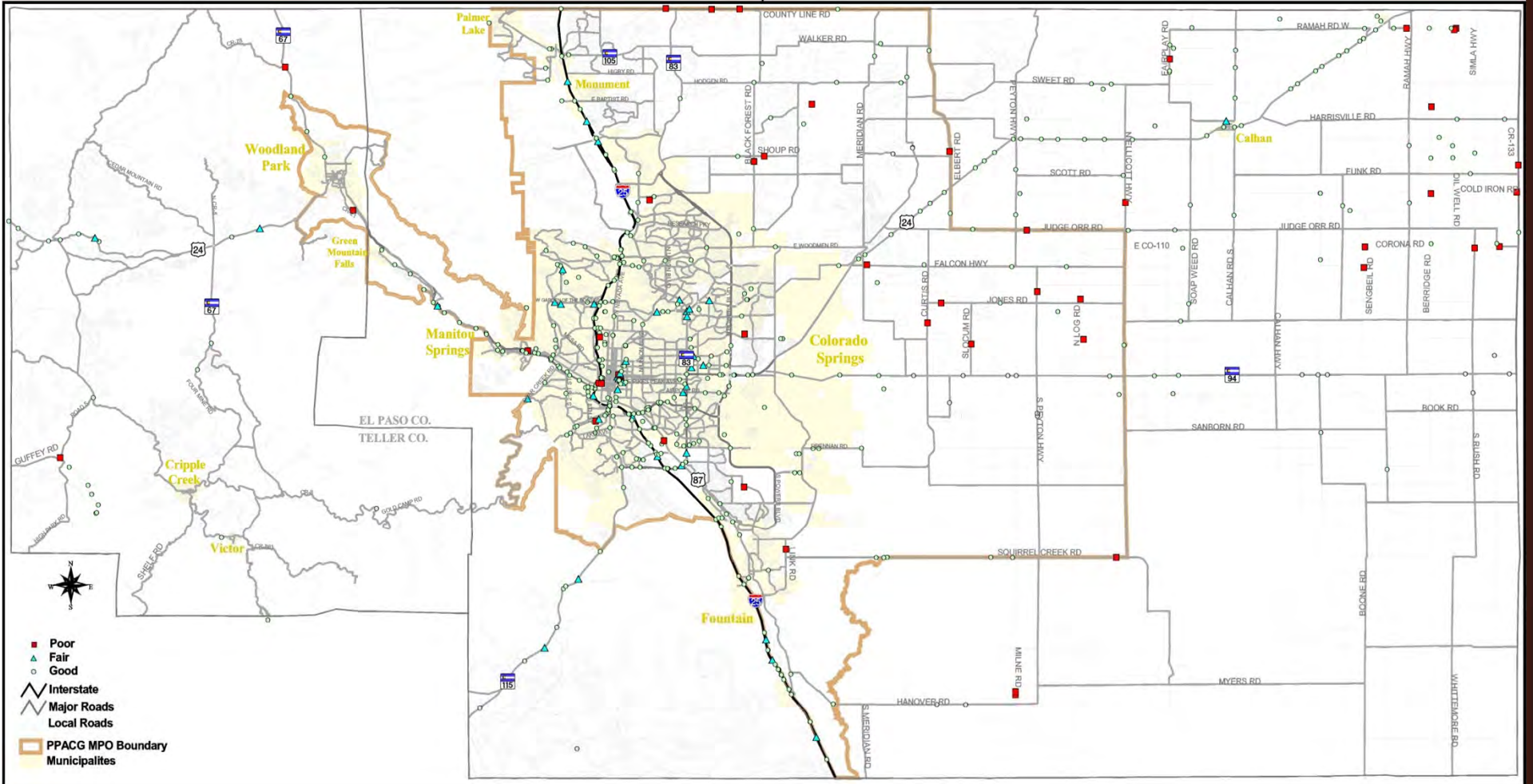
PAVEMENT CONDITIONS

	Good	Fair	Poor
Regional VMT	55%	38%	7%
By Classification			
Collectors	19%	54%	27%
Minor Arterials	39%	49%	12%
Principal Arterials	43%	47%	10%
Interstate/Freeway	67%	24%	8%
By Jurisdiction			
El Paso County	46%	46%	8%
City of COS	25%	58%	18%
CDOT	70%	27%	3%
City of Manitou Springs	1%	25%	74%
Town of Monument	24%	51%	26%
City of Fountain	31%	44%	22%

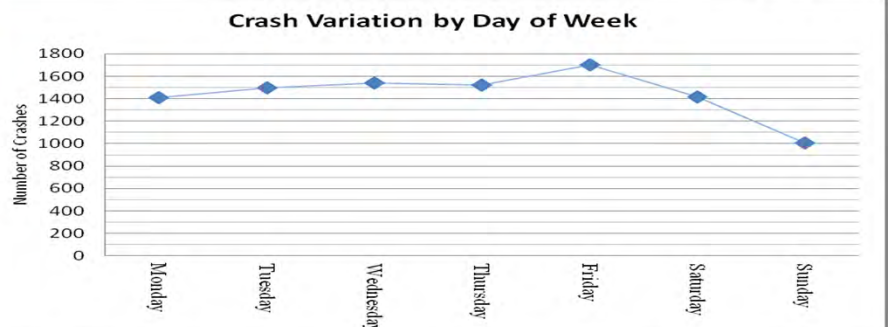
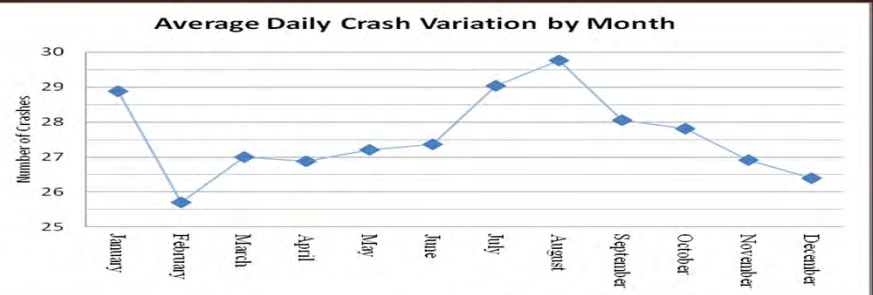
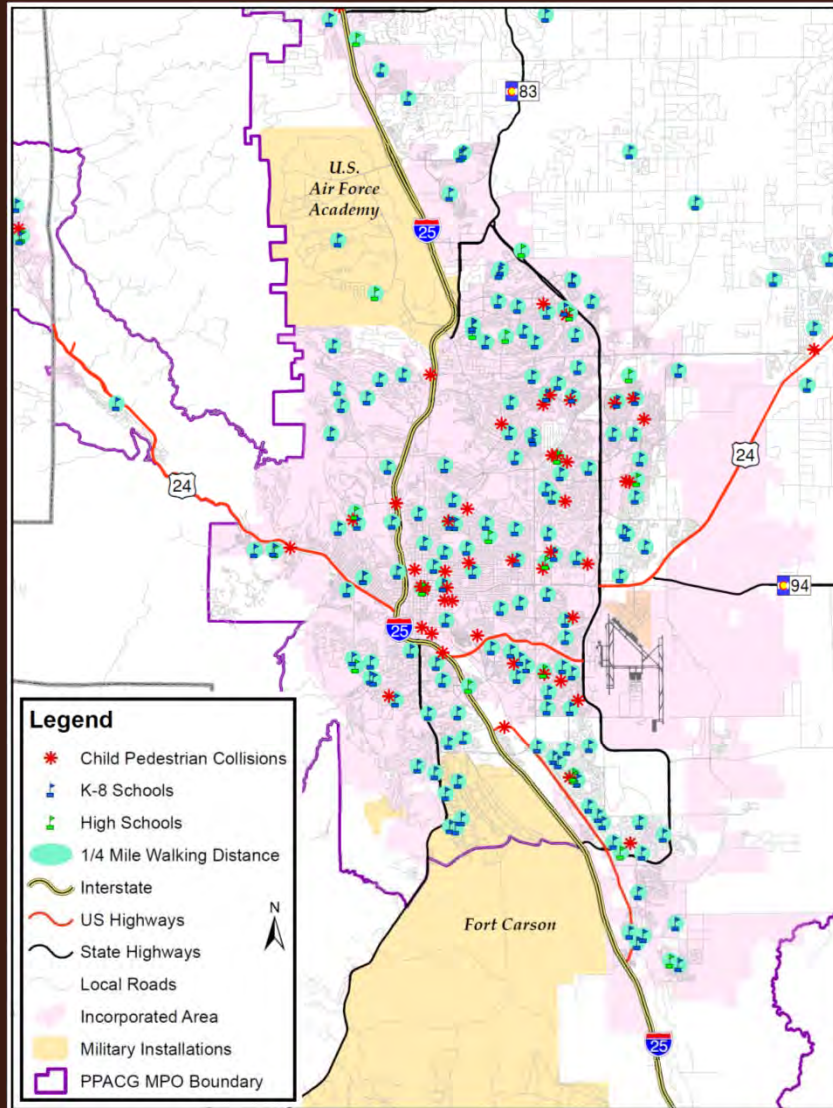
PAVEMENT CONDITIONS



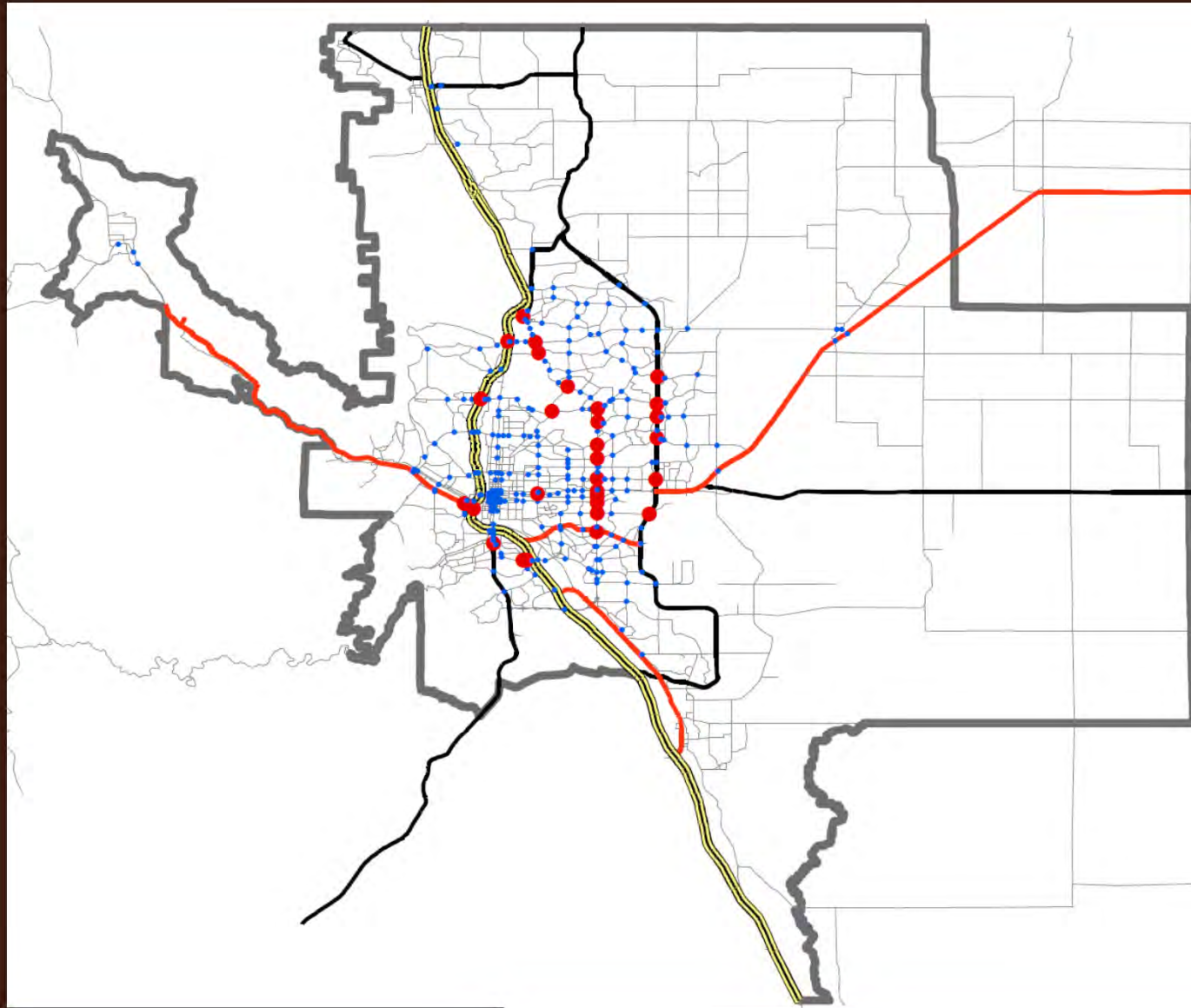
BRIDGE CONDITIONS



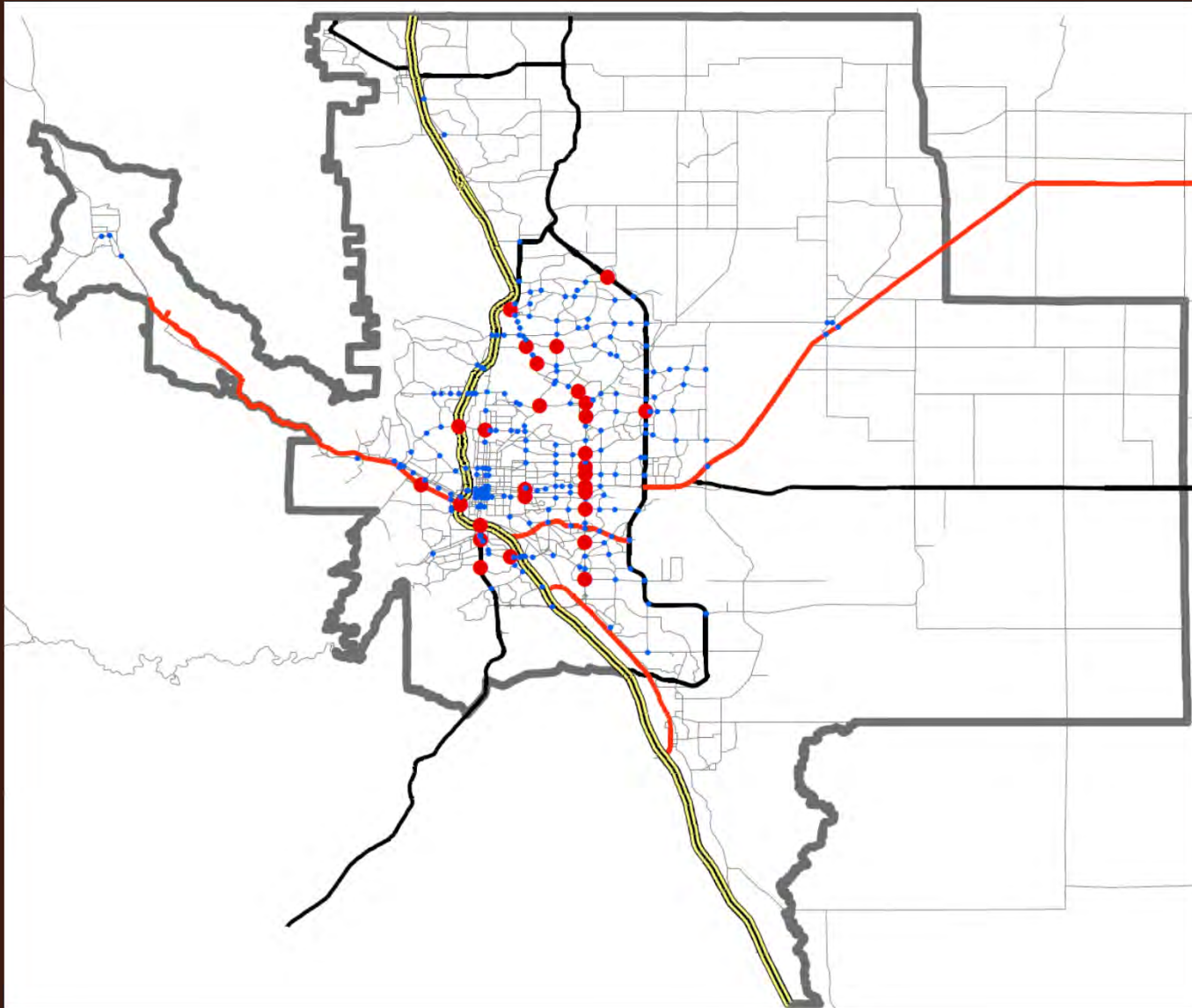
SAFETY



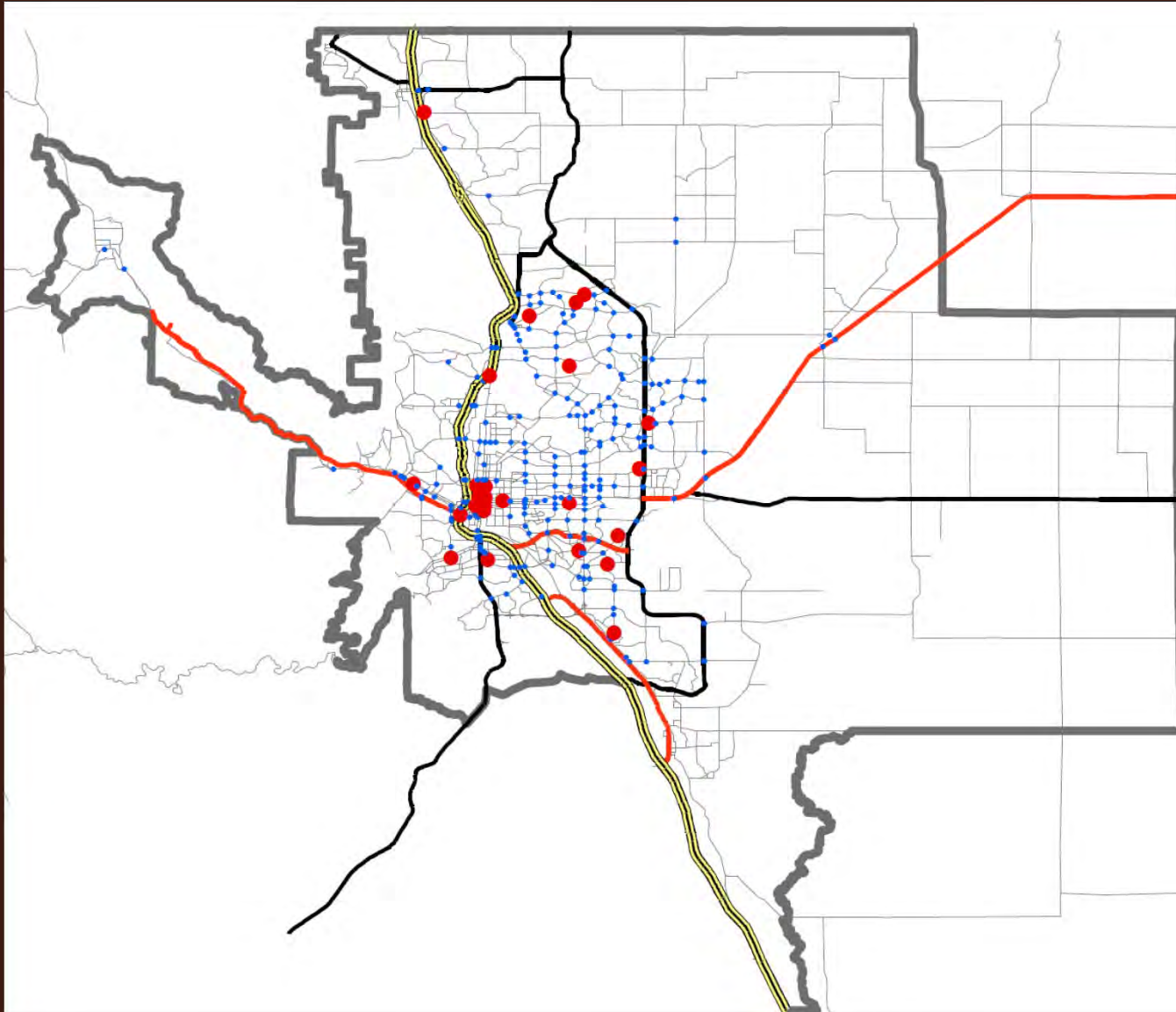
TOTAL CRASHES BY INTERSECTION



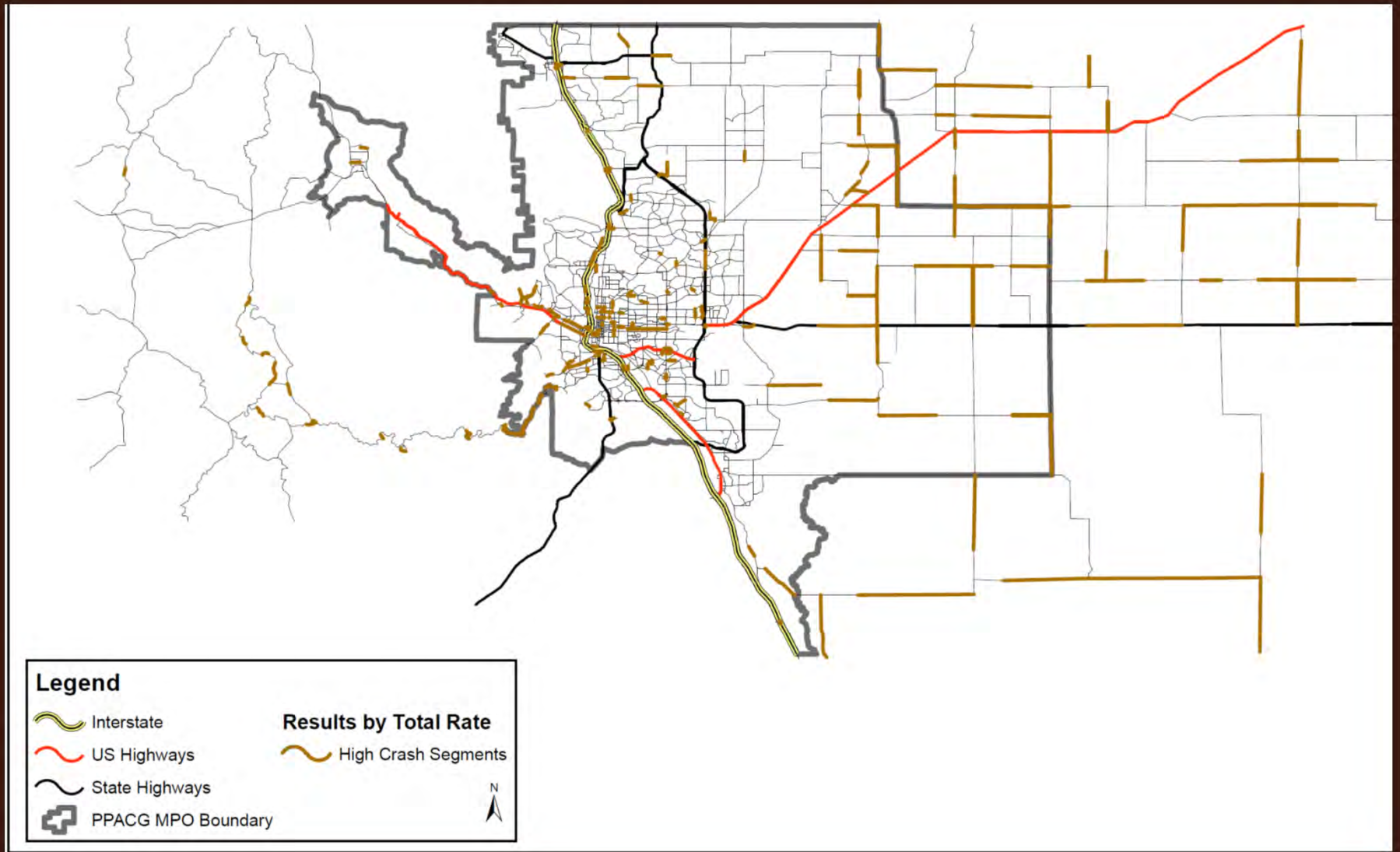
CRASH SEVERITY BY INTERSECTION



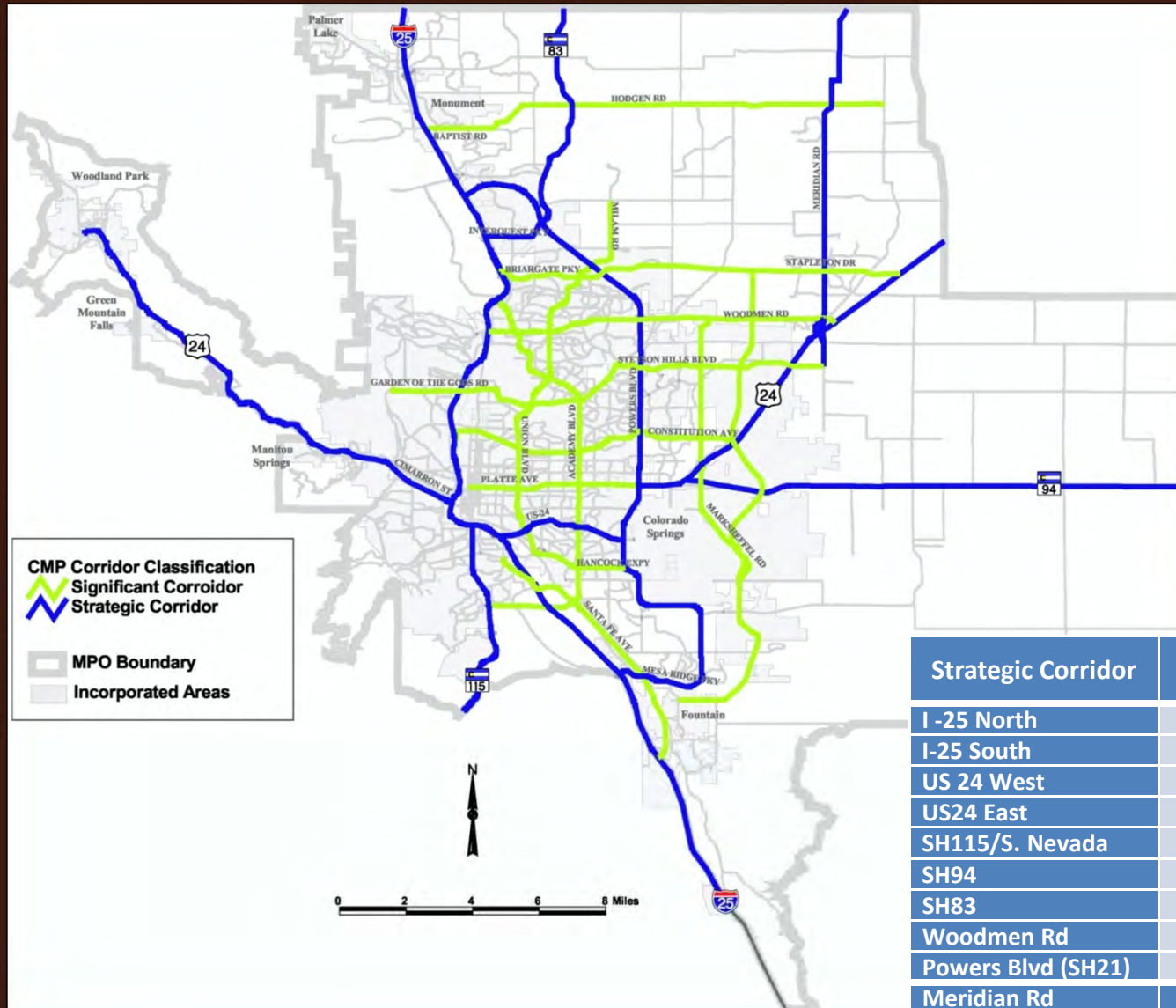
WEIGHTED HAZARD INDEX BY INTERSECTION



WEIGHTED HAZARD INDEX BY ROAD SEGMENT

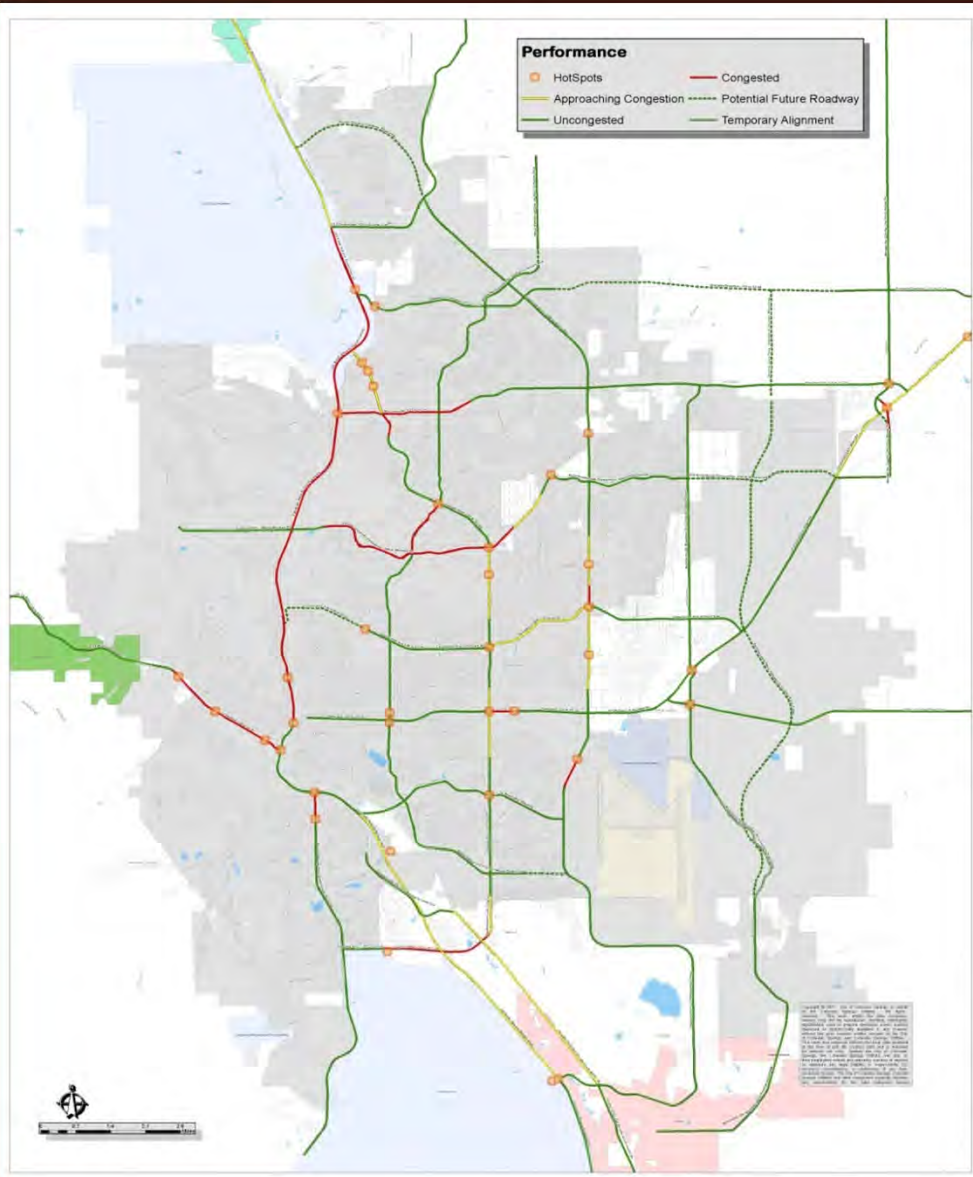


CONGESTION MANAGEMENT PLAN



Strategic Corridor	Daily VMT	% of Regional VMT
I-25 North	2,240,661	11.43%
I-25 South	1,552,866	7.92%
US 24 West	826,757	4.22%
US24 East	722,818	3.69%
SH115/S. Nevada	285,171	1.46%
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SH83	328,448	1.68%
Woodmen Rd	605,173	3.09%
Powers Blvd (SH21)	1,126,314	5.75%
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CONGESTION MANAGEMENT PLAN



Woodmen Road

Corridor Summary:
 Strategic Corridor. Woodmen Road is a major east-west roadway between Interstate 25 and US 24 along the north side of Colorado Springs. Most of the corridor is developed between Interstate 25 and Powers Boulevard. An approximate two mile stretch of this corridor is currently being improved to address existing traffic congestion. Future expansion of the roadway will be difficult between Interstate 25 and Powers Boulevard so the focus of this portion of the corridor is to develop it as an express transit corridor. A five mile stretch between Powers Boulevard and US 24 has just been widened from a two-lane rural roadway to a four-lane urban highway. CMP Tools along this corridor focus on enhanced Transit, Land Development, TSM and Capacity improvements to parallel facilities.

2010 Congested Links						
Segment	Highest Link Total Volume	PM Peak V/C	PM Peak LOS	Average Speed	# of Stops	
Interstate 25 to Lexington	54000	1.3	F	Not Available	Not Available	

2010 Hot Spot Locations		
Intersection	LOS	Intersection Delay
Meridian		

2035 Congested Links (No Action)			
Segment	Highest Link Total Volume	PM Peak V/C	PM Peak LOS
I25 to Meridian	71800	2.11	F

CMP Tool	Potential Projects
TSM	Signalization Optimization > Enhance signal operations for emergency response, automobiles and buses through the implementation of technological upgrades and integration of traffic control devices from Interstate 25 west to US 24.
	Access Management > Protect the region's investment in upgrading Woodmen Road from Interstate 25 to US 24 by limiting curb cuts and median cuts in order to maintain good traffic flow and safety.
	Intersection Improvements > Construct intersection improvements at the Interstate 25 ramps and Union Boulevard to improve traffic operations. > Construct intersection improvements on Austin Bluffs Parkway Boulevard to receive dual-left turns and additional through lanes to increase operational capacity at the intersection.
TDM	Carpool/Vanpool Programs > Fund the Metro Rides program for the Pikes Peak Region.
Bike and Pedestrian	Non-motorized Infrastructure Development > Enhance connections from the corridor bike system to adjacent land uses and intersecting bike infrastructure.
	Non-motorized Optimization > Construct grade separated facilities for Tier I trail crossings at Woodmen Road over the Sand Creek Trail and Academy Boulevard over the Cottonwood Creek Trail. Connect the Cottonwood Creek Trail to the Santa Fe Trail/Pikes Peak Greenway.
Transit	Transit System Enhancement > Implement technological advancements on transit vehicles and at transit stops which enhance real time route information, signal pre-emption and on-line services.
	Accessibility Improvements > Construct multi-modal Park and Ride facilities at Black Forest Road and the community of Falcon. > Reconstruct/expand the Woodmen Road Park and Ride into an Intermodal Station to accommodate enhanced transit, bicyclists, pedestrians and additional parking.
	Express Routes > Establish an express route connecting the Woodmen Road Park and Ride Facilities with planned intermodal transfer facilities.
	Transit Service Optimization > Provide more frequent service to reduce headways between buses for Park and Ride facilities. > Provide longer hours of service and more days of service. > Implement a Call and Ride program for the areas north of Woodmen Road and east of I-25.
	Fixed Guideway Transit > Conduct a study to determine the feasibility of the Woodmen Road corridor for a Bus Rapid Transit facility.
Land Development	Transit Supportive Density > Encourage and incentivize residential and employment centers to develop to a density supportive of mass transit, especially near existing and future Multimodal Centers and Park and Rides.
Roadway Capacity	Construct Bypass Corridors > Construct Powers Boulevard as a freeway from Interstate 25 (north) to Milton E. Proby Parkway > Construct Briargate Parkway/Stapleton Road as a parallel facility to Woodmen Road from Powers Boulevard to US 24.

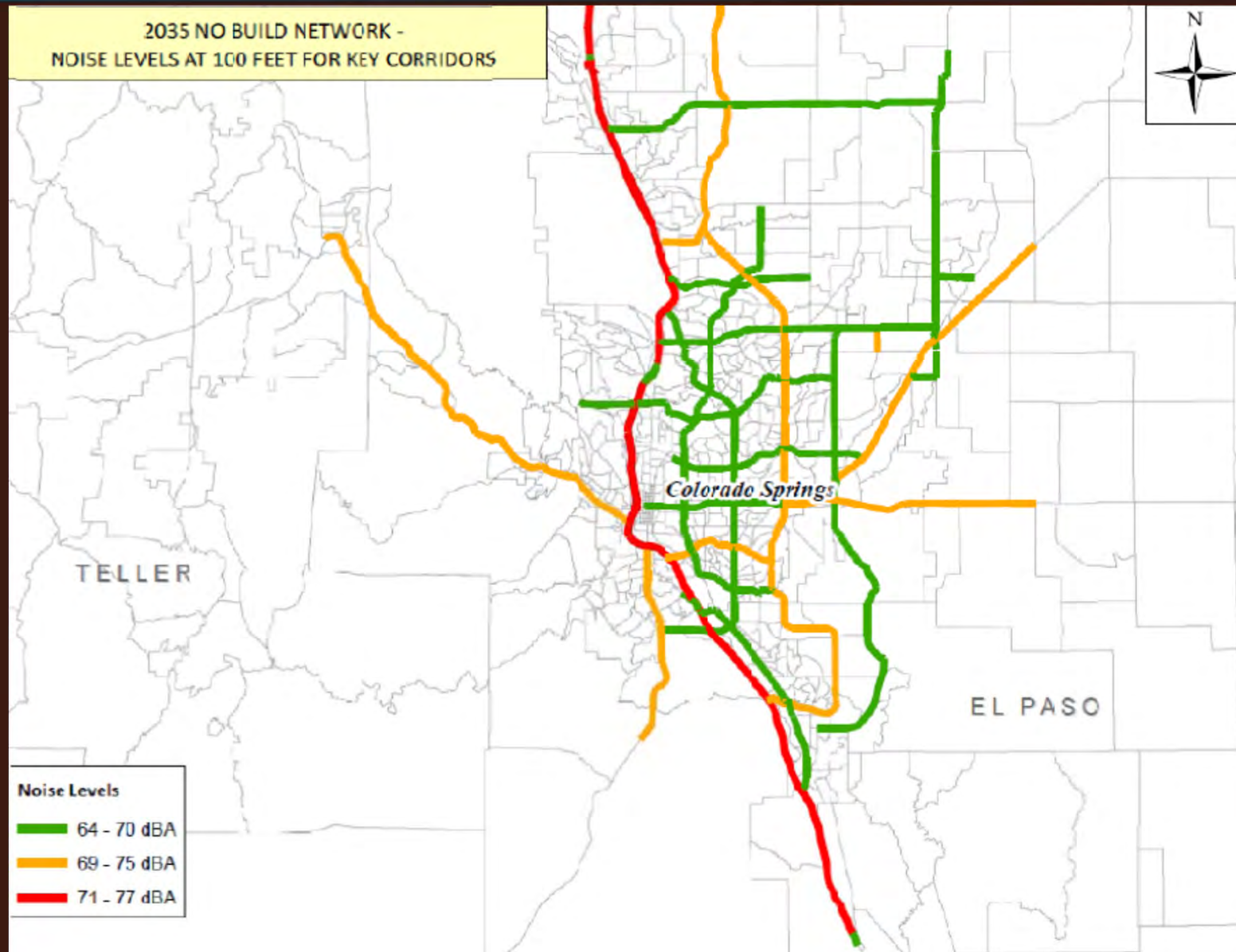
WATER QUALITY IMPACTS

Fountain Creek Watershed	Average Percent Change From Current Condition:					
Parameter	Infill - revised	Trend	Buildout	Conservation A	Conservation B	Preferred Scenario
Accumulated Run-off	11%	13%	21%	11%	16%	16%
Total Suspended Solids	3%	4%	7%	2%	1%	5%
Nitrogen Concentrations	4%	5%	7%	3%	6%	5%
Phosphorus Concentrations	20%	27%	38%	13%	34%	25%
Lead Concentrations	12%	14%	21%	9%	23%	14%
Zinc Concentrations	5%	8%	10%	5%	7%	7%
Accumulated Sediment	-3%	-4%	-7%	-2%	-2%	-4%

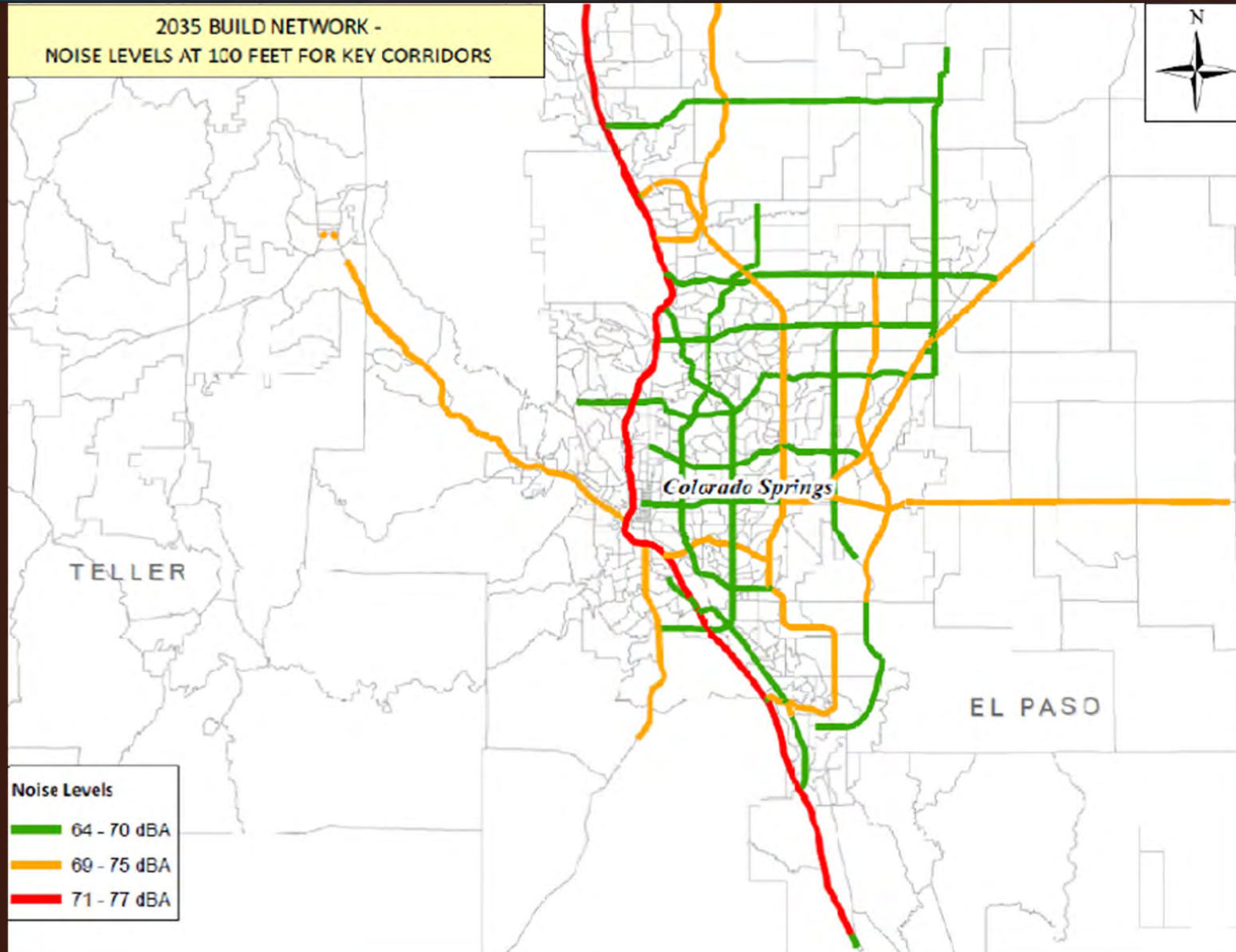
AIR QUALITY IMPACTS

Vehicle Types	2005	2010	2035 Maintenance Only	2035 Build
Motorcycles	34,820,144	36,725,934	51,858,037	53,921,444
Passenger Cars	3,197,395,233	3,276,854,856	3,702,576,339	3,769,897,136
Light Trucks	4,338,393,399	4,494,129,221	4,655,580,723	4,753,243,437
Bus	32,223,524	33,642,963	47,587,412	48,553,928
Single Unit Truck	132,571,813	136,803,076	198,726,238	198,714,697
Combination Truck	934,214,995	969,203,525	1,393,687,676	1,420,213,452
Grand Total	8,669,619,107	8,947,359,574	10,050,016,425	10,244,544,094

NOISE ANALYSIS MAINTENANCE ONLY



NOISE ANALYSIS BUILD SCENARIO



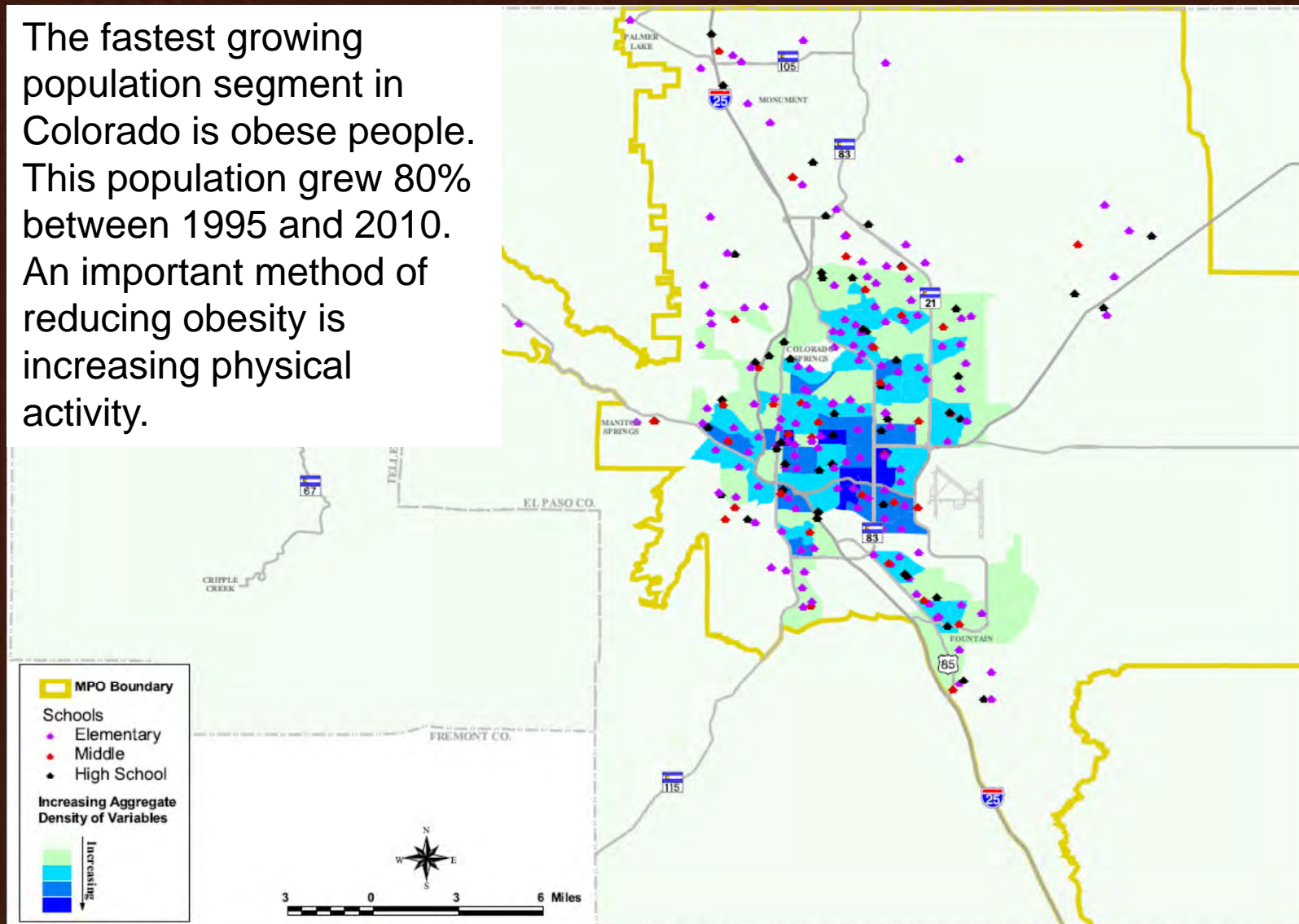
ECONOMIC ANALYSIS PROJECTS AND BUILD SCENARIO

Add Capacity – Project 147			
Segment Model Summary Risk Analysis Output			
Summary Item	Discounted Values in 2010 \$'s		
Potential Benefits	Lower 10%	Median Value	Upper 10%
Time Savings	\$327,082,018	\$331,665,803	\$336,497,214
VOC Savings	-\$143,593,150	-\$135,496,593	-\$128,137,899
Greenhouse Gas Emission Savings	-\$2,881,781	-\$2,515,228	-\$2,027,561
Other Emission Savings	-\$4,542,145	-\$4,304,263	-\$4,014,022
Accident Cost Savings	\$47,672,146	\$48,460,924	\$49,116,646
Subtotal Benefits	\$225,512,411	\$237,450,389	\$247,620,923
Total Benefits w/Salvage	\$225,512,411	\$237,450,389	\$247,620,923
Project Costs (Exceeding Base Case)			
Capital Costs + ROW Costs	\$79,520,255	\$85,584,171	\$90,312,403
O&M + Other Costs	\$0	\$0	\$0
Total Costs	\$79,520,255	\$85,584,171	\$90,312,403
Project Selection Criteria			
Net Present Value	\$138,293,600	\$153,130,234	\$164,495,168
Benefit-Cost Ratio	2.6	2.8	3.0
Internal Rate of Return	25.24%	26.87%	28.59%

The Preferred Scenario	Benefits over Maintenance Only
Vehicle Operating Cost Savings	+136.6 Million Dollars
Time & Reliability Cost Savings	+91.8 Million Dollars
Value of Personal Time Savings	+1,215.8 Million Dollars
Shipper/Logistics Cost Savings	+9.0 Million Dollars
Total Economic Benefits	+1,459.8 Million Dollars
Overall Benefit Cost Ratio of all capacity improvements	2.12

TRANSPORTATION AND HEALTH

The fastest growing population segment in Colorado is obese people. This population grew 80% between 1995 and 2010. An important method of reducing obesity is increasing physical activity.

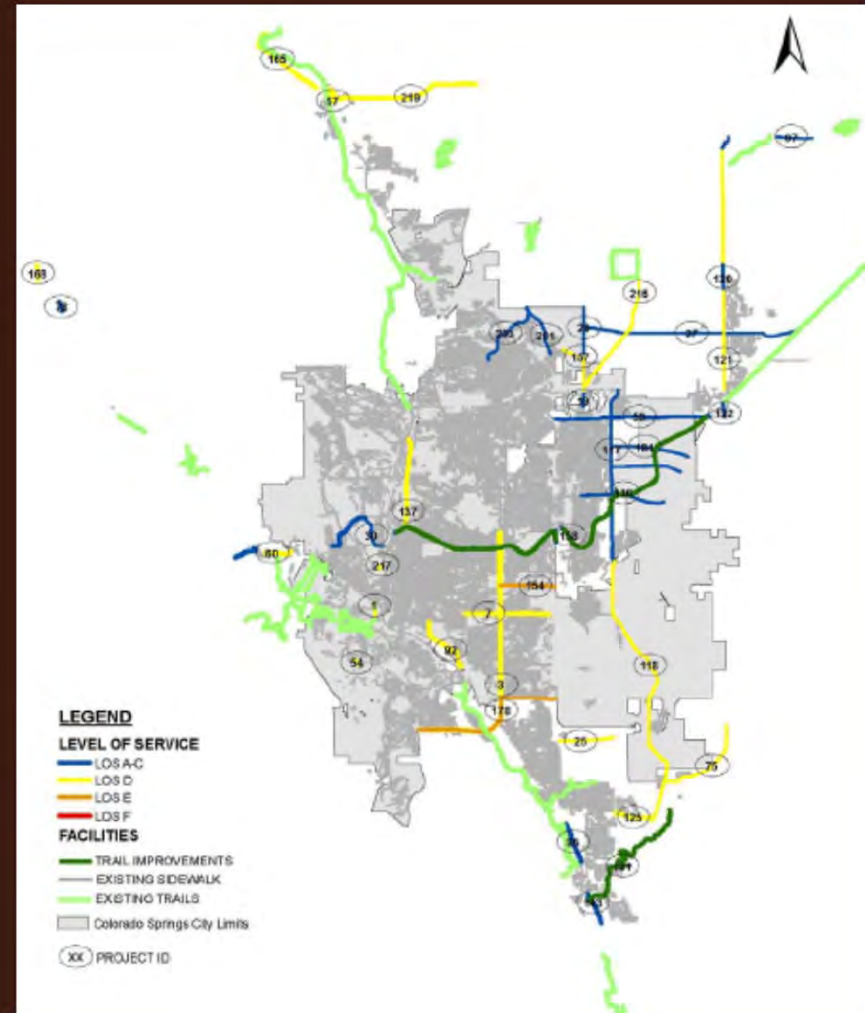
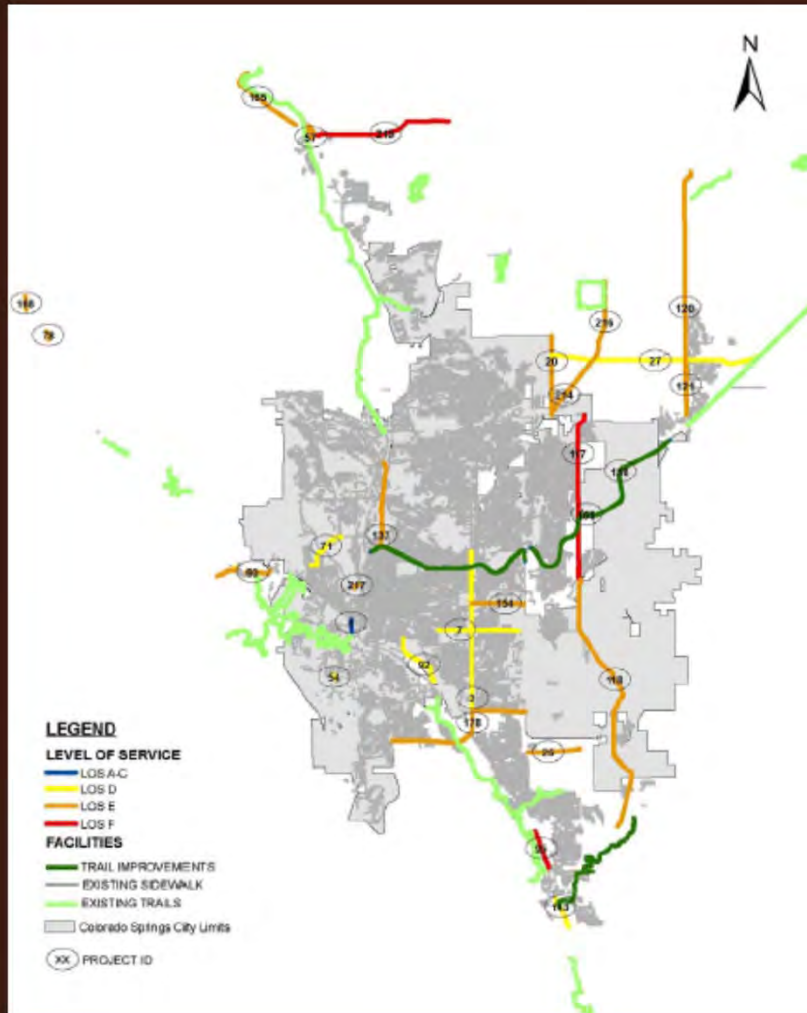


TRANSPORTATION AND HEALTH

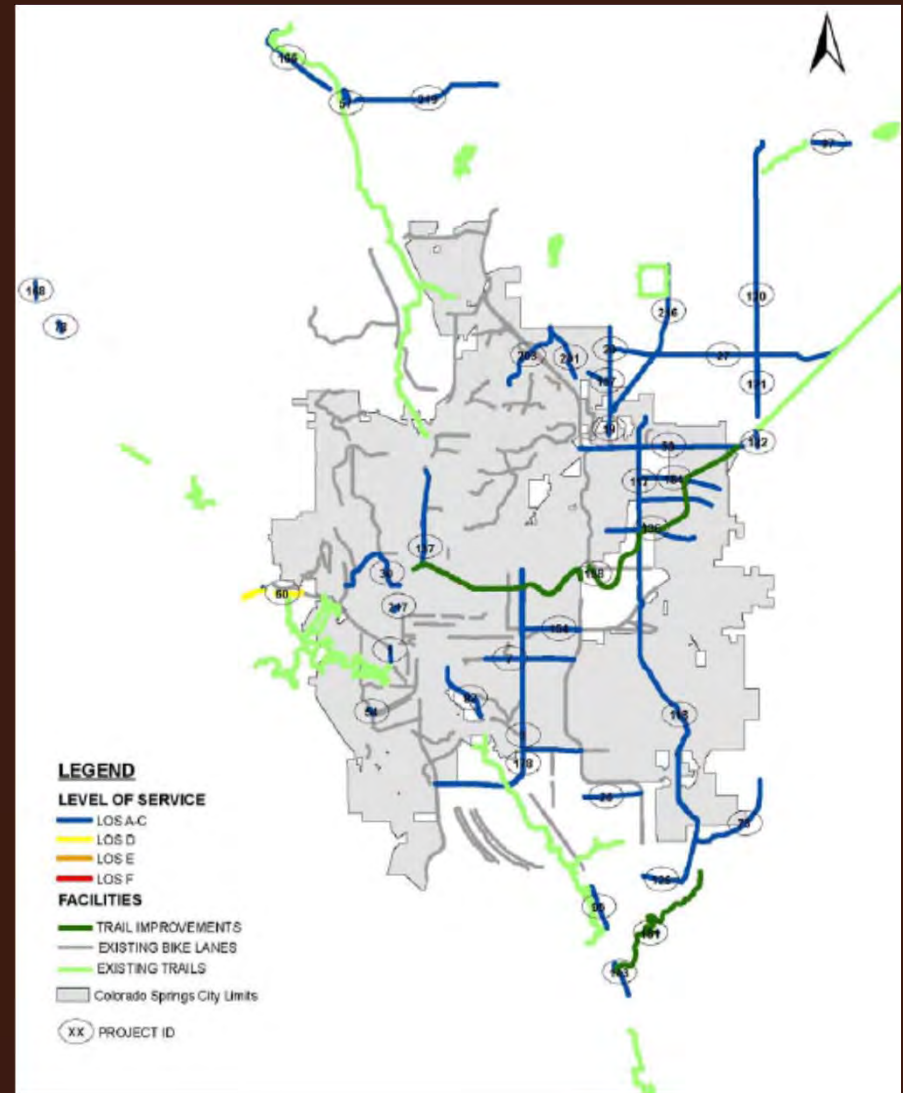
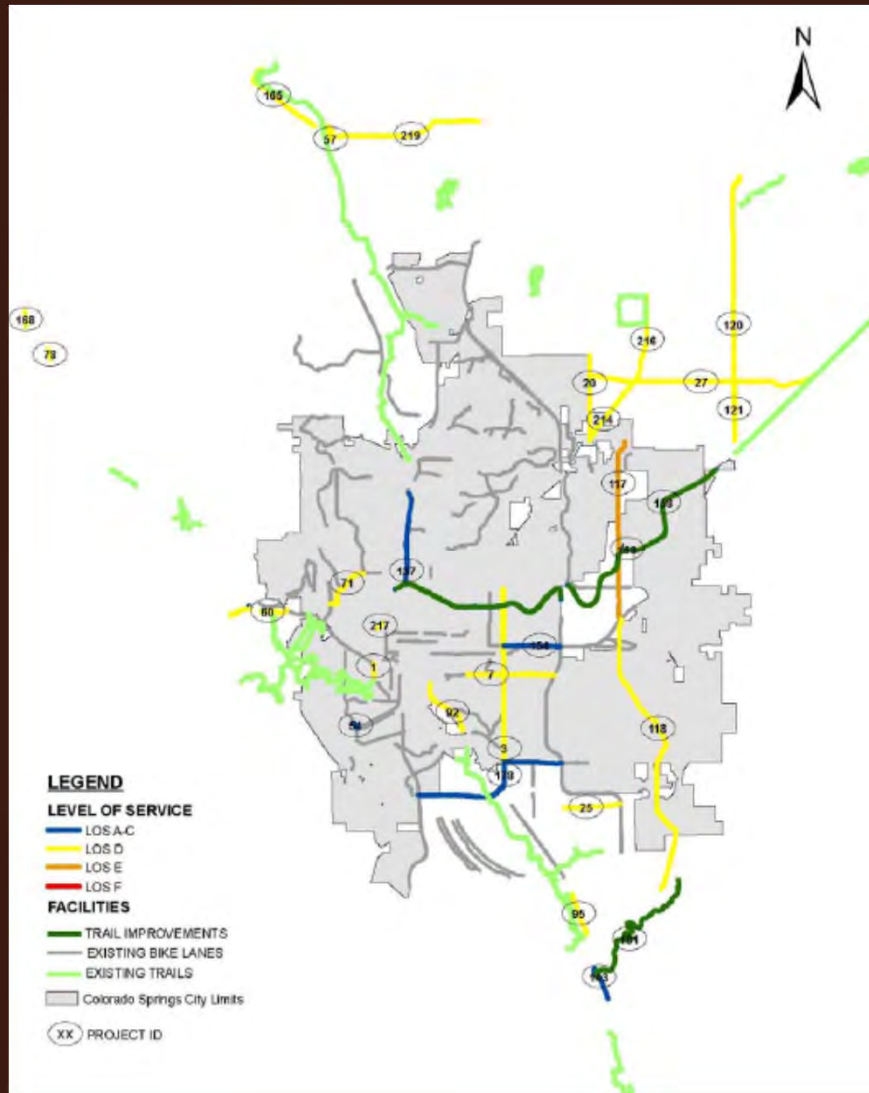
COLORADO'S WINNABLE HEALTH GOALS

MOVING FORWARD UPDATE 2035 Regional Transportation Plan Goals	Obesity	Mental Health and Substance Abuse	Injury Prevention	Clean Water	Clean Air
Goal 5 - Improve safety for all travelers	X	X	X	X	X
Goal 7 - Increase opportunity for all travelers, including special needs and protected-class travelers, to choose methods of travel other than single occupant motor vehicles	X	X			X
Goal 10 - Reduce transportation-related adverse impacts to communities, neighborhoods, and rural areas identified for cultural, environmental, and/or historical preservation	X	X			X
Goal 12 - Use transportation investments to incentivize infill in, and redevelopment of, existing communities	X	X			
Goal 14 - Minimize the amount of storm water runoff and transportation-associated pollutants that enter the region's streams				X	
Goal 16 - Attain existing and future national air quality health standards	X	X			X

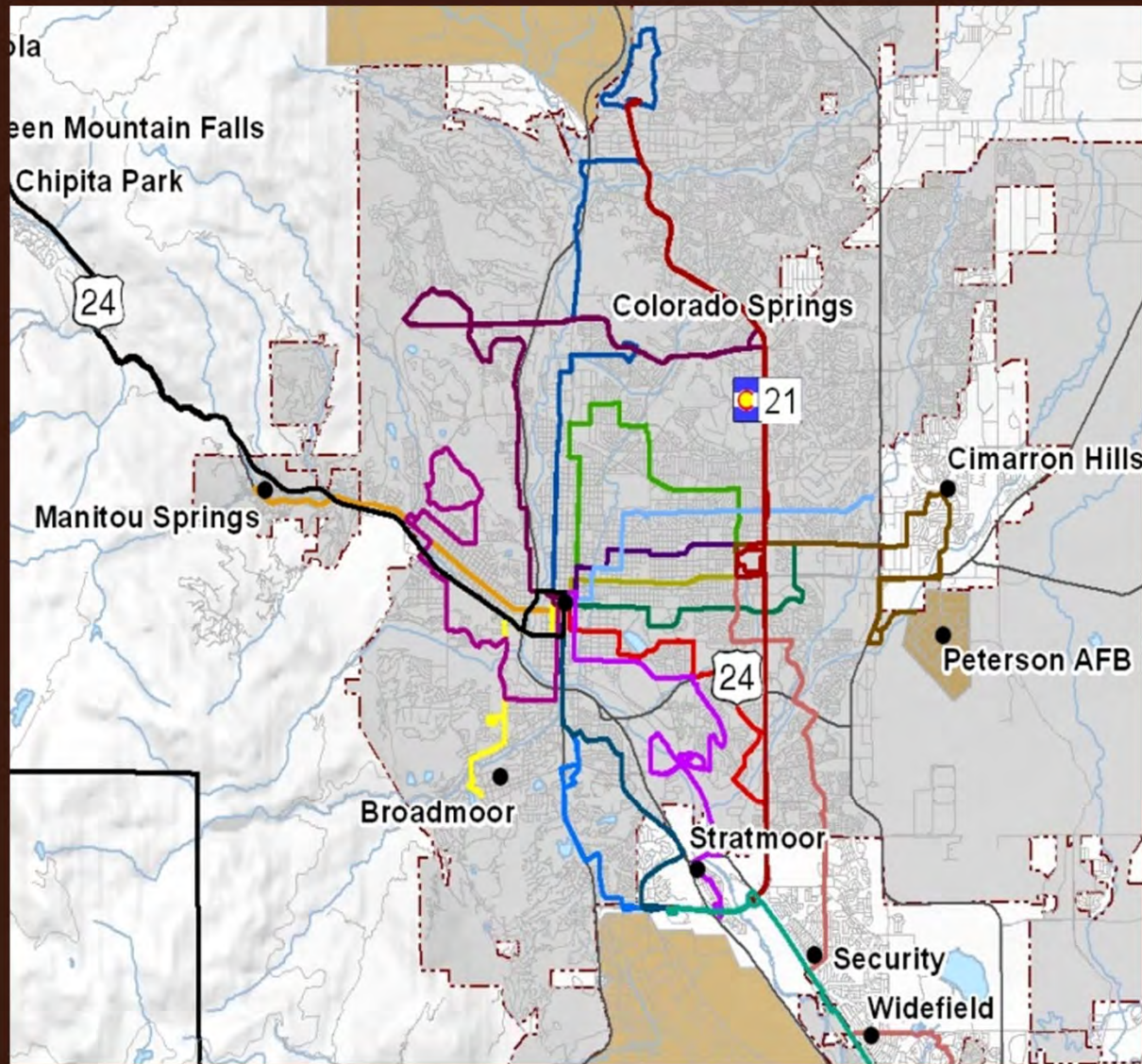
PEDESTRIAN LEVEL OF SERVICE (IN PROGRESS)



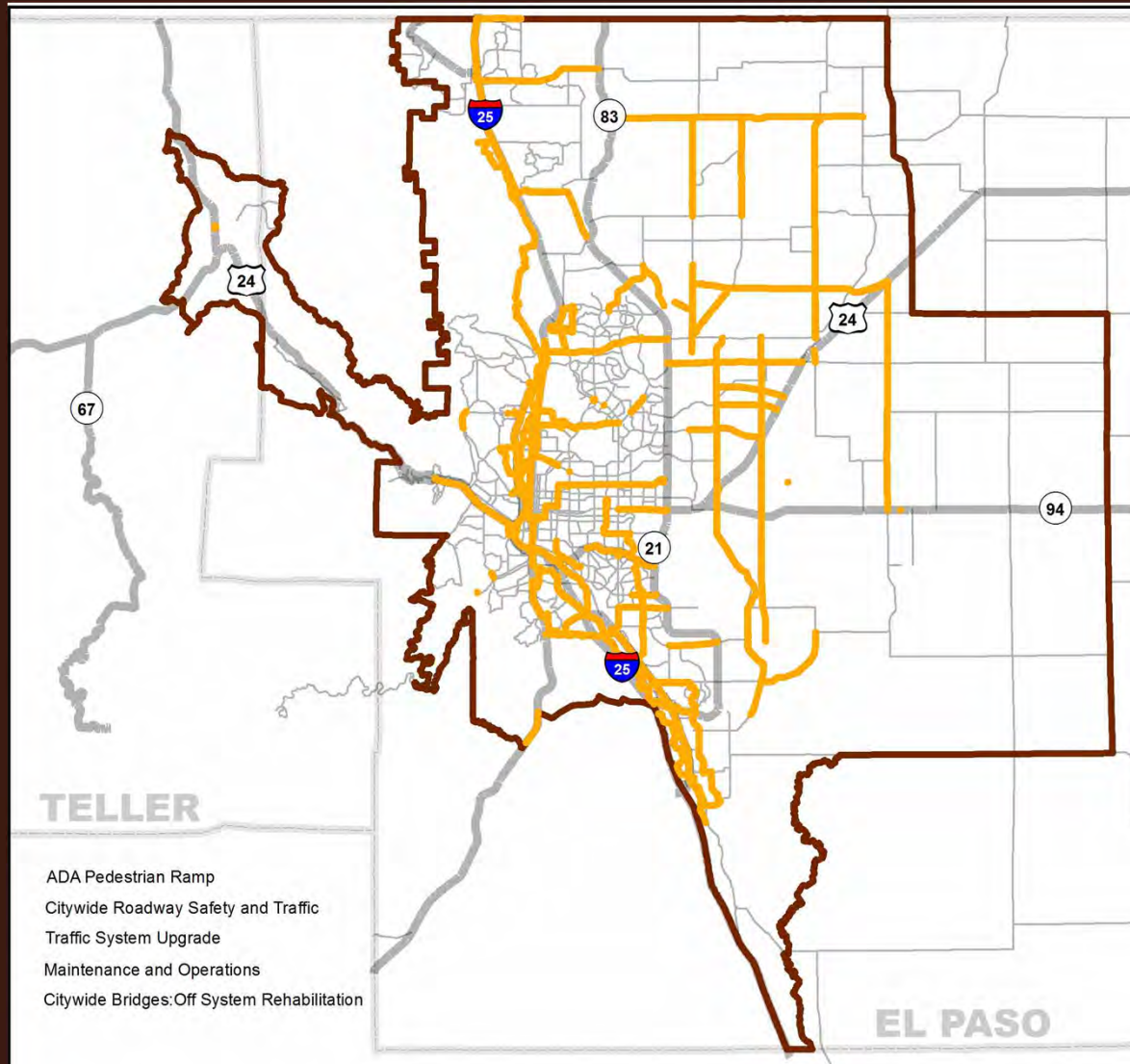
BICYCLE LEVEL OF SERVICE (IN PROGRESS)



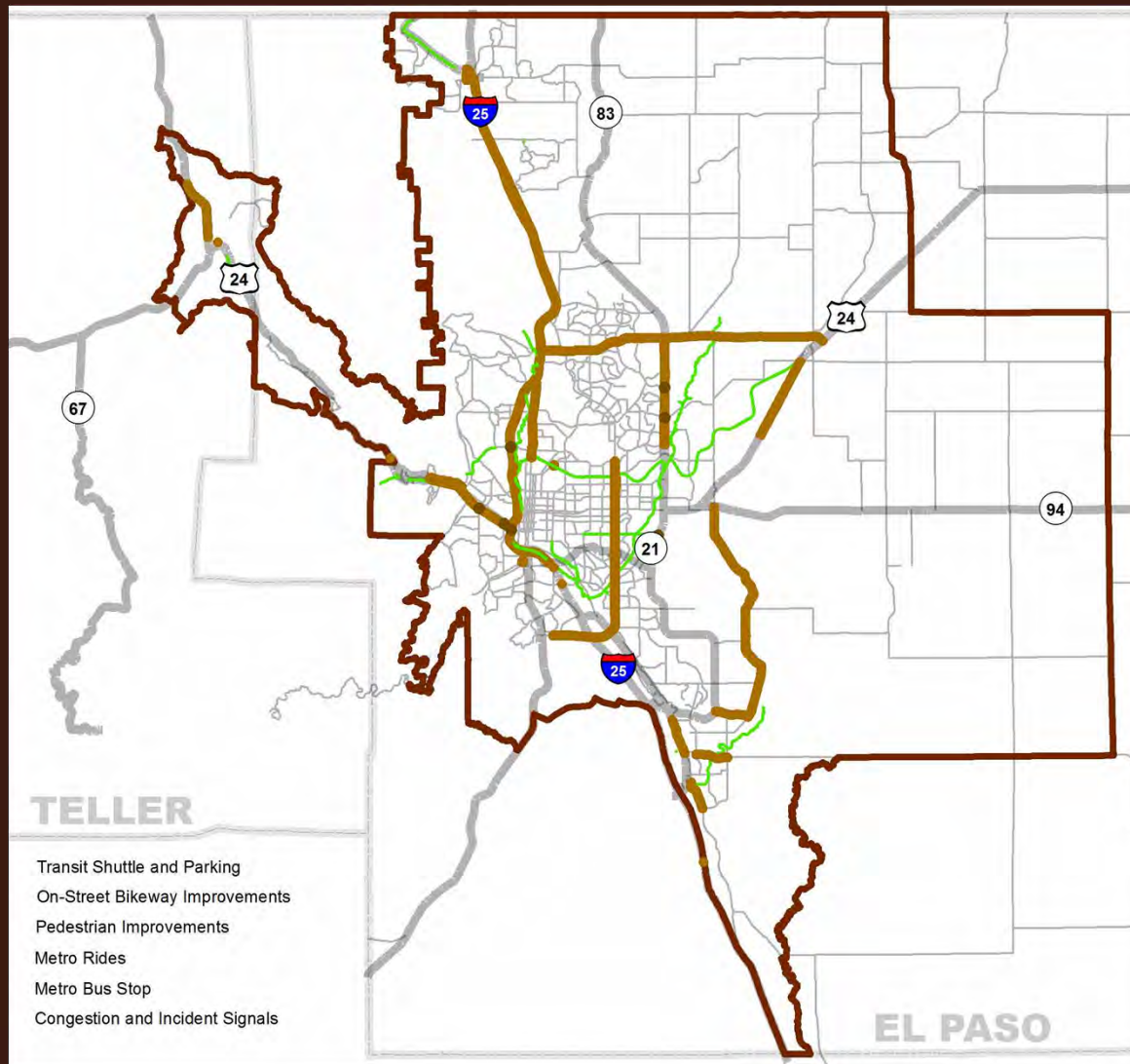
TRANSIT ROUTES



LOCAL AND PRIVATELY FUNDED PROJECTS



FEDERAL AND STATE FUNDED PROJECTS



APPROVALS

- In February 2010, Vision, Mission, and Principles.
- In May 2010, Population and Job Control Totals.
- In May 2010, Funding Level Control Totals.
- In July 2010, Congestion Management Corridors.
- In February 2011, Goals and Performance Measures.
- In March 2011, Congestion Management Process Toolbox.
- In April 2011, Project Evaluation Criteria.
- In July 2011, Project Evaluation Criteria Weighting.
- In September 2011, Small Area Forecast.
- In October 2011, Fiscally-Constrained Project List.
- On January 11, 2012, the Moving Forward Update.

