Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040

Appendices

April 2015

Prepared by:

AECOM

In association with:

Hexagon Transportation Consultants, Inc.

Central Creative

Appendix A

Public Involvement

AECOM

CYMPO

Regional Transportation Plan Update 2040

Public Meeting

April 23, 2014

Agenda

- Key Study Members
- Meeting Purpose
- History and Background
- Schedule and Process
- Study Area
- Existing and Projected Socioeconomics
- Existing and Projected Traffic Volumes
- Next Steps

Key Study Members

- CYMPO
- Arizona Department of Transportation
- City of Prescott
- Town of Prescott Valley
- Town of Chino Valley
- Town of Dewey-Humboldt
- Yavapai County

Meeting Purpose

- Educate the community on the study and its process
- Present existing and projected population, employment, and traffic data
- Solicit input to identify areas where transportation improvements are needed

History and Background

What is CYMPO?

- Central Yavapai Metropolitan Planning Organization
- Partnership between ADOT, Chino Valley, Dewey-Humboldt, Prescott, Prescott Valley, and Yavapai County
- Responsible for planning the transportation system for the Central Yavapai region (encompasses about 400 square miles)

What is a Regional Transportation Plan (RTP)?

- A long-range (25-year) vision for the regional transportation system

History and Background

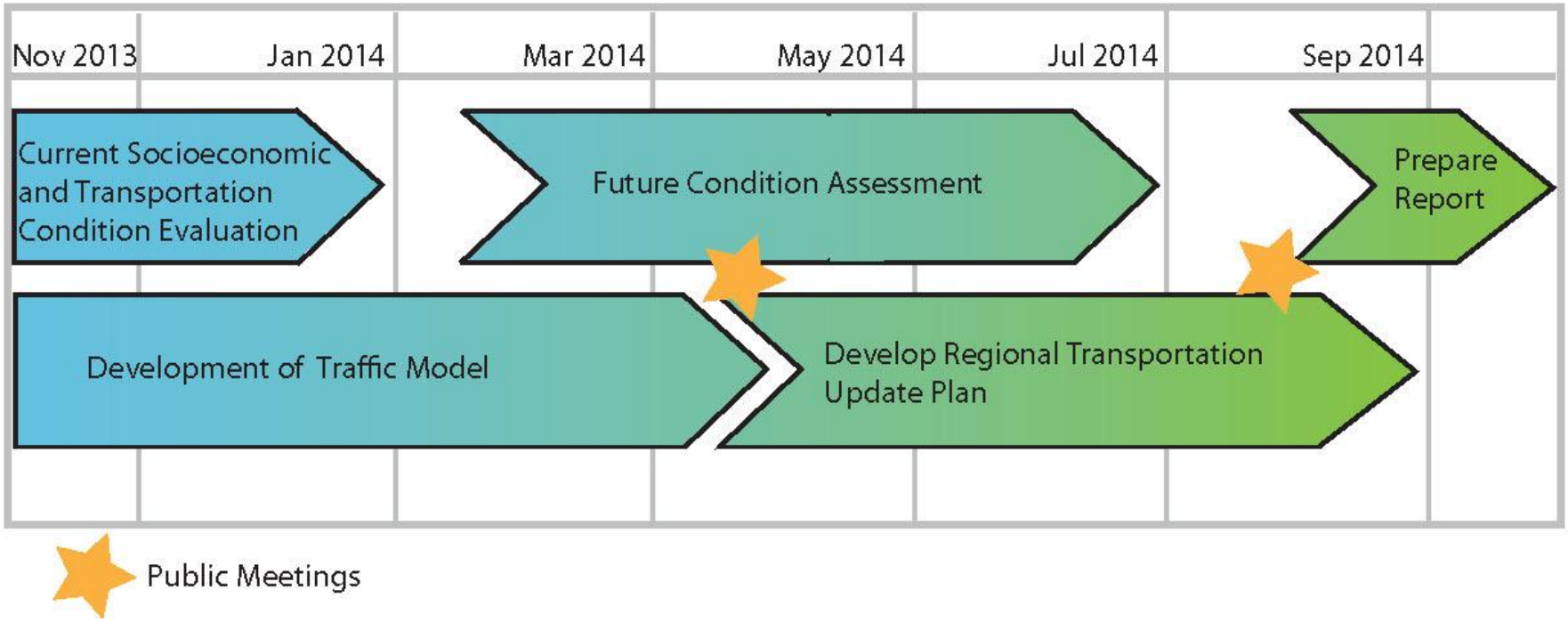
Why update the plan?

- Legislation requires updates to RTPs every five-years
- Economic recession has caused dramatic changes in expected population growth

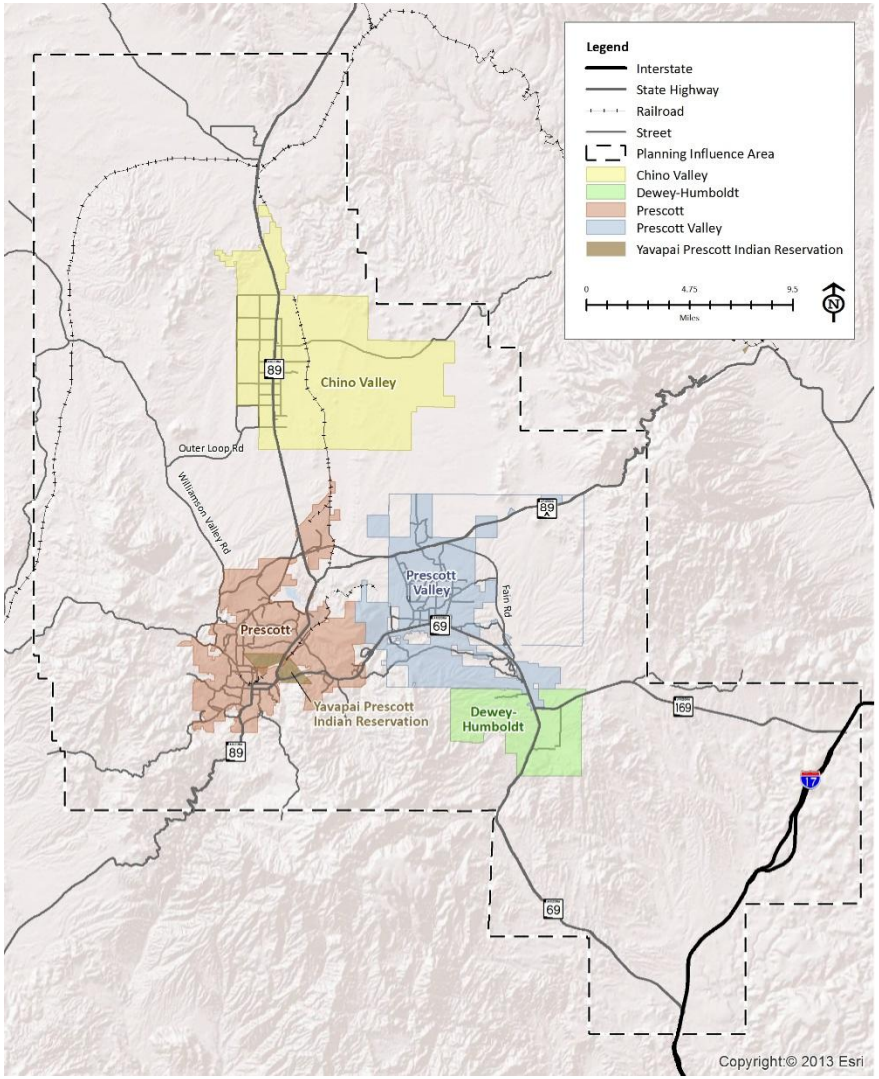
Purpose of This Update

- Adjust traffic projections to more accurately reflect population and employment growth
- Extend the life of the existing roadway network by identifying high impact / low cost improvements
- Recommend future improvement projects and identify funding opportunities

Schedule and Process



Study Area

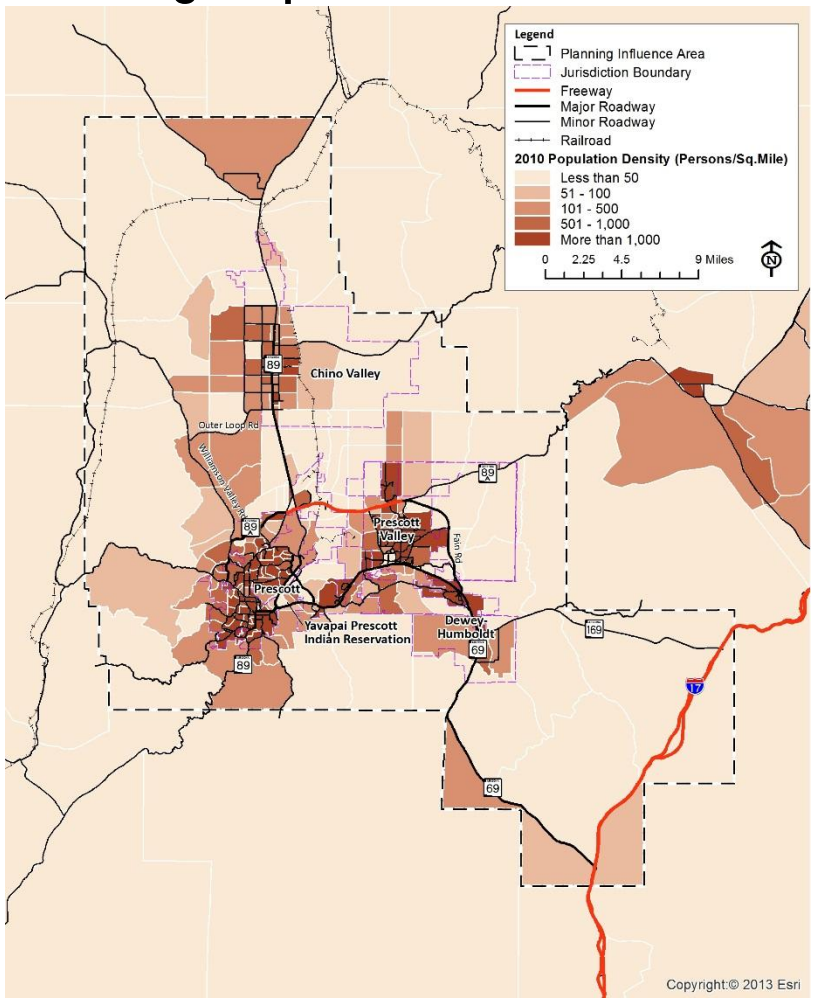


Hexagon Transportation Consultants, Inc.

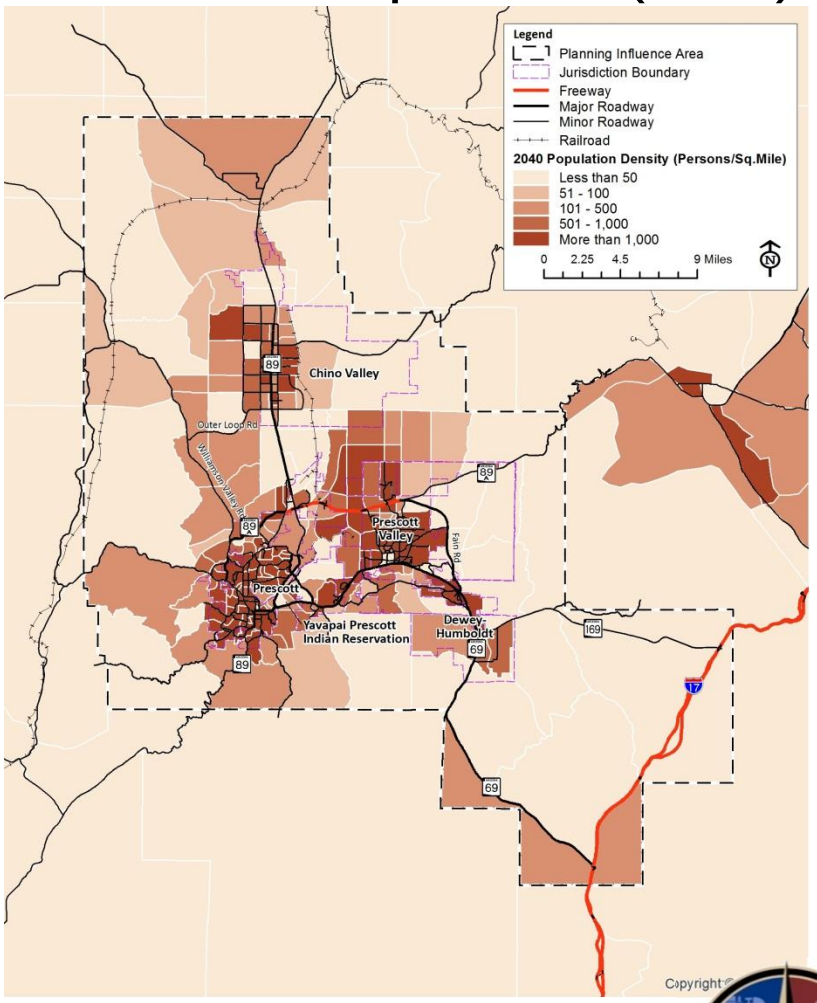
AECOM

Existing and Forecasted Population

Existing Population

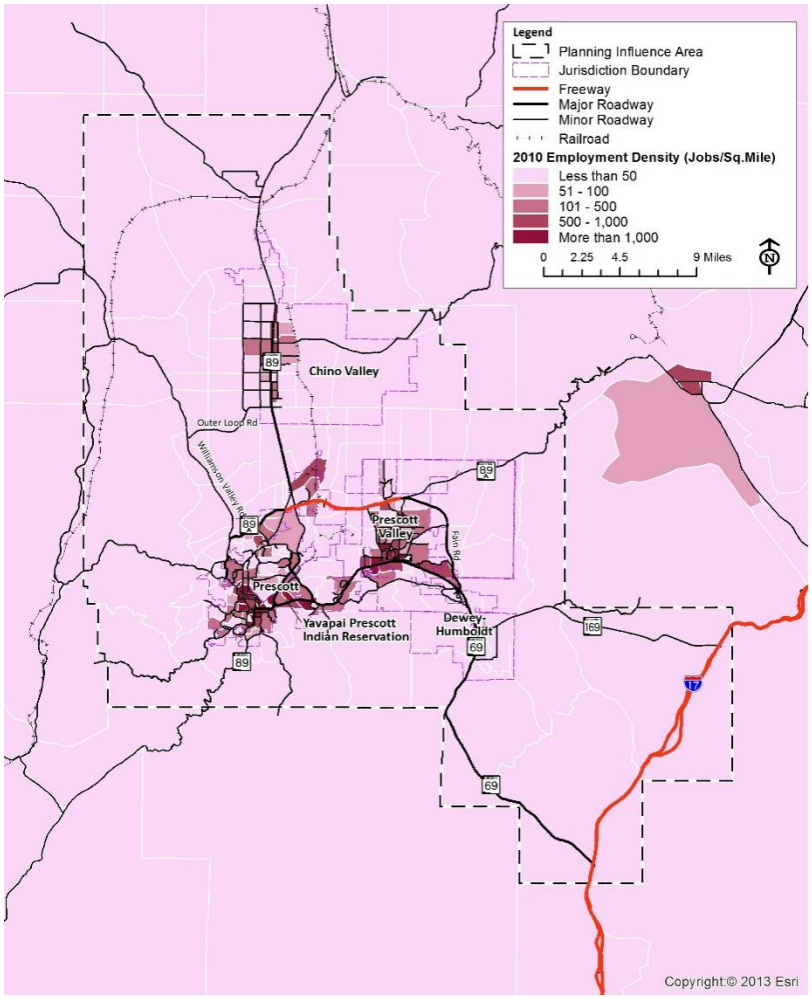


Forecasted Population (2040)

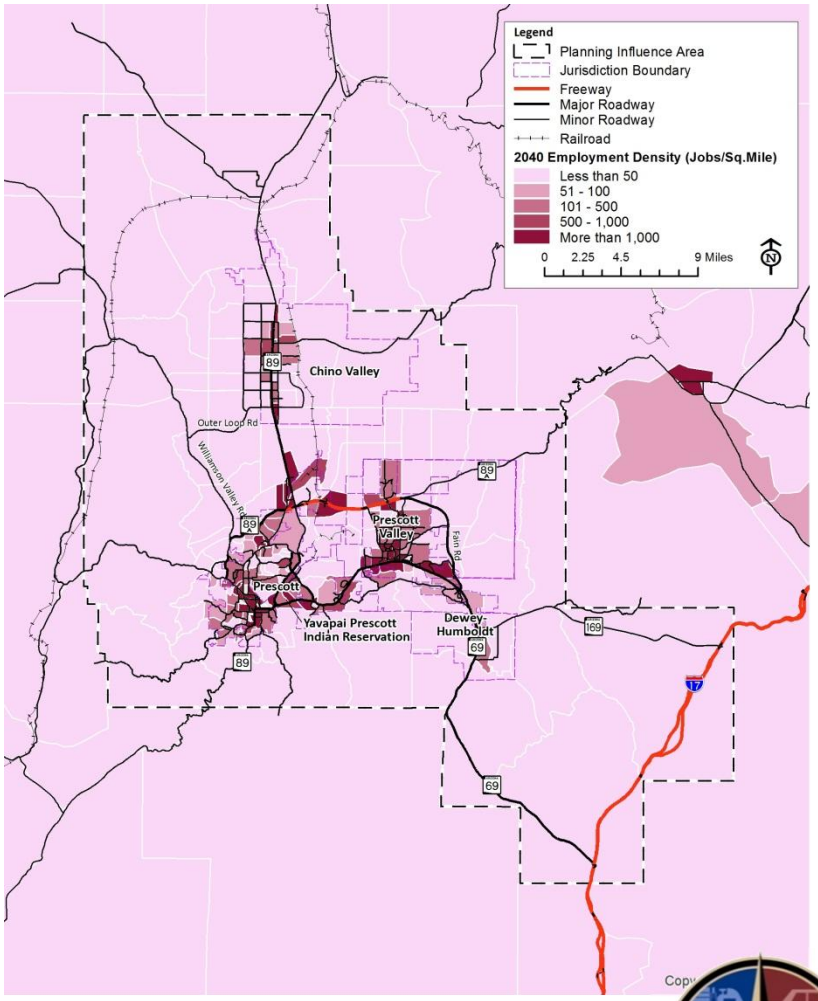


Existing and Forecasted Employment

Existing Employment

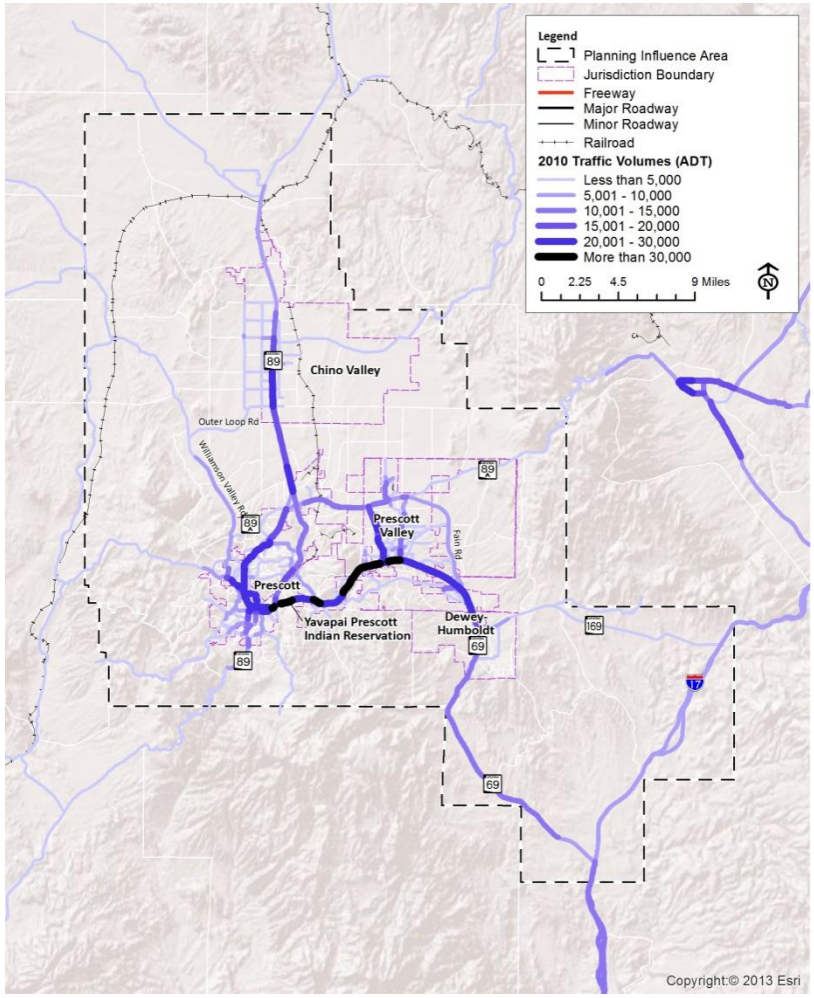


Forecasted Employment (2040)

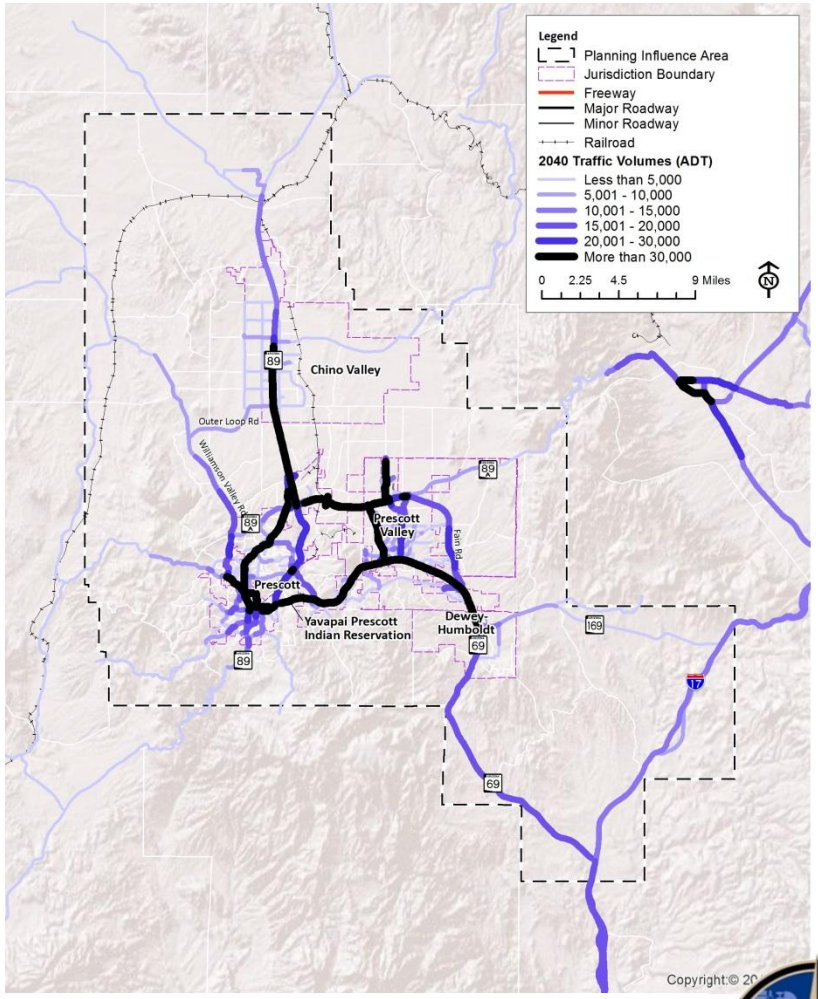


Existing and Forecasted Traffic Volumes

Existing Traffic Volumes



Forecasted Traffic Volumes (2040)



Next Steps

- Incorporate input from public meetings and analyze future transportation condition (2040) traffic model to identify outstanding future transportation needs
- Develop and analyze regional transportation network alternatives
- Identify short-term improvements to extend the life of existing transportation networks
- Bring transportation network recommendations back to the public for review and comment (September)

Question and Answer

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040
Public Meeting 1 Summary
May 2014

Overview

The Central Yavapai Metropolitan Planning Organization (CYMPO) encouraged communities within its planning boundaries to participate in public meetings scheduled for Wednesday, April 23 between 1 p.m. and 3 p.m. and 5:30 p.m. and 7:30 p.m. and provide input on the existing transportation needs and areas where the study should focus. Both meetings were held in the Town of Prescott Valley Library Auditorium.

A brief presentation was made by Kate Bondy, Project Manager with AECOM, followed by a brief question and answer session. In total 39 people attended from the communities as well as elected officials and local government representatives. All comment forms can be found in *Appendix A: Comment Forms* and copies of the sign in sheets can be found in *Appendix B: Sign In Sheets*.

The following summarizes the discussion at both of the public meetings.

Questions and Answers:

Q: What is the base for the projected population numbers? How is that forecasted?
A: CYMPO uses the data from the existing Arizona Department of Transportation (ADOT) model, which uses numbers based on the forecasted numbers produced by the Arizona Department of Administration. The numbers provided from the state agencies were reviewed and compared to those that the local governments used in their general plans.

Q: What will happen with the declining water resources in the area? How is it possible to continue to develop infrastructure for growing populations when there will be no water in the future?
A: This is a transportation planning study. The water component is analyzed in the local government plans and is inherently part of the transportation planning element. All population and employment forecasts take into account water resources.

Q: What kind of short-term improvements will be considered in this study?
A: This study will consider improvement to help the flow of traffic such as additional turn lanes and signal timing.

Q: Who is responsible for improving pavement quality?
A: The preservation of roadways is the responsibility of ADOT, Yavapai County, and local jurisdictions.

Q: Where in the plan is bus rapid transit and pedestrian and bicycle pathways considered?
A: The plan will include a multimodal element. This will be developed later in the study.

Verbal Comments:

- More wildlife corridors need to be implemented. Fewer vehicle collisions with wildlife would save the governments hundreds of thousands of dollars.
- The biggest economic draw in this area is historical sites. There should be a greater emphasis on trying to increase tourism in the area.
- European and Canadian studies should be researched and the findings should be applied to this study.

Written Comments Received on Comment Forms

1. On which roads do you currently experience the most traffic delays?
    - SR 69 – Montezuma Downtown Prescott
    - SR 89 – South of Prescott
    - SR 89 – Chino to SR 89A
    - SR 69 – SR 89 to SR 169
    - SR 89A – Granite Dells Parkway to Viewpoint Drive
    - Glassoford Hills Road
    - Willow Creek Road – SR 89 to Iron Springs
    - Sheldon Street
    - Gurley Street
    - SR 69 and Glassford Hills Road
    - SR 89 between Prescott and Chino Valley
    - SR 89 between Chino Valley and Prescott
    - None, with the exception of continued construction projects, which are making us like Phoenix and S. Cal where everything is constantly torn up. If I must drive, I do it before or after peak hours.
    - I do not drive but it would be nice to synchronize the traffic lights on Robert Rd and a few other PV streets.

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (2040)?
    - SR 69/SR 89 – Sheldon, Gurley, and Montezuma
    - Willow Creek Road – Grove Miller Valley
    - SR 89A – SR 89 to Robert Road
    - SR 69 – SR 89 to SR 169
    - SR 169 – SR 69 to Old Cherry Road
    - SR 89 – Deep Well Ranch Roundabout to SR 89A
    - Glassford Hill Road
    - Willow Creek Road
    - Whipple Third Connector
    - SR 89 – Center Street north through Paulden
    - SR 69 and Glassford Hill Road
    - SR 89 between Prescott and Chino Valley
    - As our population increases all main roads in PV will be affected

3. Are there any areas in which this study should focus to improve transportation conditions or connections?
    - Alternative routes from SR 89 through the City of Prescott. Events downtown cause huge bottlenecks.
    - SR 89A – SR 89 to SR 69
    - How long will Williamson Valley Road function as a two lane road? How long will the realigned Willow Creek Road function as a two lane road? Establish a timeline for Great Western.
    - Especially the intersection of Glassford Hill Road and SR 69.
    - Glassford Hill Road to Outer Loop in Chino Valley.
    - Widen SR 89 from Paulden to Prescott.
    - Public transit including bus, light rail, and air within communities and between communities. Alternative transportation facilities for pedestrians and bicyclists.
    - To keep traffic moving traffic lights must be synchronized on all major roads.

4. If options were provided, how would you prefer to travel?

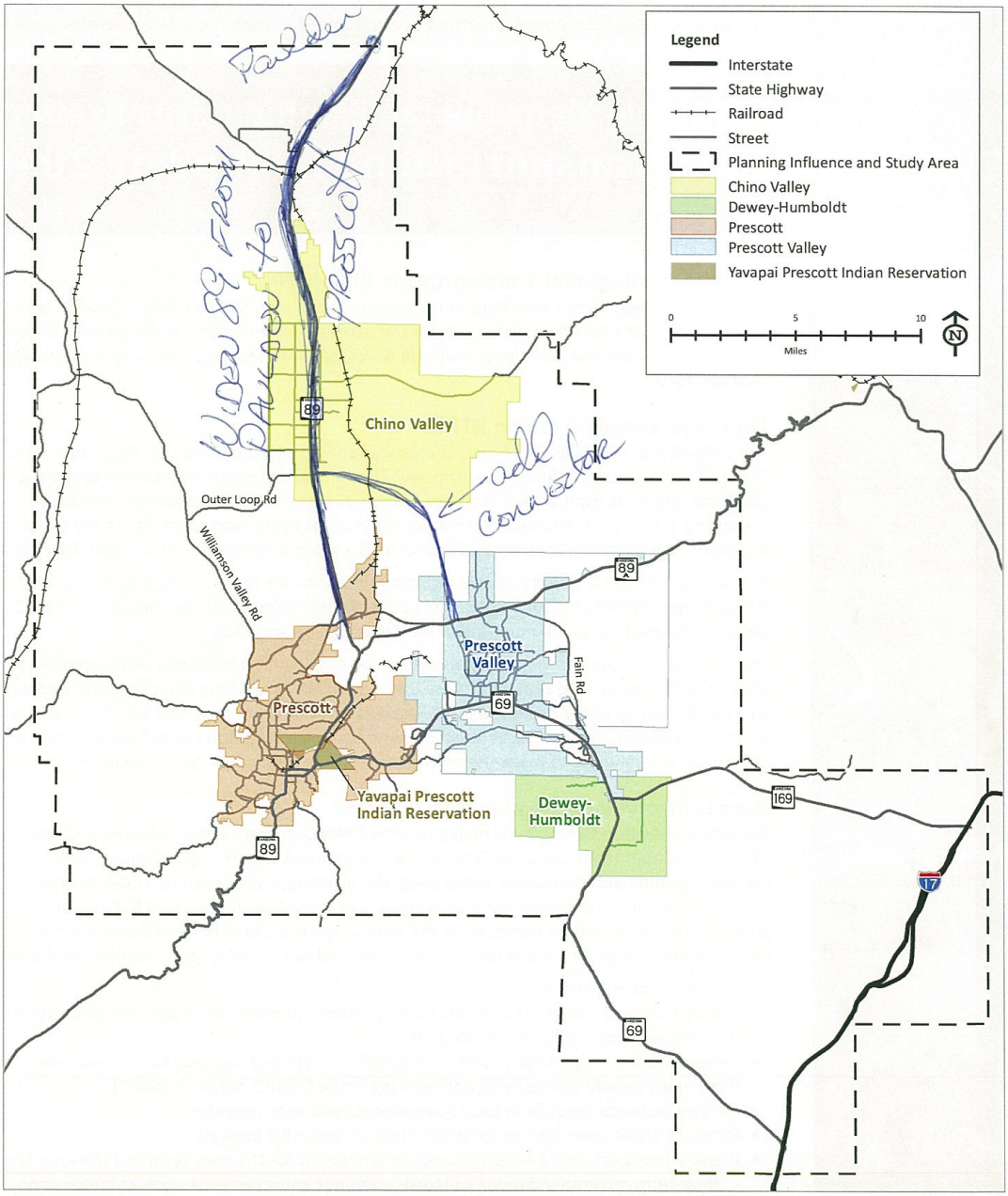
MODE OF TRANSPORTATION	RESPONSES	PERCENTAGE
PERSONAL VEHICLE	4	44.5%
PUBLIC TRANSIT	2	22.2%
WALK/BIKE	3	33.3%
OTHER	0	

5. Do you have any other comments?
    - Retrofitting existing roads to be more accommodating to bicycle and pedestrian travel and crossing.
    - Possible evaluation of a short connector from Sara Jane Lane (SR 69) to SR 169 until the Fain to SR 169 could be built.
    - Keep me informed. Thank you.
    - Implement practices and policies to reduce motor vehicle number of trips, resulting in the lowering of maintenance, widening, and new construction costs.
    - Complete non-motorized trail system connecting Prescott, Prescott Valley, Dewey-Humboldt, Chino Valley, and Skull Valley.
    - Request ADOT to provide wildlife corridor information and funding for wildlife road crossings.
    - Public transit routes: Prescott, Prescott Valley, Chino Valley connections.
    - Smart growth policies: shop, work, government, recreation where you live—not requiring a motor vehicle.

Comments drawn on maps can be found on the following page.

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040
Public Meeting 1 Summary
May 2014

CYMPO RTP Update Study Area



For more information, contact:

Chris Bridges
CYMPO Administrator
928-442-5730
Christopher.Bridges@yavapai.us

Kate Bondy, PE, PTOE
AECOM Project Manager
602-337-2603
Kate.Bondy@aecom.com

Appendix A: Comment Forms

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: JIM KNAUP

Email Address: JIM.KNAUP@GMAIL.COM

1. On which roads do you currently experience the most traffic delays?

69 - MONTEZUMA DOWNTOWN PRESCOTT
89 S. OF PRESCOTT

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

69, 89 - SHELDON - GURLEY - MONTEZUMA
WILLOW CK - GROVE MILLER VALLEY

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

ALTERNATE ROUTES FROM S. 89 THROUGH CITY OF PRESCOTT - EVENTS DOWNTOWN CAUSE HUGE BOTTLENECKS

4. If options were provided, how would you prefer to travel?

- [ ] Personal Vehicle
- [ ] Public Transit
- [x] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

RETROFITTING EXISTING ROADS TO BE MORE ACCOMODATING TO BICYCLE & PEDESTRIAN TRAVEL AND CROSSING

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by:

Mail: CYMPO RTP
c/o CYMPO
1971 Commerce Center Circle
Suite E
Prescott, AZ 86301

Email: Christopher.Bridges@yavapai.us
Telephone: 928.442.5730

Completion of this comment form is voluntary and helps the study team keep an accurate record of comments received. Under state law, any identifying information provided will become part of the public record, and as such, must be released to any individual upon request.

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: MIKE WILLETT

Email Address: MIKE.WILLETT@YAVAPAI.US

1. On which roads do you currently experience the most traffic delays?

SR 89 (CHINO TO SR 89A), SR 69 (SR 89 TO SR 169)
SR 89A - (GRANITE DELLS PARKWAY TO VIEWPOINT) GLASSFORD HILLS RD.,
WILLOW CREEK ROAD (SR 89 TO IRONSPRINGS), SHELDON ST, GURLEY ST.

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

SR 89A (SR 89 TO ROBERT RD), SR 69 (SR 89 TO SR 169), SR 169 (SR 69 TO OLD CHERRY ROAD
SR 89 (DEED WELL ROUNDABOUT TO SR 89A), GLASSFORD HILL RD, WILLOW CREEK RD,
WHIPPLE THIRD CONNECTOR, SR 89 (CENTER ST. NORTH THROUGH PAULDEN)

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

SR 89A (SR 89 TO SR 69), HOW LONG WILL WILLIAMSON VALLEY ROAD FUNCTION
AS A 2 LANE ROAD., HOW LONG WILL THE REALIGNED WILLOW CREEK ROAD
FUNCTION AS A 2 LANE ROAD. ESTABLISH A TIMELINE FOR GREAT WESTERN

4. If options were provided, how would you prefer to travel?

- [x] Personal Vehicle
- [x] Public Transit
- [x] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

POSSIBLE EVALUATION OF A SHORT CONNECTOR FROM SARAJANE LANE (SR 69)
TO SR 169 UNTIL THE FAIN TO 169 COULD BE BUILT.

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by:

Mail: CYMPO RTP
c/o CYMPO
1971 Commerce Center Circle
Suite E
Prescott, AZ 86301

Email: Christopher.Bridges@yavapai.us
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Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: Kim Moon

Email Address: kmoon@pvaz.net

1. On which roads do you currently experience the most traffic delays?

SR69 & Glassford Hill Road

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

-same-

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

-same-
especially intersection of GHR + SR69

4. If options were provided, how would you prefer to travel?

- [x] Personal Vehicle
- [ ] Public Transit
- [ ] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by:

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Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: Joe Konkel

Email Address: Konkeljoe@runbox.com

1. On which roads do you currently experience the most traffic delays?

89 north Prescott to Chino Valley
Old 89 entrance (south) to 89 north

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

Same as above

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

4. If options were provided, how would you prefer to travel?

- [x] Personal Vehicle
- [ ] Public Transit
- [ ] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

Keep me informed - thank you

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by:

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c/o CYMPO
1971 Commerce Center Circle
Suite E
Prescott, AZ 86301

Email: Christopher.Bridges@yavapai.us
Telephone: 928.442.5730

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Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: DONALD MUTZIGER

Email Address: drmca112@gmail.com

1. On which roads do you currently experience the most traffic delays?

89 THRU CHINO to PRESCOTT

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

GLASSFORD Rd to OUTER LOOP IN CHINO
WIDEN 89 FROM PAULDEN to PRESCOTT

4. If options were provided, how would you prefer to travel?

- [x] Personal Vehicle
- [ ] Public Transit
- [ ] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by:

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Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: Thomas Slaback

Email Address: Prescottkid@peoplepc.com

1. On which roads do you currently experience the most traffic delays?

None, with the exception of continued construction projects which are making us like Phoenix and S. Cal where everything is constantly torn up. If I must drive, I do it before or after peak hours.

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

public transit including bus, light rail, & air within communities and between communities. Alternative transportation facilities for pedestrian and bicyclists.

4. If options were provided, how would you prefer to travel?

- ☐ Personal Vehicle
- ☐ Public Transit
- ☒ Walk/Bike (commuted to work for 36 years)
- ☐ Other: _____

5. Do you have any other comments?

1. Implement practices & policie to reduce motor vehicle number of trips; resulting in the lowering of maintenance, widening, and new construction costs.

Please submit your comments no later than **Friday, May 9, 2014**. Comments can be submitted by: OVER

Mail: CYMPO RTP
c/o CYMPO
1971 Commerce Center Circle
Suite E
Prescott, AZ 86301

Email: Christopher.Bridges@yavapai.us
Telephone: 928.442.5730

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2. Complete non-motorized trail system connecting Prescott, Prescott Valley, Dewey-Humboldt, Chino Valley, and Skull Valley.

3. Request ADOT to provide wildlife corridor information and funding for wildlife road crossings.

4. Public transit routes: Prescott, Prescott Valley, Chino Valley connections.

5. Smart growth policies: shop, work, government, recreation where you live — not requiring a motor vehicle.

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 1 | Comment Form
April 23, 2014

Name: A Joseph Zambito

Email Address: JAZ22821@Gmail.com

1. On which roads do you currently experience the most traffic delays?

I do not drive but it would be Nice To synchronize The Traffic Lights on Robert Rd and a Few other PV Streets

2. What areas within the CYMPO planning boundary or specific roads do you anticipate significant traffic delays in the future (year 2040)?

As our population increases all main roads in PV will be affected

3. Are there any areas in which this study should focus to improve transportation conditions or connections?

To keep Traffic moving Traffic Lights must be synchronized on all major roads

RECEIVED
APR 29 2014
By

4. If options were provided, how would you prefer to travel?

- [ ] Personal Vehicle
- [x] Public Transit
- [ ] Walk/Bike
- [ ] Other: _____

5. Do you have any other comments?

PV has many seniors. In Time, most will depend on Public Transportation as they continue to age and poor Reflexes

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c/o CYMPO
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Email: Christopher.Bridges@yavapai.us
Telephone: 928.442.5730

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Appendix B: Sign In Sheets

SIGN IN

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040 | Wed., April 23, 2014
5:30 p.m. to 7:30 p.m. | Town of Prescott Valley

CYMPO
Central Yavapai Metropolitan Planning Organization

NAME	[redacted] ADDRESS	EMAIL
Thomas Slaback	715 E. Goodwin St., Prescott 86303	
CORYLE LAPOINTE		
BOYD ROBERTSON	TOWN OF PRESCOTT VALLEY	
Norm Davis	Town of Prescott Valley	ndavise pvaz.net
J.G. Brady	9970 E Shirley Lane Dewey AZ	
Jim KNAUP	200 PARKER RD PRESCOTT 86303	JIM.KNAUP@GMAIL.COM

THANK YOU
for participating!

SIGN IN

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040 | Wed., April 23, 2014
5:30 p.m. to 7:30 p.m. | Town of Prescott Valley

CYMPO
Central Yavapai Metropolitan Planning Organization

NAME	[redacted] ADDRESS	EMAIL
ED FIELDING	21350 N. HACKAMORE PAULDEN AZ 86334	EEFIELDING@GMAIL.COM
Terry Nolan	3378 S. Hwy 69 - P.O. Box 367 Humboldt	mayor.Nolan@dhAZ.gov
George Sheats	1242 Crown Ridge Prescot	gsheats@aol.com
Gary Woods	1638 White Oak Circle Prescott	gwoods3@yahoo.com
KAY Giles	P.O. Box 26962 PV 86312 (3459 Christine)	—

THANK YOU
for participating!

SIGN IN

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040 | Wed., April 23, 2014
1 p.m. to 3 p.m. | Town of Prescott Valley

CYMPO
Central Yavapai Metropolitan Planning Organization

NAME	~~ORGANIZATION~~ ADDRESS	EMAIL
Don Mutziger	6370 N. Dalley Way, Paulden	drmcal12@gmail.com
Linda Mutziger	6370 N. Dalley Way, Paulden	
Norm Davis	Town of Prescott Valley	ndavis@pvaz.net
Boyd Robertson	"	brobertson@pvaz.net
Bob LaJeunesse	ADOT	rlajeunesse@azdot.gov
Sharon + Rich Kaplan	840 Flying U Court, Prescott	rich27k@gmail.com / sharon27k@gmail.com

THANK YOU
for participating!

SIGN IN

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040 | Wed., April 23, 2014
1 p.m. to 3 p.m. | Town of Prescott Valley

CYMPO
Central Yavapai Metropolitan Planning Organization

NAME	~~ORGANIZATION~~ ADDRESS	EMAIL
GAYLE LAPOINTE	3471 N. CATHERINE DR.	gayle-lapointe@yahoo.com
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DARRYL CROTT	CHINO VALLEY TOWN COUNCIL	dlcrott@cableone.net
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Richard Straub	Town of Chino Valley	
YVONNE KIMBALL	Town of Dewey-Humboldt	
MARK FLANNERY	4941 N TONTO WAY PV.	OBAMA@whitehouse.gov
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Jeff Wasowicz	11286 High Point Dr Dewey 86327	jeffw@fainsignaturegroup.com
Ian Mattingly	COP	ian.mattingly@prescott-az.gov
Joe Konkel	890 E. Latigo Ct. Paulden, AZ 86334	Konkeljoe@runbox.com
LARRY PRENTICE	7501 E. Civic Circle PV	lprentice@pvaz.net
Jason Gisi	AZ Eco 3200 Lakeside Village Dr. 86301	jason@jasongisi.com
MIKE WILLETT	1100 COMMERCE DRIVE, PRESCOTT, AZ 86305	MIKE.WILLETT@YAVAPAI.US
Scott J. Tkach		
Richard Parks		
KEVIN ADAM	RTAC 1820 W WASHINGTON, PHX 85007	kadam@rtac.net
TERRY Collins	3313 N KNIGHTS WAY, Prescott Valley, AZ	Terrycollins.flagmail.com
Terry Nolan	Town of Dewey-Humboldt / CYMPO	mayor.Nolan@dhaz.gov
Richard Schleicher	Town of Prescott Valley	rschleicher@pvaz.net
Kim Moon	Town of Prescott Valley	kmoon@pvaz.net.

THANK YOU
for participating!

AECOM

Hexagon Transportation Consultants, Inc.

CYMPO

Regional Transportation Plan Update 2040

Public Meeting

September 29, 2014

Agenda

- Key study members
- Meeting purpose
- History and background
- Schedule and process
- Study area
- Existing and projected population, employment and traffic
- Regional recommendations (2040 and 2025)
- Intersection improvements
- Next steps
- Question and answer session

Key Study Members

- CYMPO
- Arizona Department of Transportation
- City of Prescott
- Town of Prescott Valley
- Town of Chino Valley
- Town of Dewey-Humboldt
- Yavapai County

Meeting Purpose

- Update the community on the schedule and process
- Present existing and projected population, employment, and traffic data
- Solicit input on the draft 2040 and 2025 regional recommendations
- Community's project priorities

History and Background

What is CYMPO?

- Central Yavapai Metropolitan Planning Organization
- Partnership between ADOT, Chino Valley, Dewey-Humboldt, Prescott, Prescott Valley, and Yavapai County
- Responsible for planning the transportation system for the Central Yavapai region (encompasses about 400 square miles)

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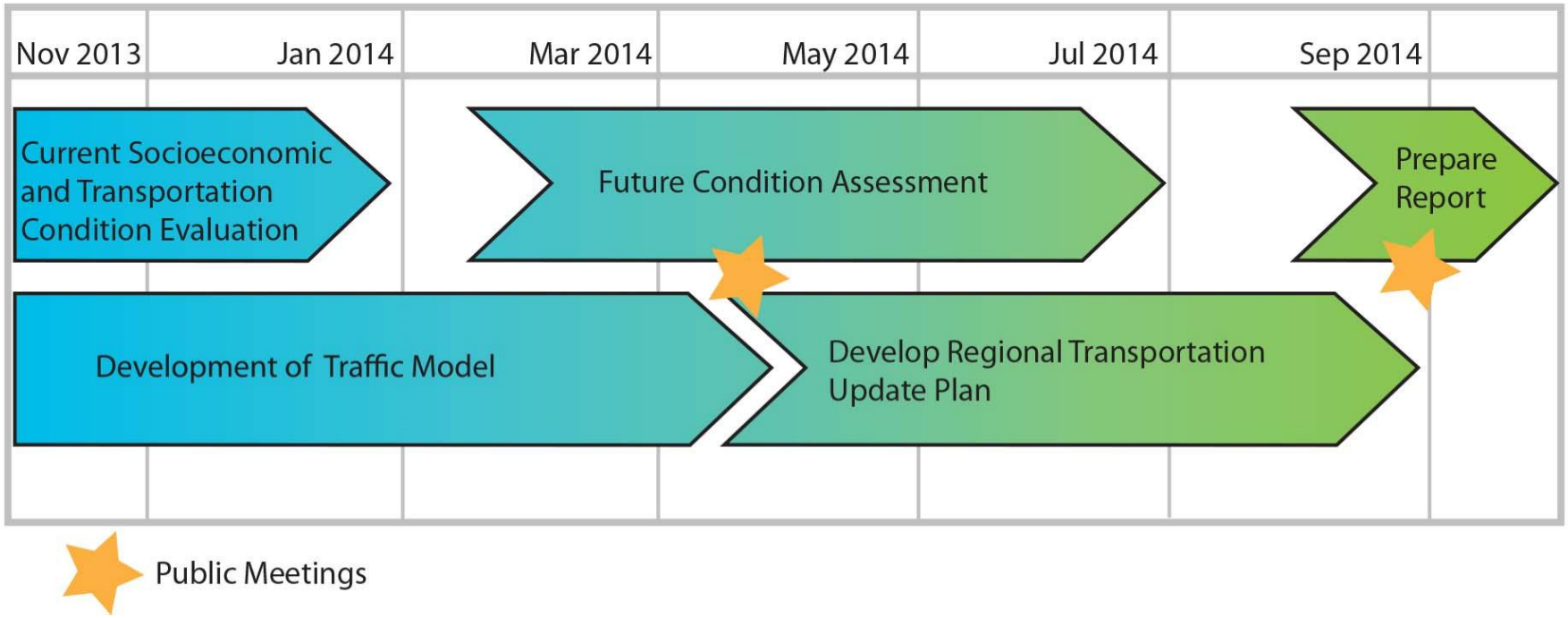
Why update the plan?

- Legislation requires updates to RTPs every five-years
- Economic recession has caused dramatic changes in expected population growth

Purpose of This Update

- Adjust traffic projections to more accurately reflect population and employment growth
- Extend the life of the existing roadway network by identifying high impact / low cost improvements
- Recommend future improvement projects and identify funding opportunities

Schedule


Nov 2013
Jan 2014
Mar 2014
May 2014
Jul 2014
Sep 2014
Current Socioeconomic and Transportation Condition Evaluation
Future Condition Assessment
Prepare Report
Development of Traffic Model
Develop Regional Transportation Update Plan
Public Meetings

Process

REVIEW EXISTING DATA
Develop and validate traffic model for 2010 using the population census

VERIFY WITH THE GENERAL PLAN
Population Employment

ASSESS THE NEEDS ("NO-BUILD")
Includes 100% funded projects
What happens if we do nothing else?

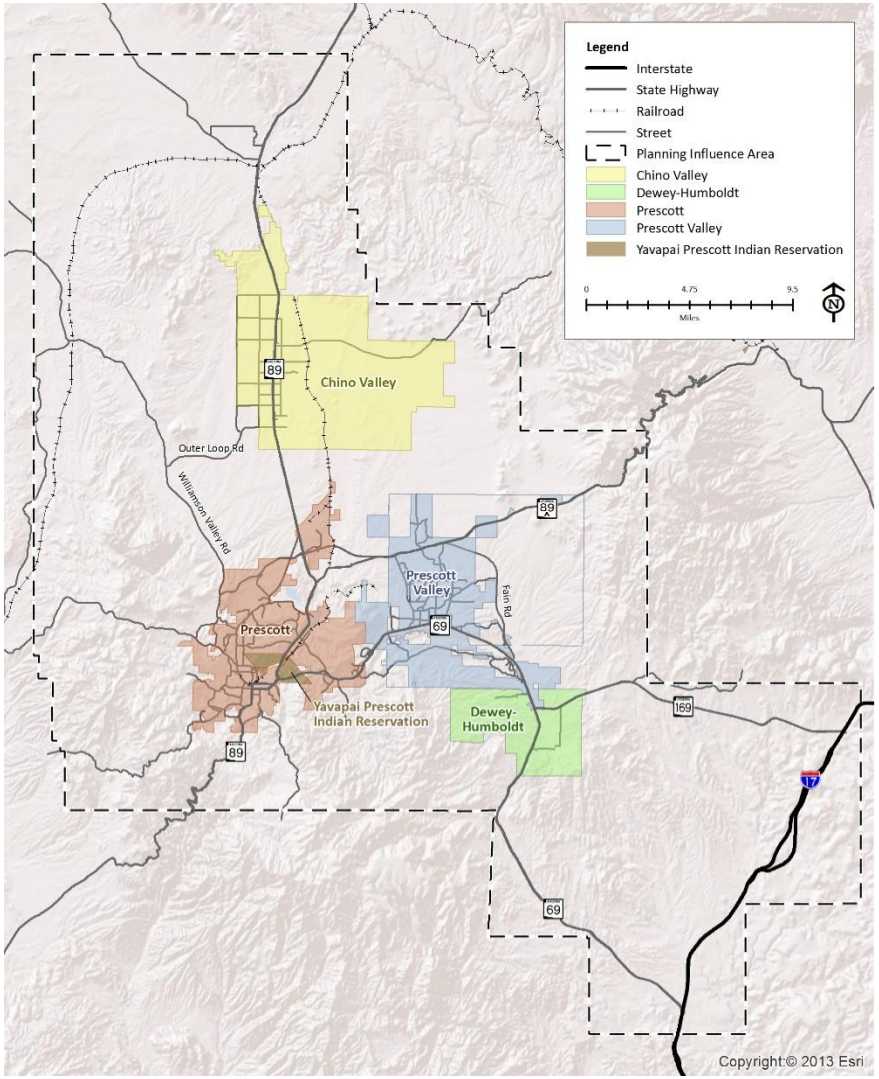
ASSESS PREVIOUSLY PLANNED PROJECTS TO IMPLEMENT BASED ON NEEDS

4 REGIONAL ALTERNATIVES IDENTIFIED TO SATISFY REGION'S NEEDS

EVALUATE ALTERNATIVES

DEVELOPED THE 2040 AND 2025 RECOMMENDED REGIONAL PLANS
Immediate projects Interim 2025 projects
Long term 2040 projects Beyond 2040 projects

Study Area



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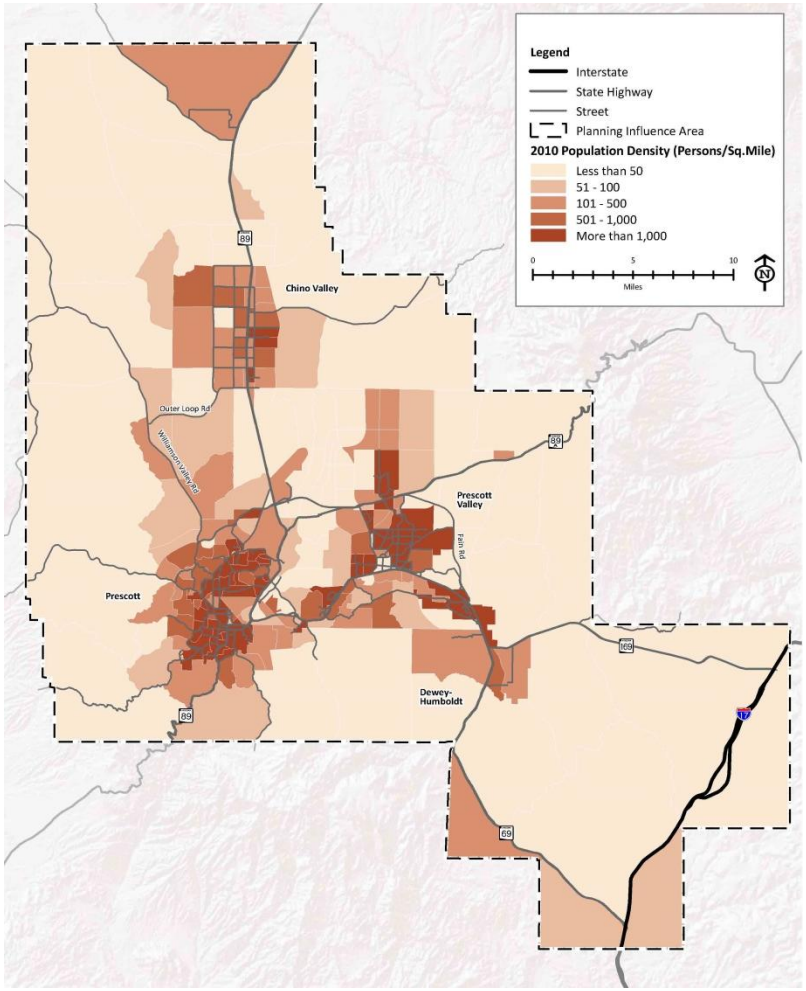
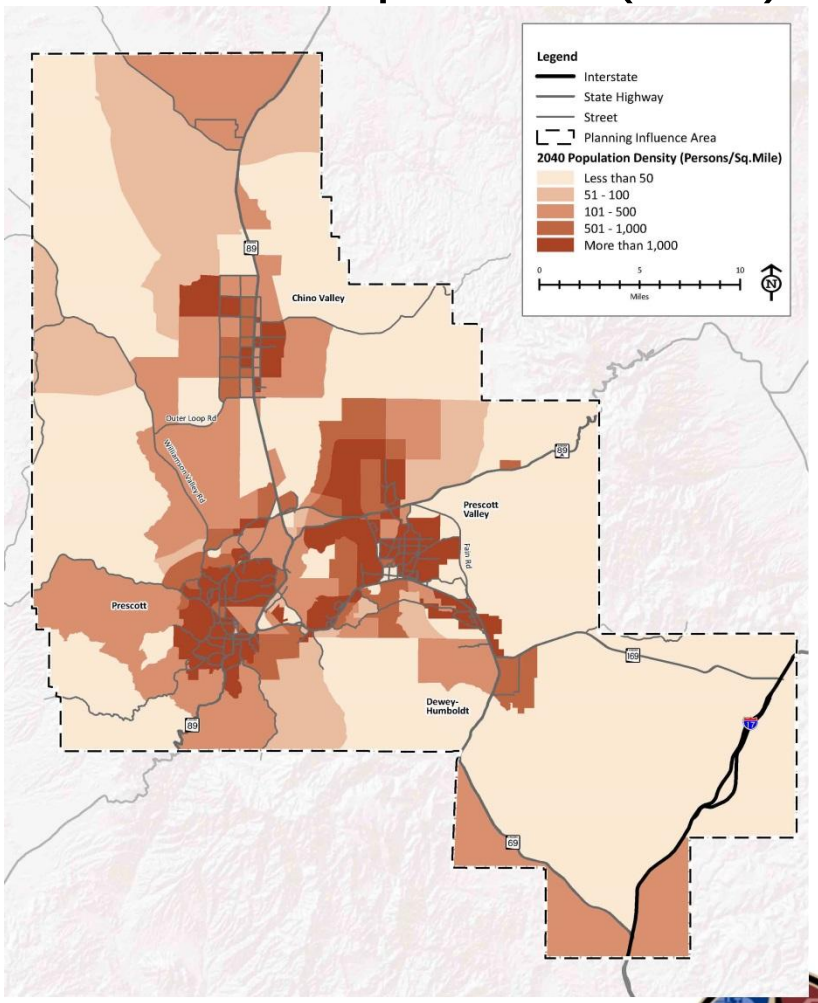
Existing and Forecasted Population

Existing Population

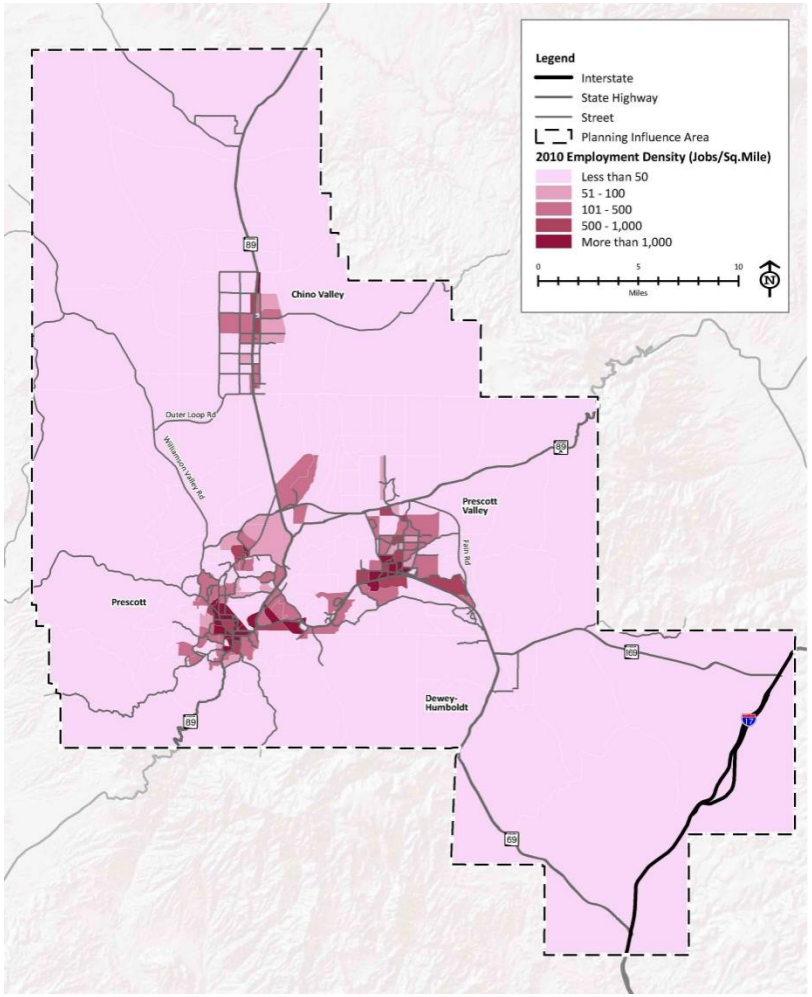


Forecasted Population (2040)

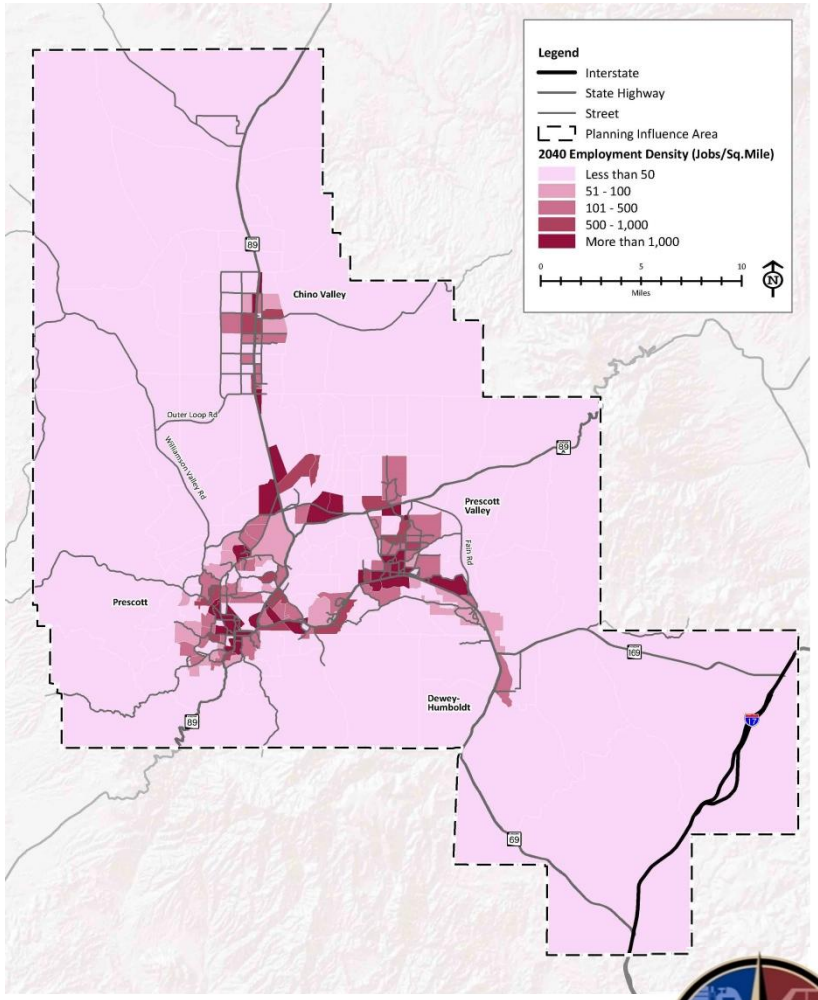


Existing and Forecasted Employment

Existing Employment



Forecasted Employment (2040)



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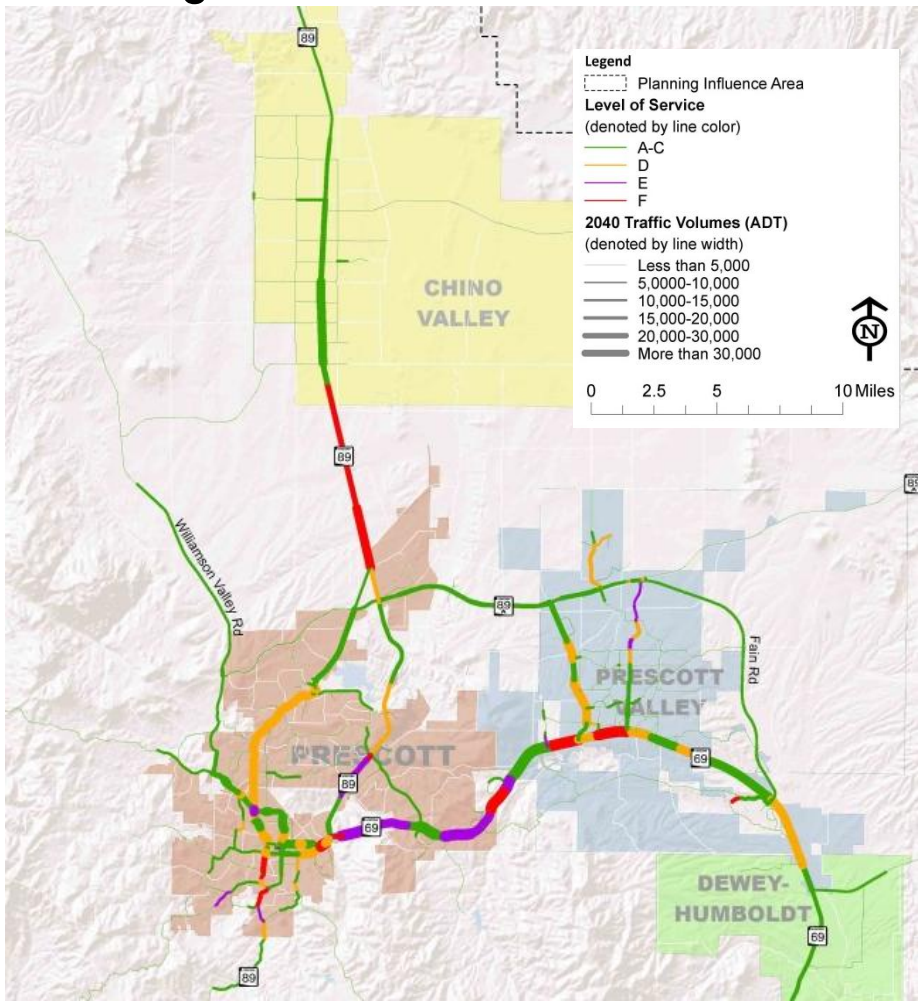
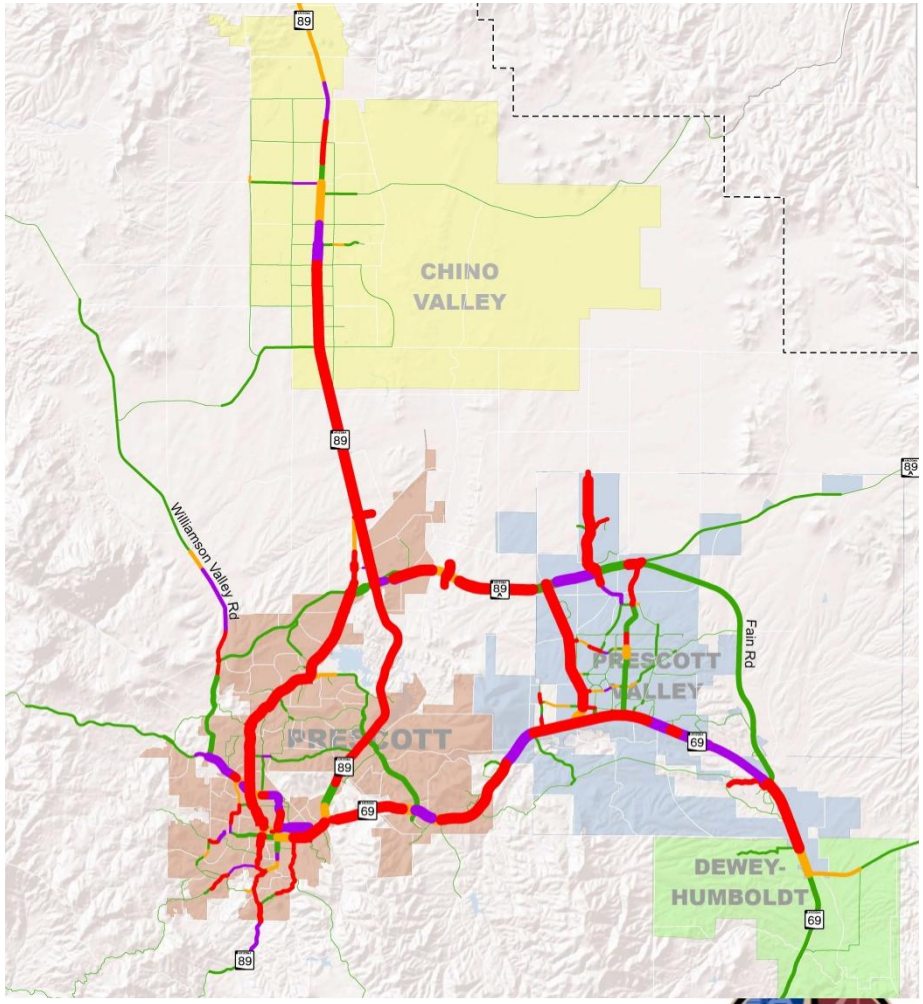
Existing and Forecasted Traffic Operations

Existing Conditions



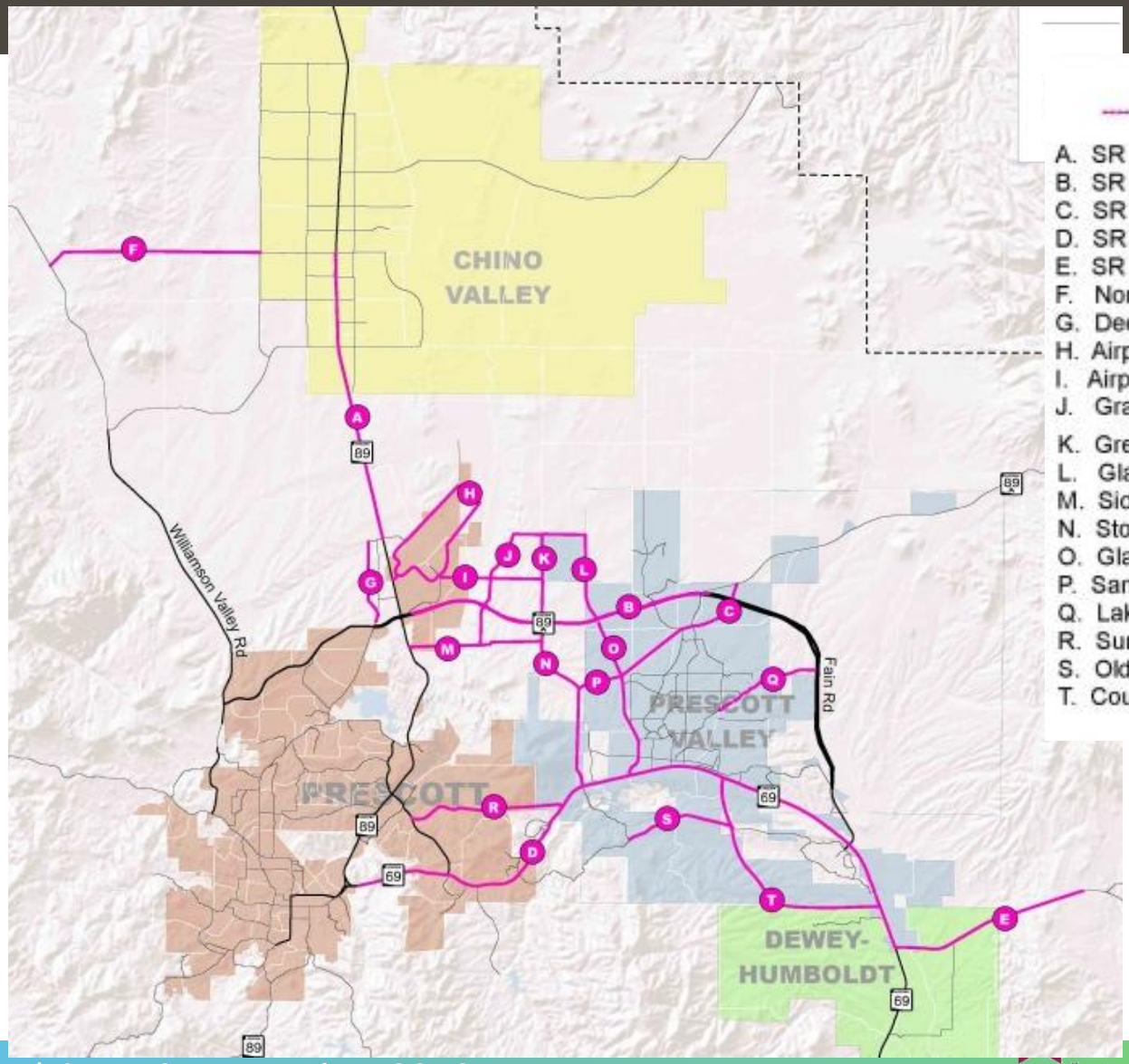
2040 Forecasted Conditions



2040 & 2025 Network Evaluation

- Developed four 2040 network alternatives
- Evaluation Criteria
  - Traffic operations
  - Mobility and Accessibility
  - Planning Consistency
  - Right-of-way
  - Environmental Justice
  - Safety
  - Cost
  - Implementation
- Developed preliminary recommendations

2040 Draft Network Recommendations



---- Possible Improvements Shown in Pink

A. SR 89 - Widen to 6-lanes
B. SR 89A - Widen to 6-lanes
C. SR 89A Robert Rd TI
D. SR 69 - Widen to 6-lanes
E. SR 169 - Widen to 4-lanes
F. Northern Connector -- New 2-lane road
G. Deep Well Ranch Road -- New 4-lane road
H. Airport Loop Rd -- New 2-lane road
I. Airport Blvd -- New 2-lane road
J. Granite Dells Pkwy -- New 4-lane road
K. Great Western Extension (Phase 1) -- New 2-lane road
L. Glassford Hill Extension -- New 4-lane road
M. Side Rd Connector -- New 4-lane road
N. Stoneridge Dr -- New 4-lane road
O. Glassford Hill Rd -- Widen to 6-lanes
P. Sante Fe Loop Rd -- New 4-lane road
Q. Lakeshore Dr -- Widen to 4-lanes
R. Sundog Connector -- New 4-lane road
S. Old Black Canyon Highway -- Widen to 4 lanes
T. Country Club Bypass -- New 2-lane road

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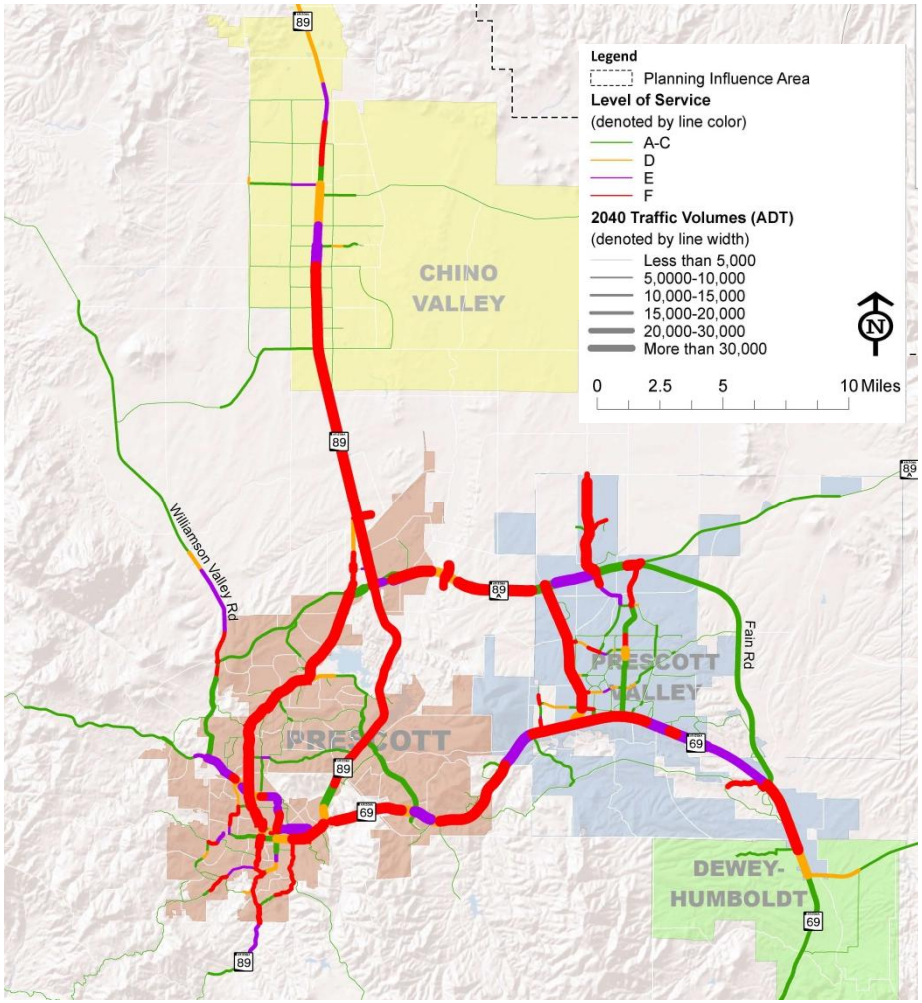
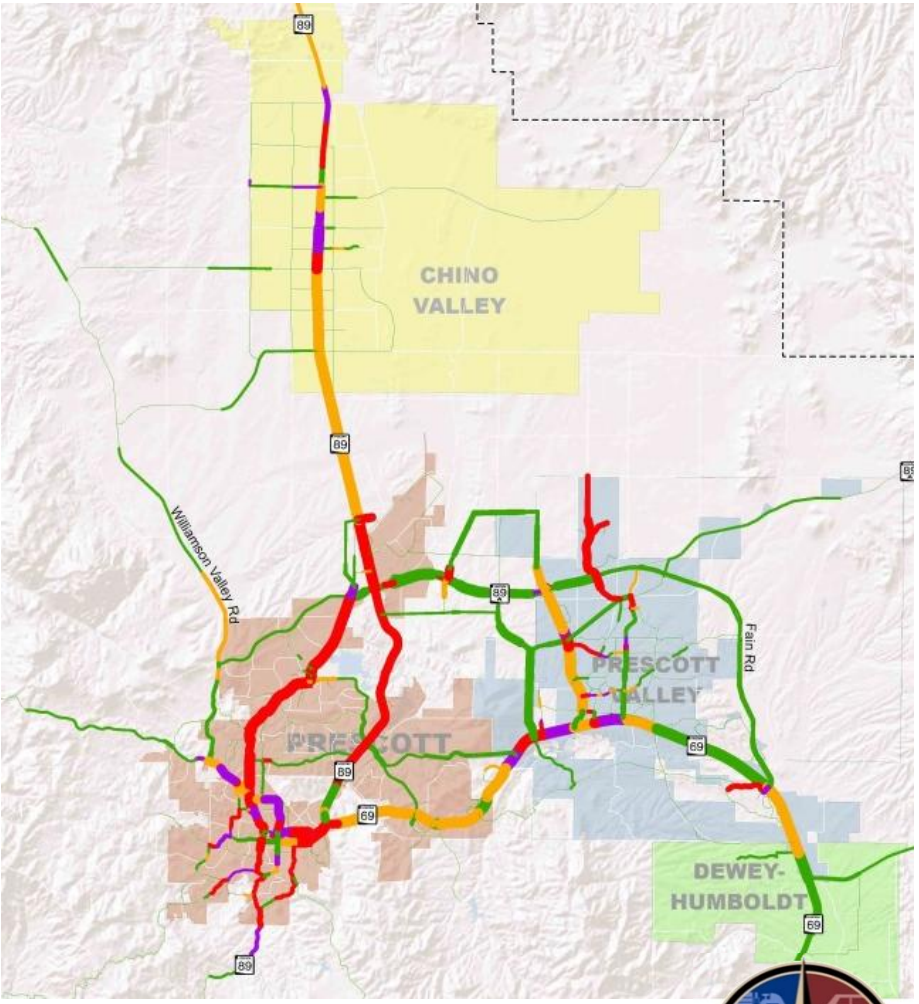
2040 Traffic Operations

2040 No-Build Conditions



2040 Recommended Conditions



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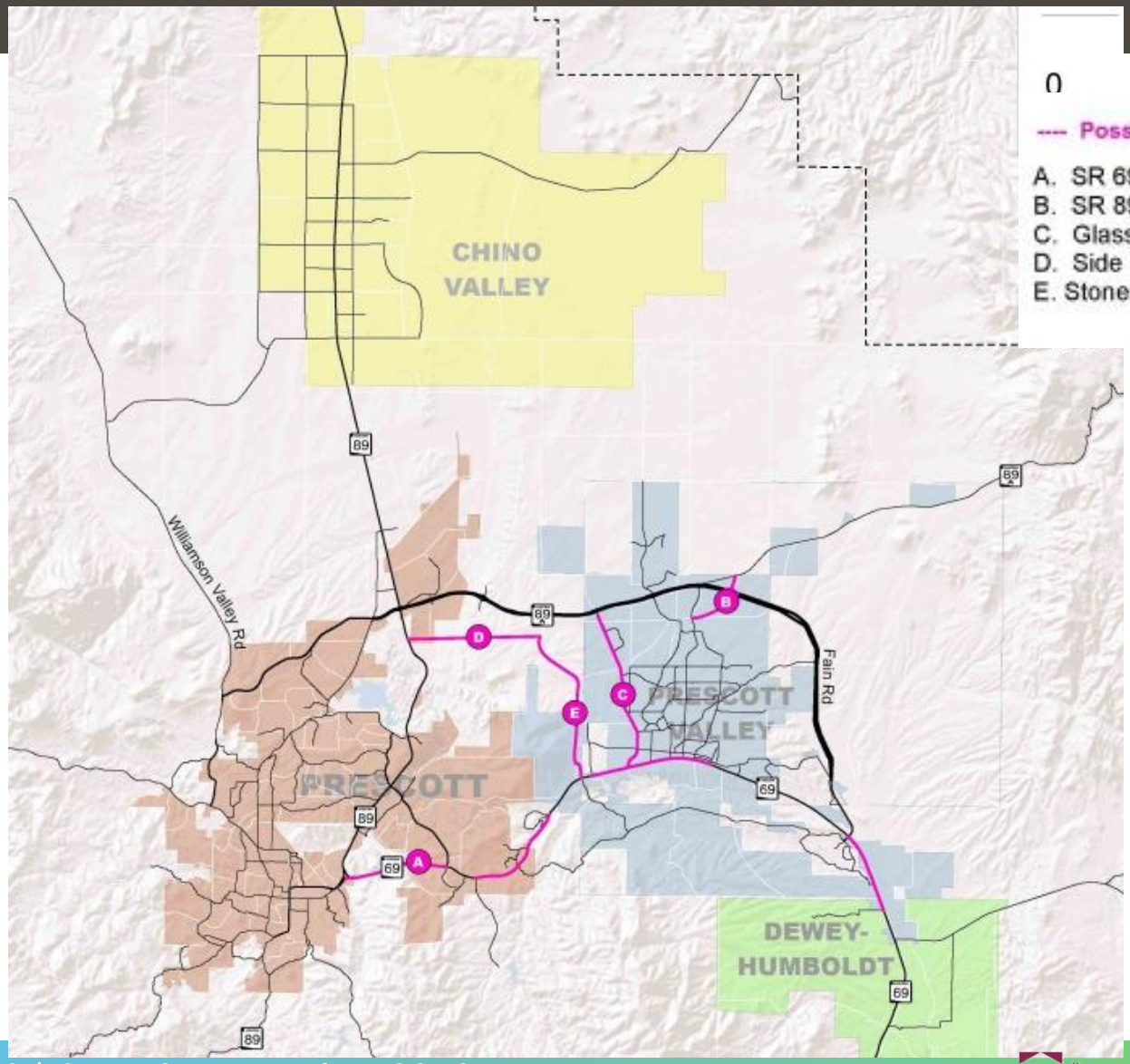
2025 Draft Network Recommendations



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---- Possible Improvements Shown in Pink

A. SR 69 -- Widen to 6 lanes - Spot improvements only
B. SR 89A Robert Rd TI
C. Glassford Hill Rd -- Widen to 6 lanes
D. Side Rd Connector -- New 4-lane road
E. Stoneridge Dr -- New 4-lane road

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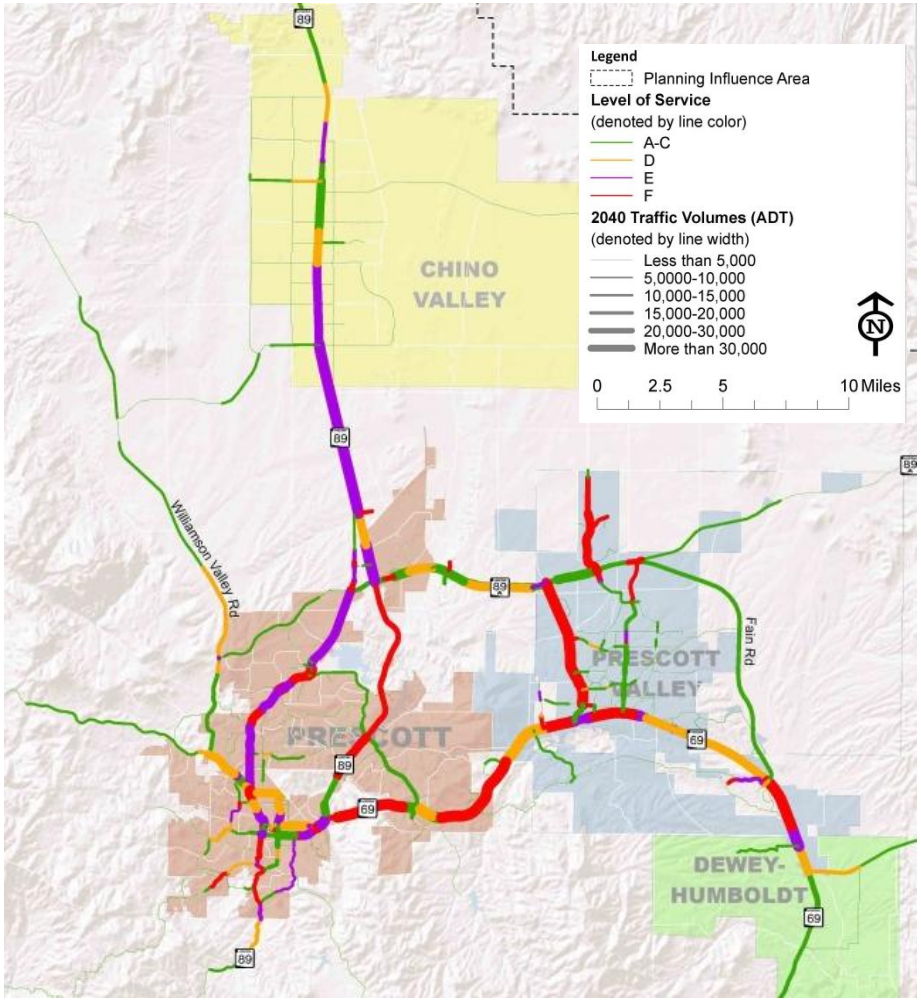
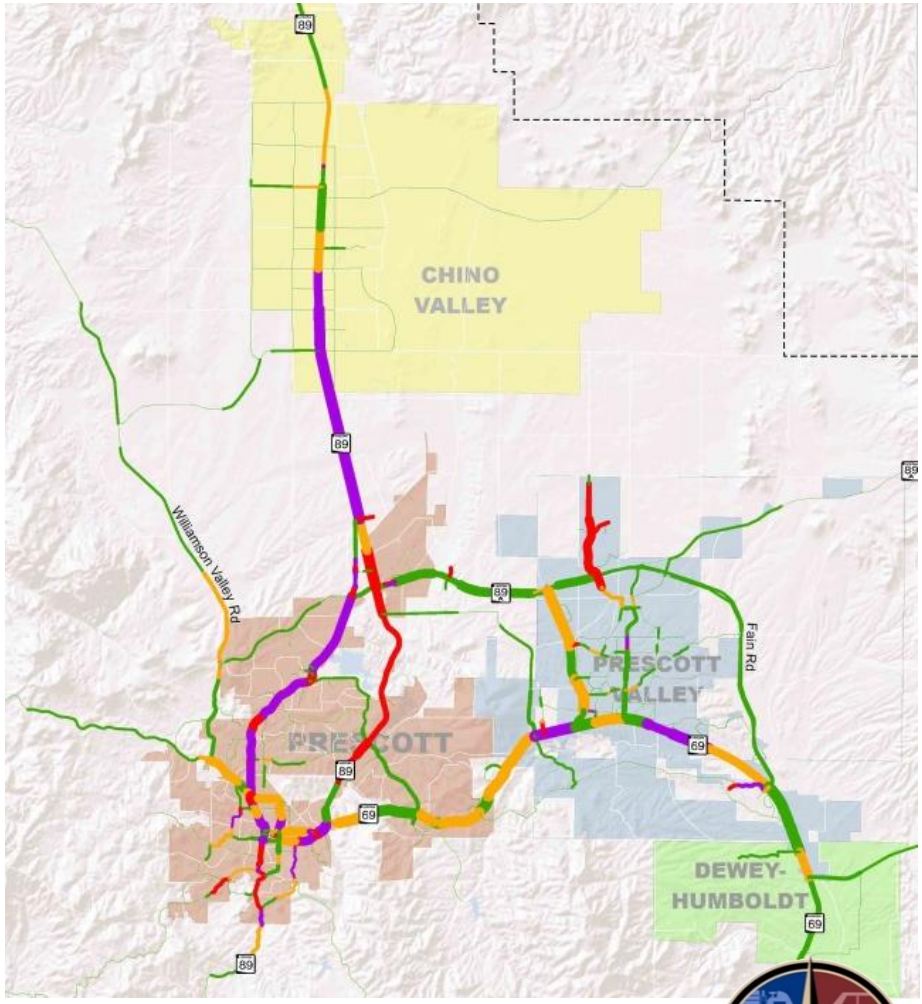
2025 Traffic Operations

2025 No-Build Conditions



2025 Recommended Conditions



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Intersection Improvements

- SR 89A and SR 89 Traffic Interchange
  - Existing Simulation
  - Modification Simulation
- SR 69 and SR 169 Intersection
- SR 89A Traffic Interchanges

Next Steps

- Incorporate input from public into plan
- Write and finalize report
- Present final plan to CYMPO Board for approval by end of the year

Question and Answer

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040
Public Meeting 2 Summary
September 2014

Overview

The Central Yavapai Metropolitan Planning Organization (CYMPO) encouraged communities within its planning boundaries to participate in public meetings scheduled for Monday, September 29 between 1 p.m. and 3 p.m. and 5:30 p.m. and 7:30 p.m. to provide input on the existing transportation needs and areas where the study should focus. Both meetings were held in the City of Prescott council chambers.

A brief presentation was made by Kate Bondy, Project Manager with AECOM, followed by a question and answer session. In total 32 people signed in from the communities including elected officials and local government representatives. All written comments can be found in *Appendix A: Written Comments,* copies of the sign in sheets can be found in *Appendix B: Sign In Sheets*, and the meeting handout is in *Appendix C: Meeting Handout*.

The following summarizes the discussion at both of the public meetings.

Questions and Answers:
1:00 p.m.

Q: In the population projections, what are the new percent projections for growth in the study area?
A: 3% per year; it was 270% previously.

Q: Is there a transit component to the plan? Does it mention it in this plan?
A: There is a transit study identifying a new funding source for a sustainable transit system. Not completely incorporated into this plan. All other plans are summarized in this plan.

Q: Is the start date for the growth population 2010? So, 3% each year from 2010 to now?
A: Yes.

Q: In terms of demographics projections, we have a higher percentage of retirees, which is a higher death rate. Is this taken into account? Did you look at where the areas are that have the large percentage of retirees, with least potential for growth? Attractors for growth – what did you use as assumptions for jobs? In terms of big landowners, Big Chino is privately held, several subdivisions planned, what assumptions were made with that? In terms of classical modeling, what kind of confidence factor do you have? Since so much of the study area is within the Prescott active management area for water, what assumptions were made about ratio for private wells vs. development?
A: Yes, the numbers came from the DES, and then we took the allocations from the general plan. We look at retirement areas as employed vs. non-employed. We don't track as a separate group. From 2010 to 2040, some workers changed; Higher growth of retirement age. We use the DES, we also look at the general plans, including the airport area, medical center, and major land owners around SR 89A and added into projections. We gave the population projections to agencies for them to verify. Yavapai Ranch, Las Vegas Ranch, talked to County development services. Not a lot happening with Yavapai Ranch. We stopped at Big Chino Rd. Validated to existing conditions, using percent error and route-mean-square, within 5% and some within 10% of counts. Tried to stay within 15%. If the jurisdiction has a water element where a project's affected, then it's included in the plan. If it's in a general plan, it is being considered. The plan is updated every five years. ADOT provides traffic projections.

5:30 p.m.

Q: Does congestion take into account automated vehicles?
A: We use historical data from past and present based on behavioral trends.

Q: Are projects J, K and L regional? Would like to see a greater emphasis on Sun Dog Connector and 69 and Old Black Canyon to get pressure off 69 with no traffic signals. Develop this now rather than widen 69. Fain Road connector to 169 doesn't need 4 lanes.
A: Project K implemented would be regional. Depends on development north of 89A. We did look at improving Sun Dog and projects S+T to relieve 69. It helps, but we need both. All roadways are still in plan for 2040. Fain Road doesn't have the demand by 2040. Will consider it in the plan. It's more expensive and harder to build in outlying areas. It will be evaluated again in five years.

Q: To confirm, Willow Creek Road Realign is Phase 1 in the five-year plan. Granite Dells wants to prevent a four-lane, but may need it in the future (red).
A: Phase 2 is Deep Well Ranch Road. We left the Dells now, but may need to build four lanes – would need to blast for more ROW. Willow Creek Road is in no-build alternative. East-west Road (M) side road connector includes a bridge in 2025.

Q: What does environmental justice mean? ADOT has the responsibility of looking at environmental impacts on wildlife corridors with roadway widening. Pronghorn loss – what are you doing to plan ahead? Wildlife overpasses? On 93? On 89 at the fairgrounds the wire fence has the bottom wire. Why?
A: AZG&F and ADOT have wildlife linkages, tracked herds and crossing points and we are involving them earlier in the land use plan as part of the zoning phase. We've been working for four to five years with AZG&F to help plan and get grant funding. There's game friendly wire – ADOT maintains the highway fencing. We will need to check on the fencing near the fairgrounds.

Q: ADOT won't get involved in wildlife unless asked by local agency jurisdiction.
A: Yes, we have talked to ADOT. Will be coordinating to get a letter. We aren't a jurisdiction, but are working on it with ADOT.

Q: Regarding the Sundog Connector – two years ago a meeting was held at Yavapai Hills. The road was described as a narrow 2-lanes; another public meeting it was described as a 4-lane. This would be a disaster to wildlife, trails. It's not needed and I want it removed from the 2040 plan.
A: This project was in the past plan and we evaluated all the projects. Still modeled that it carried traffic. The City of Prescott is responsible for this project. But, there is no money for the project. CYMPO is focusing on 89, 69, and 89A. Please come to the TAC and Board meetings to voice your opinion.

C: Would like to see a plan for alternative plans for bicycles.
A: That will be included.

Q: How soon will a turn lane be implemented at 89?
A: It depends on funding. If money is available, it needs to be programmed, designed and then built. If there is money, that could take a year or two.

Q: In the population projections, did you think about density for currently undeveloped land and was consideration given to water?

A: The base model came from the ADOT statewide model. Projections for 2040 came from DES and DOA. These were verified with each general plan. Each jurisdiction reviews to verify land use. We have talked to major developers and land owners. Water needs are not typically included in transportation plans. If the jurisdiction includes water in their plans, it will be included in the RTP, but indirectly.

C: I'd like to be included to continue to provide input on conservation with the RTP. We need to be creative with land use planning and development.

A: CYMPO presents to the TAC on the first of each month. Check the agenda and also can attend the next board meeting. This is an on-going plan.

Q: When do you start looking for money? Where does it come from? How involved are citizens?

A: Prioritizing projects is important for the region. Local funding comes from local tax or gas tax (primary source since 1993). ADOT projects are federally funded, which covers right of way, environmental, and mitigations. CYMPO only gets $600,000 per year; about $8 million since 2003. Could take 10 years with federally funded projects. We are constantly looking at priorities.

Q: Would CYMPO recommend speed reducing in Paulden? At least speed limit signs?

A: We work with ADOT on a roadway safety assessment to evaluate the needs. Safety funding is separate. We will keep the dialogue with ADOT.

C: There is a lot of commercial development interest on Big Chino Rd in Paulden. Development could have a huge impact on 89 corridor traffic.

A: Our boundary of this study doesn't go to Paulden, but we work with the county. Developers would have to go through the zoning process. We could always go back to ADOT to run the traffic model again.

Verbal/E-mail/Mail Comments:

- All the good plans you outlined at the meeting will be for naught if the traffic lights are not programmed for better traffic flow. I take 69 from PV to Prescott and get stopped by many of the lights. The same is true on Glassford in PV. With more traffic the desire will be to add more lights to control traffic. This will cancel the added lanes.
- This is regarding traffic around Prescott area. We need the four-lane Sundog Connector first to relive the traffic on 69. We could have two ways into Prescott or over to the Crossings, etc. on North Willow Rd from Prescott Valley. Next should be 69 with 3 lanes on each side from 169 on into Prescott. Better for emergency vehicles and traffic.
- I live in Chino Valley on Road 2 South just east of Road 1 West. When I was on the Chino Valley Planning committee study group in the early 2000's, it had been decided that the outer loop road would suffice for a large population growth. So now you think that making a major road just 2 miles north would help a lower population? I clearly remember that it was decided to consider Center or Road 5 from Chino as a connector road due to the existing properties at Talking Rock, etc. wishing to gain access to the local Safeway. However by looking at your map I notice that it seems convenient that more "up-scale" communities are not involved in how a

road will be built even though the residents back had stated that they did desire a connector road. So I guess it is a mute point to hear the concerns of a single taxpayer when other taxpayers choose not interact.

- In developing the CYMPO Regional Transportation Plan, there is a great need to consider the impact on wildlife of highway expansion and the resulting land fragmentation in Yavapai County and Arizona. In researching this topic, I found valuable information in the Arizona Game & Fish publication "Wildlife Field Notes, Volume 5." Scott Sprague and Jeff Gagnon presented valuable information related to Pronghorn populations, which can be extrapolated to other wildlife species as well. I am including many of their ideas, which correlate strongly with my own.

  - Land fragmentation poses the greatest obstacle to long-term viability of many species. Highways often create a barrier to "seasonal migration and gene flow." This lack of wildlife connectivity corridors results in local extinction such as was the case with the Prescott Pronghorn herd.
  - Research has shown that Pronghorn are reluctant to cross roads. One crucial fact I learned was that because of their diurnal movements, as opposed to nocturnal deer and elk, Pronghorn must deal with higher traffic volumes and resultant mortality rates. This fact poses a threat not only for the Pronghorn, but also for motorist fatalities.
  - The following are recommendations in consideration of federal law MAP-21, which requires mitigation of wildlife and land fragmentation in highway construction.
    - 1. Implement wildlife connectivity corridors. A design was created by the Ecosa Institute in the Fall of 2012 entitled "Great Western Corridor: A Dynamic Vision for Life in the West." It outlines how these corridors could be established through land swaps, conservation easements and joint planning. (I am in the process of obtaining copies of this study for CYMPO use.)
    - 2. Modify highway right-of-way fences designed to keep livestock off roadways so Pronghorn can pass under, rather than over, them as they prefer. Many ranchers have been cooperative in removing the bottom barbed wire from their fencing in order to assist the Pronghorn. It should be required universally.
    - 3. Based on identification of the preferred migratory corridors, create wildlife overpasses to assist the various animals to cross highways. This is especially important for the Pronghorn since they are a prey animal and resistant to using underpasses unless they have a clear vision capability. For those who would complain about the cost of such overpasses, remember that just one recent human fatality settlement in a wildlife collision case was millions of dollars.
  - There are numerous people concerned about the future of non-fragmented natural space, conservation of native grasslands and the preservation of indigenous wildlife who would be willing to contribute on their behalf. Please consider our input and let us participate in the process of saving the environment we love. *(*See additional comments in appendix)*
- I am pleased to see the elimination of a new road south of Hwy 69 that in the 2030 Plan appeared to cut through many established residential neighborhoods. If 69 is expanded to six lanes, the additional parallel road should unnecessary.

  - I also agree that the bypass east of Prescott Valley from I-17 to 89N can be eliminated. The road system we have now, with Fain Road and 89A seems adequate for future growth during the current planning period

  - As we move forward with a more detailed plan, I encourage CYMPO and other transportation agencies to incorporate bike lanes and pedestrian ways in all roads shown on the plan. Hwy 69 is currently extremely dangerous for bicycles and pedestrians in locations where there is no other place to go but on the side of the road. A bike lane, which is at least six feet wide, would be desirable, giving enough room for the occasional pedestrian. A separate paved bike path is preferable, where there is adequate right of way.
  - A plan for future roadway improvements should include a means for wildlife to cross the highway. To my knowledge, there are at least two wildlife crossing paths that affect the roads shown in red on the 2040 Recommended Network: Hwy 89N between the airport and Chino Valley; and Hwy 69 between the Mall and Prescott Resort. I encourage CYMPO to include these crossings in their plans, to work with state and federal agencies that have jurisdiction over wildlife, and to seek federal funding for additional crossing facilities that will be effective in allowing wildlife to cross without endangering the people who drive these highways.
- I object completely to any roads that will cross the Deep Well Ranch. This seems totally unnecessary! Does anybody ever consider the wildlife?

Written Comments Received on Comment Forms

1. **Please let us know what comments you have on the draft 2040 Regional recommendations:**
   - There have been 2 public meetings on Sundog Connector. Two years ago the public was ready to lynch you over a two-lane road. It was thought to be dead. A year later it came back and the public was ready for tar and feathers. Now it is back as a four-lane highway. Who keeps pulling the stake out of this vampire's heart? This road would be an environmental disaster, destroying open space, wildlife, habitat, trails with new barriers created by its construction. Remove from plan.
   - Paulden needs an improved area north of Big Chino Wash and south of Big Chino Road.
   - It seems that the major focus has been and continues to be focused on building more roads and hoping that will help with any congestion problems. However, that fails to address other needs of the community like retirees and disabled people that have either given up their driving privileges or never had them to begin with. These people still need to get to the stores for groceries and other items, they still need to get to doctors offices, they still need to get to the polls to vote. Yet, there is very little in this plan, or any previous plans on how this area is going to address this growing segment of the population now and into the future. This is an issue that will not go away, unless the people move to other communities where transit and transportation for their citizens is considered a priority.
   - I am strongly opposed to the Sundog Connector roadway in any form.
   - On the map of the 2040 network, show the corridors that were pushed out into the future as a dashed line for future study. Call them "future corridors," such as the remainder of Great Western, the Chino Valley Extension, and the Fain to SR169 Connector if there is consensus from the CYMPO member agencies to show this.
   - I have lived out Rd 2 south for over 20 years now, the amount of new homes, traffic has increased incredibly. On a average day the road is unbelievable and very dangerous. There are so many people that use it that I can't start to maintain it anymore, (I used to try to blade it 4-5 times per year) when it's dry, the dust can be so thick I'm amazed the people who live along it don't file complaints to ADEQ, I know that in our business if we made 1/3 the dust that that little road can put off on any average morning or evening, we would be shut down immediately.

When it's muddy forget getting emergency vehicles in or out, not to mention that most any emergency vehicle cannot navigate the road safety at more than 5 mph at best. There are over 400 tax paying property owners that use the road steady, I've watched the county improve roads with far less traffic and or home owners (very frustrating) I could go on an on but will stop for now, if there's any project that should be front and center, it would be rd2 south.

- We feel there are way too many roads in areas that are prime pronghorn habitat, especially those near the airport. Even now, the roundabout has driven away the herd that was there just six months ago. In addition, Lakeshore Drive and Fain Road cut right through pronghorn habitat--they need wildlife corridors now--before the herds are gone.
- In developing the CYMPO Regional Transportation Plan, there is a great need to consider the impact on wildlife of highway expansion and the resulting land fragmentation in Yavapai County and Arizona. In researching this topic, I found valuable information in the Arizona Game & Fish publication Wildlife Field Notes, Volume 5. Scott Sprague and Jeff Gagnon presented valuable information related to Pronghorn populations, but which can be extrapolated to other wildlife species as well. I will be including many of their ideas which correlate strongly with my own. Land fragmentation poses the greatest obstacle to long-term viability of many species. Highways often create a barrier to "seasonal migration and gene flow." This lack of wildlife connectivity corridors results in local extinction such as was the case with the Prescott Pronghorn herd. Research has shown that Pronghorn are reluctant to cross roads. One crucial fact I learned was that because of their diurnal movements, as opposed to nocturnal deer and elk, Pronghorn must deal with higher traffic volumes and resultant mortality rates. This fact poses a threat not only for the Pronghorn, but also for motorist fatalities.
- It would be great if road 2 south was paved. It would help out parents that need the bus to come closer to their house. I live off of 2 south and would love to see this road paved.
- I just read about the possibility of making Road 2 South into a connector road to Williamson Valley. I LOVE this idea! I live on Rd. 2 South, so I understand that for a while it would be a pain with the construction, but it would be so worth it! It would save our cars on the bumpy roads, and it would make it so much easier to get my son to work. He works on a ranch out in Williamson Valley and this would cut down a lot of miles and time to get him there. I really hope to see this move forward. I am in total support of it.

2. Do you think the team missed any important information in the draft 2040 recommendations?

- What plans CYMPO and the various city and town councils plan to do to address the growing need for transit in the CYMPO area. This is a need that is not going to diminish and will not go away if it is ignored. It must be addressed by leaders thinking boldly and courageously for the good of their communities.
- The widening of Rt 69 from Prescott Valley to the Rt69 Rt 89 junction should be included, along with the synchronization of the 4 traffic lights from the Prescott Lakes Parkway to the Walker Road intersections on Rt.69.
- Yes, the Sundog Connector needs to be relocated up the hill further to minimize the impact on the homeowners in Yavapai Hills from its proposed location.
- This is significant in both plans. I am concerned about the fragmentation of wildlife and maintenance of wildlife corridors. The existence of Pronghorn is a very good indicator of the overall health of the ecosystem, and I would like to see the preservation of those herds be given the highest priority, to include overhead wildlife crossings and realignment of roads to lessen

the impact of new roads on the already fragmented and stressed herds of Pronghorn. Thank you!

- We strongly encourage the inclusion of SPECIFIC PLANS to preserve wildlife, developed with the input of a variety of local wildlife conservation experts. In looking through the last plans, there don't appear to be any plans for how CYMPO will preserve wildlife, something most people in the county really like (which is noted in one report). Roads and wildlife don't mix well. We feel any plans for roads must address preservation of wildlife, and can't just be lip service.
- The following are recommendations in consideration of federal law MAP-21, which requires mitigation of wildlife and land fragmentation in highway construction. 1. Implement wildlife connectivity corridors. A design was created by the Ecosa Institute in the Fall of 2012 entitled "Great Western Corridor: A Dynamic Vision for Life in the West." It outlines how these corridors could be established through land swaps, conservation easements and joint planning. (I am in the process of obtaining copies of this study for CYMPO use.) 2. Modify highway right-of-way fences designed to keep livestock off roadways so Pronghorn can pass under, rather than over, them as they prefer. Many ranchers have been cooperative in removing the bottom barbed wire from their fencing in order to assist the Pronghorn. It should be required universally. 3. Based on identification of the preferred migratory corridors, create wildlife overpasses to assist the various animals to cross highways. This is especially important for the Pronghorn since they are a prey animal and resistant to using underpasses unless they have a clear vision capability. For those who would complain about the cost of such overpasses, remember that just one recent human fatality settlement in a wildlife collision case was millions of dollars.

3. Please let us know what comments you have on the draft 2025 Regional recommendations:

- I am strongly opposed to the Sundog Connector project in any form.
- The map or the text of the report needs to be clear that the Robert Road Interchange is not the only SR89A interchange recommended to be constructed or improved by 2025. For example widening Glassford Hill Road to 6 lanes may be needed but the Glassford Hill Interchange may need to be improved to be able to get the 6 lanes of traffic on and off of SR89A. The 2025 recommendations need to include a recommendation to do further study along SR89A from SR89 to the new Robert Road Interchange to determine the priority of improvements based on the growth and traffic projections.
- One of the best things about Central Arizona is the unique wildlife in the area. The Central Arizona Land Trust (CALT) wishes to express its strong support for mitigation of the negative impact road building has on wildlife. In particular, we support placing roads near existing development to avoid fragmenting grasslands, and thus the pronghorn herds that rely on that habitat. As shown in AECOM-2025 Network Recommendations, the proposed Side Road Connector and Stoneridge Drive projects would cut directly through antelope habitat, stranding what remains of those herds. We urge CYMPO to reconsider these roads, or at least move them closer to the existing roads and development. In addition, CALT strongly urges the construction of overhead wildlife crossings. We recommend continued work with AZ Game & Fish, but encourage CYMPO to take the advice of other experts in wildlife conservation, as well, so that pronghorn and other animal populations in Central Arizona will be sustainable.
- If Glassford Hill is to be widened to six lanes, we don't support the creation of a Side Road Connector + new Stoneridge Drive. Building new roads will further cut off the pronghorn herd. 89A (expanded in 2040 plan) and Glassford Hill (expanded in 2025) are very close to the locations of these proposed roads. We are not convinced that they are necessary, and feel strongly that they will be detrimental to wildlife, and thus quality of life.

4. **Do you think the team missed any important information in the draft 2025 recommendations?**
   - 1. Wildlife corridors and mitigating the bisecting caused by road construction; 2. Alternative transportation (bicycle & pedestrian); and 3. Mass transit (including connections to #2).
   - We believe that a detailed, specific plan as to how wildlife issues will be addressed should be included in the plan. We would like to see specific plans for the creation and maintenance of overhead wildlife corridors.

5. **Do you have any other comments?**
   - If shoulders are constructed with curbs (as is happening on 89 widening between Prescott and Chino Valley) it needs to be wider than normal as it limits escape range for alternate transportation modes.
   - Transit and transportation can enhance the communities in ways that cannot always be quantified in dollars and cents. Take a look at that various communities around Arizona that have active transit systems and ask the people that ride and use those systems what their lives would be like without the transit system. Ask the business owners along the routes where the buses travel and how the buses travelling by their shops have affected their businesses. Ask the dialysis patients that rely on the Para transit service provided by the local transit service to get them to their life-giving treatments three times a week without fail, on time. Ask the workers that use transit to get to and from work every day what they would do if they were forced to drive every day, if they could afford the gas and maintenance on a vehicle to get to and from work. Transit is more than just buses move people around a community. Transit make the community a better place to live for everyone and makes it possible for more people to enjoy the various benefits that living in a community like Prescott, Prescott Valley, China Valley, Dewy-Humbolt bring to them. The benefits of a viable transit system far outweigh the costs in greater community services utilized, more revenues to business, more people able to get to work, more people able to get to needed healthcare. Transit is a plus for any community.
   - The elimination of the entrance to the Gateway Mall exit on from the north bound Rt 69 would smooth traffic flow by elimination the traffic light at that spot. There are two other entrances available to northbound Rt. 69 traffic.
   - It is not appropriate to remove a corridor from the study based on an comment from any individual who thinks that a corridor like the Sundog Connector be withdrawn solely based on their desire to see it be kept as open space or wildlife habitat. Any corridor planned on private land cannot be designated as open space or wildlife habitat without the consent of the private landowner or some requirement placed on a developer by a governmental entity during the land development approval process. Furthermore if the corridors are not properly planned the private landowner/developer will most likely provide some kind of circulation system for the developed land and it be will much worse to “daisy chain” pieces of roadway together for traffic circulation than it would be to properly plan the corridor and its connection to our arterial roadways. If proponents of wildlife habitat and open space want to eliminate roadways on private land then they need to either work though the jurisdiction with the authority to approve the land development or purchase the land.
   - Please make road 2 south a connecter road.
   - Please consider this as one more public effort to support and encourage CYMPO to make every effort to include wildlife and multi-modal corridors in current and future planning efforts for road expansions and current road situations. As chairman of Community Forest Trust and member of the General Plan I am requesting as always that you submit to ADOT my/our request

for the implementation of wildlife corridors especially since you are cognizant of the extreme severity of the wildlife kills here in Yavapai County.

- Not at this time, but CALT would be very happy to work with CYMPO on wildlife/conservation issues.
- We feel you should expand what is there already, and not build so many new roads that cut through open space. This will save taxpayer money and preserve open space and wildlife habitat.
- We would like to see much more focus on reliable and easily accessible public transportation. If that existed, the pressure to build roads would decrease. We are adamantly opposed to building roads to attract development. Please consider reading this book: "Better, Not Bigger". Here's a description: "Contrary to accepted wisdom, rapid urban growth can leave communities permanently scarred, deeply in debt, with unaffordable housing, a lost sense of community, and sacrificed environmental quality. In Better NOT Bigger, Eben Fodor explodes the fundamental myth that growth is good for us and that more development will bring in more tax money, add jobs, lower housing costs, and reduce property taxes." It also has good ideas that could be implemented in CYMPO plans.
- There are numerous people concerned about the future of non-fragmented natural space, conservation of native grasslands and the preservation of indigenous wildlife who would be willing to contribute on their behalf. Please consider our input and let us participate in the process of saving the environment we love.
- I was unable to open the specific plans on your website. Why? Because I have a Mac? So all I can do is give a general comment that I hope will be given consideration. Habitat fragmentation is a significant problem with any expansion of road systems. We can and should include wildlife corridors with underpasses or overpasses for species that need to migrate between critical habitats as well as fencing that will reduce animals from being hit on our highways, both for the protection of wildlife and reducing accidents involving wildlife and endanger people. I also would like consideration given for significant trees and natural features whenever possible. While I understand the importance of cost effectiveness and safety as being a priority, I have lived and worked in other countries that value the natural landscape as a priority that warrants consideration.
- I know I missed the deadline by a day, hopefully, you will still consider my comments. I am pleasantly surprised to see that the proposed "Northern Connector" is proposed on Road 2 South. At one time, it was discussed to be Center Street, which, in my opinion, is not good, as it comes out right at Chino Valley High School. So I am writing to support the proposed Road 2 as the possible cut through. Thank You.

Appendix A: Written Comments

Mr. & Mrs. John O. Sanders
1245 Buena Vis E
Dewey, AZ 86327

PHOENIX AZ 852
06 OCT 2014 PM 4 L

CYMPO
1971 Commerce Center Circle
Suite E
Prescott, Az. 86301

10/6/14

This is regarding traffic around Prescott area. We need the four lane Sundog Connector first to relieve the traffic on 69. We could have 2 way into Prescott or over to the Crossing + etc. on North Willow Rd from Prescott Valley.
Next should be 69 with 3 lanes on each side from 169 on into Prescott. Better for emergency vehicles and traffic.
Thank you.
Katy Sanders

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040
Public Meeting 2 | Comment Form
September 29, 2014

Name: **Mike Willett**

Email Address: Mike.willett@yavapai.us

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1. Do you have any comments on the 2040 Draft Regional Network recommendations?

On the map of the 2040 network show the corridors that were pushed out into the future as a dashed line for future study. Call them "future corridors" such as the remainder of Great Western, the Chino Valley Extension and the Fain to SR169 Connector if there is consensus from the CYMPO member agencies to show this.

2. Do you have any comments on the 2025 Draft Regional Network recommendations?

The map or the text of the report needs to be clear that the Robert Road Interchange is not the only SR89A interchange recommended to be constructed or improved by 2025. For example widening Glassford Hill Road to 6 lanes may be needed but the Glassford Hill Interchange may need to be improved to be able to get the 6 lanes of traffic on and off of SR89A. The 2025 recommendations need to include a recommendation to do further study along SR89A from SR89 to the new Robert Road Interchange to determine the priority of improvements based on the growth and traffic projections.

3. Do you think any other important information should be included in the Plan?

---

4. Which roadway in the Plan do you feel is the most important improvement?

SR89A shows the most need for improvements based on the projected increase in employment and population?

5. Do you have any other comments?

It is not appropriate to remove a corridor from the study based on an comment from any individual who thinks that a corridor like the Sundog Connector be withdrawn solely based on their desire to see it be kept as open space or wildlife habitat. Any corridor planned on private land cannot be designated as open space or wildlife habitat without the consent of the private landowner or some requirement placed on a developer by a governmental entity during the land development approval process. Furthermore if the corridors are not properly planned the private landowner/developer will most likely provide some kind of circulation system for the developed land and it be will much worse to "daisy chain" pieces of roadway together for traffic circulation than it would be to properly plan the corridor and its connection to our arterial roadways. If proponents of wildlife habitat and open space want to eliminate roadways on private land then they need to either work though the jurisdiction with the authority to approve the land development or purchase the land.

Please submit your comments no later than **Friday, October 10, 2014**. Comments can be submitted by:

Mail: CYMPO RTP
c/o CYMPO
1971 Commerce Center Circle
Suite E
Prescott, AZ 86301

Email: Christopher.Bridges@yavapai.us
Telephone: 928.442.5730

Completion of this comment form is voluntary and helps the study team keep an accurate record of comments received. Under state law, any identifying information provided will become part of the public record, and as such, must be released to any individual upon request.

Mary E. McMains
P.O. Box 3810
Chino Valley, Az. 86323
Oct. 11, 2014

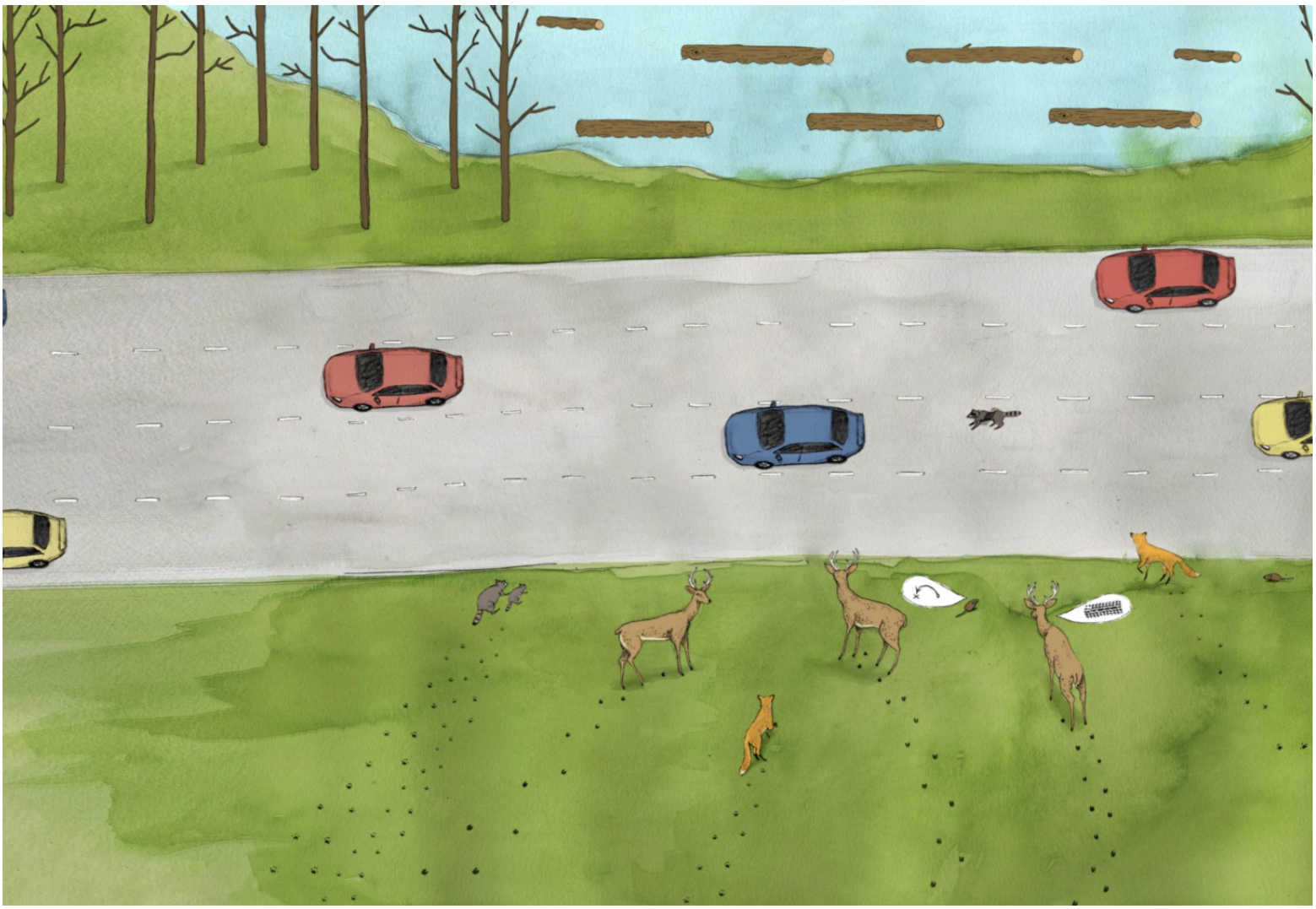
C.Y.M.P.O.
1971 Commerce Circle
Suite E.
Prescott, Az. 86301

Dear Sirs:

I'm writing concerning the article in the Chino Valley Review, published Oct 8, 2014. about the possibility of a connector road from two South Highway eighty mile, over to Williamson Valley Road. This is exciting news for everyone in this area, as this present road is terrible to say the least. I just hope + pray it will happen sooner than later. It is long overdue. Please try to make this project a top priority.

Sincerely
Mary E. McMains

How Did the Meadow Vole Cross the Road?



Designing travel routes for wildlife on Highway 93

Some fifteen miles south of Missoula, Montana, on an October morning as cold and clear as a mountain stream, a biologist named Pat Basting crouched in the brittle grass of a roadside ditch to show me one of the strangest pieces of infrastructure I'd ever seen.

I'd gone for a drive down US Highway 93 to see how Basting's agency, the Montana Department of Transportation, was making the Bitterroot Valley safer not only for drivers, but for non-human residents. In the ditch below the highway, Basting, a slim man with a drooping fu manchu mustache, guided me to a metal culvert, four feet in diameter, that ran beneath the road. A miniature catwalk, like the scaled-down set of an action movie's climax, hung on wire loops from the roof of the culvert and ran off into the cylinder's dark interior. Basting's blue eyes were

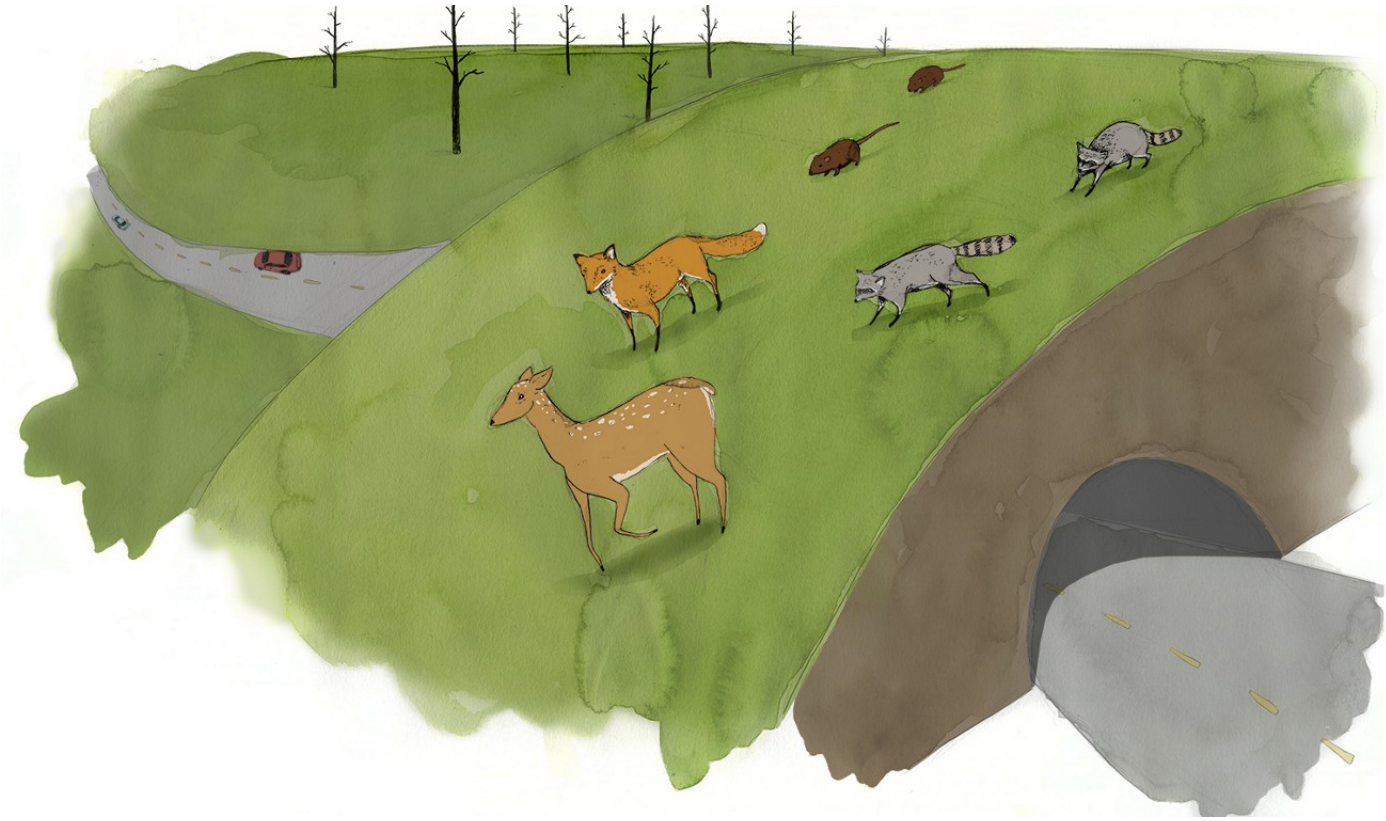
alight behind his glasses. “This is really exciting,” he said, his raspy voice almost reverent. The odd steel contraption, he told me, was called animal shelving — a type of wildlife crossing.

I tried to contain my surprise. Perhaps you’ve seen photographs of wildlife crossings Amazing Animal Bridges Around the World — graceful bridges that swoop over highways in countries like Canada, Germany, and the Netherlands to convey animals from one side of a well-trafficked road to the other.

A couple years ago the internet became briefly obsessed with wildlife bridges, and it’s not hard to understand why: Seen from above, they’re gorgeous, almost fanciful, a slash of incongruous greenery slicing through the concrete scar of the highway. They seem more likely to have been built by elves than by humans. The steel catwalk below US 93 bore little resemblance to those graceful parabolas. But as Basting explained, it was just as important. For small, secretive mammals, the dark tunnels of drainage culverts are vital conduits that allow mice, skunks, and porcupines to cross between islands of habitat without having to play Frogger through oncoming traffic. The problem is that culverts are expressly designed to channel water off the surface of roadways — which means that during the year’s wettest months, the tunnels are flooded. “When the groundwater comes up, just a few inches is enough to stop a lot of animals,” said Basting.

Hence the catwalk, which allows small species to cross the culvert during rainy season while remaining dry. First built in 2001, this crossing, and several others like it, has helped more than 15 species, from raccoons to weasels, safely traverse Highway 93. “We even got a picture of a turtle,” Basting told me — a surprise, since a cold-blooded reptile shouldn’t have triggered the heat-activated camera inside the culvert. “The only thing we can think is that the sun heated his shell up enough for him to be detected.”

Though the Bitterroot Valley’s smallest critters are the most obvious beneficiaries, this small metal runway isn’t just a local curiosity — it’s another salvo in a decades-long battle to make our highway infrastructure safer for wildlife. It’s one answer, too, to the ongoing question of who animal crossings should really be for — the wildlife that use them, or the humans that build them.



As Basting spoke, a steady river of cars and big rigs roared south down Highway 93, the 1500-mile-long road that runs straight as a spine from British Columbia to Arizona. Sudden curves and heavy vacation traffic make Highway 93 one of the most dangerous roads in Montana; from 2007 to 2011, 69 motorists died on a single stretch along the shores of Flathead Lake. In the 1990's, one popular Treasure State bumper sticker read, "Pray for me, I drive Highway 93."

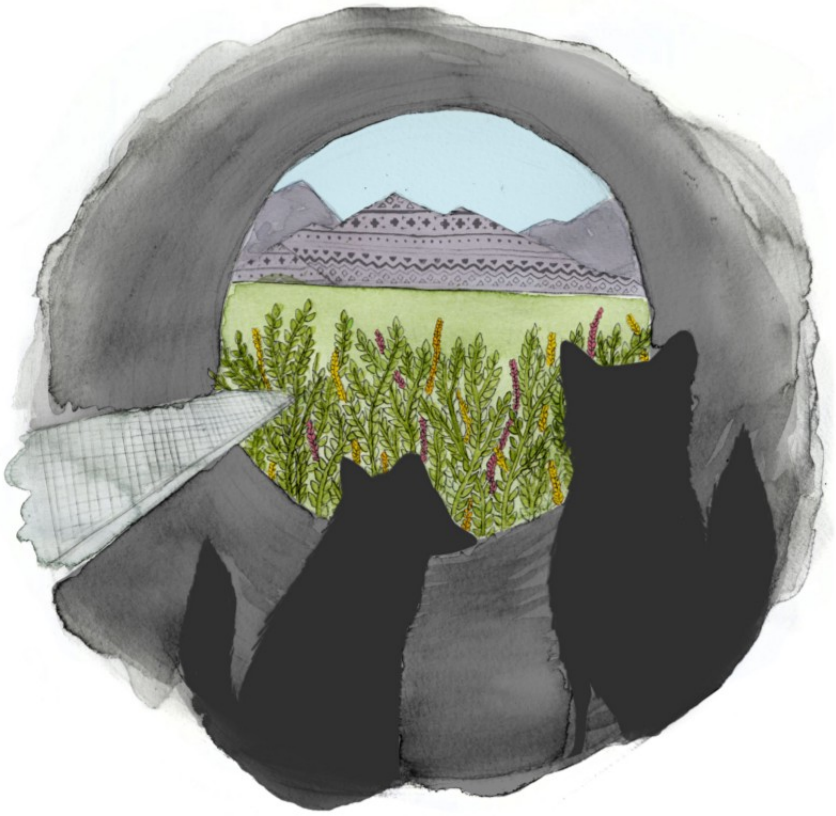
Another hazard: Large mammals. Almost nowhere is that threat more prevalent than in Montana, the state with the third-highest rate of deer crashes in the country. And the problem extends far beyond the state: A car slams into a deer every 26 seconds nationwide, and collisions kill some 200 drivers a year.

Those crashes aren't just dangerous, they're enormously expensive. According to a 2009 study by Marcel Huijser, research ecologist at Montana State University's Western Transportation Institute, the average deer collision costs society around $6,600 in vehicle damage and human injury. (Elk collisions, also frequent on Highway 93, cost more than $17,000 apiece, and moose almost $31,000.) By averting those hefty damages, Huijser says, wildlife crossings on many accident-prone stretches of North American highways would easily pay for their own construction. "We could keep ourselves busy for a long time mitigating road sections where it's beneficial not only for safety, but to our wallets."

But while roadkill-preventing projects have undeniable benefits — an underpass beneath Idaho's Highway 21, for instance, has eliminated deer strikes — they come with a caveat. Most American wildlife crossings, says Huijser, are aimed at the large, common ungulates that pose the greatest threat to property and

safety — rather than rare or small creatures that don't typically endanger drivers. Why is that a problem? While some species happily use underpasses designed for deer, others are reluctant: Pronghorn and grizzly bears, for instance, prefer bridges (which tend to be more expensive to build).
In other words, wildlife crossings tend to provide the most help to the most common creatures — a strategy that makes plenty of sense if your primary goal is to prevent drivers from crashing into white-tailed deer, but less if you're trying to conserve endangered species. "If you took a conservation perspective," Huijser told me recently, "you'd design structures of different type, dimensions and location."

The bias toward human safety especially harms the untold millions of diminutive animals that get pancaked each year with scarcely more than a gentle thump. There are exceptions, of course — salamander tunnels in Massachusetts, turtle crossings in Florida — but for the most part, transportation departments don't sweat the small stuff. "We don't see nearly enough mitigation for amphibians and small mammals," says Rob Ament, road ecology program manager at the Western Transportation Institute. "There's a lot more we could be doing to help those species out."



In 2000, Pat Basting's agency, the Montana Department of Transportation, sought to widen Highway 93 from two lanes to four throughout the Bitterroot Valley, a well-populated swath of fertile land wedged between the Bitterroot Range and the Sapphire Mountains. Doubling the width of the highway was certain to cause more roadkill in an area that already suffered from plenty of it; to address the problem, MDOT created a citizen advisory group to help choose wildlife crossing locations throughout the valley. The public had little trouble identifying sites for ungulate underpasses, but they had another, more difficult demand: What could the agency do for small mammals?

Basting placed a call to Kerry Foresman, a bushy-bearded field ecologist at the University of Montana. Biologists at MDOT had come up with a crazy idea —

shelves within culverts that would allow small critters to cross beneath the highway during the rainy season — and they wanted to know whether the concept would work. Foresman wasn't sure. "We had no idea whether even a single animal would use these things," he recalls.

To answer the question, Foresman crawled into the depths of three culverts outfitted with shelving and installed heat-activated cameras. Over the next three years, the devices captured 4,500 pictures — including grainy, security camera-quality images of raccoons, skunks, weasels, and a dozen resourceful housecats that used the shelves during their nocturnal hunting expeditions.

On first blush, then, the catwalks seemed a success. But still photographs could only tell Foresman so much. He needed to know not only whether animals used the shelves, but also how comfortable they felt on the metal runways. Back into the tunnel he crawled, this time to implant video cameras. When he watched the footage, a design flaw became apparent: Small mammals, like mice, struggled to walk across the inch-wide holes in the metal mesh floor. "They were placing their feet very carefully, like a person walking on railroad ties," Foresman says. He went back to Roscoe Steel, the company that had designed the structures, and chose a tighter steel grid, one that could support tiny feet.

Yet he wasn't done tinkering. Oddly, during the study's first year, Foresman hadn't collected any picture of the meadow vole, a nondescript, brown-furred rodent that's lighter than a pack of playing cards. Meadow voles were more common than any other mammal in the wetlands of the Bitterroot Valley — when it comes to reproduction, they're the most prolific mammal in the world — yet not a single vole had crossed the catwalk. Clearly, the shelves were failing for one critical species. The question was how to make them better.

To solve the puzzle, Foresman turned his attention to vole behavior. "These guys are the prey base for hawks, owls, weasels — there's lots of predation on them," he says. "So voles have evolved a behavior where they simply avoid going out in the open." The rodents, he realized, survive by spending their entire lives concealed beneath dense mats of grasses and cattails. To such a secretive — and delectable — creature, scurrying across the uncovered surface of a shelf must have seemed tantamount to suicide.

What does an ecologist do when he's cracked a riddle of animal behavior? He goes to Home Depot. There, Foresman bought 180 feet of plastic gutter pipe, taped it all together, and headed, once more, into the culvert, to hang his jerry-rigged vole tube beneath the shelves.

To test the apparatus, he dusted a plate with soot and surrounded it with sticky white paper, ensuring that any animal passing through the tube would leave behind telltale black paw prints—"exquisite tracks," as Foresman puts it. He cut a small door in the side of the gutter to observe the results. Then he left.

The next morning, Foresman hurried back to the culvert, his mind buzzing with scientific curiosity. He shuffled into the darkness, found the door he'd sliced into the gutter, and peered inside. There, pressed in black soot onto white paper like minuscule fingerprints, were the exquisite tracks left behind by the half-inch-long feet of *Microtus pennsylvanicus*—the meadow vole.

Further down Highway 93, Pat Basting pulled over yet again, this time alongside a deer underpass called Dawn's Crossing, named for a congressional staffer who'd gotten $1.5 million allocated for the project. Tons of fill, which had once created a steep wall over which wildlife had to scramble, had been scooped away from beneath the roadbed, essentially turning the highway into a bridge over a 100-foot-wide animal path.

"There used to be a huge pile of bones right down the road," Basting said as we clambered into Dawn's Crossing. The underpass was cool and dark; traffic Dopplered faintly overhead. The structure had been designed for white-tailed deer, and deer were primarily what used it—nearly 3,000 times in 2012 alone. In the soft dirt floor of the underpass, though, amidst the jumble of cloven white-tail

tracks, Basting pointed out the prints of other species: Raccoons, skunks, porcupines. He'd seen bobcat tracks down here, too. Clearly, designing for deer didn't entirely exclude small critters (though I couldn't help but notice that a meadow vole would have been loath to cross the bare dirt floor).

Back in 2003, in an article in *Audubon Magazine*, a U.S. Forest Service biologist named Sandra Jacobson called for "something akin to the interstate highway system — a highway system for critters." Along U.S. 93 in Montana, perhaps more than anywhere in the country, that alternative highway system is close to fruition. The 40 miles south of Missoula boast 31 total crossings; to the north, another 41 structures, including a 26-foot-high overpass, help animals traverse the highway as it bisects the Flathead Indian Reservation. Basting has shared information with a dozen states and countries including France, China, and Mongolia, and for good reason: "We have here what a lot of folks say is the most mitigated stretch of highway in the country," he told me.

Like any highway crossing worth its price tag, the Highway 93 structures have helped prevent roadkill; Marcel Huijser's research suggests that crossings north of Missoula have cut collisions in half. But they've succeeded, too, through their diversity — evidenced by the remarkable fact that an overpass intended for an 800-pound grizzly bear exists in the same network as a gutter designed for a 2-ounce meadow vole.

Making highway crossings safe for the tiniest animals isn't expensive, or even particularly challenging. It just requires a touch of consideration. Huijser and colleagues were able to nearly double the number of mice, voles, chipmunks and other small mammals that used underpasses simply by laying down some brush that the creatures can use as cover — a technique that actually saves transportation departments money. "When you widen a road, there's all sorts of vegetation removed," he says. "They can haul it away, they can bury it onsite, or they can pile it by underpasses — and it's cheaper to leave it onsite than to do any of the destructive methods."

Kerry Foresman, too, is attempting to take small animal crossings mainstream. A year after demonstrating the effectiveness of his animal shelving, Kerry Foresman spoke at the International Conference on Ecology and Transportation, an annual jamboree for scientists who study roads and wildlife. After his talk, he was surrounded by other researchers who wanted to use his design; the warm reception persuaded him to patent his invention and start his own company, Critter-Crossing Technology. (These days, the vole tubes are built into the frame of the structure.) Now he's developing shelves around North America, from crossings meant for fishers in Yosemite to the endangered Preble's jumping mouse in Colorado, where roads are being rebuilt after catastrophic flooding last fall. (Appropriately, Pat Basting, now working for the Federal Emergency Management Agency in Denver, is helping to spearhead the latter project.)

"The cost of the shelves is minimal — they're a few thousand dollars in a hundred-

million-dollar highway project," Foresman told me. "We're trying to make this routine."

*All Illustrations by Summer Ortiz**This story was supported by the Solutions Journalism Network.*

Joyce Mackin
1235 West Merrill Drive
Prescott, AZ 86305

Comment:

1- Do think we need Deep Well Ranch Road - Not necessary.

2 - Need a plan for the prong horn. Need to provide crossings for the prong horn.

Per phone call
Oct 9. 2014
@ 1:15 pm

dh

E S P I R I T U L O C I

The Spirit of the Place

14 October 2014

Christopher Bridges
Central Yavapai Metropolitan Planning Organization
1971 Commerce Center Circle
Suite E
Prescott AZ 86301

RE: Regional Transportation Plan 2014 Update

Mr. Bridges

Thank you and AECOM for your presentation on the Regional Transportation Plan 2014 Update on the 29th of September, 2014.

As a result of questions generated by the Town of Prescott's General Plan update, ADOT's bypass study and the Regional Transportation Plan, we have been hired by the Fain Family of Prescott Valley to assist them with the long term planning of their property. Your study, projections and outlook for the Prescott-Prescott Valley-Chino Valley area are very helpful in these early stages of our work.

One of the early outcomes of our planning work is recognition of the importance of the existing regional employment center near the intersection of Highway 69 and Fain Road. As you likely already know, over 50 employers have chosen this district for their operations already, including Lockheed Martin, UPS, Ace Hardware, Sunstate Equipment, and Hensley & Co. This location with convenient truck access to I-17 and I-40, the adjacent regional natural gas transmission line, adjacent executive housing in the Prescott Golf & Country Club, and the easy access to the workers of Prescott Valley, is positioned to grow dramatically over the next several decades. Along Fain Road several large tracts of land (640+ acres) are relatively flat and easily developable, dramatically improving the development potential for this area. ADOT has been studying bypass routes through the area to eventually connect I-40 to I-17, the southernmost alignment of the study would further enhance the long-term development of this employment district. This roadway would also provide a short secondary route for traffic along Highway 69 between Fain Road and Highway 169 where no other secondary route currently exists.

To enhance the development of this vital regional economic engine, we request your assistance. While we know that the development of such a roadway is not likely in the 2040 horizon with the current employment and residential projections, we request the inclusion of a graphic showing the long term transportation plans in your report. If such a graphic included the proposed bypass alignment shown in orange on the attached "Prescott Valley Employment Core" graphic it would be very helpful in our efforts to attract additional employers to the region.

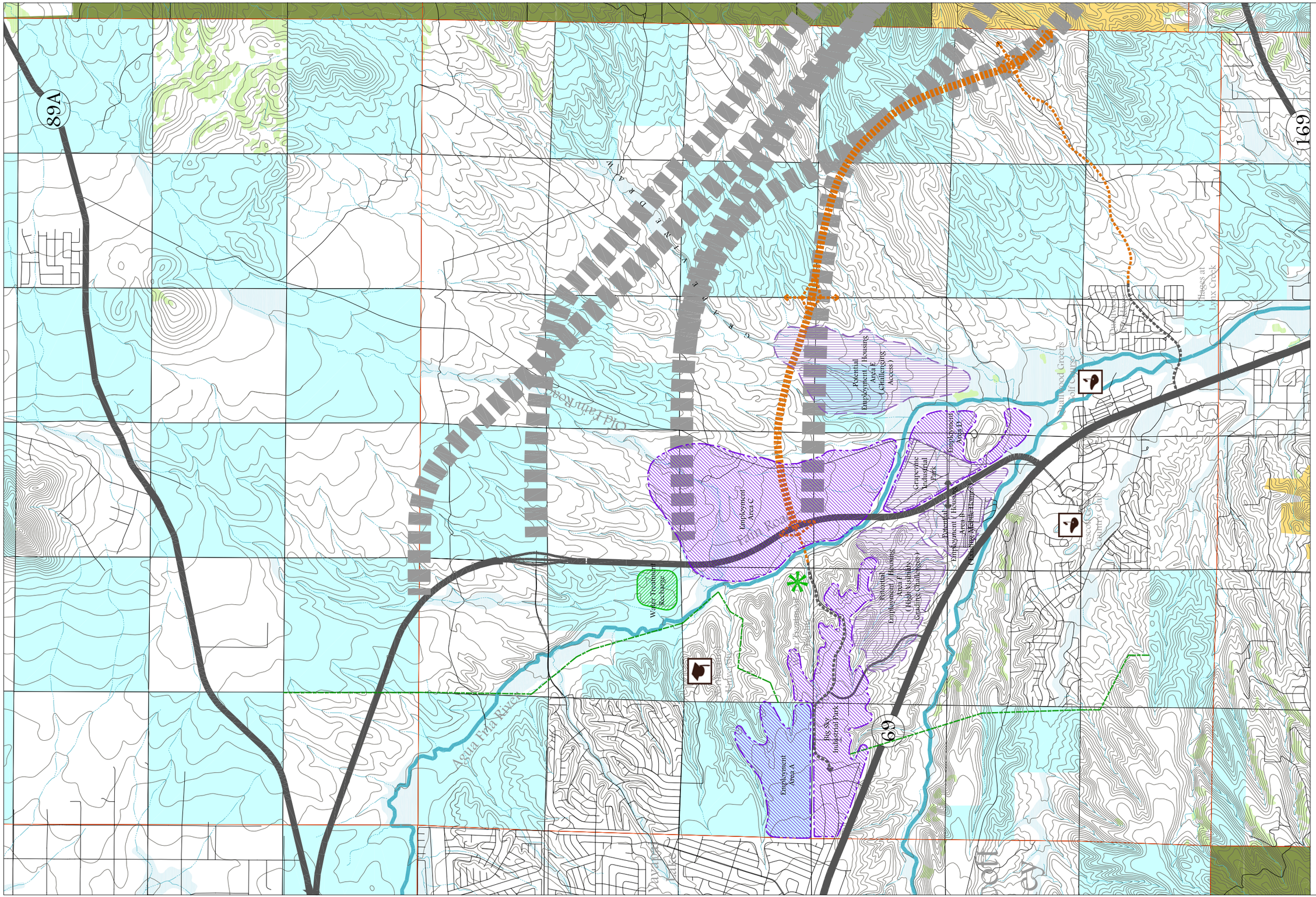
Thank you for your work to improve the quality of the Central Yavapai Metropolitan Area and your consideration of our request.

Sincerely,

Trevor Barger, AICP
President/CEO

6625 NORTH SCOTTSDALE ROAD
ANTIBES BUILDING SUITE E
SCOTTSDALE ARIZONA 85250

WWW.ESPIRITULOCI.COM
PHONE 480.481.9100
FAX 480.481.9101


89A
169
69
Old Fain Road
Agua Fria River
Water Treatment Recharge
Employment Area C
Employment Area Y
Big Sky Industrial Park
Potential Employment / Housing Area F (Challenging Access)
Potential Employment / Housing Area E (High Visibility, Grading Challenges)
Employment Area D
Greenwich Industrial Park
Potential Employment / Housing Area G (Challenging Access)
Prescott Golf & Country Club
Willows at Lynx Creek
Prescott Valley Employment Core
Employment Area
Potential Employment / Housing w/Challenging Access
Preferred Potential Alignment
Potential Transportation Alignment
Major Transportation Route
Proposed Major Transportation Route
Minor Road
Major Gas Transmission Line
Stream / Arroyo River
Golf
Higher Education
Water Treatment Facility
BLM Land
State Land
Private Land
Tribal Land
National Forest
ESPIRITU LOCI
The Spirit of the Place
7272 East Indian School Road
Suite 201
Scottsdale AZ 85251
Phone 480.481.9100
Facsimile 480.481.9101
www.EspirituLoci.com
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17 Oct 14
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Appendix B: Sign In Sheets

SIGN IN

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040 | Mon., Sept. 29, 2014
1 p.m. to 3 p.m. | Prescott Council Chambers

CYMPO
Central Yavapai Metropolitan Planning Organization

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KEN MINO	2560 MESA OAK CT. 86305	kmin9955@AOL.COM
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THANK YOU
for participating!

SIGN IN

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040 | Mon., Sept. 29, 2014
5:30 p.m. to 7:30 p.m. | Prescott Council Chambers

CYMPO
Central Yavapai Metropolitan Planning Organization

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THANK YOU
for participating!

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CYMPO
Central Yavapai Metropolitan Planning Organization

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THANK YOU
for participating!

Appendix C: Meeting Handout

The Central Yavapai Metropolitan Planning Organization (CYMPO) is the designated planning organization for the City of Prescott, Town of Prescott Valley, Town of Chino Valley, Town of Dewey-Humboldt, Yavapai County, and Arizona Department of Transportation (ADOT). The CYMPO is governed by an Executive Board composed of elected officials from the various member agencies.

Central Yavapai Metropolitan Planning Organization
Regional Transportation Plan Update 2040

FACT SHEET | September 2014

What is the Regional Transportation Plan (RTP)?

The CYMPO is completing a new long-range transportation plan for the region. The RTP is a 25-year plan that will provide a framework for transportation investments in the CYMPO region by identifying projects that could be developed with federal, state, and local funding through 2040.

Don't we already have an RTP?

The quad-city MPO adopted the 2030 RTP for the greater Prescott area in 2006. This study was prepared during an economic boom, and the forecasts have since been labelled inaccurate because of the Great Recession that began in 2007-2008. In response, the CYMPO updated its information in the 2011 RTP Update, completed in June 2012. The updated study used 2000 and 2010 U.S. Census data and resulted in much lower growth estimates for 2030.

These reduced population and employment forecasts were used with the 2006 network to evaluate future travel demands on existing and proposed roadways. As a result, several proposed roadway corridors will no longer be needed in the next 25 years. Meanwhile, other changes in travel demand and transportation needs have occurred and need to be re-evaluated to make the smartest choices in future transportation investments.

How did population and employment forecasts lead us to an updated transportation plan?

The forecasting process of the RTP Update 2040 was twofold:

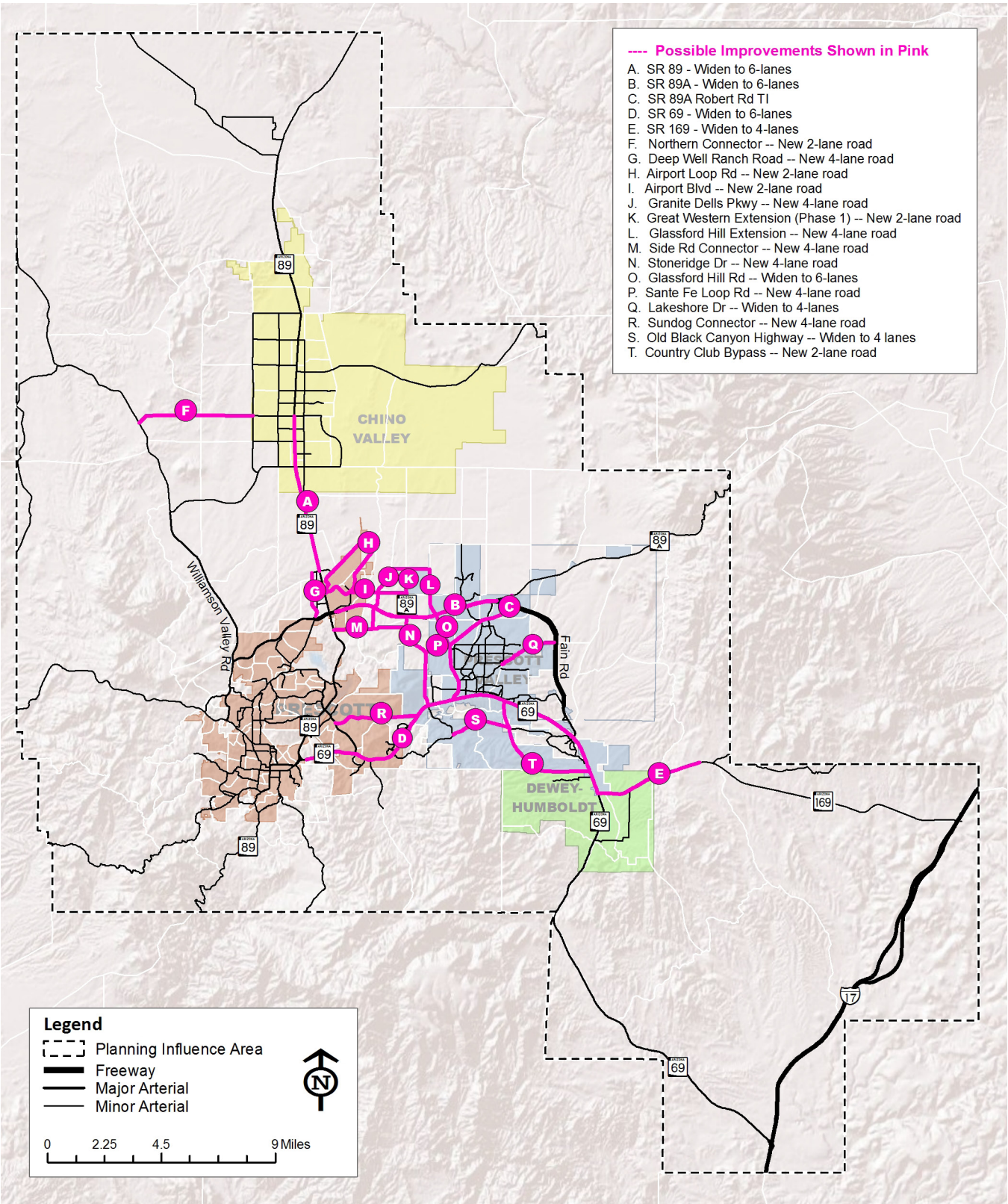
1. Use the latest 2010 Census data to extend the existing 2030 travel forecasts ten years to 2040.
2. Use the same data and forecasts to develop interim 2025 travel forecasts.

The future travel demand estimates were then overlaid on a "No-Build" traffic network to determine if only funded projects in the current pipeline are built, what transportation needs and deficiencies will remain in 2025? In 2040? With assistance from knowledgeable central Yavapai area stakeholders, the technical team assembled and then evaluated competing network improvement alternatives. Each alternative solution was designed to fit together seamlessly, both geographically and over the lifetime of the plan. The recommended 2040 network, presented at the second public meeting, includes the following elements, as shown in "Recommended 2040 Network and Facilities:"

- Widen portions of major regional highways, including SR 89A, SR 69, SR 89, and SR 169
- Widen portions of regional arterials (for example, Glassford Hill Road and Old Black Canyon Highway) to improve community connectivity
- Add new major arterials (for example, Sundog Connector, Northern Connector, Stoneridge Drive) to improve regional connectivity
- Add new facilities to provide improved access to air travel (Airport Boulevard and Airport Loop Road)
- Add new facilities to provide access to growing residential and commercial centers (for example, Granite Dells Parkway and Phase 1 of Great Western Extension)

AECOM

Recommended 2040 Network and Facilities



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Number	Comment Date	Name	Comment
1	4/6/2015	Doris Lake	Re hywy 69 &89 expansion it is criticalto include permanent wildllife corridorsand crossing structures at key locations if our local pronghorn and other species are to survive I support wildlife corridors and highway under and overpasses.It has been highly successful in Florida and other states.Please consider this carefully.Thank You....Doris Lake
2	4/6/2015	Williamson Valley Community Organization	The decrease in the population estiamte for the County Area of 158,041 is noted
3			The elimination of Williamson Valley Road as a proposed 4-lane Major Arterial is strongly supported
4			The inclusion of a proposed Northern Connector is strongly supported and coincides with recommendations from WVCO and its predecessor organizations
5			The proposal for the Great Western Extension is strongly supported
6	4/6/2015	Caleb Kulfan	That said, I hope that your plan will include under- or over-passes to serve as wildlife corridors. One of the greatest parts about Arizona is our open land and wildlife, both as sources of recreation and hunting and for their own sake. A six-lane road will provide a difficult barrier to a number of species, especially pronghorn, big horned sheep, etc.
7	4/6/2015	J.D. Greenberg	Section 5.3 of the final plan is a great start for addressing the conservation of wildlife in central Yavapai County. While I am pleased that much attention is given to our beloved Pronghorn, we need to include mitigation for other wildlife also. Deer, badgers and porcupines as well as many other species are dying on our highways. We need to reduce collisions with a broader definition of wildlife. Habitat connectivity is a key issue for the conservation of our local wildlife. It is difficult to state how wide these connective corridors must be to be effective. It depends upon the situation. However, the longer the corridor the wider it must be in order to avoid a "tunnel effect." This is why it is critical to bring AGFD experts into the early planning process to evaluate each setting. Basically, the wider the corridors, the better it is for wildlife, but setting hard numbers can be a mistake. The specifics in each case depend upon the species, the type and characteristics of the development, and environmental factors. Fortunately, AGFD has a system developed to refine each project and identify the best placement and design of mitigation features to ensure habitat connectivity Regarding the subject of fences, the ideal approach would be for Pronghorn-friendly ADOT Game Fence specifications to be used as the default standards for right-of-way fencing, with exceptions and alternatives applied as appropriate. Modifications of existing fences, including bringing them to these Game Fence standards, could benefit Pronghorn connectivity in opportune locations where driver safety actually would be improved by encouraging Pronghorn passage in targeted areas of high visibility. However, once overpasses (or underpasses for other species) are constructed on roadways, tall, impenetrable fences must funnel wildlife to those structures. In addition to habitat connectivity for the Pronghorn, similar mitigation must apply to riparian areas as well. Riparian corridors are some of the most important corridors we have in Arizona. The species richness in these areas is usually the highest, and whenever possible these linkages should be maintained and conserved. Once they are gone, they can be lost for good. All wildlife exists because of water and their distribution is tied to it. Widespread community support has been shown for wildlife habitat connectivity and highway crossing structure mitigation. Now it is time to secure federal funds under the Transportation Re-Authorization Bill (MAP-21) to ensure these steps to conserve our local wildlife and increase motorist safety are enacted. This must be a collaborative effort with local municipalities, ADOT, AGFD and other concerned parties brought into the initial stages of land use planning, and involved in the subsequent implementation and monitoring process.
8	4/6/2015	Jim Goldstein	I support wildlife corridors and overpasses.
9	4/6/2015	Arizona Game and Fish Department	See Attachement letter & Support wildlife preservation and Crossings
10	4/6/2015	Sierra Club	See Attachement - Plan Week and incomplete on Environmental Considerations
11			See Attachement - Plan Weak on Multimodal and future alternative transportation plans.
12			See Attachement - Peavine Trail should not be shown as a future roadway, as suggested in page 22 of Executive Summary.
13	4/6/2015	Joanne Lee	It is so very important to preserve our wildlife. These beautiful animals are a tremendous part of what we love about our great State of Arizona. We can't afford to disregard this Arizona heritage by ignoring their preservation.
14	4/6/2015	Damon and Susan Lamb	My wife and I are contacting you to indicate our support for wildlife corridors and highway under and overpasses. We have seen these corridors work in Canada and hope to see them used in the United States also. Thanks for all you do.
15	4/6/2015	Linda Emmett	We totally support having with wildlife corridors and highway under and overpasses. It has worked very well in many other states. Please give the animal every chance and it will help people too.
16	4/6/2015	Joel Barnes	As a college professor with an expertise in landscape ecology and conservation biology, I want to express my strong support for the 2040 regional Network Plan to include wildlife corridor connectivity and species-appropriate overpasses and underpasses.
17	4/6/2015	Rita Carey Rubin	I was recently informed of the 2040 transportation plans for Central Yavapai County and would like to express my concerns regarding expansion of highways 89 and 69 to six lanes. My concerns include the continued fracturing of wildlife habitat, especially for the pronghorn antelope, which have suffered significant habitat loss in the last 25 years. Expanding highways takes up the land they use to graze, and also impedes their ability to migrate and find suitable forage and cover. Expanding the highways also continues to contribute to reduced air quality. We should be talking more about improving mass transportation, which will reduce highway congestion and air pollution and improve the quality of life for all. We have some of the cleanest air in the nation here, let's preserve it! Please consider making changes to the transportation plan that prioritize maintaining wildlife habitat connectivity, wildlife corridors and right-of-way and preservation of our very clean and clear air.
18	4/6/2015	Linda Sable	I strongly support wildlife corridors and highway under and over passes!!!
19	4/5/2015	Margaret McConnell	I'm originally from Alaska and we (in the Anchorage/Matsu valley area) had similar issues with wildlife--moose, in particular. Our solution was to provide underpasses where animals could safely cross roads and highways. I support wildlife corridors and other similar solutions for migratory wildlife. Thank you.
20	4/5/2015	Carol Wilson	I would like to state my support for wildlife corridors and highway under- and overpasses be included in the plan.
21	4/5/2015	Karin Gosney	I strongly urge all land-use planners, including municipalities, developers and ADOT, to utilize information collected by the Arizona Game & Fish Dept. to determine the best design and placement of mitigation features to promote habitat connectivity. Wildlife experts should be consulted early in the planning process to ensure intelligent measures are adopted for the preservation of our native species.
22	4/5/2015	Georgia Carter	Just letting you know that I support wildlife corridors and connectivity with highway over and under passes. It a huge pleasure to see the local pronghorn when driving in and out of town. That's one reason we picked Prescott to live and not a town in California!
23	4/5/2015	Tommy Thompson	I support the wildlife corridors and highway under and overpasses, and fence the right-of-ways to keep elk, deer and antelope from entering.
24	4/5/2015	L.H. Alger	As a professional geographer and engineer, and as a native of Prescott, I was pleased to see that some individuals are as concerned as me for Arizona's natural wildlife. The attempt to provide corridors for wildlife migration habits as their natural environments degrade with increasing human population is gratifying to me. I support the inclusion and development of wildlife corridors as human corridors are increase. Thank you for your work.
25	4/4/2015	Jo Ann Johnson	I support permanent wildlife corridors and wildlife crossing measures (overpasses and underpasses, as well as other other devices that provide safe migration paths for wildlife) in areas used by Pronghorn and other species to prevent loss of their habitat connectivity. Please require consideration for wildlife connectivity be given on all right-of-way fencing applications. I strongly urge all land use planners, including municipalities, developers and ADOT, to utilize information collected by the Arizona Game & Fish Dept. to determine the best design and placement of mitigation features to promote habitat connectivity.
26	4/4/2015	The Canfora Family	Our family is in total support of wildlife corridors and overpasses.
27	4/4/2015	Todd Metcalf	(2
28	4/4/2015	Nancy Vargo	I strongly support wildlife corridors and highway under and over passes!!! (2 Times)
29	4/4/2015	Allie Werhan	I strongly support wildlife corridors and highway under and over passes. Please help.
30	4/4/2015	Kelly Boryca	I support the preservation of our natural resources and wild life cooidors and overpasses.
31	4/4/2015	Sandy Hall	I would like to please include the use of wildlife corridors in any future plans for Yavapai County.
32	4/4/2015	Guy Whol	As resident of Yavapai County I would like urge you to include wildlife corridors connectivity and highway over and under passes. I am aware that construction of such passages may increase the overall cost of the construction project, and that is only one short term consideration. When planing for the future it will be important to enhence and not minimize the legacy and greatness of our county. Yavapai county is known for its vast landscapes and open spaces that host great array of wildlife species. It will be a shame that we might loose our uniqueness in the name of progress and construction of bigger and better highways.
33	4/4/2015	Nancy Miller	When considering the expansion of Highways 89 and 69 to six lanes, I support permanent wildlife corridors and wildlife crossing measures (overpasses, underpasses etc.) in areas used by Pronghorn and other species to prevent loss of their habitat connectivity. I live in Yavapai Hills and know that many animals cross Highway 69 in this area from Prescott National Forest. Many of them use the culvert near Costco to cross; others cross the highway and sometimes get killed. Having to cross the highway is a danger both to the animals and to the drivers. I want to urge support of our diversity of species such as the Pronghorn who must have access to migratory corridor connectivity or perish.

Number	Comment Date	Name	Comment
34	4/4/2015	Diane Bright	I am writing on behalf of my family and friends that join in concern for the natural resources in our area. We have watched with sadness as the pronghorn habitat has dwindled. Please make your decisions with respect for all of creation. Natural beauty is important for the well-being of all, and those with no voice deserve respect and protection. I hope our grandchildren will be able to see wildlife in it's natural state. PLEASE speak for keeping wildlife corridors, safe passageways, and places for our natural heritage to survive and thrive.
35	4/4/2015	Laura Rhoden	I support wildlife corridors and highway over- and underpasses.
36	4/4/2015	Steve Willing	Please include wildlife corridors and underpasses overpasses for highways 89 and 69 in the 2040 Regional Transportation Plan. The pronghorn herds in particular cannot survive in small segmented grazing areas when they cannot cross highways.
37	4/4/2015	Fred Leonard	Quality of life is one of the prime reasons most of us choose to live in Yavapai County. Greatly contributing to that quality of life is the presence of wildlife around us. Fragmentation of wildlife habitat by development and road construction is making it increasingly difficult for many wild creatures, including pronghorn, to survive. The 2040 Regional Transportation plan should include measures to mitigate this fragmentation. Specifically the Plan should: Include wildlife corridors and wildlife crossing measures (overpasses, underpasses etc.) in areas used by pronghorn and other species to prevent loss of their habitat connectivity. Give consideration for wildlife connectivity on all right-of-way fencing applications. Further, all land-use planners, including municipalities, developers and ADOT, should utilize information collected by the Arizona Game & Fish Dept. to determine the best design and placement of mitigation features to promote habitat connectivity. Wildlife experts should be consulted early in the planning process to ensure intelligent measures are adopted for the preservation of our native species.
38	4/4/2015	Marge Wilkins	The critters were here before us, the least we can do is let them go where they need to, to survive.
39	4/4/2015	Neil Cooperrider	I want to express my satisfaction that the 2040 plan incorporates reasonable population growth estimates, correcting the unrealistically high population estimates in earlier plans. As a result, the transportation plans in this update appear to be realistic and necessary.
40			Concerning wildlife habitat connectivity, I support permanent wildlife corridors and wildlife crossing measures (overpasses, underpasses etc.) in areas used by Pronghorn and other species. Studies by the Nature Conservancy and others show that pronghorn travel widely and are unwilling to cross highways. Overpasses in particular, are needed to allow pronghorn free movement.
41	4/4/2015	Cheryl Williams	I support corridor connectivity and wildlife under/over passes on our highways. This type of meaningful solution has already produced positive results on Hwy 260 near Payson as you know, and not only for wildlife but frequency and severity of vehicular accidents involving humans and animals. It would be wonderful to have it implemented in this busy area. Taxpayers need to realize it includes their safety as well. If presented to the public through educational involvement, I believe people will be fascinated to experience, through use of over/under pass cameras, as on Hwy 260, how animals can and do adapt to change and how change can be a positive for both humans and wildlife. It takes caring, proactive communities to consider the big picture we call the future, educating the citizens (including our young ones!) to create a positive, long term plan for all who share our environment.
42	4/4/2015	Happy Oasis	I am concerned that some of the changes for central Arizona potentially could harm our native wildlife through habitat fragmentation due to increased and expanded roads. I live in the Granite Dells and am extremely interested in preserving the remaining wildlife here. Please note my "vote" to support wildlife corridor connectivity and highway over- and under-passes.
43	4/4/2015	Steve Finucane	We are particularly concerned about environmental effects of SR 89A and SR69 Widening. We support and applaud your findings that "Future corridor improvement studies should coordinate with AGFD on locations and design of pronghorn crossing structures (i.e. wildlife underpasses, overpasses) and any other measures (i.e. funnel fencing, etc.) recommended to maintain permeability and mitigate the potential impacts of roadway improvements on pronghorn movements. It is recommended the information available from AGFD be referenced by the local jurisdictions and developers to plan future wildlife corridors as part of the development process. This will align future crossings with the preservation of future open spaces for wildlife movement." Wildlife is part of the essence of this count and needs to be preserved. Drivers don't want to hit animals. Please implement crossing structures and related meaures!
44			Drivers also don't want to hit bikes and pedestrians, so please highlight the support of traffic separation (e.g., bike lanes with adequate segregration.
45	4/3/2015	Janet Morgello	I support wildlife corridors and highway underpasses. It's very important to me and many others that wildlife is considered a priority during talks regarding highway expansion. I'm very concerned about the impact of highway expansion on our wildlife. Please do all that you can to help.
46	4/3/2015	Roy Smith	Without wildlife corridors certain migratory and wandering species will eventually die out. We have an obligation to our heritage, our children their children and grandchildren to preserve what little we have left. If we can afford new highways then surely we can afford to provide safe corridors for species like the Pronghorn.
47	4/3/2015	Udelle Stuckey	I support wildlife corridors and highway underpasses
48	4/3/2015	Karen Goldstein	I think wild animals are a treasure worth protecting and we should keep wildlife corridors open and provide animals with safe places to cross busy highways. Over or under passes whatever it takes to ensure that our future generations can enjoy seeing the wonderful wild animals we have all been lucky to see. I have noticed that I am not seeing as many Antelopes around as I did 20 years ago and that concerns me. I was around when the herd that was located by Willow Lake was surrounded by homes we did not do right by them, and now that herd is gone. We can not do anything about that now but we can protect the remaining herds, we can at least try.
49	4/3/2015	Brenda Smith	I support wildlife corridors and highway under- and overpasses. The extension and expansion of highways will significantly impact our local wildlife and riparian areas. It is important that we protect the migratory pathways of our local wildlife. I have seen these under- and overpasses in other areas and find they are aesthetically pleasing and remind drivers that wildlife is important, which the majority of people agree with and support.
50	4/3/2015	Gerald Stricklin	I'm writing to support the inclusion of wildlife crossings in your and ADOTs highway planning efforts. Wildlife on the highways is contrary to ADOTs essential charge of safe and efficient traffic flow. It's also hard on animals and vehicles when they intersect.
51	4/3/2015	Janet Grossman	I strongly support maintaining wildlife corridors and building highway under- and overpasses for animals as part of the 2040 Regional Transportation Plan and any road-building that comes from it.
52	4/3/2015	Terry Stickling	Why can't we provide highway under passes or over passes for our Wildlife here in Yavapai County. They have absolutely no way to contend with our man-made structures. Why are there no mandatory measures in these Highway Bills that include the needs of the natural world and the animals that are dependent upon it. To our own demise, we race.
53	4/3/2015	Steve and Kay Van Slyke	My wife and I, despite not having any children or grandchildren, feel it would be a shame to see the wildlife that we have around Prescott disappear from the scene.
54	4/3/2015	Katherine Grant	I support wildlife corridors and highway under- and overpasses.
55	4/3/2015	Vicki Irvine	After reading today's editorial I am joining the residents of Yavapai county to request that you design the new highway structures with our local wildlife in mind. These creatures are part of this area and as our rights to live here are respected, theirs should be too.
56	4/3/2015	Richard Yetman	I would like to affirm my ardent support for the planning and implementation of wildlife corridor crossings on the future highway 69/89 widening/expansion. Thank you!
57	4/3/2015	PATRICK TWOMEY	my family and I strongly support wildlife corridors
58	4/3/2015	Toni Kaus	Please include wildlife corridors in CYMPO"s Regional Transportation Plan. Highway over- and underpasses are critical to the survival of pronghorn and other wildlife. Please limit habitat fragmentation as much as possible. Thank you.
59	4/2/2015	Lynette Tritel	The changes for central Arizona potentially could harm our native wildlife through habitat fragmentation due to increased and expanded roads. Highways 89 and 69 are scheduled to become six lanes, which significantly will impact our local wildlife and riparian areas. The changes for central Arizona potentially could harm our native wildlife through habitat fragmentation due to increased and expanded roads.
60	4/2/2015	Dan Garcia de la Cadena	I want to take this opportunity to let you know that I support wildlife corridors and overpasses...Thanks!...Dan
61	4/2/2015	Judy Coffman	Please seriously consider including a wildlife corridor using over passes and under passes when widening any roads, especially during the highways 89 & 69 expansion in Yavapai County. In a world gone awry we need to take care of our wildlife!
62	4/2/2015	Thomas L. Slaback	The plan needs to request, through ADOT, for available Federal funding to include wildlife corridor crossings, as species appropriate, in all new and reconstruction road projects. These crossings must be species specific, as some species will not pass through tunnels but need overpass crossings, while the opposite is true for other species. The location and type of these corridor crossings may be determined by conferring with the Arizona Department of Game and Fish and the US Fish and Wildlife Service. Fencing also plays a part in wildlife movement management. Some animals will jump fencing, others must go underneath. Appropriate fencing needs to be put in place to either prohibit animal passage, thereby directing them to safe crossings, or to allow free movement through the area. Through positive reinforcement, wildlife can be taught to use these crossings.
63	4/2/2015	Dean Goehring/Prescott College Student Chapter of The Wildlife Society	Wildlife friendly overpasses and underpasses are a vital part of coexisting with wildlife in hotspots of biodiversity in the urban/nature interface. Although they [corridors] are invaluable to wildlife I am also concerned with the human aspect. Public safety is compromised when overpasses and underpasses are not wildlife friendly. They increase accident frequency and could be fatal depending on the size of the animal. The aesthetics of the place should also be considered. Would you rather see a herd of mule deer crossing overhead or see the carcasses of skunks and raccoon which is not an uncommon sight. Please consider wildlife friendly corridors for the safety of an expanding area, the aesthetics, and course the intrinsic good of preserving the Southwest's wild side.
64	4/2/2015	Connie Foss	Supportwildlife corridor connectivity and over and under passes.
65	4/1/2015	Debra Campbell Howard	I support wildlife corridor connectivity and highway over- and under-passes.
66	4/1/2015	Mark Riegner	Please consider my voice in support of developing wildlife corridors and greenway connectivities in the proposed Highway 69 and 89 expansions. The native pronghorn are a key part of the Prescott landscape, and they have already been impacted heavily by development and habitat loss. Arizona Game and Fish, after long-term study, have made a number of suggestions regarding the need for over- and underpasses in regard to wildlife migration corridors that I would urge your office to consider. Besides the pronghorn population, other species of mammals, as well as birds and reptiles, would benefit from wise planning before modifying the roadways. Our native wildlife is a local treasure and it is important for all of us to do what we can to preserve their remaining wild populations.

Number	Comment Date	Name	Comment
67	4/1/2015	Ginger Carlson	I know growth and new roads are inevitable, but I hope care will be taken to maintain wildlife corridor connectivity and highway over and under passes. I have seen much of the Pronghorn areas loose out to development in the 23 years I have been here and all there is left of the Pronghorn in those areas are street and sub division names.
68	4/1/2015	Pamela Mills Knudsen	I am extremely concerned about the proposed expansions of Highways 69 and 89 to 6 lanes. While needed for traffic, it would greatly impact the migratory pathways of local wildlife. Any decision to expand these highways must take into account the findings of the Arizona Game and Fish Department in intelligent, scientific-based corridors and highway mitigation. With any expansion there must be wildlife corridor connectivity and highway over- and under-passes. We have an obligation to protect these animals and the ease and speed of human traffic is no excuse to allow the slaughter of wildlife.
69	3/31/2015	Thomas L. Fleischner	I am writing to express my strong support for the inclusion of wildlife corridors and overpasses as the Central Yavapai Metropolitan Planning Organization proceeds with its work. As a conservation biologist (and former member of the Board of Governors of the international scientific organization, the Society for Conservation Biology), I know well how essential it is for maintaining healthy wildlife populations to provide transportation corridors for their movement. It is well documented that the fragmenting of wildlife habitat by roads is a key factor leading to the loss of biological diversity. I encourage CYMPO to include wildlife corridors and overpasses in its planning for highway development in Yavapai County.
70	3/31/2015	Dennisse A Esparza	My name is Dennisse and I am currently attending Yavapai Community College. My teacher Joanne Oellers gave us really important about the fragmentation currently affecting the Pronghorn. I am deeply concerned and would like to offer my support and anything else I can do. Please let me know how I can help, I would like to be closely engaged in this wildlife protection movement.
71	3/31/2015	gary worob/ Community Forest Trust	The Community Forest Trust is commenting on the Update for the CYMPO Regional Transportation Plan as an advocate for conservation of the forests, fields, waters and wildlife of Central Arizona and sustainable outdoor recreation opportunities among them. The CFT perceive wildlife corridors as open space where recreational options exist. In looking at the area, wildlife corridors as interconnecting open space also provide opportunities for multi-modal transportation options. Therefore to achieve this end CFT suggests the following language for Section 5.3, Environmental Considerations: In the second paragraph, insert "coordinate with AFGD in cooperation with local community groups with open space, recreation, and/or habitat preservation as their mission, to assist in locating, prioritizing and conserving open space in accordance with the local area Land Use/General Plans." Also, include the next sentence, "That these lands be considered options for conservation easements, or other legal mechanism, when CYMPO considers highway corridor planning. The CYMPO and AGFD, will collaborate with these groups to seek those measures necessary to maintain habitat permeability and recognizes the role that ecological systems hold in providing green infrastructure for storm water management, as well as compatibility of multi-modal (bicycle, walking, horseback, etc.) accesses to the highway corridor for aesthetic and recreational value.
72	3/30/2015	lmina0708	Please support wildlife corridors in overpasses and under passes along all highway improvements and new construction. I cringe every time I see road kill. I am concerned about increased carnage along the proposed construction around the Verde Valley and Sedona corridors.
73	3/29/2015	MARILYN ROMMEL	Protect our Wildlife!
74	3/29/2015	Gail Roberts	I support wildlife corridor connectivity and highway over and under passes to preserve our Northern Arizona wildlife.
75	3/29/2015	pat hunt	I support wildlife corridor connectivity and highway over- and under passes.
76	3/29/2015	jon navarro	I support wildlife corridor connectivity and highway over- and under-passes. If and when 89 and 69 are expanded
77	3/28/2015	Jan MAUCK	I see my beautiful pronghorns everyday as I drive into Prescott. They and other wildlife are one of the reasons we moved to this area. Please don't do anything that will further endanger them any more. Their welfare should be a part of any regional major transportation plan. Incorporate over/under passes for them in any future plans
78	3/28/2015	Dan and Karen Brunken	We support wildlife corridor connectivity and highway over- and under-passes for the Yavapai County, Prescott and Prescott Valley area.
79	3/28/2015	Diane Young	In consideration of the long term highway expansion program, please be sure to consider the need for wildlife corridor connectivity including highway over and under passes for the wildlife.
80	3/27/2015	Dusty & Dee Spitler	Wr support WildlifrCorridor connectivity... ... and highway over and under passes.
81	3/27/2015	Barbara Weingard	I am concerned about the migratory pathways of our local wildlife and support wildlife corridor connectivity and highway over-and under passes.
82	3/25/2015	Denise Nicklaus	I support wildlife corridors and overpasses.
83	3/26/2015	Carl Brown	I think it is important that the Plan include Wildlife Corridors and overpasses. Part of what I love about our area is our environment. It is important that in the long run we allow such corridors in order to maintain the wildlife as our communities continue grow in human numbers. A balance of human and wildlife needs should be maintained!!
84	3/26/2015	Christine Broiles	In regards to the 2040 Regional Transportation Plan, I want to express my support, and belief, in wildlife corridors and overpasses.
85	3/25/2015	Susan Drown	I understand that the CYMPO is looking for input for planning on Hgwys 89 and 69 in the Prescott area. I completely support including wildlife corridors, including overpasses for certain species like Pronghorn, in the planning. Please do not forget that a healthy environment for Arizona's wildlife means the very best long-term economic result for the human community in this region. It's a sustainable solution that will attract the wisest human development, in my opinion.
86	3/25/2015	Dr. Layne Longfellow	One of the saddest aspects of progress is to watch decision-makers shape a future that disinherits the qualities that originally made their jurisdiction desirable. The most stark example, of course, is Los Angeles, originally named Ciudad de Los Angeles - City of The Angels. Few would see it as that now. Yavapai County attracts tourists and residents precisely because of its natural attributes - terrain and wildlife. We must not lose those qualities that define our uniqueness.
87	3/25/2015	Denise Nicklaus	I support wildlife corridors and overpasses.
88	3/25/2015	Sharon Seymour	I am writing to express my strong support for permanent wildlife corridors and overpasses as part of the road expansion in Central Yavapai County outlined in the 2040 plan. Clearly, our area will continue to grow; let's preserve and protect the resources that make this part of Arizona so appealing.
89	3/25/2015	Glenn J Gooding	I support wildlife corridors and overpasses
90	3/25/2015	Chelly Herren	I support wildlife corridors and overpasses in Yavapai County
91	3/25/2015	srcordova123@cableone.net	I support wildlife corridors and overpasses.
92	3/25/2015	Cheryl Berry	I vehemently hope that wild life connectivity and species appropriate over/underpasses will be required in the expansion plans for Hwy 89 and 69!
93	3/24/2015	Laurel Freeman	I understand planning is going on now regarding future transportation routes. Please bear in mind as this is done the needs of wildlife corridors and some connectivity to allow our antelope and other important members of our community to continue sharing this lovely county with us. Appropriate highway overpasses or underpasses to allow these creatures to continue to live here is an important investment in our future. I work in mental health, and more and more every day is being understood regarding the connection between mental illness and disconnecting from our fellow creatures so please work to make the improvements real improvements for all of us.
94	3/24/2015	Melvin and Cheryl Hill	We feel strongly that we need to support wildlife corridor connectivity and species-appropriate highway overpasses and underpasses. We the needs of wildlife should be considered in any future transportation plan. Thank you for your consideration in this matter.
95	3/24/2015	Gerry Garvey	I support wildlife corridors and overpasses please support this effort to save our wild life.
96	3/24/2015	david m solomon	I give my voice in support of the necessary migratory "corridors" needed in the Yavapai area to help preserve the native wildlife, and riparian, areas as the state looks towards the future expansions of highways 89 & 69.
97	3/24/2015	Anna Fallon	I support highway bridges for wildlife
98	3/24/2015	Lisa Zander	I am writing to advocate for the inclusion of wildlife appropriate corridors in the 2040 Regional Transportation Plan. Plenty of research and practical plans exist to implement wildlife-friendly strategies, you can look to our very own Arizona Game and Fish for recommendations and guidance.
99	3/23/2015	Joy Doherty	Please know that me and my family are in total support of making sure our wildlife is taken care of during the construction of the proposed highways. We must speak for the animals that don't have a voice. We are asking that you act responsibly and make certain there are permanent wildlife corridors and overpasses to protect our precious animal friends.
100	3/23/2015	Dave Irvine	As you are probably discovering, the residents of Yavapai County place a high value on our natural heritage. Most of us live here because we want to be closer to the natural world and want to leave space for it to thrive . While planning for future transportation needs is also important to leave space for wildlife corridors and possible over/under passes so that habitat is not too fragmented. Pronghorn and other species are what gives this region our unique character. Please listen to AZ Game & Fish recommendations to plan in these needed additions to ensure that wildlife will remain intact. A high quality of life is more than having a six lane highway!
101	3/23/2015	Doris Cellarius	I support wildlife corridor connectivity and species appropriate highway overpasses or underpasses.
102	3/23/2015	Felipe Guerrero	I am writing you in regard to the transportation development plans for Yavapai County and my concern for the wildlife that inhabit the region. I and many others feel it is very important to incorporate input from a variety of agencies and organizations that can provide insight into the potential impact this will have on wildlife.
103	3/23/2015	Suzanne Yoder	I urge you to plan as many wildlife corridors and overpasses as possible in future road expansions for 89 and 69 and other other developments. Our pronghorn and riparian areas need to have as many undisturbed connectors and connections as possible.
104	3/23/2015	Cynthia Jones	I support wildlife corridors and overpasses.
105	3/22/2015	Joan Dukes	I have been a Yavapai country resident since 1971. My deceased husband and I moved here because we loved the beauty of the surrounding natural world—the diversity of ecosystem all within close proximity. I definitely support whatever can be done to preserve our beautiful wildlife and their habitats as development ensues. I support wildlife corridors and overpasses.
106	3/21/2015	Dr. J. L. Preston	Many of us moved to Prescott for the open spaces, trails, and the various species of wildlife. I speak not only for myself but for many others when I respectfully request that you honor the wonderful gift we have of various and abundant wildlife by making sure there are wildlife corridors and overpasses to protect animals and motorists. Tourists come here from crowded cities and antiseptic suburban surroundings for the beauty of the open spaces and the chance to see for example, antelopes grazing in the fields.

Number	Comment Date	Name	Comment
107	3/20/2015	George T. Flood Jeannie M. Flood	Support wildlife corridors and overpasses in Yavapai County, Arizona. We need to preserve our natural resources.
108	3/19/2015	Bill Arnold	Yes, I support wildlife and connectivity!!
109	3/19/2015	Johanna Hawley	I support the Wildlife
110	3/19/2015	Walt Anderson	Though the projected growth figures have been moved downward, I hope the revised estimates are still too high. I worry seriously about the impacts on groundwater (and surface water that depends on groundwater--like the Upper Verde River) and on our quality of life if we grow beyond our means. The thought of our landscape being further fractured by major highways is distasteful to me at best. There is considerable evidence (as was reported in the 3/2/15 issue of High Country News) that more roads tends to lead to more traffic congestion, not less. This seems counter-intuitive, but it has been shown multiple times. I would much prefer us to look at creative alternatives to expanding the numbers of cars running here and there.
111			Nevertheless, whether the roads are expanded at the projected rate or not, it is imperative that we recognize the value of our currently healthy Pronghorn herds. There is already fragmentation of their habitat and consequent risks to inbreeding and other population problems. Pronghorns are open-country animals, and underpasses simply don't work for them; overpasses are essential. This is indeed the prime time for us to invest in strategically placed overpasses to protect the viability of our Pronghorn subpopulations. Please add my voice as strong support for this wise investment in our quality-of-life amenities--our wildlife populations.
112	3/18/2015		The Sundog connector would suitable for the beyond 2040 plan.
113		davd seelye	highway 69 widening and synchronization of the traffic lights from Prescott Parkway to Walker road. Is most important.
114	3/18/2015	Leslie Hoy	Please include corridors and overpasses for wildlife in the 2040 Regional Transportation Plan. Thank you!
115	3/18/2015	Sharon Arnold	Please put me down as a supporter of actions that will mitigate impact on wildlife, grasslands, woodlands and riparian areas affected by expanded highways in Yavapai County.
116	3/17/2015	Marleen Luckman	I want to express my concern about including wildlife corridors in future planning for transportation. Wildlife is one of the state's most important and valued assets. Please consider overpasses and wildlife corridors when plans are being made. The wildlife and open spaces are reasons my family moved here in the 1960's, and we have already lost so much due to development. There are ways to balance the needs of transportation and maintain our wildlife populations. Please give this topic a high priority in planning.
117	3/12/2015	Norm Davis	Page 22- Draft Project Implementation Schedule- Fain Road to SR 169 Connector A.) A theme left over from the 2006 RTP was what if an accident occurs on SR 69 between Fain Road/Prescott Country Club intersection and SR 169? There is no reasonable alternative detour route to move current traffic volume of 20-30 thousand cars/day. Couple this with the 2025 no build scenario that shows level of service F & E for this segment, an accident would delay for 1 or more hours reasonable traffic access for 100,000 residents to the tri-city area for trips to/from the greater Phoenix metro area. This same condition is currently experienced on SR 89 between Prescott Airport and Chino Valley for higher accident incidence with its current failing level of service and 1 hour traffic delay detours even with a relatively close alternate route via Pioneer Parkway/Williamson Valley/Outer Loop. Good recommendation to address this concern sooner that Beyond 2040 as currently shown for Fain Road to SR 169 Connector in Draft Project Implementation Schedule (mimic somewhat the Great Western Extension project timeline) is to add "Design new 2-lane facility" in FY 2020-2025 and "Construct Phase I as new 2-lane facility" and "Study and construct final phases of access controlled facility" in Beyond 2025. This project timeline would provide an alternate route for reasonable alternate access if accident occurs on SR 69 between Fain Road/Prescott Country Club intersection and SR 169.
118	3/3/2015	Joyce Mackin	See Attached - All Wildlife and too many unneccessary new roadways that causes wildlife fragmentation.
119	3/24/2015	Dale Ellis	I support the wildlife corridor connectivity and species appropriate highway overpasses or underpasses!
120			I do not support Wildlife Crossings

Appendix B

Model Validation

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040

Transportation Network Alternatives Development and Evaluation Revised for Comments

October 2014

Prepared by:

AECOM

Central Yavapai Metropolitan Planning Organization
Transportation Plan Update 2040

Transportation Network Alternatives Development and Evaluation
October 2014

Member Agencies:
City of Prescott
Town of Chino Valley
Town of Dewey-Humboldt
Town of Prescott Valley
Yavapai County
Arizona Department of Transportation

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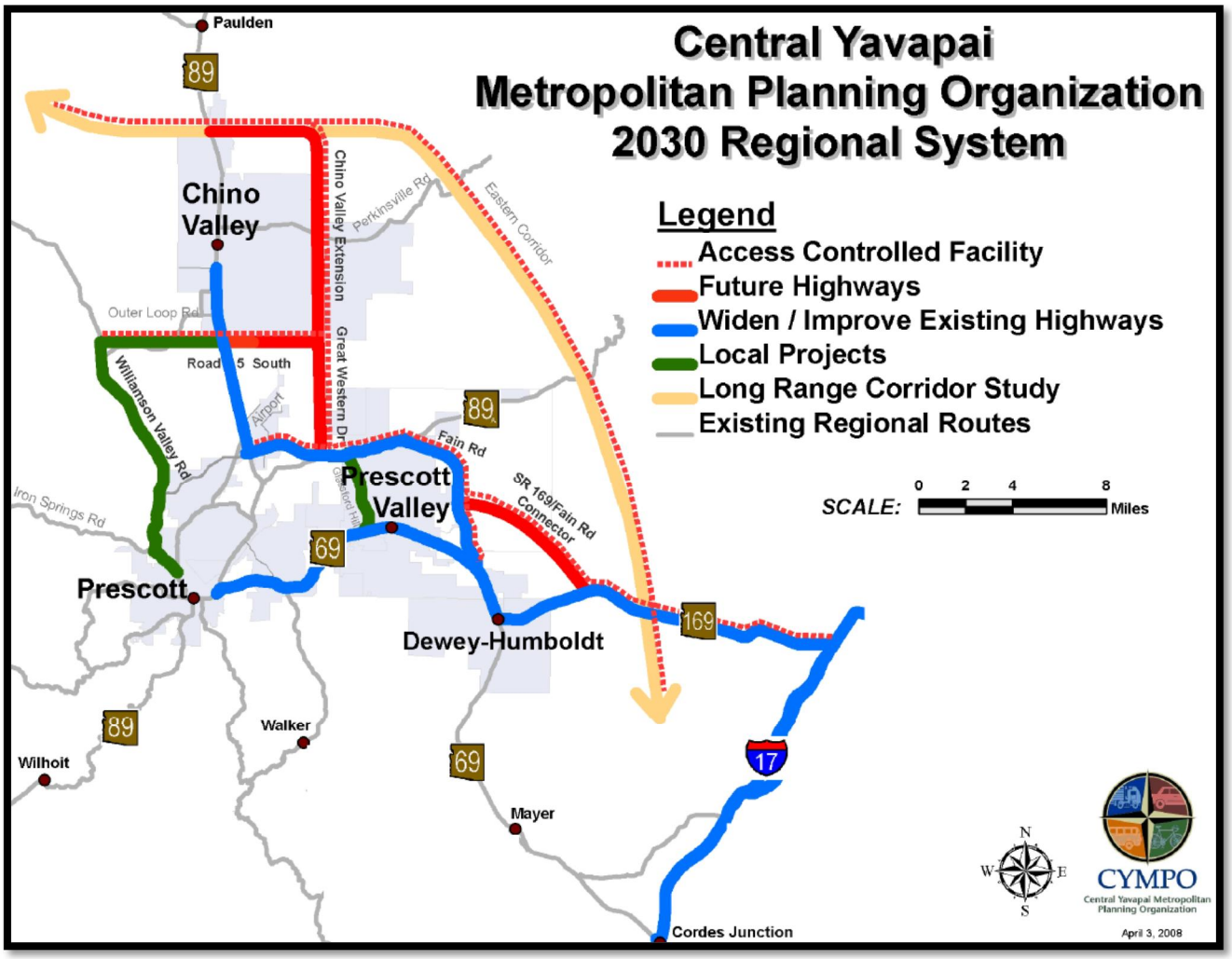
1.0 Introduction

This working paper presents the alternatives developed for the future transportation network in CYMPO, their evaluation criteria, and evaluation results. The results of the analysis of future conditions with the "No-Build" alternative (described in working paper #6 – Future Conditions) reveal that several areas of the network will suffer from congestion due to increasing traffic demand in the region. The alternatives selected for review and described herein were selected to improve the health of the transportation network and the mobility of CYMPO residents.

2.0 Transportation Network Alternatives

The goal of the transportation plan presented herein is to provide CYMPO and its member agencies a guide for programming transportation improvement projects that will most efficiently enhance the regional connectivity of the network and support the circulation goals identified by member agencies.

The 2006 CYMPO RTP presented the 2030 planned regional system depicted in Figure 1. This system includes widening several of the major state highways in the region, widening several more local routes, constructing new highways for improved connectivity, and at least one long-range study for new highway corridors.



Source: Yavapai County Comprehensive Plan (9/17/2012)

Figure 1 – CYMPO 2030 Regional Planned Transportation System

For each CYMPO member agency, a summary of transportation goals and description of future network improvement projects is provided.

2.1 Yavapai County Plan

The *Yavapai County Comprehensive Plan* (9/17/2012) identifies three major transportation element goals. These are: fully integrated coordination between land use planning and transportation planning, encouragement of multi-modal transportation opportunities (including transit), and ensured consistency between transportation and land use through a thorough review and understanding of land use zoning policy. In summary, Yavapai County transportation goals are centered on the cohesion of transportation and land use as well as the promotion of multi-modal options for users.

The Yavapai County Comprehensive Plan (9/17/2012) lists the following major planned regional projects in the Central Yavapai area.

- Great Western/Glassford Hill Extension, which will provide connectivity north of Prescott Valley and southeast of Chino Valley. The corridor alignment connects SR 89A at Great Western Road to SR 89 approximately one mile south of Outer Loop Road.
- I-17 to SR 169 connector, a continuation of the previously studied SR 169 to Fain Road connector. The new facility would provide a direct connection between I-17 and SR 89A and would alleviate future congestion on SR 69.
- SR 89 to be widened between Chino Valley and Prescott.
- Intersection improvements at the intersections of SR 89 and Road 4 North and SR 89 and Perkinsville Road.
- SR 89 between Road 5 South in Chino Valley and the Prescott Airport would be widened to four lanes.
- SR 69 construction as a six-lane access-controlled roadway, identified as a long-range project.
- Widening of I-17 to six lanes from Cordes Junction to SR 169 as a long-range project.

2.2 City of Prescott Plan

The *Draft 2014 City of Prescott General Plan* identifies transportation goals for each of three types of facilities separately: arterial streets, collector streets, and local streets. Goals for arterial roadways include providing adequate level of service (LOS) and options for alternative mode usage during peak hours. The goals for collector roadways include providing safe access to community amenities (such as schools and libraries), connecting neighborhoods to each other, and connecting neighborhoods to commercial centers. The goals for local streets include providing efficient access to emergency response vehicles, and enhancing the environment and livability of neighborhoods. The general plan also includes transportation goals revolving around enhanced transportation safety, efficient management of the existing system, and the increased integration of bike, pedestrian, transit, and air travel modes.
The *Draft 2014 City of Prescott General Plan* does not provide a detailed list of future transportation projects, instead referring to the plan developed in the CYMPO RTP.

2.3 Town of Prescott Valley Plan

The Town of Prescott Valley General Plan 2025 identifies a guiding principle for its circulation element that emphasizes traffic safety and efficiency, pedestrian safety, economic development, and alternative modes of travel. The plan also affirms a second guiding principle that establishes the need to administratively adopt transportation recommendations made by CYMPO. The general plan adopts goals for its circulation element to 1) encourage alternative modes of travel, including transit, 2) incorporate a comprehensive public trails system to increase connectivity to parks and other community amenities, 3) adopt a street improvement program that draws maximum capacity from existing infrastructure, 4) increase connectivity to the local airport in order to support air travel, and 5) adopt relevant transportation projects approved by CYMPO in the Prescott Valley plans.

The *General Plan* lists several improvement projects for the 2025 future build-out network. With the exception of roadways requiring the specified improvements, the Prescott Valley system was anticipated to operate at LOS E or better in 2025. The projects listed would improve the roadways through capacity augmentations, including (but not limited to) signal timing improvements, additional intersection lanes, auxiliary lanes, and intersection grade separations. The projects identified are listed below:

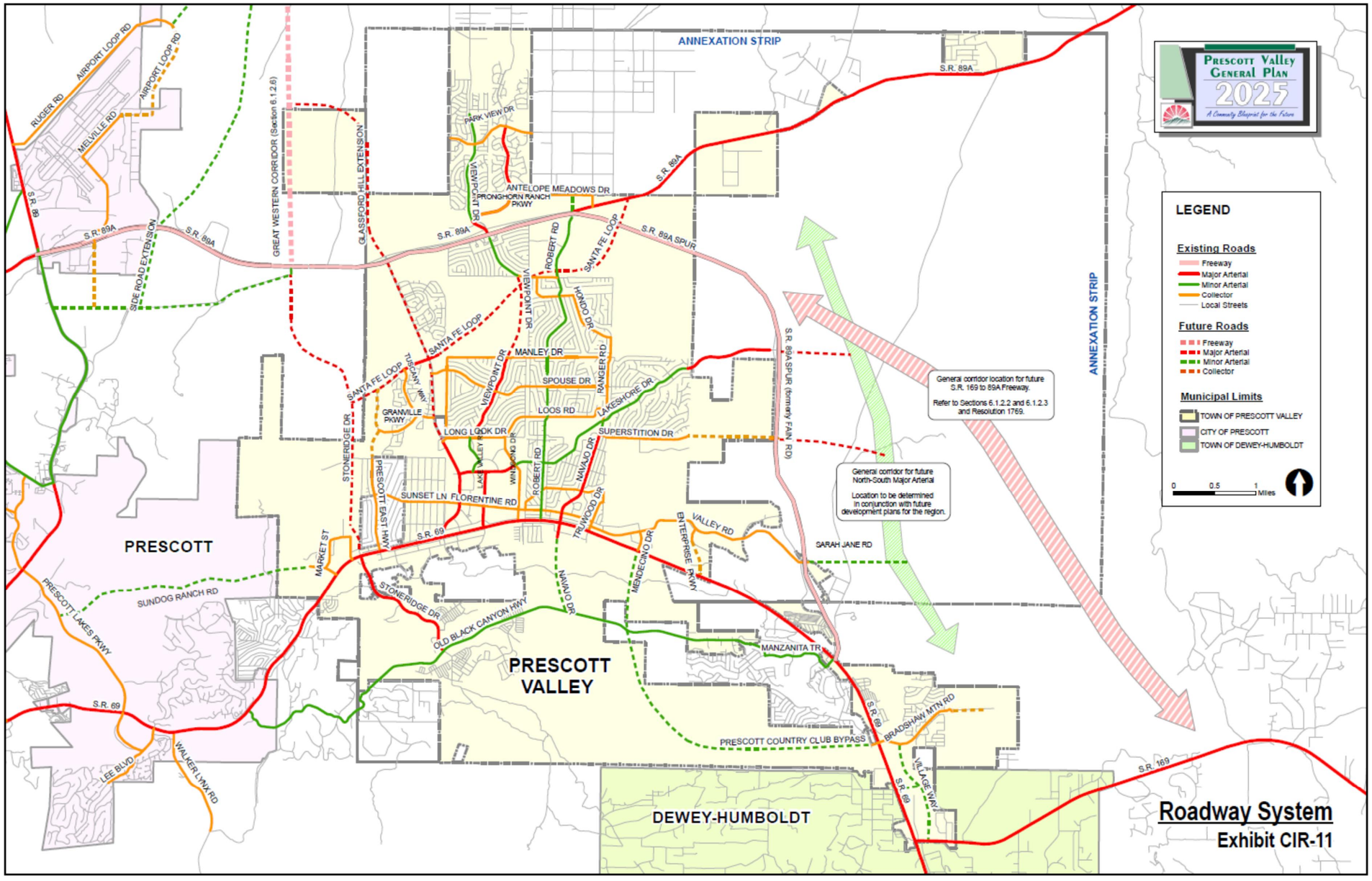
- SR 69, Sundog Ranch Road to Prescott East Highway
- Fain Road, SR 69 to southern terminus
- Lakeshore Drive, Navajo Drive to Badger Road
- Robert Road, Florentine Road to Lakeshore Drive
- Robert Road, SR 89 to Pronghorn Parkway

The *General Plan* (Figure 2) summarizes the anticipated 2025 transportation system.

2.4 Town of Chino Valley

The *Town of Chino Valley General Plan 2013-2014* (Review Draft) establishes the objective to increase employment opportunities and establish community core areas without sacrificing the small-town, rural atmosphere. The plan provides one overarching goal for the transportation system and several supporting strategies. The circulation/transportation goal of the community is to encourage system improvements that incorporate alternative transportation modes. The town identifies six targeted strategies for achieving this goal. These are: 1) encouraging new connecting local roadways, 2) supporting regional goals of widening existing and planning for future major regional connectors, 3) promoting Yavapai Regional Transit Inc. (YRTI), 4) encouraging the use of all alternative transportation modes, including transit, paratransit, and non-motorized, 5) considering “green” practices when constructing new streets, and 6) adopting a five-year CIP.

Figure 2 – Town of Plan 2025 Map



Source: Town of Prescott Valley General Plan

Prescott Valley General Transportation System

The Draft *General Plan* identifies several projects for future development that aim to advance the community's circulation/transportation goal. These are projects that the City plans either to budget itself or promote in cooperation with other entities. The projects listed are as follows:

- Westside Road at Center Street alignment, Williamson Valley Road to Reed Road
- Road improvements for several local corridors, including Reed Road north to Road 2N, Center Street to SR 89, and others
- Eastside Loop Road Center Street to Peavine Trail to Road 4 South
- Planning for the installation of bus stop features, such as safe seating and shelters
- Complete an origin-destination study to determine non-motorized transportation needs

In addition to these roadway construction or planning projects, the Draft General Plan identifies specific strategies for regional cooperation and incorporation of "green" roadway construction practices in all new street construction.

2.5 Town of Dewey Humboldt

The Town of Dewey-Humboldt does not as yet have a general plan, but a Planning Assistance for Rural Areas (PARA) study that outlines the transportation needs of the community was completed in May, 2012. These identified needs include improvements to the current system (paving some unpaved roads, signal coordination, incorporation of ADA-compliant rehabilitation in the community core, and rehabilitation of failing pavements), access management along major regional routes for improved safety, federal reclassification of several roadway segments, and improved circulation through the addition of some local streets and at least one river crossing. (ADA = Americans with Disabilities Act.)

The PARA study identifies two regional improvement projects that could affect circulation in the Dewey-Humboldt area: the addition of the Country Club Bypass road and the addition of a north-south roadway through the developments near the northeast corner of the SR 69 and SR 169 intersection (both projects would be in the Town of Prescott Valley but would have an effect on Dewey Humboldt). In the long-range time frame, the addition of a highway corridor ultimately connecting I-17 to Fain Road would affect conditions in the area as well. The study also identifies several small local street improvements that should be implemented to improve mobility and connectivity in the community. Several of the network improvement suggestions made in the study are recommended for further study and development by the town.

3.0 Description of Alternatives

Four alternative transportation networks for the 2040 horizon design year were developed by the Technical Advisory Committee (TAC). These alternatives were drawn from a list of planned projects in the CYMPO planning area, which was based in turn upon the 2011 RTP update, Yavapai County plans, and city and town CIPs and general plans, as described in Section 2. Each alternative represents a different combination of improvements to existing roadways and/or new facilities, assembled to evaluate the combined projects' effect on congestion in the region. Table 1 shows all improvement projects considered, their inclusion in previous planning documents, and the responsible jurisdictions.

Table 1 – Comprehensive List of Planned Projects

Project	Jurisdiction	Included in 2006 RTP	Included in 2011 RTP Update	Included in Additional Planning Documents
SR 89: Center St to Deep Well Ranch Rd	ADOT	Yes	Yes	-
Deep Well Ranch Road	Prescott	No	No	Yes
Airport Loop Road	Prescott	Yes	Yes	Yes
SR 69: SR 89 to SR 169	ADOT	Yes	Yes	Yes
SR 169: SR 69 to I-17	ADOT	Yes	Yes	-
SR 89A: SR 89 to Robert Rd	ADOT	Yes	Yes	Yes
SR 89A-Robert Road Traffic Interchange	ADOT/Prescott Valley	Yes	Yes	Yes
SR 89A: Fain Rd to Milepost 329	ADOT	Yes	Yes	-
Fain Road to SR 169 Connector	ADOT	Yes	Yes	Yes
SR 169 to I-17 Connector	ADOT	No	Yes	Yes
Great Western Extension	ADOT	Yes	Yes	Yes
Chino Valley Extension	ADOT	Yes	Yes	Yes
Northern Connector	Yavapai County	Yes	Yes	Yes
I-17: Cordes Junction to SR 169	ADOT	Yes	Yes	-
Sundog Connector	Prescott	Yes	Yes	Yes
Glassford Hill Rd: SR 69 to SR 89A	Prescott Valley	Yes	Yes	Yes
Side Road Connector	Prescott	Yes	Yes	Yes
Outer Loop Rd: SR 89 to Williamson Valley Rd	Chino Valley	Yes	Yes	-
Glassford Hill Extension	Prescott Valley	Yes	Yes	Yes
Old Black Canyon Highway: Country Club Bypass to Stoneridge	Prescott Valley	Yes	Yes	-
Country Club Bypass	Prescott Valley	Yes	Yes	Yes

Project	Jurisdiction	Included in 2006 RTP	Included in 2011 RTP Update	Included in Additional Planning Documents
Sante Fe Loop Rd	Prescott Valley	Yes	Yes	Yes
Stoneridge Drive	Prescott Valley	Yes	Yes	Yes
Granite Dells Pkwy: SR 89A to new Great Western	Prescott	Yes	Yes	Yes
Navajo Drive: SR 69 to Old Black Canyon	Prescott Valley	Yes	Yes	Yes
Superstition Drive Extension		No	No	Yes
SR 89: Milepost 314 to SR 89A	ADOT	Yes	No	-
SR 89: Deep Well Ranch to SR 89A	ADOT	Yes	No	-
Eastern Corridor		Yes	No	-
SR 69 Bypass Corridor	ADOT	Yes	No	-

Four alternatives were developed for the 2040 horizon year transportation network. The TAC considered each project in the list of planned projects and evaluated whether that project would be feasible by the 2040 horizon year. There were some projects that – based on their size, the needs of the community, and/or the limited funding available – were deferred until after 2040 and not included in any alternative. Table 2 identifies each project in the list of planned projects that was deemed feasible by 2040, describes each, and indicates its inclusion in each of the four alternative future networks. Alternative 4 was developed to include all the projects in the list of planned projects for the region that were deemed feasible by 2040.

Table 2 – List of Projects Considered for 2040 with Inclusion Status in Each Alternative

Project	Project Description	Included in Alternatives			
		1	2	3	4
SR 89	Widen to 6 lanes from Center Street to Deep Well Ranch Road	X	X	X	X
Deep Well Ranch Road	New 4-lane facility connecting SR 89 to Pioneer Parkway	X	X	X	X
Airport Loop Rd	New 2-lane facility providing full access to the regional airport	X	X	X	X
SR 69	Widen to 6 lanes from SR 89 to SR 169	X	X		X
SR 169	Widen to 4 lanes from SR 69 to Old Cherry Rd	X	X	X	X
SR 89A	Widen to 6 lanes from SR 89 to Robert Rd	X	X	X	X
SR 89A / Robert Rd Traffic Interchange (TI)	New TI east of Robert Rd per Alternative 1 in the I-17 to Fain Rd Study	X	X	X	X
Fain Rd to SR 169 Connector	New 4-lane facility connecting Fain Road directly to SR 169		X	X	X
SR 169 to I-17 Connector	New 4-lane facility extending the Fain Rd to SR 169 Connector to the southeast, completing the connection to I-17			X	X
Great Western Extension	New 4-lane facility connecting SR 89A to SR 89, circumventing the airport area		X	X	X
Chino Valley Extension	New 4-lane facility connecting the future Great Western Extension to SR 89 north of Chino Valley			X	X
Northern Connector	New 2-lane facility extending Center Street in Chino Valley west to Williamson Valley Road	X	X	X	X
Sundog Connector	New 4-lane facility providing an east/west connection between Prescott Lakes Parkway and SR 69		X	X	X
Glassford Hill Rd	Widen to 6 lanes from SR 69 to SR 89A	X	X	X	X
Side Rd Connector	New 4-lane facility connecting SR 89 to the future Great Western Extension south of SR 89A	X	X	X	X
Glassford Hill Extension	New 4-lane facility extending Glassford Hill Road north to connect with the future Great Western Extension	X	X	X	X
Old Black Canyon Highway	Widen to 4 lanes from Country Club Bypass to Stoneridge			X	X
Country Club Bypass	New 2-lane facility connecting SR 69 in Prescott Valley to SR 69 north of Dewey-Humboldt while circumventing the Country Club			X	X
Sante Fe Loop Rd	New 4-lane facility connecting future Stoneridge Drive to Fain Road through Prescott Valley	X	X	X	X

Project	Project Description	Included in Alternatives			
		1	2	3	4
Stoneridge Dr	New 4-lane facility connecting SR 69 to the future Great Western Extension at the intersection with SR 89A	X	X	X	X
Granite Dells Parkway	New 4-lane facility from SR 89A north to new Great Western Extension	X	X	X	X
Navajo Dr	New Facility from SR 69 to Old Black Canyon Highway	X	X		X
Lakeshore Dr	Widen to 4 lanes from Fain Road to Navajo Drive	X	X	X	X

Each of the four alternatives was developed in the TransCAD modeling software and provided to ADOT to be run in the statewide model. The alternative networks and the results of the model runs for each alternative are presented below.

3.1 Alternative 1

The TAC collaboratively identified those projects (from the list of planned projects) that would be essential to traffic circulation in the future network. These projects were identified by taking into account the needs identified in the No-Build network, the planned future residential and commercial developments in the area, the ease of freight access to the region, and other factors. Alternative 1 includes only those projects that were deemed essential, the majority of which are improvements to existing roadways, with some smaller new facilities.

Figure 3 depicts the Alternative 1 2040 CYMPO network. The figure highlights the areas that will be improved under this scenario in pink. Projects include widening of major state highways (SR 89 from Deep Well Ranch to Center Street), widening of local arterials (Glassford Hill Road and Lakeshore Drive), and the addition of smaller local arterials (Stoneridge Drive and Santa Fe Loop Road). The alternative also includes the Northern Connector, a new 2-lane facility that will improve connectivity between Chino Valley, Williamson Valley, and Prescott, and the Airport Loop Road, which will enhance mobility to and from the airport.

Figure 4 displays the projected volumes and LOS anticipated under the Alternative 1 network scenario. The highest volumes in the network are projected at the following locations:

- SR 89 between Center Street (in Chino Valley) and SR 89A
- SR 89A between SR 89 and Glassford Hill Road
- SR 69 between downtown Prescott and SR 169
- Glassford Hill Road between SR 69 and SR 89A
- Willow Creek Road between Pioneer Parkway and downtown Prescott

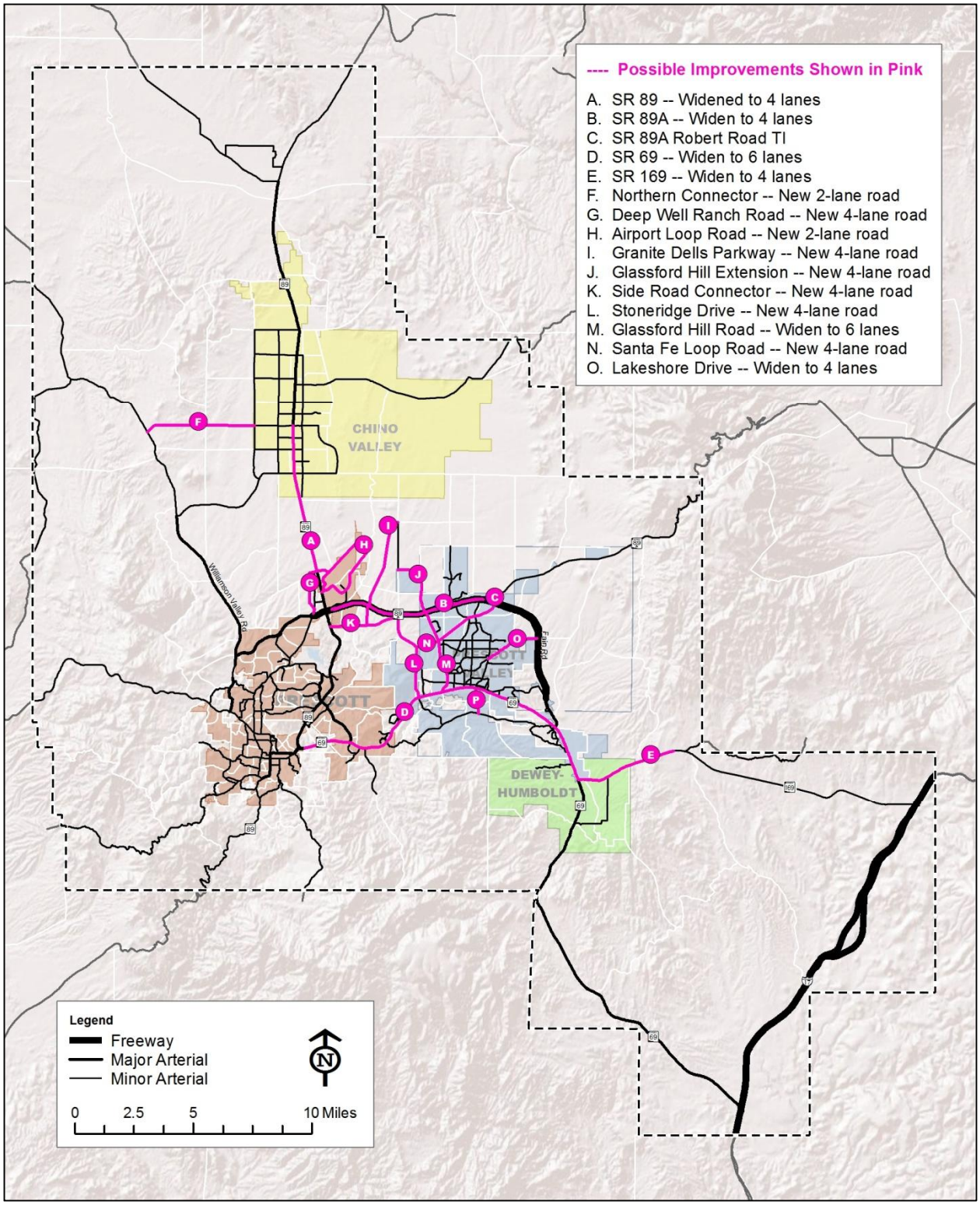


Figure 3 – Alternative 1 Regional Network

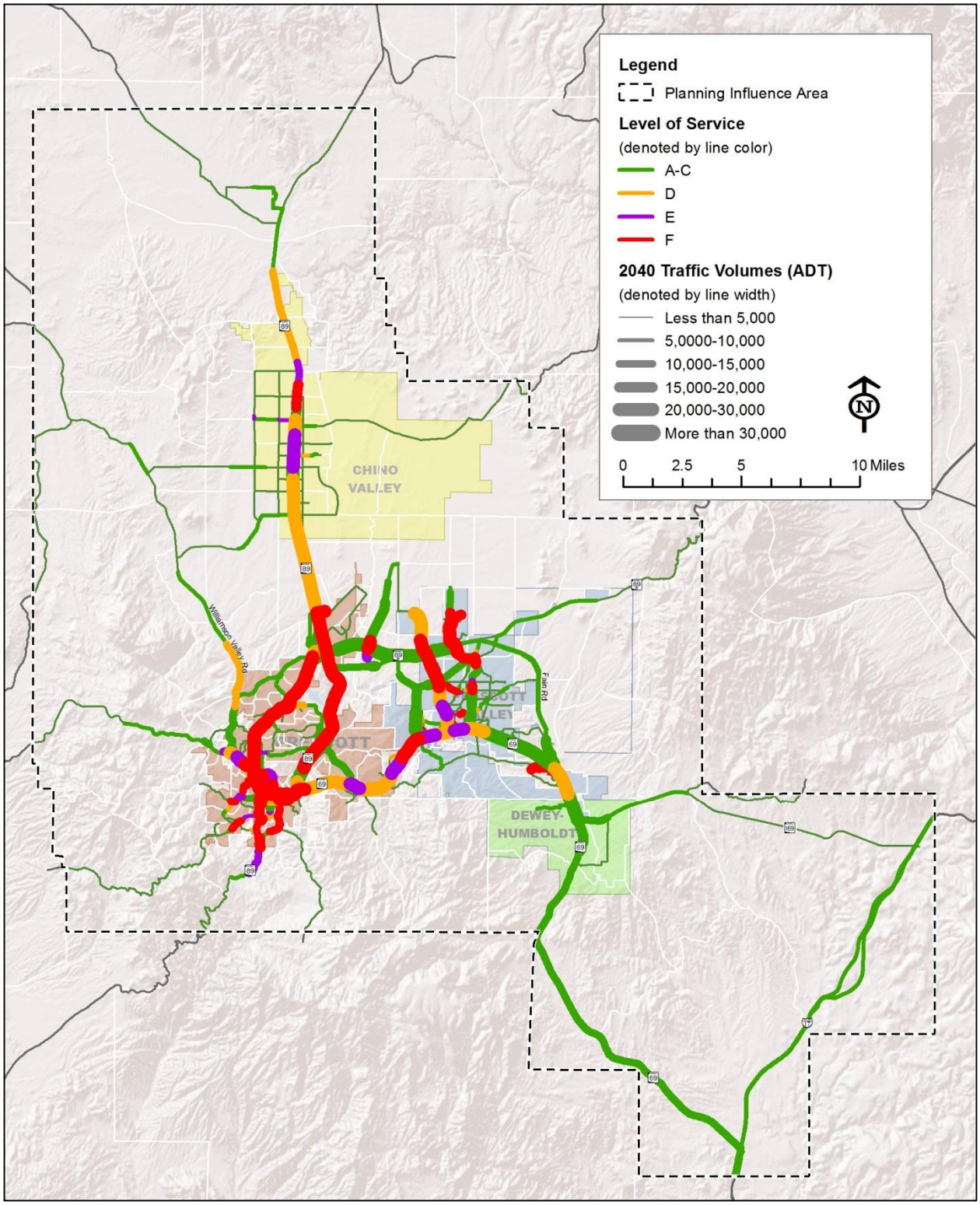


Figure 4 – Alternative 1 2040 Traffic Volumes and Levels-of-Service

These roadway segments correspond to the major regional routes in the CYMPO region. Figure 4 also indicates that the LOS of several roadways will be at level of "F," or failing. The congested segments include the following:

- SR 89 in northern Chino Valley
- Willow Creek Road through Prescott
- SR 89 between Deep Well Ranch Road and SR 69
- Manzanita Trail near the Prescott Country Club
- SR 69 west of Stoneridge Drive
- Various road segments in downtown Prescott
- Glassford Hill Road and Viewpoint Drive north of Santa Fe Loop Road
- the west-side ramps on the four traffic interchanges on SR 89A

Compared to the 2040 No-Build Network (described in working paper #6 – Future Conditions), Alternative 1 alleviates congestion on SR 89A, the majority of SR 69, SR 89 between Deep Well Ranch Road and Center Street, Williamson Valley Road, and much of Glassford Hill Road.

3.2 Alternative 2

Alternative 2 was developed to include all of the projects present in Alternative 1, plus three regional connecting roadways. This alternative was conceived to cover all of the essential circulation projects, with the addition of some new options for regional travel and improved regional connectivity. Figure 5 shows the 2040 horizon year network proposed in Alternative 2. The three additional regional roadways are the Fain Road to SR 169 Connector, the Great Western Extension, and the Sundog Connector. The Fain Road to SR 169 Connector is a controlled-access facility that represents half of a roadway that would ultimately connect I-17 to Fain Road. This ultimate I-17 to Fain connection would provide an alternate route between the Phoenix area and the Prescott area, alleviating traffic on SR 69. The Great Western Extension provides an alternate route between Prescott Valley and SR 89 north of the airport, meant to alleviate traffic on SR 89 between Road 4 South and SR 89A. The Sundog Connector will connect SR 69 to Prescott Lakes Parkway, offering connectivity to residential and commercial development in the Diamond Valley area.

Figure 6 displays the projected volumes and LOS anticipated under the Alternative 2 network scenario. The figure indicates that the roadways with the highest traffic volumes are similar to those shown in the Alternative 1 network (Figure 4). The high-volume roadways include the following:

- SR 89 between SR 89A and Center Street in Chino Valley
- Willow Creek Road through Prescott
- SR 69 between Prescott and Dewey-Humboldt
- Glassford Hill Road between SR 69 and SR 89

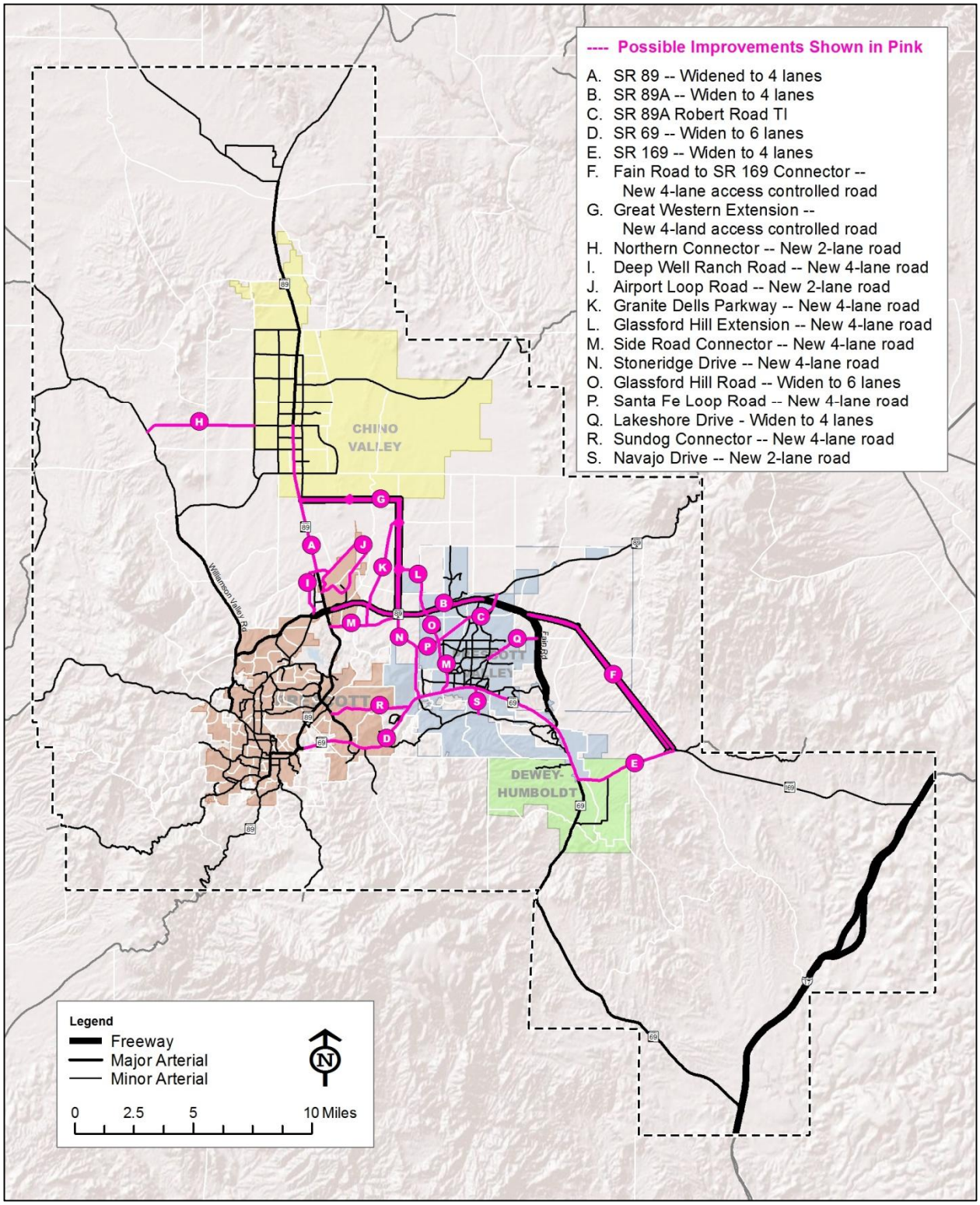


Figure 5 – Alternative 2 Regional Network

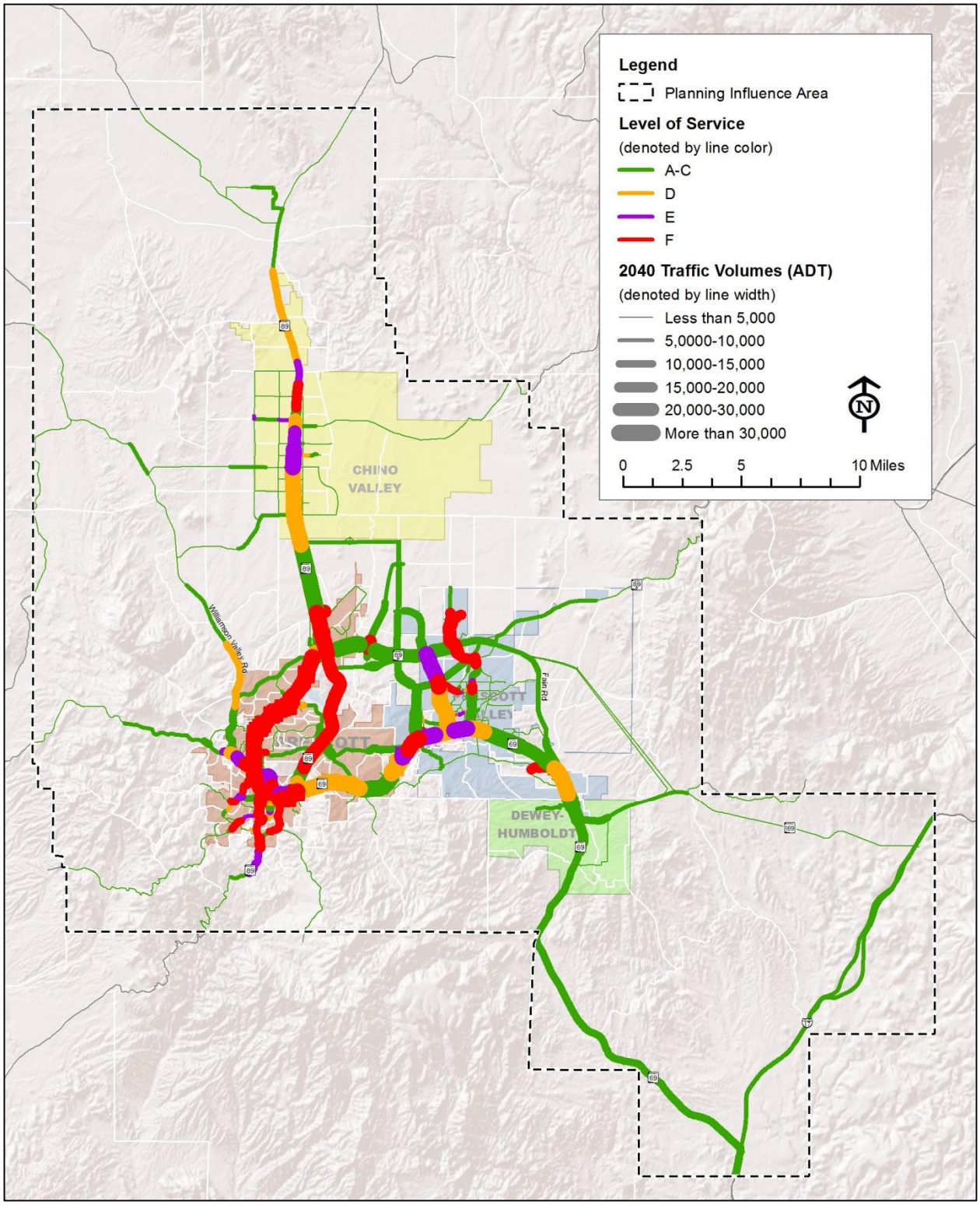


Figure 6 – Alternative 2 2040 Traffic Volumes and Levels-of-Service

Alternative 1 indicated that the highest volume on SR 89A was between SR 89 and Glassford Hill Road. However, with the addition of the Great Western Extension, Alternative 2 shows a lower volume on SR 89A between Great Western and Glassford Hill Road. The volumes on the Fain Road to SR 169 Connector are low.

Figure 6 also depicts the LOS of several roadways at LOS "F." When compared to Alternative 1, the following segments are anticipated to still operate at LOS "F" under the Alternative 2 scenario:

- Willow Creek Road through Prescott
- SR 89 between Deep Well Ranch Road and SR 69
- SR 69, Manzanita Trail near the Prescott Country Club
- SR 69 west of Stoneridge Drive
- Various road segments in downtown Prescott
- Glassford Hill Road and Viewpoint Drive north of Santa Fe Loop Road
- The west-side ramps on three of the four traffic interchanges on SR 89A

However, the congestion on Glassford Hill Road north of Santa Fe Loop Road, the Granite Dells Parkway/SR 89A traffic interchange, and SR 89 in northern Chino Valley have been reduced by this alternative.

3.3 Alternative 3

Alternative 3 was developed to include all of the projects in the list of planned projects that were identified as feasible by 2040, with the exception of SR 69 widening and the new Najavo Drive facility, which were included in Alternative 2. This alternative was developed to evaluate whether these two projects would be necessary, considering the addition of other regional circulation projects that provide capacity and connectivity to the network. The network alternative is displayed in Figure 7. The additional projects considered in Alternative 3 are the SR 169 to I-17 Connector (completing the ultimate Fain Road to I-17 connector and providing an alternate route between the Phoenix and Prescott areas) and the Chino Valley Extension (an extension of Great Western that connects Prescott Valley to SR 89 north of Chino Valley). In exchange for the SR 69 widening and Navajo Drive projects, Alternative 3 adds a Country Club Bypass facility and widening Old Black Canyon Highway between Stoneridge Drive and Country Club Bypass, with the intent of diverting some SR 69 traffic onto Old Black Canyon Highway.

Figure 8 displays the projected volumes and LOS anticipated under the Alternative 3 network scenario. The figure indicates that the traffic volume distribution did not significantly change from Alternatives 1 and 2 to Alternative 3.

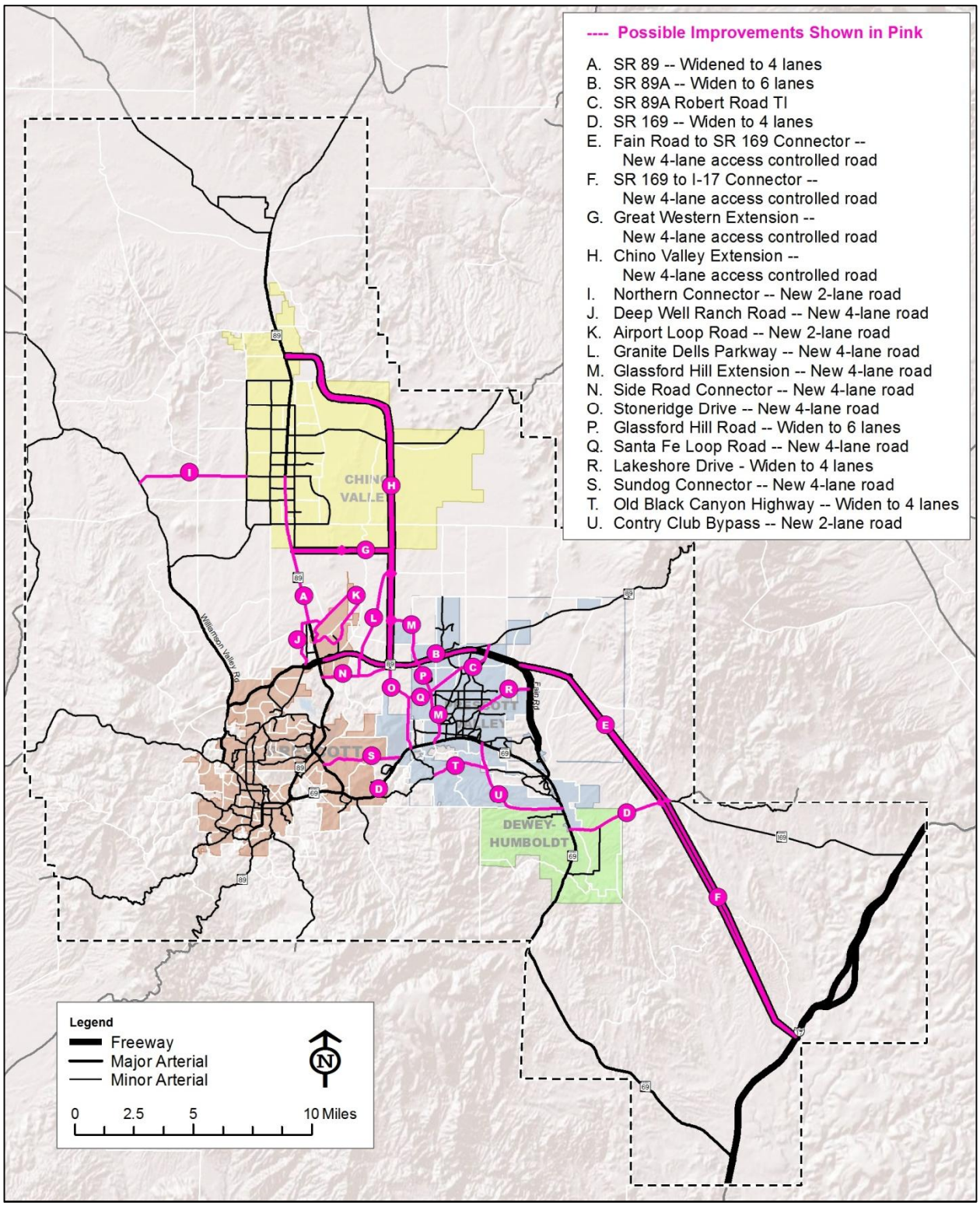


Figure 7 – Alternative 3 Regional Network

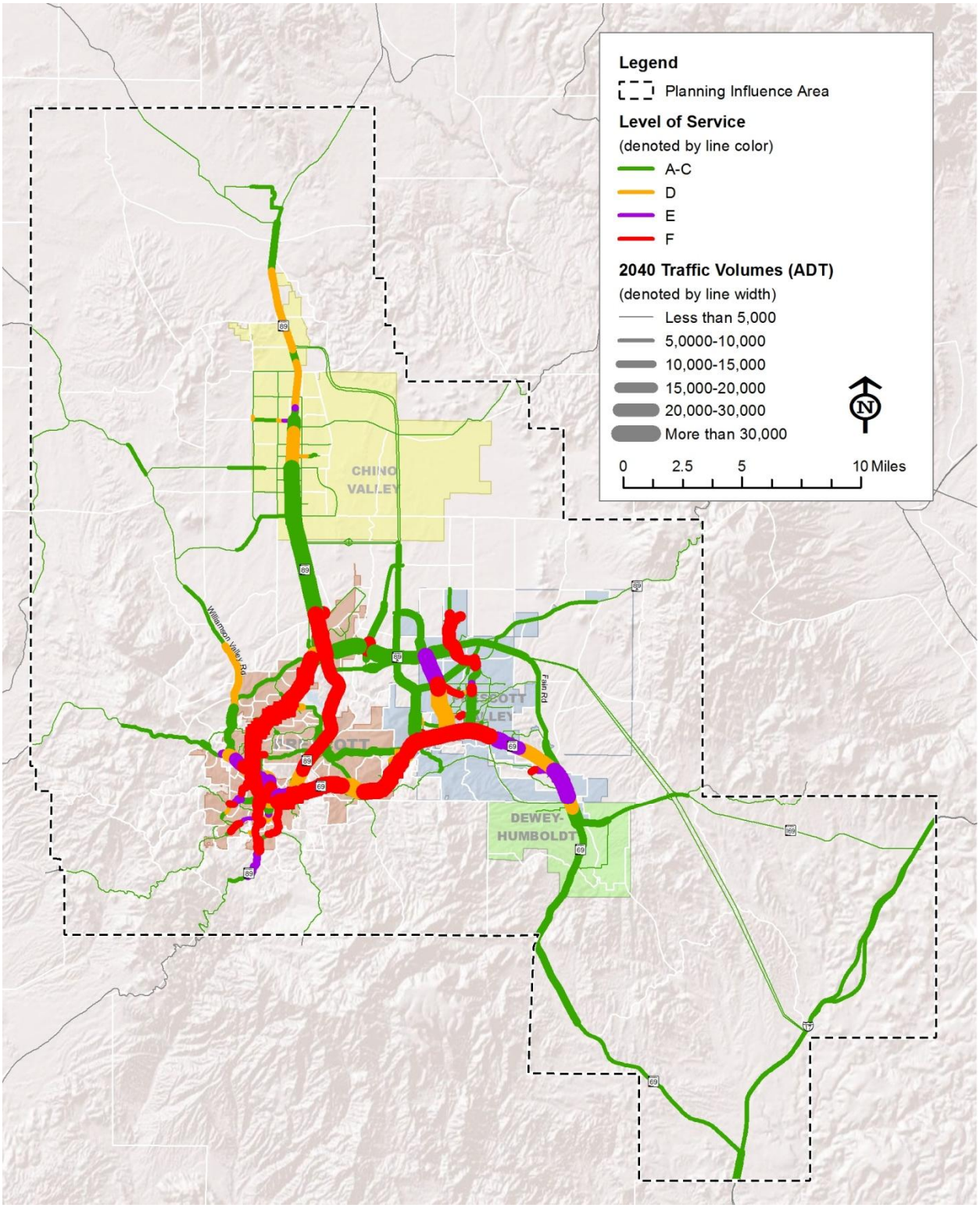


Figure 8 – Alternative 3 2040 Traffic Volumes and Levels-of-Service

The roadways with the greatest volumes are anticipated at the following locations:

- SR 89 from SR 89A to Center Street
- Willow Creek Road in Prescott
- SR 89A from Great Western to SR 89
- SR 69 from Prescott to Dewey-Humboldt
- Glassford Hill Road from SR 69 to SR 89A

The volume on the Fain Road to SR 169 Connector increased with the addition of the SR 169 to I-17 Connection segment. With the implementation of the network changes in Alternative 3 the following segments are anticipated to still operate at LOS 'F':

- Willow Creek Road through Prescott
- SR 89 between Deep Well Ranch Road and SR 69
- Various road segments in downtown Prescott
- Viewpoint Drive north of Santa Fe Loop Road
- The west-side ramps on three of the four traffic interchanges on SR 89A

The addition of the Country Club Bypass relieves congestion on Manzanita Trail near the Prescott Country Club, and the Chino Valley Extension improves SR 89 to LOS 'D' or better from Deep Well Ranch Road to the northern border of the CYMPO influence area. However, the removal of the SR 69 widening project causes the majority of SR 69 to fail at LOS "E" or worse, even with the widening of Old Black Canyon Highway, the addition of the Country Club Bypass, and the inclusion of the Sundog Connector.

3.4 Alternative 4

Alternative 4 was developed to include all the projects (in the list of planned projects for the region) that were deemed feasible by 2040. This scenario includes all of the projects that were present in Alternative 3, plus the SR 69 widening project and Navajo Drive widening projects. Figure 9 displays the Alternative 4 network.

Figure 10 displays the projected volumes and LOS anticipated under the Alternative 4 network scenario. This alternative does not significantly alter the traffic volume distributions from the other alternatives, and the same roadways listed previously have the heaviest volumes. Figure 8 indicates that the Alternative 4 LOS looks very similar to that of Alternative 3; however, SR 69 returns to the same state as in Alternative 2, with only a small segment west of Stoneridge Drive operating at LOS "F." Manzanita Trail, on the other hand, goes back to operating at LOS "F." This likely happens because the addition of lanes on SR 69 makes it a more desirable roadway to use than the Country Club Bypass.

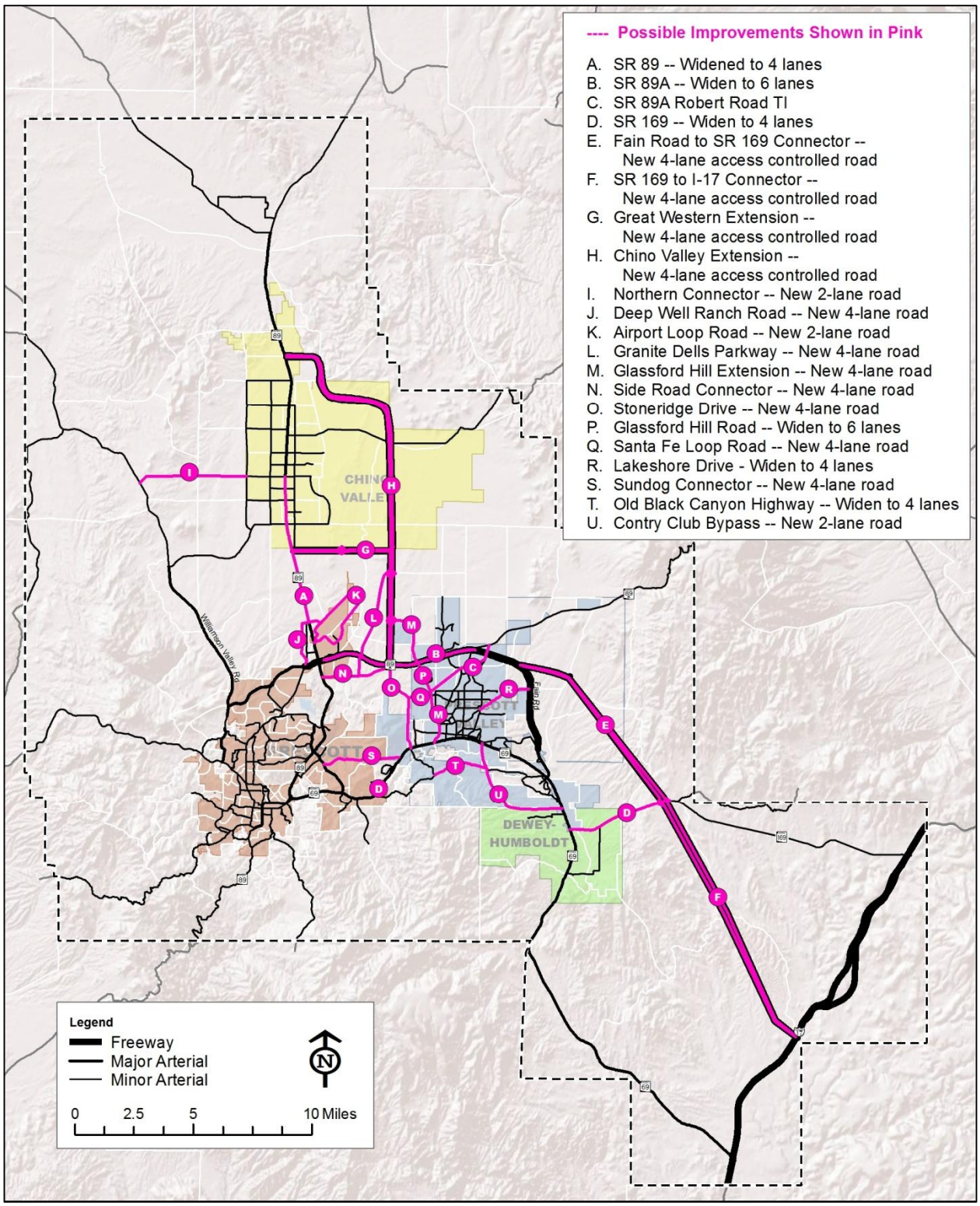


Figure 9 – Alternative 4 Regional Network

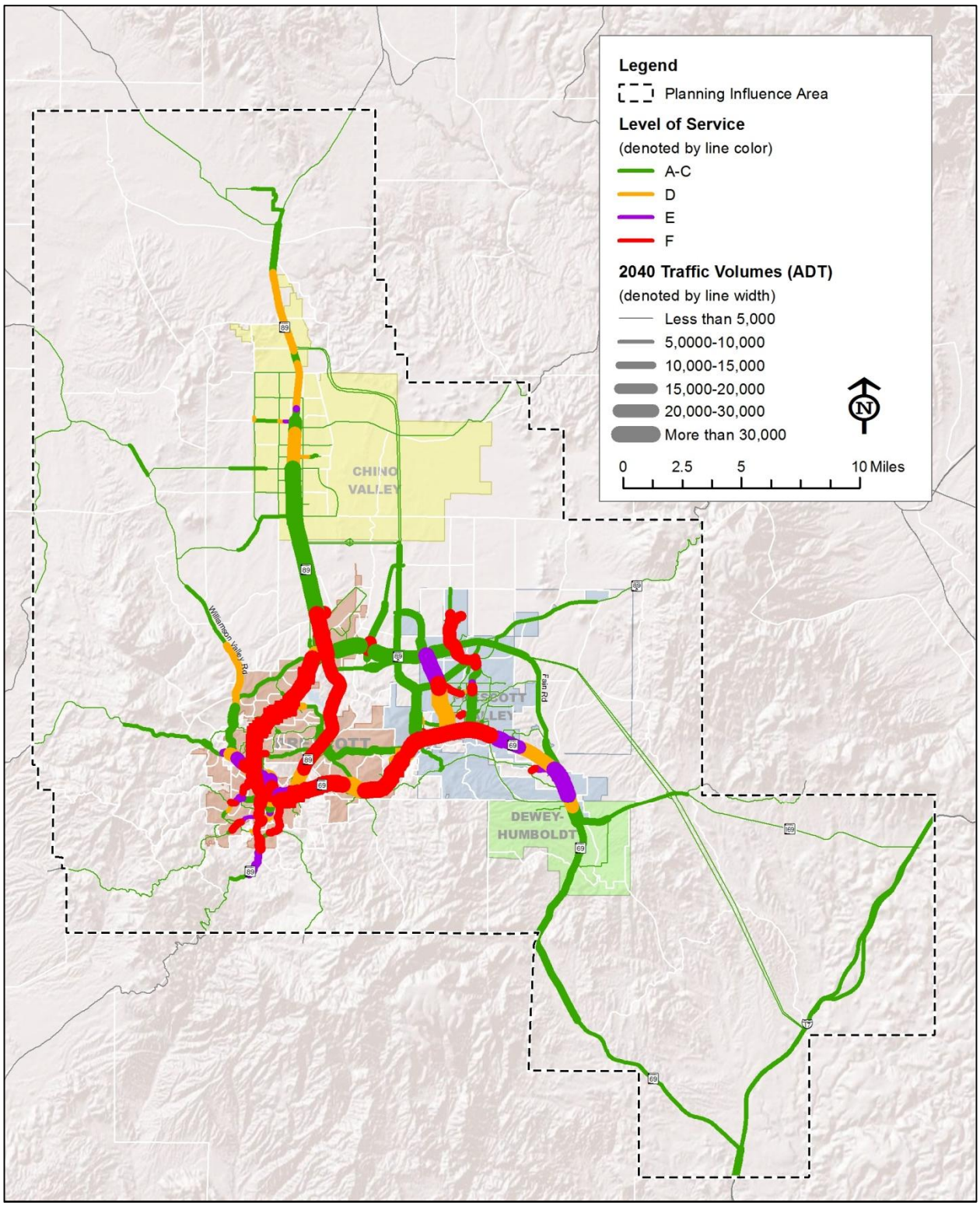


Figure 10 – Alternative 4 2040 Traffic Volumes and Levels-of-Service

4.0 Alternative Evaluation Process

The alternatives described in Section 3 of this working paper were developed in cooperation with the TAC. An evaluation was performed for each alternative individually, and results were then compared to quantitatively rank their technical merits. The criteria used to evaluate the alternatives are listed in Table 3.

Table 3 – Network Alternative Evaluation Criteria

#	Criteria	Performance Measures
1	Improve traffic operations	Total miles of projected LOS E or F
2	Promote mobility and accessibility for personal and freight transport	Travel time savings per home-based work trip compared to No-Build Alternative
		Percent of 24-hour truck VMT on congested facilities
3	Maintains planning consistency	Consistent with comprehensive plans, city/town general plans, previous regional transportation plan and corridor studies
4	Right-of-way considerations	Total estimated right-of-way (ROW) needed
5	Potential to result in relocations or displacements of a protected population	Qualitative assessment of the new ROW required and the likelihood that relocations or displacements would be required in areas where protected populations have been identified
6	Potential to affect protected populations' community	Qualitative assessment of the potential for adverse effects to the communities in which protected populations live
7	Improve safety by strengthening and expanding roadway access management	Number of additional centerline miles with a high level of access management compared with the 2040 No-Build condition
8	Cost	Total estimated cost for all projects included in addition to 2040 No-Build condition
		Ratio of estimated cost to annual time savings from building the alternative
9	Ease of implementation	Constructability based on miles of included improvements that are new major regional freeways
10	Local agency and public acceptance	Local community support for and acceptance of the alternative

The evaluation criteria were developed in coordination with the TAC. Results of the evaluation on all criteria were compared across alternatives. The criteria and their performance measures are described below.

4.1 Descriptions of Criteria

Improve Traffic Operations

This criterion is a calculation of the total miles of level of service "E" or "F" for each network alternative. LOS "E" and "F" were considered failing levels, meaning that the fewer the congested miles, the better the performance.

Promote Mobility and Accessibility for Personal and Freight Transport

It is important to improve mobility for residents, visitors, and freight carriers operating in the region. This criterion has two performance measures: one related to personal travel and one related to freight travel. The first performance measure compares travel time savings per each home-based work trip compared to the No-Build Alternative. Home-based work trips – that is, those trips with one end located at home and the other at work, no matter the direction of travel – are typically the most prevalent type of trip during a weekday. They tend to have the greatest impact on the transportation system, since they are heavily concentrated during peak travel periods. This performance measure calculates the average of the travel times of all home-based work trips in the No-Build network, then compares that to the average of the travel times of all home-based work trips in each network Build alternative. The second performance measure is the percent of daily vehicle miles that trucks travel in the system on congested roadways. A "congested roadway" refers to a roadway operating at LOS 'E' or 'F' during the time the truck is traveling on it.

Maintains Planning Consistency

The improvement projects that were previously planned in the CYMPO area are listed in Table 1. This evaluation criterion evaluates whether the projects in the network alternative are consistent with those shown in the table. Although some of the projects from Table 1 were not considered due to the size of the project, the needs of the community, and/or the limited funding available, the majority were considered in at least one of the network alternatives. This criterion indicates which alternatives maintained the most consistency with the planned projects.

Right-of-Way Considerations

A transportation project cannot be built unless the land necessary to build and operate the project is first acquired. Acquisition of ROW is expensive and, in situations where the land is already occupied by active land uses, its acquisition will disturb the community's environment, continuity, and way of life. This criterion estimates the amount of ROW that would need to be acquired for each alternative. The more ROW needed, the less desirable the alternative.

Potential to Result in Relocations or Displacements of a Protected Population

If the land needed for a roadway project includes land on which a home is already located, the residents of that home will need to vacate and find alternative housing (with assistance from the responsible agency, as required by law). Protected populations include certain racial and ethnic minorities, low-income households, disabled persons, and elderly persons, among others (in accordance with Title VI of

the Civil Rights Act and Executive Order 12898). This criterion was set to evaluate the extent to which any protected populations would need to be moved due to ROW acquisitions.

Potential to Affect Protected Populations' Community

In addition to ROW acquisition, a new roadway can negatively affect a community simply through its location; for example, by forming a barrier to circulation. A large facility, such as a freeway or major arterial, can split a community, isolating a group on one side of the facility from neighbors and community amenities on the other side. This criterion was established to determine the potential of each alternative for creating such barriers affecting protected populations.

Improve Safety by Strengthening and Expanding Roadway Access Management

Vehicular crashes often involve conflicts between vehicles at public or private access points. Sound access management practices can reduce the number of crashes while enhancing the efficiency of traffic flow. This criterion quantifies linear miles of new access management – either new facilities that will effectively manage access or existing facilities that will have access management features added.

Cost

The level of funding needed to complete each network alternative is an important factor in the evaluation. The cost criterion includes two performance measures. The first is the estimated total cost of each alternative. The second represents a form of cost/benefit analysis. This performance measure compares the total cost of the alternative to the annual time savings resulting from that alternative. The time savings is gleaned from reduction of congestion as compared to the No-Build network. For example, in the No-Build network, a person may have sat in traffic for 60 minutes on the way to work. In a network with a Build alternative implemented, that same trip may take only 55 minutes. If a person makes that same trip twice in one day, for 250 days per year, then that person will save more than 20 hours of time each year. The total annual time savings for an alternative is the sum of the time savings off all the trip-makers in the network. It should be noted that a transportation investment may have many benefits other than travel time savings.

Ease of Implementation

Transportation improvements can be difficult to implement. Besides the necessary funding, implementation requires public support, limiting disruption to the community, maintaining access during construction, and other challenges. The ease of implementation criterion compares the number of roadways in each alternative which are considered the most difficult to build.

Local Agency and Public Acceptance

The final criterion is the level of acceptance from the CYMPO member agencies and the public. None of the projects proposed will be completed without community acceptance. The local agencies reviewed the evaluation results for all other criteria and a recommended network alternative were presented to the public on Monday, 9/29/14. The local agencies criterion was evaluated based on the input at the public meeting and through the TAC coordination.

4.2 Alternative Analysis Results

Table 4 presents the results of the alternative analysis. Each alternative is evaluated for all performance measures. The black circles represent high impact and a low level of acceptability based on CYMPO's goals and those of the member agencies. The hollow circles represent a low impact and high level of acceptability to the agencies. Half circles represent an intermediate impact. The evaluation indicates that, although alternatives 3 and 4 do the best job of improving mobility and saving time, they do so at a high cost compared with other Build alternatives.

The recommended alternative, which is based on the results of this evaluation, will be presented in the Draft Recommendation Working Paper.

Table 4 – Alternative Analysis Results

Criteria	Performance Measures	No-Build Alternative*	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Improve traffic operations	Total miles of total projected LOS E or F	● 77.91 miles	◒ 47.94 miles	◒ 45.91 miles	◒ 48.15 miles	○ 40.74 miles
Promote mobility and accessibility for personal and freight transport	Travel time savings per home-based work (HBW) trip compared to No-Build Alternative	● Travel time is greater than all 4 Build alternatives	◒ 2.18 minutes per HBW trip	○ 2.43 minutes per HBW trip	○ 2.49 minutes per HBW trip	○ 2.59 minutes per HBW trip
	Percentage of 24-hour truck VMT on congested facilities	● 49% Truck VMT	◒ 24% Truck VMT	◒ 22% Truck VMT	◒ 26% Truck VMT	○ 19% Truck VMT
Maintains planning consistency	Consistent with comprehensive plans, city/town general plans, previous regional transportation plan and corridor studies	● None of the planned improvements are implemented	◒ Nearly all projects are present in previous planning documents, and 7 previously planned projects are not included	◒ Nearly all projects are present in previous planning documents, and 4 previously planned projects are not included	◒ Nearly all projects are present in previous planning documents, and 2 previously planned projects are not included	○ Nearly all projects are present in previous planning documents
ROW considerations	Total estimated ROW needed	○ No new ROW	○ Approximately 500 acres	◒ Approximately 1,050 acres	● Approximately 1,800 acres	● Approximately 1,850 acres
Potential to result in relocations or displacements within a protected population	Qualitative assessment of the new ROW required and the likelihood that relocations or displacements would be required in areas where protected populations have been identified	○ Wouldn't result in any relocations/displacements within protected populations.	◒ Potential for relocations/acquisitions along many of the new facilities	◒ Potential for relocations/acquisitions along many of the new facilities	◒ Potential for relocations/acquisitions along many of the new facilities	◒ Potential for relocations/acquisitions along many of the new facilities
Potential to affect protected populations' community	Qualitative assessment of the potential for adverse effects to the communities in which protected populations live.	○ No new effects for surrounding communities	◒ Potential for new facilities to affect continuity of adjacent communities	◒ Similar to Alt 1	◒ Similar to Alt 1	◒ Similar to Alt 1
Improve safety by strengthening and expanding roadway access management	Number of additional centerline miles with a high level of access management compared with the 2040 No-Build condition	● No additional miles	◒ 24 miles	○ 57 miles	○ 83 miles	○ 83 miles
Cost	Total planning level cost estimates for all projects included in addition to 2030 Base condition	○ $0.00	◒ $312 Million	◒ $474 Million	● $638 Million	● $674 Million
	Comparison of total alternative planning level cost to total annual time savings compared to the No-Build network	● No time savings	○ 84.30 (annual min per $100 spent)	◒ 62.55 (annual min per $100 spent)	◒ 48.18 (annual min per $100 spent)	◒ 47.31 (annual min per $100 spent)
Ease of implementation	Probability and constructability based on miles of included improvements that are new major regional freeways	○ No new major regional freeways included	○ No new major regional freeways included	◒ Approximately 18 miles	● Approximately 42 miles	● Approximately 42 miles
Local agency acceptability	Anticipated local municipal support for and acceptance of the network alternative, based on input from TAC	●	◒	◒	●	●

***No-Build Alternative includes some area improvements which have already been funded** ○ **Low impact, high compatibility** ◒ **Medium impact, moderate compatibility** ● **High impact, low compatibility**

Appendix C

Alternatives Evaluation

Central Yavapai Metropolitan Planning Organization

Regional Transportation Plan Update 2040

Travel Demand Model Validation Revised for comments

June 2014

Prepared by:

Hexagon Transportation Consultants, Inc.

AECOM

Central Yavapai Metropolitan Planning Organization
Transportation Plan Update 2040

Travel Demand Model Validation
June 2014

Member Agencies:
City of Prescott
Town of Chino Valley
Town of Dewey-Humboldt
Town of Prescott Valley
Yavapai County
Arizona Department of Transportation

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1.0 Introduction

The purpose of this report is to document the development of a focused travel demand model for the Central Yavapai Metropolitan Planning Organization (CYMPO). The CYMPO focused travel model is based on the Arizona statewide travel demand model developed by the Arizona Department of Transportation (ADOT); AZTDM2. The model operates in the TransCAD software platform.

ADOT has spent several years developing a statewide model that can focus on specific MPO planning areas of the state. The model is based on extensive data collection efforts that are beyond the reach of most MPOs. The model has been calibrated and validated to a comprehensive set of observed data. The statewide model has also undergone a national peer review which was focused on model development, calibration and validation. Additionally, ADOT continues to update features of the model. Documentation of the AZTDM2 model development and validation is available from ADOT in the following report: "*Development of the Arizona Statewide Travel Demand Model: Phase 2, September 19, 2011".*

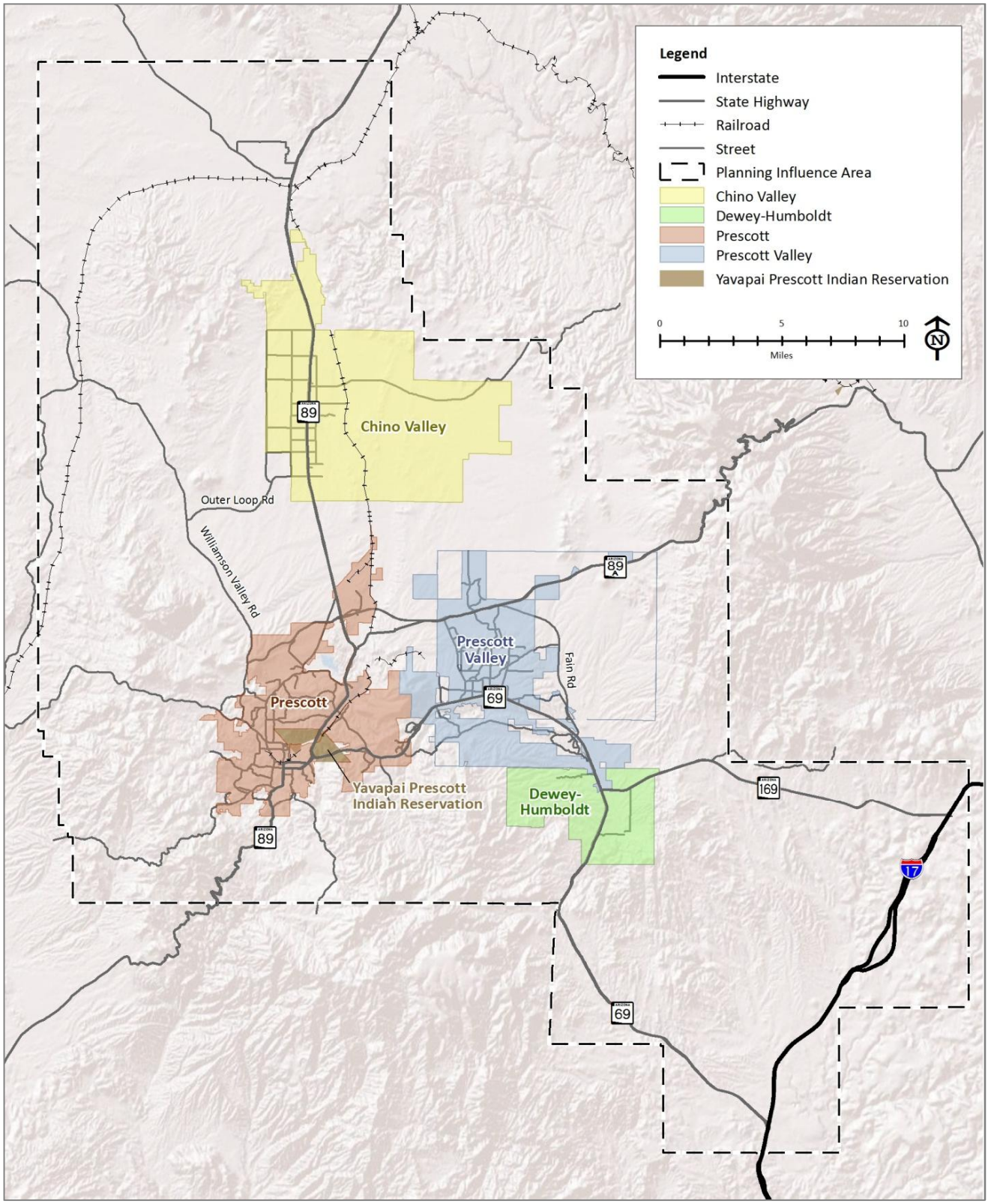
The CYMPO focused model encompasses the communities of Prescott, Prescott Valley, Chino Valley, Dewey-Humboldt, portions of Yavapai County and the Yavapai-Prescott Indian Tribe, including an area of influence of approximately 401 square miles. Figure 1 shows the location of these communities and the planning influence area. To validate the AZTDM2 model for the CYMPO planning area, information on existing socioeconomic and roadway characteristics were collected for input into the model. Daily traffic counts on City and County roads were also collected to serve as the basis for the validation efforts. Cordon and screenline locations were developed to summarize and compare model validation estimates with actual count data. These efforts were completed under Task 4 and are documented in the "*Current Socioeconomic and Transportation Conditions"* report.

2.0 Model Validation Database

Model validation efforts consists of several steps including estimation of person and truck trips (trip generation), distribution of trips (trip distribution), assignment of trips to the network (trip assignment) and aggregate and roadway level comparisons of model assigned daily vehicle trips to traffic counts.

The validation process is a top down approach starting with estimation of the number for trips within the region and ending with roadway level analysis. At each step, daily traffic counts are used to evaluate if the model is performing within acceptable standards. For the CYMPO model validation, both aggregate and disaggregate analyses were conducted. The validation standards used for this analysis are the same as those used to validate the AZTDM2 model. The AZTDM2 model validation followed guidelines from several sources, such as the Federal Highway Administration, the National Cooperative Highway Research Project and Best Practices.

Figure 1 – CYMPO Planning Area



The model validation effort consisted of the following comparisons of model assigned traffic to aggregated traffic counts.

- Cordon Line
- Screen Line
- Facility Type
- Volume Group
- Roadway Level

The results of the comparison are then evaluated based on the validation guidelines to determine whether the standards have been met. The first step in the model validation process is to establish the database and validation guideline(s) for each of the categories. The development of the data sets for the model validation are described below.

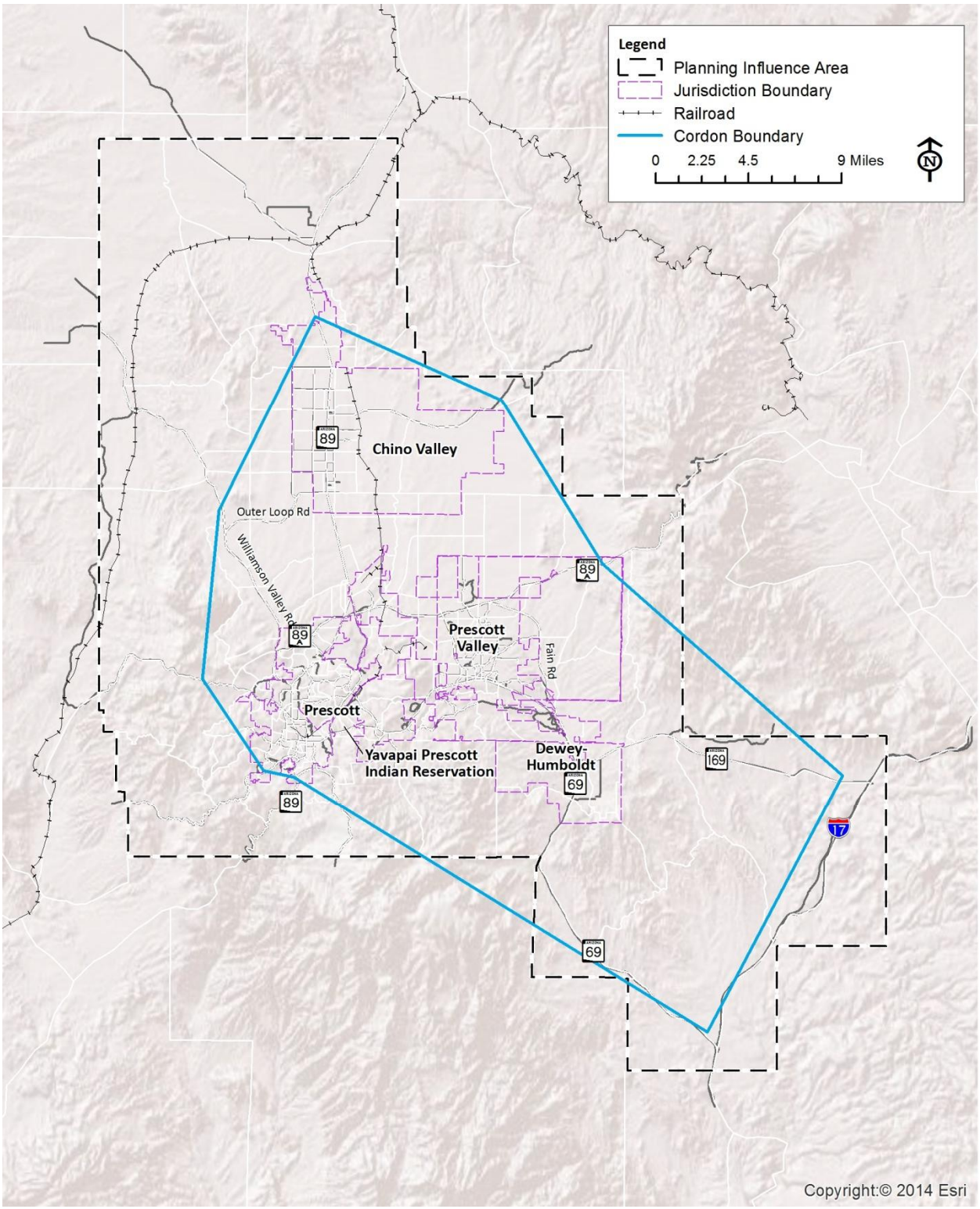
2.1 Cordon Line Database

A cordon line is used to evaluate whether the correct number of trips are entering and exiting the study area. An imaginary circle is drawn across facilities at the boundary of the study area. The imaginary circle is drawn to include, to the extent possible, locations were traffic counts exist on the roadways that serve as entry/exit points to the region. These counts are then totaled to estimate the total daily volume entering and exiting the CYMPO region. Figure 2 shows the CYMPO area cordon line and Table 1 lists the facilities that comprise the CYMPO area cordon line and the existing traffic count for each of the facilities. Based on the information in Table 1 it is estimated that there are approximately 47,000 daily trips between the CYMPO area and the rest of the region. The validation target for the cordon line validation is 10 percent. This means that the sum of the model assigned volumes crossing the cordon line is within 10% of the traffic counts at the cordon line.

Table 1 – CYMPO Cordon Line

Roadway	Location	Existing Count
S. R 89	S. of Big Chino Rd.	8,890
Perkinsville Rd.	W. of Forest Service 641 Rd.--	100
S.R.89A	W. Of Mingus West Rd.	1,880
S. R. 169	W. of I-17	5,000
S.R. 69	W. of I-17	11,800
Senator Highway	S. of Nathan Ln.	2,770
S.R. 89	N. of Haisley Rd.	5,780
Copper Basin Rd.	S. of Vista Rd.	3,960
Iron Springs Rd.	W. of Hereford Dr.	3,420
Williamson Valley Rd.	N. of Outer Loop Rd.	3,180
TOTAL		46,780

Figure 2 – CYMPO Focused Model Cordon Line



2.2 Screenline Database

Screenlines are tools to analyze whether the CYMPO focused model is replicating the existing travel patterns in the CYMPO region. Like cordon lines, screenlines are imaginary lines drawn across major roadways at specific locations in the roadway network. Figure 3 shows the screenlines for the CYMPO focused model.

Seven screenlines were developed for the CYMPO model validation, four north/south screenlines and three east/west screenlines. Each screenline was drawn to capture travel patterns in the area.

For example, screenline 1 includes facilities that capture trips coming to/from the City of Prescott traveling in a north/south direction. Screenline 2 captures travel between the Town of Prescott Valley and the City of Prescott. Like the cordon line analysis, the evaluation target for each screenline is to have the model assigned volumes be within 10% of the traffic counts. Table 2 presents the seven CYMPO screenlines and the sum of the existing traffic counts at the screenlines.

Figure 3 – CYMPO Focused Model Screen Lines

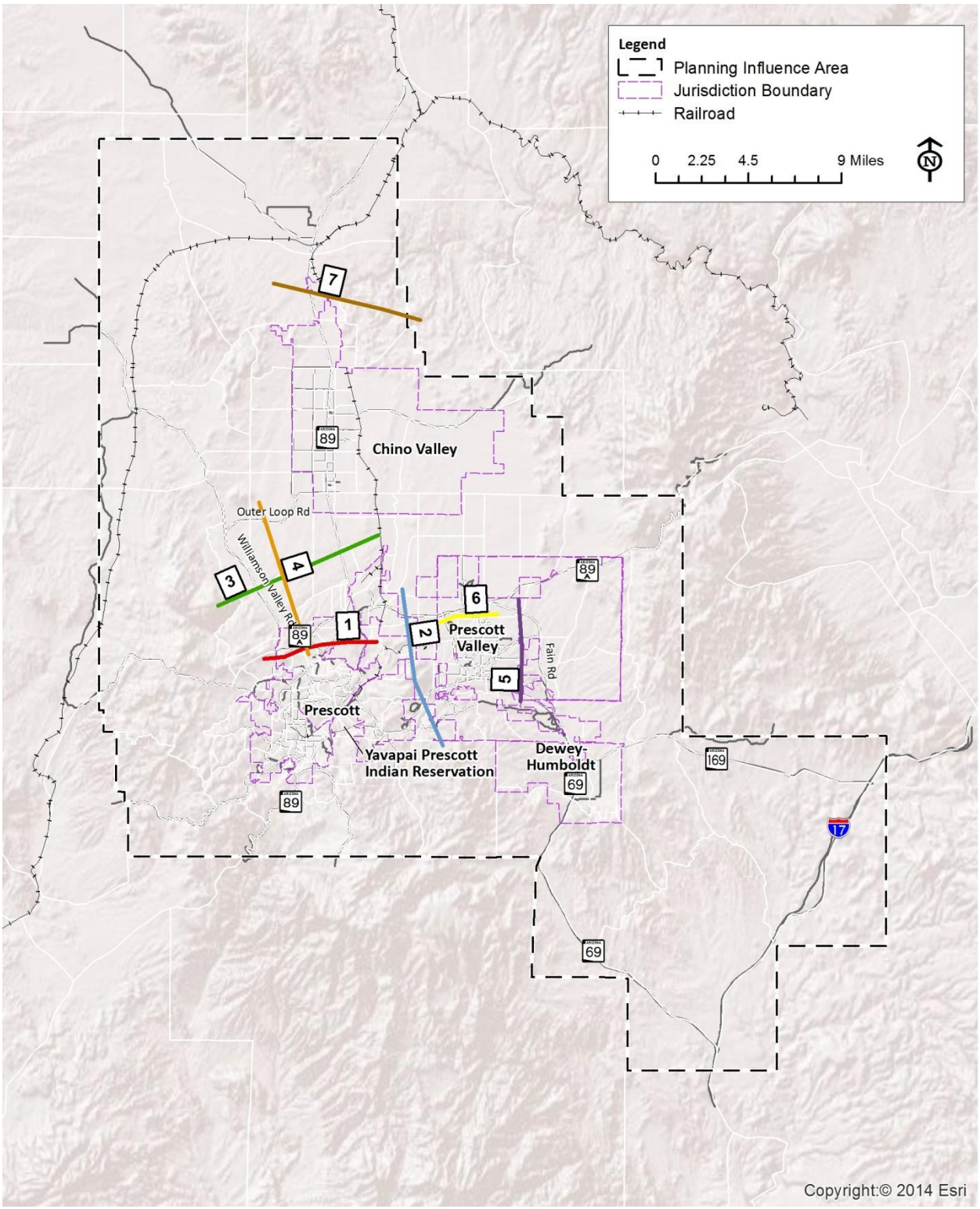


Table 2 – CYMPO Focused Model Screenlines

Screenline Number	Location	Sum of Existing Traffic Counts	Travel Pattern
1	North Prescott	47,200	N/S travel to/from City of Prescott
2	Prescott/Prescott Valley	59,400	E/W travel to/from Prescott and Prescott Valley
3	North of 89A	24,900	N/S travel to/from Chino Valley
4	West of Williamson Valley Rd.	8,000	E/W travel to/from western study area.
5	West of Fain Rd.	32,300	E/W travel to/from City of Prescott Valley
6	South of 89A	31,300	N/S travel to/from City of Prescott Valley
7	SR 89 North of Chino Valley	8,900	N/S travel to/from City of Chino Valley
TOTAL		212,000	

2.3 Facility Type Database

Facility type validation is an analysis of roadways that have the same functional classification. The functional classification of roadways for the CYMPO region was documented in the Draft Chapter: *Current Socioeconomic and Transportation Conditions* and also depicted in Figure 4. Existing traffic counts are totaled for roadways by facility type and then compared to the sum of the model assigned traffic volumes by facility type. The validation standard for facility types varies by the type of facility and is shown in Table 3

Figure 4 – Existing Roadway Functional Classification

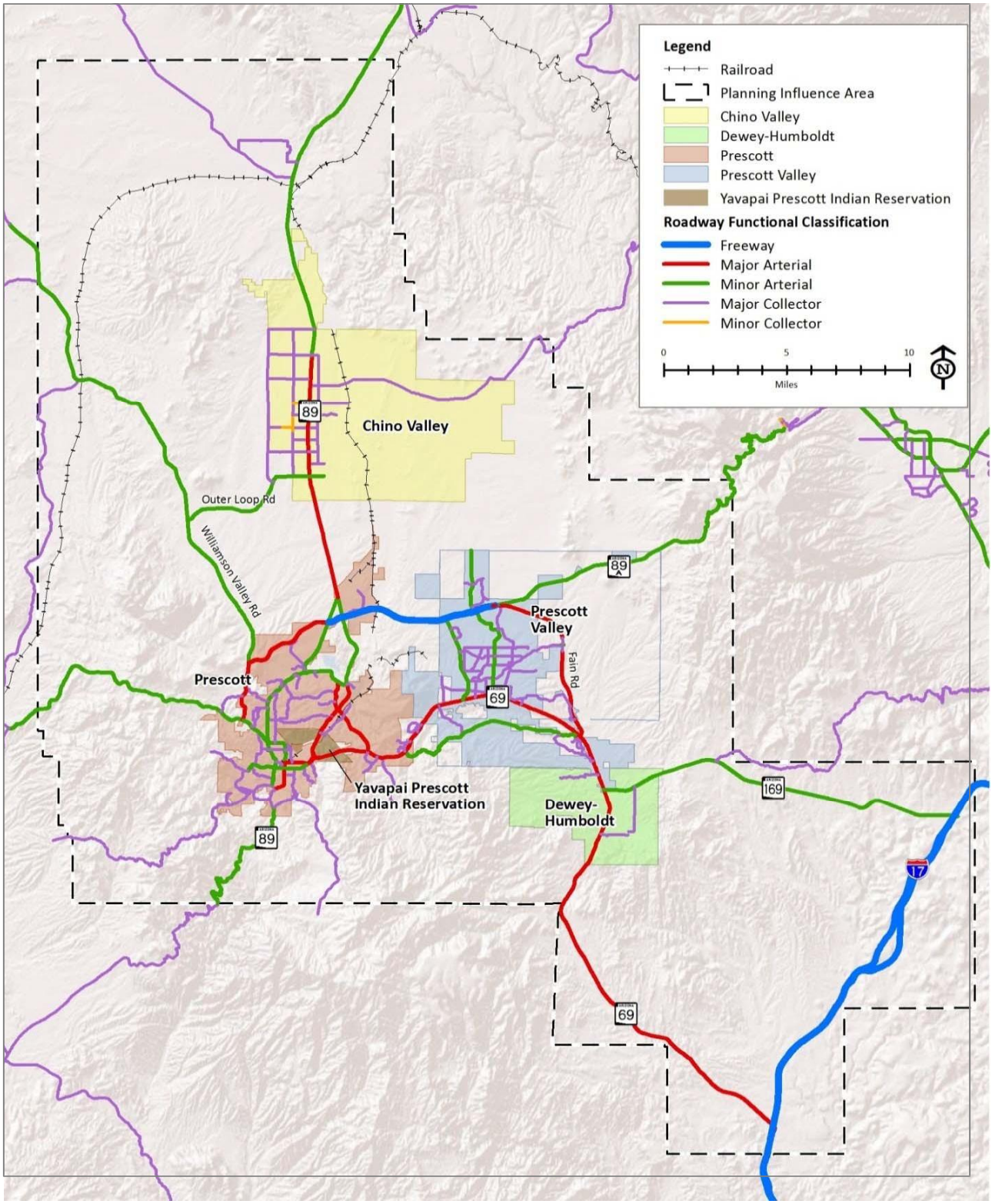


Table 3 –Facility Type Validation Guidelines

Facility Type	Number of Count Locations	Validation Guideline
Freeways	10	+/- 7%
Major Arterials	37	+/- 10%
Minor Arterials	49	+/- 15%
Collectors	110	+/- 20%

2.4 Volume Group and Roadway Database

The goal of the volume group validation is to ascertain that the model is correctly assigning traffic to roadways based on the amount of traffic of the facilities. Aggregate validation compares the sum of all counts and assigned model volumes by volume group. Disaggregate validation compares the individual count and model assignment at a specific location. The volume groups and aggregate validation standards used for the CYMPO model validation is listed in Table 4.

Table 4 – Volume Group Validation Guidelines

Volume Group (vpd)	Number of Count Locations	Validation Guideline Aggregated	Validation Guideline Disaggregated
0 to 4,500	94	+/-10%	48%
4,500 to 10,000	52	+/-10%	36%
10,000 to 15,000	22	+/-10%	31%
15,000 to 20,000	12	+/-10%	28%
20,000 to 35,000	25	+/-10%	24%

(vpd) vehicles per day

3.0 Model Validation

Once the model validation database was in place the focused model was run. The results of the traffic assignments were compared to the validation database and, through an iterative process, adjustments were made to model inputs and parameters until the model validation targets were met. The first step in model validation is to ensure the model is accurately estimating the number of trips with the region and that the distribution of those trips within the region is correct.

The results of the first model validation run indicated that the model was doing a good job overall in estimating trips into and out of the area at the cordon line. The model assigned traffic was with 5% of the counts at the cordon line. However, within the study area the model was under estimating trips by approximately 15%. This was not an unexpected result because the AZTDM2 model was also low at the CYMPO cordon.

The CYMPO trip generation model uses occupied dwelling units as one of the inputs. Seasonal households are not included in the model as part of the occupied households. Approximately seven percent of the households in the CYMPO region are seasonal households. Seasonal households within the CYMPO region were added to the database and the model was rerun. The inclusion of the seasonal households in the database resulted in an increase of approximately 24,000 daily trips. The inclusion of seasonal households improved the model validation. However, the number of trips generated by the model was still low compared to the counts.

A series of analyses were conducted to indentify the cause of the under estimation of trips in the region. The analysis included:

- Identification of additional travel markets
    - special events in the CYMPO region
    - college enrollment in the CYMPO region
- Validation and modification of the AZTDM2 truck model for the CYMPO region
- Review of the household income segmentation
- Analysis of trip rates
    - Review of the non-home-based trip generation rates
    - Modification of the CYMPO focused model non-home-based trip rates
- Modification of speeds on collector roads
- Roadway and centroid connector modifications

3.1 Additional Travel Markets Data Collection

The initial validation runs showed that the model was under estimating trips. Two of the potential causes for the under estimation of trips in travel forecasting models are:

- Travel markets are missing from the weekday travel included in the model.
- Trip rates used in the trip generation model are too low

To determine if there were missing travel markets in the CYMPO focused model additional information was collected for special events and college enrollment. Special events are activities such as major conventions, sporting events, fairs, rodeos etc. These events do not occur on a daily basis and therefore are excluded from most regional models. However on a sub regional level, these types of activities can have an impact on daily travel.

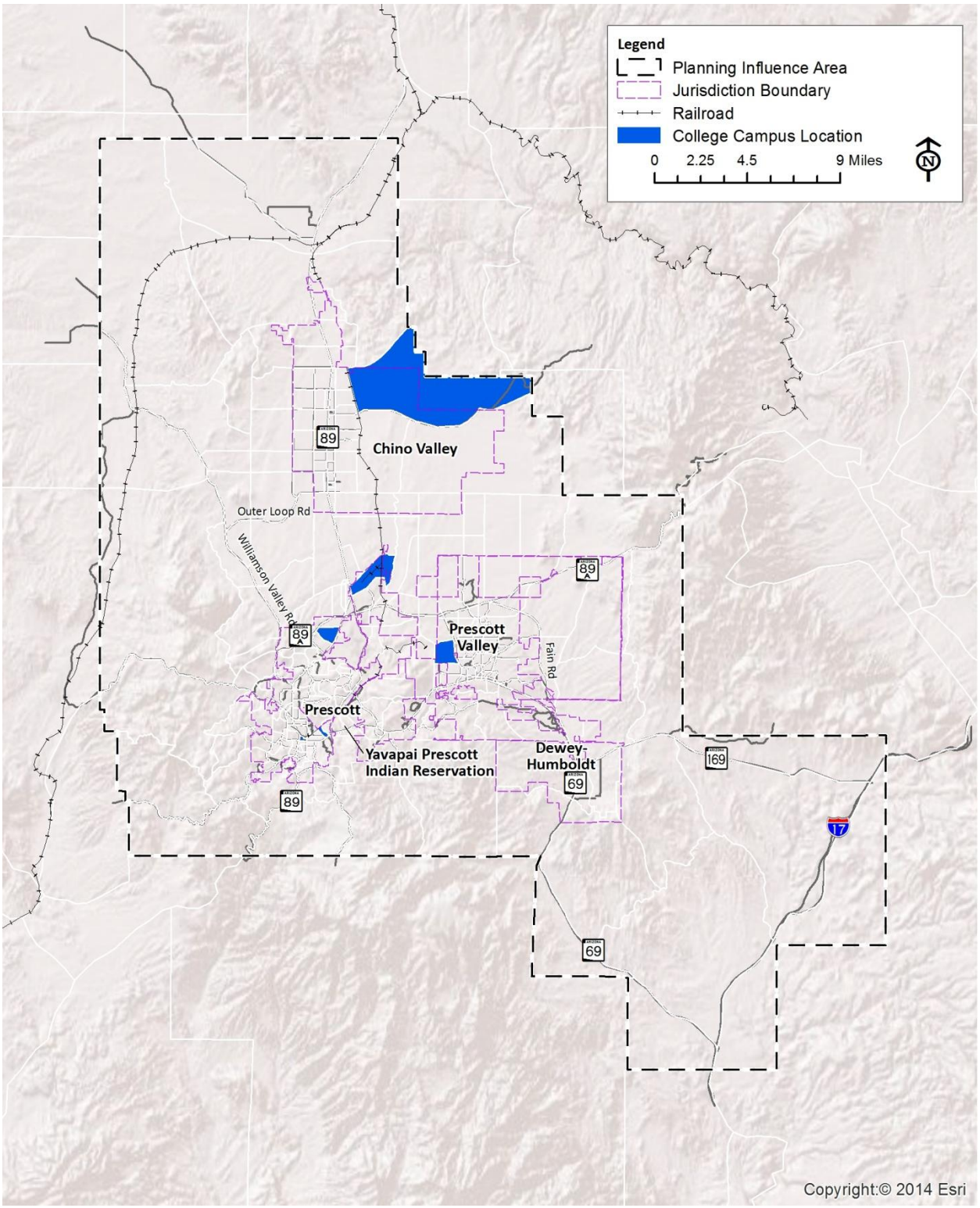
CYMPO MPO staff provided a listing of special events in the CYMPO region. These events included activities such as the Annual Whiskey Row Marathon, Western Art Show and Annual Rodeo. The list was reviewed and it was determined that the majority of these events occur on weekends and therefore should not be included in the CYMPO model, which only estimates weekday travel.

The CYMPO model includes estimates of travel to/from colleges in the area. Daily college trips are estimated based on college enrollment at the campus location. The original socio-economic data used as input into the CYMPO focused model did not include college enrollment. Additional information on college enrollment in the CYMPO region was collected and the socio-economic database was updated to include this information. Table 5 lists the colleges included in the CYMPO model and. Figure 5 show the location of these colleges.

Table 5 – Colleges Included in model

College	Enrollment
Embry Riddle	1,723 students
Prescott College	1,134 students
Yavapai College Prescott	3,972 students
Yavapai College Career/Tech (Prescott airport)	541 students
Yavapai College Chino Valley	241 students
Yavapai College Prescott Valley	466 students

Figure 5 – College Campus Locations



3.2 Truck Model Validation

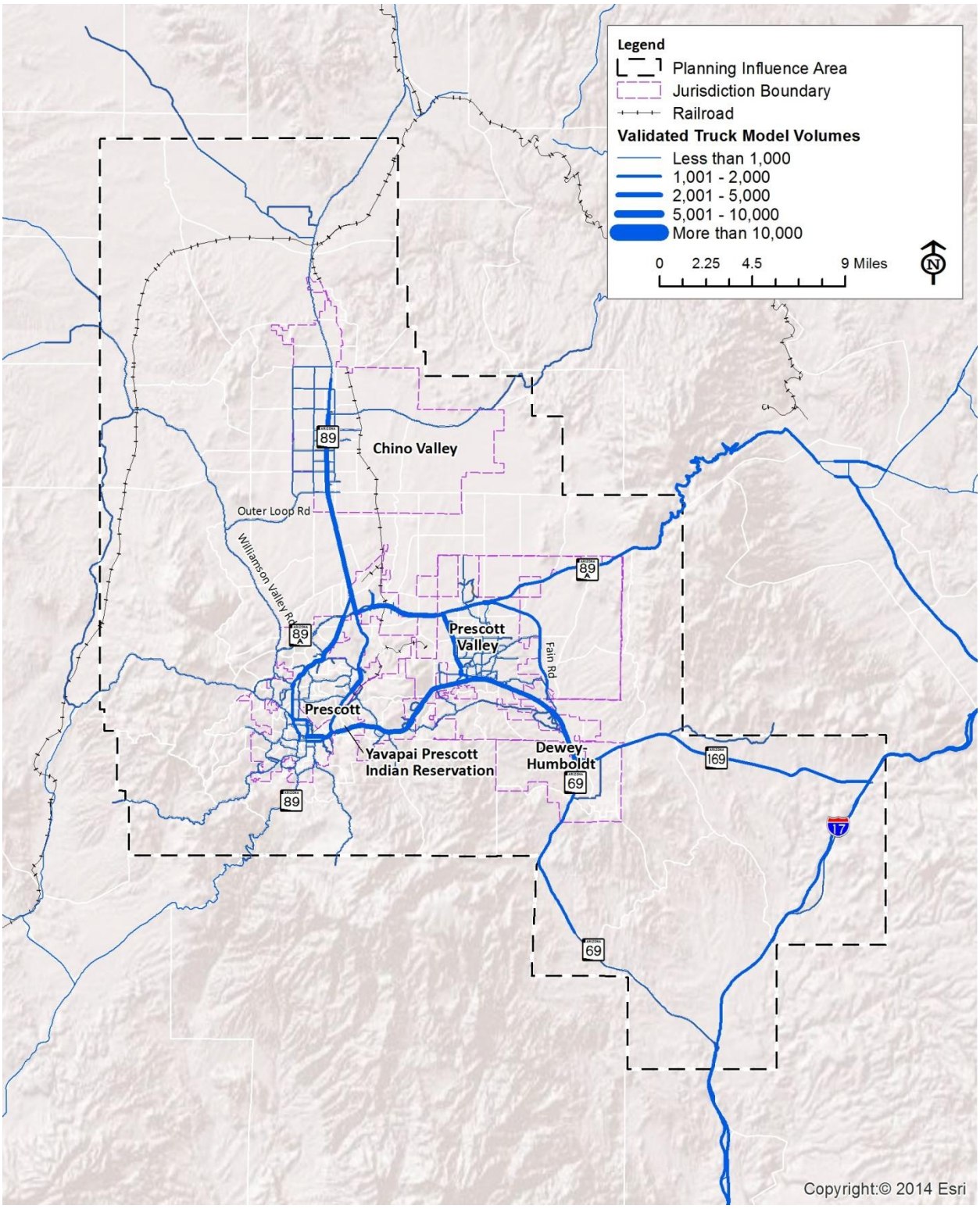
The Arizona Statewide Travel Demand Model (AZTDM2) includes both short distance and long-distance truck models. Long distance truck trips are estimated from commodity flow data provided by the Federal Highway Administration. The long distance model simulates truck trips across North America to account for trips passing through Arizona and trips beginning and ending in Arizona. The long distance truck model also simulates truck trips between urban areas.

The short distance truck model is implemented to capture local truck trips and service deliveries not included in the FHWA commodity flow data. The model implemented within the AZTDM is based on travel behavior observed in the Phoenix metropolitan area. The short distance truck model estimates single-unit trucks and multi-unit trucks. It uses the model's population and employment database in a three-step trip generation, distribution, and assignment process. The model segments trip generation and distribution into twelve land use categories to match truck trips between compatible land uses.

The CYMPO model uses both the long-distance and short-distance truck model. The CYMPO long distance truck model uses the trip table from the AZTDM2. The CYMPO short-distance truck model implements the trip generation and trip distribution procedures used in the AZTDM2. The key difference between the AZTDM2 short distance truck model and the CYMPO truck model is the geographic modeled area. The CYMPO model only simulates short distance truck trips for Yavapai County to avoid overlap with the long distance trip model and short distance trips related to other urban areas.

Both short and long distance truck trips, combined with passenger vehicles on each modeled roadway segment results in the estimate of total traffic. Truck traffic estimates were not compared to truck counts. Rather, total traffic volume estimates were compared to total traffic counts. Figure 6 shows the validated truck model volumes for the existing year in the CYMPO region.

Figure 6 – Validated Truck Model Volumes



3.3 Household Income Analysis

The CYMPO model indicated that in several areas where property values are relatively high, there might be lower than anticipated trip generation which might be a result of inflated numbers of low income households. To verify, a spot comparison was completed of the TAZ low income data against the 2012 American Community Survey (5-year) from the US Census Bureau. Preliminary results displayed that there were no conclusive results to indicate a need to change the model inputs. In some areas, the TAZ numbers for the under $25k population were lower, and the $45-65 population higher, than the census data. It was thought that perhaps the retirement population may account for this discrepancy; however, a review of employment data produced inconclusive results.

3.4 Non Home Based Trip Rates

The CYMPO model was updated to include the changes noted above in 3.1 and 3.2. The model was then rerun and the validation results reviewed. The results indicated that the inclusion of college trips and updated truck trips improved the model validation. However the model was still under estimating daily travel in the CYMPO region which indicated that adjustments were needed to the trip rates used in the CYMPO model.

The initial trip rates used in the CYMPO model were the same as those used in the AZTDM2 model. The trip rates are based on Arizona household travel survey information. Non home base trips are often under reported in household travel surveys. The non home based trip purpose is often linked with other trips. For example there are three trips and two different trip purposes in the following travel sequence:

Home --→ Grocery Store → Hardware Store→ Home

The above trip sequence translates into the following trips and trip purposes:

1. Home to Grocery Store: Home to shopping trip
2. Grocery Store to Hardware Store : Non home based trip
3. Hardware Store to Home: Home to Shopping trip

The second trip listed above is often missed in travel surveys because the traveler will see this as part of the first trip and thus the non home based trip is under reported. Therefore non home based trip rates in regional travel models are often adjusted during the model validation process.

Non home based trip rates information was collected and analyzed from other regions. Of the data collected, the French Board River MPO region (FBR) stood out as being similar in nature to the Prescott region. The FBR area encompasses the Asheville North Carolina region. This region has a high retirement population and also includes a high number of seasonal households. The non home based trip generation model structure used in the FBR model is the same as that used in the CYMPO model and therefore it was possible to efficiently update the non home based trip rates and measure the impact on CYMPO model validation. Tables 5 and 6 list the CYMPO and FBR Non Home Based Trip rates.

Table 5 – CYMPO Model AZTDM2 NHB Trip Rates

0-1 Autos Per Household				
Household Income	1 Person	2 Person	3 Person	4+ Person
0 – 25K	0.38	1.24	1.24	1.24
25 - 45K	0.38	1.55	2.57	2.57
45 – 65K	0.38	1.55	2.57	2.57
65 – 100K	2.16	1.55	4.27	4.27
100+K	2.16	1.55	6.28	7.23
2+ Autos Per Household				
Household Income	1 Person	2 Person	3 Person	4+ Person
0 – 25K	0.91	2.81	2.81	2.81
25 - 45K	0.91	3.26	3.27	3.27
45 – 65K	0.91	3.26	3.27	3.27
65 – 100K	2.16	3.26	4.27	4.27
100+K	2.16	3.26	6.28	7.23

Table 6 – French Broad River NHB Trip Rates

0-1 Autos Per Household				
Household Income	1 Person	2 Person	3 Person	4+ Person
0 – 25K	0.68	1.864	1.27	1.68
25 - 45K	0.68	2.63	1.27	1.68
45 – 65K	0.68	1.43	3.70	4.30
65 – 100K	2.46	2.63	3.71	4.30
100+K	2.46	1.43	3.71	5.11
2+ Autos Per Household				
Household Income	1 Person	2 Person	3 Person	4+ Person
0 – 25K	0.98	2.53	2.81	2.81
25 - 45K	0.98	4.13	2.81	3.63
45 – 65K	1.04	4.73	3.91	4.47
65 – 100K	2.46	4.73	5.50	6.06
100+K	2.46	4.73	5.50	6.06

The CYMPO model non home based trip rates were replaced with the FBR rate. The CYMPO model was rerun with the updated rates and the model results reevaluated. The update to the non home based trip rates resulted in an increase of approximately 25,800 trips in the CYMPO region. The inclusion of the FBR non home based trip rates improved the validation of the CYMPO model. The validation

comparisons at the cordon and screenlines indicated that the model was producing an accurate estimate of total trips in the CYMPO region.

3.5 Collector Roadways Speeds

The modification of the NHB trip rates improved the validation of the CYMPO model. However, there were still issues with the model assigned volumes by facility type. The model was under assigning major arterials and over assigning collectors in the study area.

The CYMPO model uses posted speeds provided by the user. The model input speeds were compared by facility type and, in general, it was found that the collector speeds being used in the model were higher than the posted speeds on the collector facilities. In the CYMPO region, the majority of collector roadways are posted at 25 MPH. The model assigned speeds for collectors were averaging about 40 MPH.

Speeds for all collectors in the CYMPO focused model were reset to 25 MPH. The model was rerun and the once again the model assigned volumes were compared to the validation database. The number of trips in the region did not change and therefore the validation of screenlines and cordon remained about the same. However the validation by facility type and roadway group showed substantial improvement.

3.6 Roadway and Centroid Modifications

The adjustments to the CYMPO focused model described above ensured the model was validated in terms of total trips and the distribution of trips. The assigned volumes were summed by facility type and compared to the counts by facility type and that comparison showed that the model was accurately assigning trips by facility type. The final step in model validation was to review the assignment results at the individual roadway level.

The speeds on individual roadway facilities were increased or decreased to produce a more accurate estimate of assigned traffic compared to the counts. These network refinements concentrated on the higher level facilities in the study area. In corridors where two arterial run parallel to each other, it is often necessary to adjust model speeds on both facilities to improve the assignment results. Gurley and Sheldon Streets in the City of Prescott are examples of arterials where input speeds were modified to reflect actual driving behavior, which improved the validation. The model was over assigning trips to Gurley Street and under assigning trips to Sheldon Street. The model speeds on both of these facilities were modified to better match the traffic counts on these roads.

In some instances to improve the assignment to roadways, centroid connectors were added, modified or deleted. In transportation models centroid connectors distribute the trips from a traffic analysis zone (TAZ) to roadway facilities. A TAZ can have multiple connectors. Generally a TAZ is connected to each roadway it is adjacent to by a centroid connector. During the validation process modifications were made to centroid connectors to improve model validation.

4.0 Model Validation Results

A total of 22 validation runs were completed to validate the CYMPO. After each validation run the model assigned volumes were compared to the daily traffic counts for each of the validation categories identified in Section 2 of this report. This was an iterative process. At each successive model run, inputs and parameters were adjusted until further changes to the model no longer improved overall model validation.

On a daily basis the CYMPO model results in the following[1]:

- Trips Per Person 3.5
- Trips Per household 8.1
- Assigned Trips: (CYMPO Region) 394,000
- Vehicle Miles of Travel (CYMPO Region) 2,616,947
- Vehicle Hours of Travel (CYMPO Region) 57,518

Figure 7 show the traffic assigned volumes for the CYMPO region.

4.1 Cordon and Screen Line Results

The CYMPO model accurately estimates existing daily traffic in the CYMPO region. Regional level validation statistics show the following results:

- Cordon Validation: model assigned trips to counts within 4%
- Screenline Validation: model assigned trips to total screenline volumes within 1%
- Total assigned volumes compared to total counts within 2%

Table 7 lists the validation results at the regional screenlines.

[1] VMT/VHT do not include centroid connectors

Figure 7 – Validation Results: Average Daily Traffic

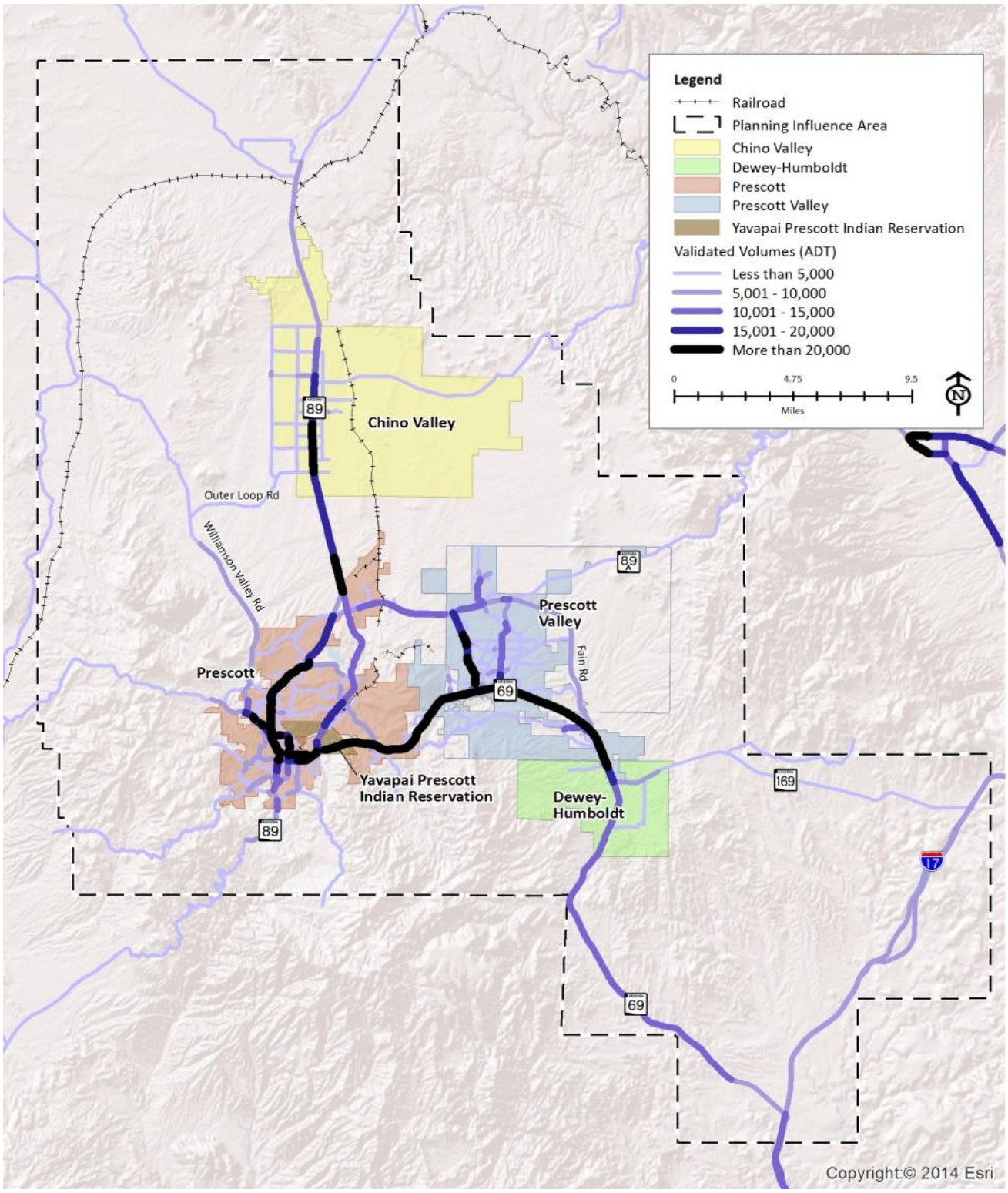


Table 7 – Screen Line Validation

Screenline Number	Location	Counts	Volume	Percent Error	RMSE
1	North Prescott	47,200	43,000	9%	15%
2	Prescott/Prescott Valley	59,400	60,000	1%	3%
3	North of 89A	24,900	27,300	10%	10 %
4	West of Williamson Valley Rd.	8,000	8,100	1%	2 %
5	West of Fain Rd.	32,300	33,700	5%	13%
6	South of 89A	31,300	32,600	4%	16%
7	SR 89 North of Chino Valley	8,900	8,400	6%	6%
TOTAL		212,000	213,100	1%	11%

Tables 8 and 9 show the results of the CYMPO focused model validation by facility type and roadway volume group.

Table 8 – Facility Type Validation Results

Facility Type	Validation Guideline	Counts	Model	Percent Error
Freeway	+/- 7%	90,400	94,0000	4%
Major Arterial	+/- 10%	616,700	616,300	1%
Minor Arterial5	+/- 15%	567,800	583,900	3%
Collectors	+/- 20%	363,100	322,800	11%

Table 9 – Volume Group Validation Results

Volume Group (vpd)	Validation Guideline	Count	Model	Percent Error	RMSE
0 to 4,500	+/-10%	188,400	200,500	6%	47%
4,500 to 10,000	+/-10%	344,000	338,700	2%	49%
10,000 to 15,000	+/-10%	265,100	258,800	2%	22%
15,000 to 20,000	+/-10%	211,600	202,400	4%	19%
20,000 to 35,000	+/-10%	617,300	602,100	2%	10%

Appendix D

Traffic Counts

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	38	13	0	0	0	0	1	0	0	0	0	0	52
01:00	0	43	6	0	1	0	0	1	0	0	0	0	0	51
02:00	0	26	8	0	0	0	0	1	0	0	0	0	0	35
03:00	0	36	10	0	0	0	0	5	0	0	0	0	0	51
04:00	0	58	24	1	4	0	0	6	0	0	0	0	0	93
05:00	0	177	51	0	0	0	0	6	0	0	0	0	0	234
06:00	0	394	116	0	6	0	0	8	0	0	4	0	1	529
07:00	0	535	137	0	8	**2**	0	5	5	0	7	0	0	699
08:00	0	564	163	0	7	1	**1**	7	**7**	0	3	0	4	757
09:00	0	694	183	0	4	1	0	**11**	7	0	**12**	2	2	916
10:00	0	798	222	0	**14**	2	0	3	7	0	10	3	3	1062
11:00	**3**	**938**	**264**	**3**	7	0	0	6	5	0	4	**4**	**7**	**1241**
12 PM	1	1001	267	**5**	**13**	2	**1**	4	9	0	17	4	5	1329
13:00	1	1011	252	2	10	1	0	3	9	0	**22**	6	5	1322
14:00	**2**	1058	285	1	9	1	0	2	9	0	12	3	7	1389
15:00	0	1164	263	4	8	6	0	2	14	0	11	4	10	1486
16:00	0	**1183**	**291**	4	5	5	0	**7**	**20**	0	14	3	11	**1543**
17:00	0	1146	231	0	4	**8**	0	1	13	0	10	**7**	**17**	1437
18:00	1	677	131	0	3	2	0	2	3	0	5	2	2	828
19:00	0	489	108	0	1	0	0	0	1	0	1	0	0	600
20:00	0	457	86	0	2	2	1	1	0	0	1	0	0	550
21:00	0	259	53	0	1	1	0	1	0	0	0	0	0	315
22:00	0	128	23	0	0	0	0	1	0	0	1	0	0	153
23:00	0	90	15	0	0	0	0	2	0	0	0	0	0	107
Day Total	8	12964	3202	20	107	34	3	86	109	0	134	38	74	16779
Percent	0.0%	77.3%	19.1%	0.1%	0.6%	0.2%	0.0%	0.5%	0.6%	0.0%	0.8%	0.2%	0.4%	
AM Peak	11:00	11:00	11:00	11:00	10:00	07:00	08:00	09:00	08:00		09:00	11:00	11:00	11:00
Vol.	3	938	264	3	14	2	1	11	7		12	4	7	1241
PM Peak	14:00	16:00	16:00	12:00	12:00	17:00	12:00	16:00	16:00		13:00	17:00	17:00	16:00
Vol.	2	1183	291	5	13	8	1	7	20		22	7	17	1543

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	52	6	0	0	0	0	0	0	0	0	0	0	58
01:00	0	31	6	0	0	0	0	2	0	0	0	0	0	39
02:00	0	25	6	0	2	0	0	2	0	0	0	0	0	35
03:00	0	30	9	0	0	0	0	4	0	0	0	0	0	43
04:00	0	71	20	0	2	1	0	4	0	0	0	0	0	98
05:00	0	186	48	0	3	0	0	3	0	0	0	0	0	240
06:00	0	372	118	1	4	2	0	4	0	0	4	0	1	506
07:00	**1**	502	164	2	3	0	0	6	1	0	6	1	0	686
08:00	0	530	161	**3**	8	0	0	8	2	0	4	0	2	718
09:00	0	628	196	2	8	1	0	**9**	5	0	11	2	0	862
10:00	0	791	233	0	11	**4**	0	5	**8**	0	7	**3**	3	1065
11:00	0	**861**	**238**	1	**12**	1	0	2	7	0	**21**	3	**8**	**1154**
12 PM	1	981	243	**3**	7	2	0	5	10	0	11	1	9	1273
13:00	0	1086	**311**	0	5	1	**1**	6	**17**	**1**	8	0	7	1443
14:00	**2**	1072	284	0	5	2	0	1	10	0	**18**	0	3	1397
15:00	1	1196	261	2	**10**	**7**	0	6	14	0	10	**5**	10	1522
16:00	1	**1238**	275	3	3	7	0	**7**	10	0	10	3	**15**	**1572**
17:00	1	1184	259	2	1	5	0	2	12	0	16	2	8	1492
18:00	1	726	189	1	2	2	0	1	4	0	3	1	3	933
19:00	1	528	122	1	3	3	0	1	2	0	1	0	0	662
20:00	0	492	93	1	2	0	0	2	1	0	1	0	0	592
21:00	0	252	54	0	0	0	0	0	1	0	2	0	0	309
22:00	0	166	40	0	0	0	0	2	0	0	0	0	0	208
23:00	0	107	14	0	1	0	0	2	0	0	0	0	0	124
Day Total	9	13107	3350	22	92	38	1	84	104	1	133	21	69	17031
Percent	0.1%	77.0%	19.7%	0.1%	0.5%	0.2%	0.0%	0.5%	0.6%	0.0%	0.8%	0.1%	0.4%	
AM Peak	07:00	11:00	11:00	08:00	11:00	10:00		09:00	10:00		11:00	10:00	11:00	11:00
Vol.	1	861	238	3	12	4		9	8		21	3	8	1154
PM Peak	14:00	16:00	13:00	12:00	15:00	15:00	13:00	16:00	13:00	13:00	14:00	15:00	16:00	16:00
Vol.	2	1238	311	3	10	7	1	7	17	1	18	5	15	1572

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	48	12	0	0	0	0	1	0	0	0	0	0	61
01:00	0	32	6	0	1	0	0	5	0	0	0	0	0	44
02:00	0	32	8	0	0	0	0	0	0	0	0	0	0	40
03:00	0	31	8	0	0	0	0	2	0	0	0	0	0	41
04:00	0	61	20	0	3	0	0	4	0	0	0	0	0	88
05:00	0	176	65	0	0	0	0	1	0	0	1	0	0	243
06:00	0	361	124	0	4	0	0	5	4	0	2	0	0	500
07:00	0	532	167	1	6	**3**	0	5	1	0	11	0	1	727
08:00	0	571	159	**2**	7	1	0	7	1	0	6	2	1	757
09:00	0	648	188	0	**11**	0	0	3	3	0	2	1	**4**	860
10:00	0	765	219	2	4	0	0	**9**	**5**	0	**13**	1	4	1022
11:00	**1**	**870**	**245**	1	9	2	0	4	5	**1**	10	**3**	4	**1155**
12 PM	0	1043	218	1	10	**6**	0	6	12	0	16	3	5	1320
13:00	**1**	1089	239	4	**11**	3	0	2	11	0	**21**	3	9	1393
14:00	0	1043	240	1	5	6	0	7	**17**	0	12	3	**10**	1344
15:00	1	1201	**264**	1	6	5	0	7	11	0	19	**5**	4	1524
16:00	0	**1279**	240	**5**	7	5	**2**	**8**	16	0	16	2	10	**1590**
17:00	0	1098	219	1	4	6	0	0	14	**1**	19	5	8	1375
18:00	0	796	164	1	4	5	0	3	3	0	6	1	1	984
19:00	0	577	117	0	5	0	0	2	2	0	2	0	0	705
20:00	0	461	85	3	2	0	0	2	2	0	2	1	0	558
21:00	0	310	81	0	0	0	0	2	0	0	2	0	0	395
22:00	0	199	28	0	0	0	0	1	3	0	0	0	0	231
23:00	0	99	15	0	0	1	0	2	0	0	0	0	0	117
Day Total	3	13322	3131	23	99	43	2	88	110	2	160	30	61	17074
Percent	0.0%	78.0%	18.3%	0.1%	0.6%	0.3%	0.0%	0.5%	0.6%	0.0%	0.9%	0.2%	0.4%	
AM Peak	11:00	11:00	11:00	08:00	09:00	07:00		10:00	10:00	11:00	10:00	11:00	09:00	11:00
Vol.	1	870	245	2	11	3		9	5	1	13	3	4	1155
PM Peak	13:00	16:00	15:00	16:00	13:00	12:00	16:00	16:00	14:00	17:00	13:00	15:00	14:00	16:00
Vol.	1	1279	264	5	11	6	2	8	17	1	21	5	10	1590
Grand Total	20	39393	9683	65	298	115	6	258	323	3	427	89	204	50884
Percent	0.0%	77.4%	19.0%	0.1%	0.6%	0.2%	0.0%	0.5%	0.6%	0.0%	0.8%	0.2%	0.4%	

Field Data Services of Arizona, Inc.

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Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	53	12	0	0	0	0	2	0	0	0	0	0	67
01:00	0	24	9	0	0	0	0	2	0	0	0	0	0	35
02:00	0	21	7	0	0	0	0	4	0	0	0	0	0	32
03:00	0	37	8	0	5	0	0	2	0	0	0	0	0	52
04:00	0	92	32	0	4	0	0	4	0	0	1	0	0	133
05:00	0	240	68	0	4	2	0	9	0	0	1	1	0	325
06:00	0	458	171	0	9	0	0	**12**	3	0	8	0	3	664
07:00	0	**973**	243	**5**	11	1	0	10	**15**	0	15	**8**	12	**1293**
08:00	0	821	244	0	7	0	0	7	4	0	11	5	8	1107
09:00	0	877	242	2	**14**	2	**1**	7	9	0	8	2	11	1175
10:00	**1**	925	**276**	0	12	**3**	1	6	8	0	14	8	**13**	1267
11:00	0	935	222	0	7	3	1	7	10	**1**	**16**	0	11	1213
12 PM	0	919	217	**3**	**8**	4	1	3	**15**	**1**	**17**	4	**16**	1208
13:00	**1**	**934**	**244**	1	8	2	0	**7**	6	0	17	3	9	**1232**
14:00	1	856	222	3	7	3	**2**	5	8	0	14	**6**	13	1140
15:00	0	834	206	3	6	**6**	0	2	10	0	15	3	14	1099
16:00	0	875	193	1	8	3	1	2	11	0	9	4	6	1113
17:00	0	769	181	2	6	0	0	3	5	0	7	1	3	977
18:00	0	533	124	1	6	0	0	0	0	0	5	1	0	670
19:00	0	372	83	0	3	0	0	2	0	0	2	0	0	462
20:00	0	330	70	0	1	0	0	1	2	0	1	1	2	408
21:00	0	218	41	0	0	0	0	3	0	0	1	0	0	263
22:00	0	101	30	0	0	0	0	0	0	0	0	0	0	131
23:00	0	69	11	0	0	0	0	1	1	0	0	0	0	82
Day Total	3	12266	3156	21	126	29	7	101	107	2	162	47	121	16148
Percent	0.0%	76.0%	19.5%	0.1%	0.8%	0.2%	0.0%	0.6%	0.7%	0.0%	1.0%	0.3%	0.7%	
AM Peak	10:00	07:00	10:00	07:00	09:00	10:00	09:00	06:00	07:00	11:00	11:00	07:00	10:00	07:00
Vol.	1	973	276	5	14	3	1	12	15	1	16	8	13	1293
PM Peak	13:00	13:00	13:00	12:00	12:00	15:00	14:00	13:00	12:00	12:00	12:00	14:00	12:00	13:00
Vol.	1	934	244	3	8	6	2	7	15	1	17	6	16	1232

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	45	10	0	0	0	0	1	0	0	0	0	0	56
01:00	0	31	4	0	0	0	0	5	0	0	0	0	0	40
02:00	0	15	6	0	0	0	0	4	0	0	0	0	0	25
03:00	0	35	9	0	1	0	0	3	0	0	0	0	0	48
04:00	0	109	29	0	8	0	0	5	0	0	0	0	0	151
05:00	0	235	60	1	6	1	0	8	2	0	2	0	0	315
06:00	0	474	161	1	11	0	0	6	5	0	8	3	1	670
07:00	0	963	**288**	2	10	1	1	**12**	12	0	17	2	5	**1313**
08:00	**1**	783	237	2	**15**	2	0	8	10	0	11	3	10	1082
09:00	0	845	265	**4**	10	2	**2**	8	**15**	0	**24**	6	**13**	1194
10:00	1	945	255	0	11	2	0	8	8	0	15	**9**	11	1265
11:00	0	**988**	229	1	10	**3**	0	11	9	0	16	6	4	1277
12 PM	0	922	223	3	**12**	5	0	6	11	0	11	**5**	**12**	**1210**
13:00	**2**	901	**227**	0	7	**6**	0	**9**	**14**	**1**	8	4	11	1190
14:00	0	**937**	191	1	9	3	0	5	9	0	9	2	12	1178
15:00	0	909	207	**4**	6	3	0	3	14	0	**14**	1	12	1173
16:00	1	872	194	1	2	3	0	3	14	0	12	0	6	1108
17:00	0	746	199	1	0	2	0	4	3	0	5	3	3	966
18:00	0	570	154	1	6	4	0	2	4	0	3	0	0	744
19:00	0	369	87	0	3	0	0	3	0	0	0	0	2	464
20:00	0	399	93	0	2	1	0	2	2	0	2	0	1	502
21:00	0	268	56	0	0	0	0	1	0	0	0	0	1	326
22:00	0	117	24	0	0	0	0	4	0	0	0	0	0	145
23:00	0	82	18	0	0	0	0	1	1	0	0	0	0	102
Day Total	5	12560	3226	22	129	38	3	122	133	1	157	44	104	16544
Percent	0.0%	75.9%	19.5%	0.1%	0.8%	0.2%	0.0%	0.7%	0.8%	0.0%	0.9%	0.3%	0.6%	
AM Peak	08:00	11:00	07:00	09:00	08:00	11:00	09:00	07:00	09:00		09:00	10:00	09:00	07:00
Vol.	1	988	288	4	15	3	2	12	15		24	9	13	1313
PM Peak	13:00	14:00	13:00	15:00	12:00	13:00		13:00	13:00	13:00	15:00	12:00	12:00	12:00
Vol.	2	937	227	4	12	6		9	14	1	14	5	12	1210

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	43	11	0	0	0	0	1	0	0	0	0	0	55
01:00	0	26	4	0	0	0	0	0	0	0	0	0	0	30
02:00	0	23	5	0	0	0	0	3	0	0	0	0	0	31
03:00	0	36	10	0	0	0	0	4	0	0	1	0	0	51
04:00	0	106	32	0	5	0	0	7	0	0	0	0	0	150
05:00	0	231	55	0	2	0	0	7	0	0	1	0	1	297
06:00	0	473	167	1	**16**	0	0	6	1	0	4	2	2	672
07:00	0	930	**286**	1	12	1	0	6	8	0	14	4	10	1272
08:00	**1**	812	219	1	12	0	0	3	**17**	0	14	1	9	1089
09:00	0	834	230	**3**	7	2	0	**8**	11	0	18	**6**	**13**	1132
10:00	0	923	251	0	9	**3**	0	6	8	0	**21**	3	10	1234
11:00	0	**978**	246	3	8	0	0	4	10	0	20	2	12	**1283**
12 PM	**1**	874	213	3	8	3	0	**8**	**16**	0	**17**	4	10	1157
13:00	0	908	**241**	**4**	**9**	0	0	8	13	0	9	**9**	10	**1211**
14:00	0	930	230	1	1	2	0	4	13	0	11	3	7	1202
15:00	0	914	194	0	7	**5**	0	8	13	0	13	1	**11**	1166
16:00	1	**954**	185	0	5	3	0	2	9	0	13	2	6	1180
17:00	1	850	201	0	3	0	0	2	5	0	5	1	4	1072
18:00	1	610	139	0	5	4	0	1	4	0	2	2	4	772
19:00	0	455	111	0	3	1	0	3	3	0	3	1	0	580
20:00	0	306	86	0	1	0	0	2	0	0	2	0	1	398
21:00	0	237	67	0	2	0	0	3	0	0	0	0	0	309
22:00	0	134	33	0	1	0	0	3	1	0	0	0	0	172
23:00	0	67	17	0	0	0	0	3	0	0	0	0	0	87
Day Total	5	12654	3233	17	116	24	0	102	132	0	168	41	110	16602
Percent	0.0%	76.2%	19.5%	0.1%	0.7%	0.1%	0.0%	0.6%	0.8%	0.0%	1.0%	0.2%	0.7%	
AM Peak	08:00	11:00	07:00	09:00	06:00	10:00		09:00	08:00		10:00	09:00	09:00	11:00
Vol.	1	978	286	3	16	3		8	17		21	6	13	1283
PM Peak	12:00	16:00	13:00	13:00	13:00	15:00		12:00	12:00		12:00	13:00	15:00	13:00
Vol.	1	954	241	4	9	5		8	16		17	9	11	1211
Grand Total	13	37480	9615	60	371	91	10	325	372	3	487	132	335	49294
Percent	0.0%	76.0%	19.5%	0.1%	0.8%	0.2%	0.0%	0.7%	0.8%	0.0%	1.0%	0.3%	0.7%	

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound, Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	91	25	0	0	0	0	3	0	0	0	0	0	119
01:00	0	67	15	0	1	0	0	3	0	0	0	0	0	86
02:00	0	47	15	0	0	0	0	5	0	0	0	0	0	67
03:00	0	73	18	0	5	0	0	7	0	0	0	0	0	103
04:00	0	150	56	1	8	0	0	10	0	0	1	0	0	226
05:00	0	417	119	0	4	2	0	15	0	0	1	1	0	559
06:00	0	852	287	0	15	0	0	**20**	3	0	12	0	4	1193
07:00	0	1508	380	**5**	19	3	0	15	**20**	0	22	8	12	1992
08:00	0	1385	407	0	14	1	**1**	14	11	0	14	5	12	1864
09:00	0	1571	425	2	18	3	1	18	16	0	20	4	13	2091
10:00	1	1723	**498**	0	**26**	**5**	1	9	15	0	**24**	**11**	16	2329
11:00	**3**	**1873**	486	3	14	3	1	13	15	**1**	20	4	**18**	**2454**
12 PM	1	1920	484	**8**	**21**	6	**2**	7	24	**1**	34	8	21	2537
13:00	2	1945	496	3	18	3	0	**10**	15	0	**39**	**9**	14	2554
14:00	**3**	1914	**507**	4	16	4	2	7	17	0	26	9	20	2529
15:00	0	1998	469	7	14	**12**	0	4	24	0	26	7	**24**	2585
16:00	0	**2058**	484	5	13	8	1	9	**31**	0	23	7	17	**2656**
17:00	0	1915	412	2	10	8	0	4	18	0	17	8	20	2414
18:00	1	1210	255	1	9	2	0	2	3	0	10	3	2	1498
19:00	0	861	191	0	4	0	0	2	1	0	3	0	0	1062
20:00	0	787	156	0	3	2	1	2	2	0	2	1	2	958
21:00	0	477	94	0	1	1	0	4	0	0	1	0	0	578
22:00	0	229	53	0	0	0	0	1	0	0	1	0	0	284
23:00	0	159	26	0	0	0	0	3	1	0	0	0	0	189
Day Total	11	25230	6358	41	233	63	10	187	216	2	296	85	195	32927
Percent	0.0%	76.6%	19.3%	0.1%	0.7%	0.2%	0.0%	0.6%	0.7%	0.0%	0.9%	0.3%	0.6%	
AM Peak	11:00	11:00	10:00	07:00	10:00	10:00	08:00	06:00	07:00	11:00	10:00	10:00	11:00	11:00
Vol.	3	1873	498	5	26	5	1	20	20	1	24	11	18	2454
PM Peak	14:00	16:00	14:00	12:00	12:00	15:00	12:00	13:00	16:00	12:00	13:00	13:00	15:00	16:00
Vol.	3	2058	507	8	21	12	2	10	31	1	39	9	24	2656

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound, Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	97	16	0	0	0	0	1	0	0	0	0	0	114
01:00	0	62	10	0	0	0	0	7	0	0	0	0	0	79
02:00	0	40	12	0	2	0	0	6	0	0	0	0	0	60
03:00	0	65	18	0	1	0	0	7	0	0	0	0	0	91
04:00	0	180	49	0	10	1	0	9	0	0	0	0	0	249
05:00	0	421	108	1	9	1	0	11	2	0	2	0	0	555
06:00	0	846	279	2	15	2	0	10	5	0	12	3	2	1176
07:00	**1**	1465	452	4	13	1	1	**18**	13	0	23	3	5	1999
08:00	1	1313	398	5	**23**	2	0	16	12	0	15	3	12	1800
09:00	0	1473	461	**6**	18	3	**2**	17	**20**	0	35	8	13	2056
10:00	1	1736	**488**	0	22	**6**	0	13	16	0	22	**12**	**14**	2330
11:00	0	**1849**	467	2	22	4	0	13	16	0	**37**	9	12	**2431**
12 PM	1	1903	466	**6**	**19**	7	0	11	21	0	22	**6**	21	2483
13:00	**2**	1987	**538**	0	12	7	**1**	**15**	**31**	**2**	16	4	18	2633
14:00	2	2009	475	1	14	5	0	6	19	0	**27**	2	15	2575
15:00	1	2105	468	6	16	**10**	0	9	28	0	24	6	**22**	**2695**
16:00	2	**2110**	469	4	5	10	0	10	24	0	22	3	21	2680
17:00	1	1930	458	3	1	7	0	6	15	0	21	5	11	2458
18:00	1	1296	343	2	8	6	0	3	8	0	6	1	3	1677
19:00	1	897	209	1	6	3	0	4	2	0	1	0	2	1126
20:00	0	891	186	1	4	1	0	4	3	0	3	0	1	1094
21:00	0	520	110	0	0	0	0	1	1	0	2	0	1	635
22:00	0	283	64	0	0	0	0	6	0	0	0	0	0	353
23:00	0	189	32	0	1	0	0	3	1	0	0	0	0	226
Day Total	14	25667	6576	44	221	76	4	206	237	2	290	65	173	33575
Percent	0.0%	76.4%	19.6%	0.1%	0.7%	0.2%	0.0%	0.6%	0.7%	0.0%	0.9%	0.2%	0.5%	
AM Peak	07:00	11:00	10:00	09:00	08:00	10:00	09:00	07:00	09:00		11:00	10:00	10:00	11:00
Vol.	1	1849	488	6	23	6	2	18	20		37	12	14	2431
PM Peak	13:00	16:00	13:00	12:00	12:00	15:00	13:00	13:00	13:00	13:00	14:00	12:00	15:00	15:00
Vol.	2	2110	538	6	19	10	1	15	31	2	27	6	22	2695

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-001
Station ID:
SR-69 btwn Sundog Ranch Rd. & E Baker St
Latitude: 0' 0.000 Undefined

Eastbound, Westbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	91	23	0	0	0	0	2	0	0	0	0	0	116
01:00	0	58	10	0	1	0	0	5	0	0	0	0	0	74
02:00	0	55	13	0	0	0	0	3	0	0	0	0	0	71
03:00	0	67	18	0	0	0	0	6	0	0	1	0	0	92
04:00	0	167	52	0	8	0	0	11	0	0	0	0	0	238
05:00	0	407	120	0	2	0	0	8	0	0	2	0	1	540
06:00	0	834	291	1	**20**	0	0	11	5	0	6	2	2	1172
07:00	0	1462	453	2	18	**4**	0	11	9	0	25	4	11	1999
08:00	**1**	1383	378	3	19	1	0	10	**18**	0	20	3	10	1846
09:00	0	1482	418	3	18	2	0	11	14	0	20	**7**	**17**	1992
10:00	0	1688	470	2	13	3	0	**15**	13	0	**34**	4	14	2256
11:00	1	**1848**	**491**	**4**	17	2	0	8	15	**1**	30	5	16	**2438**
12 PM	**1**	1917	431	4	18	9	0	14	28	0	**33**	7	15	2477
13:00	1	1997	**480**	**8**	**20**	3	0	10	24	0	30	**12**	**19**	2604
14:00	0	1973	470	2	6	8	0	11	**30**	0	23	6	17	2546
15:00	1	2115	458	1	13	**10**	0	**15**	24	0	32	6	15	2690
16:00	1	**2233**	425	5	12	8	**2**	10	25	0	29	4	16	**2770**
17:00	1	1948	420	1	7	6	0	2	19	**1**	24	6	12	2447
18:00	1	1406	303	1	9	9	0	4	7	0	8	3	5	1756
19:00	0	1032	228	0	8	1	0	5	5	0	5	1	0	1285
20:00	0	767	171	3	3	0	0	4	2	0	4	1	1	956
21:00	0	547	148	0	2	0	0	5	0	0	2	0	0	704
22:00	0	333	61	0	1	0	0	4	4	0	0	0	0	403
23:00	0	166	32	0	0	1	0	5	0	0	0	0	0	204
Day Total	8	25976	6364	40	215	67	2	190	242	2	328	71	171	33676
Percent	0.0%	77.1%	18.9%	0.1%	0.6%	0.2%	0.0%	0.6%	0.7%	0.0%	1.0%	0.2%	0.5%	
AM Peak	08:00	11:00	11:00	11:00	06:00	07:00		10:00	08:00	11:00	10:00	09:00	09:00	11:00
Vol.	1	1848	491	4	20	4		15	18	1	34	7	17	2438
PM Peak	12:00	16:00	13:00	13:00	13:00	15:00	16:00	15:00	14:00	17:00	12:00	13:00	13:00	16:00
Vol.	1	2233	480	8	20	10	2	15	30	1	33	12	19	2770
Grand Total	33	76873	19298	125	669	206	16	583	695	6	914	221	539	100178
Percent	0.0%	76.7%	19.3%	0.1%	0.7%	0.2%	0.0%	0.6%	0.7%	0.0%	0.9%	0.2%	0.5%	

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Northbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	23	5	0	0	0	0	0	0	0	0	0	0	28
01:00	0	23	5	0	0	0	0	0	0	0	0	0	0	28
02:00	0	27	17	0	0	0	0	0	0	0	0	0	0	44
03:00	0	48	20	0	0	0	0	0	0	0	0	0	0	68
04:00	0	64	31	0	2	0	0	1	0	0	0	0	0	98
05:00	0	177	48	0	2	0	0	2	0	0	0	0	0	229
06:00	0	397	169	0	5	2	0	**6**	0	0	1	0	1	581
07:00	0	**710**	**223**	2	7	2	**1**	1	**9**	0	**7**	0	**9**	**971**
08:00	0	430	146	**3**	**13**	1	0	2	3	0	1	**2**	1	602
09:00	1	341	124	0	5	**3**	0	6	2	0	4	2	0	488
10:00	**2**	359	138	0	6	3	0	2	4	0	4	0	0	518
11:00	1	391	127	1	7	2	0	2	1	0	1	1	6	540
12 PM	1	458	171	1	**13**	5	0	4	5	0	**5**	1	4	668
13:00	**2**	453	164	0	6	3	**1**	3	2	0	4	1	1	640
14:00	1	578	161	**2**	6	**6**	1	2	7	0	4	1	2	771
15:00	0	605	**199**	2	11	1	0	**6**	5	0	4	**2**	**8**	843
16:00	0	**646**	183	2	10	3	0	3	**13**	0	3	0	4	**867**
17:00	0	524	161	1	8	0	0	1	1	0	3	2	0	701
18:00	1	439	92	0	3	1	0	1	0	0	4	0	0	541
19:00	0	285	70	0	0	1	0	0	0	0	1	0	0	357
20:00	0	319	93	0	2	1	0	0	1	0	1	0	0	417
21:00	0	213	55	0	0	2	0	0	1	0	0	0	0	271
22:00	0	78	14	0	0	0	0	0	0	0	0	0	0	92
23:00	0	49	10	0	0	0	0	0	0	0	0	0	0	59
Day Total	9	7637	2426	14	106	36	3	42	54	0	47	12	36	10422
Percent	0.1%	73.3%	23.3%	0.1%	1.0%	0.3%	0.0%	0.4%	0.5%	0.0%	0.5%	0.1%	0.3%	
AM Peak	10:00	07:00	07:00	08:00	08:00	09:00	07:00	06:00	07:00		07:00	08:00	07:00	07:00
Vol.	2	710	223	3	13	3	1	6	9		7	2	9	971
PM Peak	13:00	16:00	15:00	14:00	12:00	14:00	13:00	15:00	16:00		12:00	15:00	15:00	16:00
Vol.	2	646	199	2	13	6	1	6	13		5	2	8	867

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Northbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	29	7	0	0	0	0	1	0	0	0	0	0	37
01:00	0	31	7	0	0	0	0	1	0	0	0	0	0	39
02:00	0	40	8	0	0	0	0	0	0	0	0	0	0	48
03:00	0	50	17	0	0	0	0	0	0	0	0	0	0	67
04:00	0	74	26	0	2	0	0	1	0	0	0	0	0	103
05:00	0	191	59	0	5	0	0	2	0	0	0	0	0	257
06:00	0	356	141	1	9	0	0	2	**3**	0	3	1	1	517
07:00	**1**	**718**	**219**	**3**	11	**3**	**1**	**4**	2	0	**4**	**5**	**5**	**976**
08:00	0	426	165	3	**15**	1	1	2	0	0	2	0	0	615
09:00	1	369	96	2	5	1	0	4	0	0	1	1	1	481
10:00	1	328	130	0	9	2	0	3	3	0	1	1	1	479
11:00	1	380	148	0	7	0	0	2	3	0	1	0	1	543
12 PM	0	445	144	0	**13**	1	0	**3**	2	0	4	0	1	613
13:00	1	506	150	**4**	12	3	0	2	2	0	2	2	**4**	688
14:00	1	547	175	1	9	3	0	3	**8**	0	6	2	4	759
15:00	0	**611**	**187**	0	8	3	0	2	6	**1**	6	**4**	2	**830**
16:00	**2**	537	174	0	1	1	0	2	8	0	**12**	3	4	744
17:00	0	565	164	1	1	**7**	0	2	4	1	2	1	1	749
18:00	0	415	134	1	4	1	0	1	0	0	2	0	0	558
19:00	0	283	92	0	0	1	0	1	2	0	1	0	0	380
20:00	0	218	49	0	0	0	0	0	0	0	0	0	0	267
21:00	0	165	38	0	0	0	0	1	0	0	0	0	0	204
22:00	0	81	14	0	1	0	0	0	0	0	1	0	0	97
23:00	0	42	12	0	0	0	0	0	0	0	0	0	0	54
Day Total	8	7407	2356	16	112	27	2	39	43	2	48	20	25	10105
Percent	0.1%	73.3%	23.3%	0.2%	1.1%	0.3%	0.0%	0.4%	0.4%	0.0%	0.5%	0.2%	0.2%	
AM Peak	07:00	07:00	07:00	07:00	08:00	07:00	07:00	07:00	06:00		07:00	07:00	07:00	07:00
Vol.	1	718	219	3	15	3	1	4	3		4	5	5	976
PM Peak	16:00	15:00	15:00	13:00	12:00	17:00		12:00	14:00	15:00	16:00	15:00	13:00	15:00
Vol.	2	611	187	4	13	7		3	8	1	12	4	4	830

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Northbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	20	8	0	0	0	0	0	0	0	0	0	0	28
01:00	0	24	1	1	0	0	0	2	0	0	1	0	1	30
02:00	0	28	4	0	0	1	**1**	0	0	0	0	0	0	34
03:00	0	48	14	0	1	0	0	1	0	0	0	0	0	64
04:00	0	75	28	0	1	1	0	0	**1**	0	0	1	0	107
05:00	0	165	62	1	4	0	0	0	0	0	0	1	1	234
06:00	0	351	134	0	3	0	1	1	1	0	2	0	0	493
07:00	0	**713**	**232**	**3**	11	**3**	0	2	0	0	**5**	**3**	1	**973**
08:00	1	464	218	1	**12**	1	0	**5**	0	0	1	1	1	705
09:00	0	301	115	0	11	1	1	3	1	**1**	0	1	0	435
10:00	**2**	308	94	1	8	0	0	3	1	0	1	1	**2**	421
11:00	2	363	134	0	4	1	0	1	1	0	3	0	1	510
12 PM	0	464	137	1	1	1	0	1	**2**	**1**	2	0	1	611
13:00	1	**532**	104	**3**	3	**6**	**1**	2	1	0	1	0	1	655
14:00	**2**	532	102	3	2	4	0	1	0	0	1	1	0	648
15:00	0	524	163	0	2	3	0	2	1	1	**3**	1	1	701
16:00	1	525	**165**	1	2	3	0	**3**	2	0	1	**3**	**4**	**710**
17:00	0	495	153	0	**6**	2	0	0	2	0	0	0	0	658
18:00	1	369	93	1	3	0	0	0	0	0	1	0	1	469
19:00	0	283	76	0	0	1	0	1	2	0	1	0	0	364
20:00	0	218	37	0	0	0	0	0	0	0	0	0	0	255
21:00	0	162	49	0	0	0	0	1	0	0	0	0	0	212
22:00	0	75	20	0	1	0	0	0	0	0	1	0	0	97
23:00	0	50	14	0	0	0	0	0	0	0	0	0	0	64
Day Total	10	7089	2157	16	75	28	4	29	15	3	24	13	15	9478
Percent	0.1%	74.8%	22.8%	0.2%	0.8%	0.3%	0.0%	0.3%	0.2%	0.0%	0.3%	0.1%	0.2%	
AM Peak	10:00	07:00	07:00	07:00	08:00	07:00	02:00	08:00	04:00	09:00	07:00	07:00	10:00	07:00
Vol.	2	713	232	3	12	3	1	5	1	1	5	3	2	973
PM Peak	14:00	13:00	16:00	13:00	17:00	13:00	13:00	16:00	12:00	12:00	15:00	16:00	16:00	16:00
Vol.	2	532	165	3	6	6	1	3	2	1	3	3	4	710
Grand Total	27	22133	6939	46	293	91	9	110	112	5	119	45	76	30005
Percent	0.1%	73.8%	23.1%	0.2%	1.0%	0.3%	0.0%	0.4%	0.4%	0.0%	0.4%	0.1%	0.3%	

Field Data Services of Arizona, Inc.

21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Southbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	27	5	0	0	0	0	2	0	0	0	0	0	34
01:00	0	12	2	0	0	0	0	1	0	0	0	0	0	15
02:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
03:00	0	18	5	0	1	0	0	0	0	0	0	0	0	24
04:00	0	71	31	0	0	0	0	2	0	0	0	0	0	104
05:00	0	131	47	0	1	1	0	0	0	0	0	0	0	180
06:00	0	369	109	0	**20**	0	0	**4**	1	0	0	0	0	503
07:00	0	**709**	**175**	0	2	1	0	2	**6**	0	1	1	1	**898**
08:00	0	499	165	0	9	1	0	3	2	0	**4**	1	0	684
09:00	0	445	131	**1**	6	**2**	0	2	2	0	0	0	1	590
10:00	0	463	122	0	10	1	0	2	1	0	0	**2**	0	601
11:00	0	469	152	1	14	2	0	3	2	0	1	0	**2**	646
12 PM	0	444	121	0	13	2	0	2	1	0	5	0	0	588
13:00	0	489	151	**1**	19	1	0	2	2	0	5	**1**	0	671
14:00	0	599	164	0	**20**	0	0	**4**	**6**	0	1	0	0	794
15:00	**1**	705	**205**	1	12	0	0	0	3	0	**8**	0	0	935
16:00	0	793	198	0	3	1	0	2	3	0	1	1	0	**1002**
17:00	0	**803**	185	0	1	**3**	0	0	2	0	1	0	0	995
18:00	0	382	99	0	4	2	0	0	2	0	3	0	0	492
19:00	0	204	46	0	0	0	0	0	1	0	0	0	0	251
20:00	0	220	25	0	1	0	0	0	0	0	0	0	0	246
21:00	0	117	19	0	0	0	0	0	0	0	0	0	0	136
22:00	0	59	10	0	0	0	0	0	0	0	0	0	0	69
23:00	0	38	4	0	0	0	0	1	0	0	0	0	0	43
Day Total	1	8073	2173	4	136	17	0	32	34	0	30	6	4	10510
Percent	0.0%	76.8%	20.7%	0.0%	1.3%	0.2%	0.0%	0.3%	0.3%	0.0%	0.3%	0.1%	0.0%	
AM Peak		07:00	07:00	09:00	06:00	09:00		06:00	07:00		08:00	10:00	11:00	07:00
Vol.		709	175	1	20	2		4	6		4	2	2	898
PM Peak	15:00	17:00	15:00	13:00	14:00	17:00		14:00	14:00		15:00	13:00		16:00
Vol.	1	803	205	1	20	3		4	6		8	1		1002

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A &
Granville Pkwy.
Latitude: 0' 0.000 Undefined

Southbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	24	9	0	0	0	0	0	1	0	0	0	0	34
01:00	0	43	6	0	0	0	0	0	0	0	0	0	0	49
02:00	0	32	7	0	0	0	0	0	0	0	0	0	0	39
03:00	0	28	6	0	1	0	0	0	0	0	0	0	0	35
04:00	0	79	25	0	1	0	0	1	0	0	0	0	0	106
05:00	0	138	48	0	1	0	0	0	0	0	0	0	0	187
06:00	0	329	116	**1**	**8**	0	0	**6**	1	0	3	0	**1**	465
07:00	0	**675**	**155**	0	3	1	0	0	**8**	0	3	0	0	**845**
08:00	0	526	146	0	5	**4**	0	4	1	0	0	1	1	688
09:00	**1**	431	101	0	5	2	**1**	6	2	0	**4**	0	0	553
10:00	0	447	125	1	7	1	0	2	1	0	1	**2**	0	587
11:00	0	505	141	0	5	1	0	5	3	0	4	0	0	664
12 PM	0	509	137	0	**14**	3	0	2	**1**	**1**	2	**1**	0	670
13:00	0	493	144	0	10	0	0	1	0	0	3	1	0	652
14:00	0	558	159	0	6	2	0	1	1	0	**4**	0	**1**	732
15:00	0	651	159	**1**	6	2	0	2	1	0	3	1	1	827
16:00	0	741	160	0	4	**5**	0	**3**	1	0	4	0	0	918
17:00	**2**	**837**	**205**	0	1	3	0	2	0	0	3	1	1	**1055**
18:00	0	478	108	0	1	0	0	1	1	0	0	0	0	589
19:00	0	235	50	0	0	2	0	1	0	0	0	0	0	288
20:00	0	289	47	0	0	1	0	1	1	0	0	0	0	339
21:00	0	125	27	0	0	0	0	0	0	0	0	0	0	152
22:00	0	66	11	0	0	0	0	0	0	0	0	0	0	77
23:00	0	40	5	0	0	0	0	0	0	0	0	0	0	45
Day Total	3	8279	2097	3	78	27	1	38	23	1	34	7	5	10596
Percent	0.0%	78.1%	19.8%	0.0%	0.7%	0.3%	0.0%	0.4%	0.2%	0.0%	0.3%	0.1%	0.0%	
AM Peak	09:00	07:00	07:00	06:00	06:00	08:00	09:00	06:00	07:00		09:00	10:00	06:00	07:00
Vol.	1	675	155	1	8	4	1	6	8		4	2	1	845
PM Peak	17:00	17:00	17:00	15:00	12:00	16:00		16:00	12:00	12:00	14:00	12:00	14:00	17:00
Vol.	2	837	205	1	14	5		3	1	1	4	1	1	1055

Field Data Services of Arizona, Inc.

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Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Southbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	21	9	0	0	0	0	2	0	0	0	0	0	32
01:00	0	43	7	0	0	0	0	0	0	0	0	0	0	50
02:00	0	21	6	0	0	0	0	0	0	0	0	0	0	27
03:00	0	30	4	0	0	0	0	0	0	0	0	0	0	34
04:00	0	69	24	**1**	1	0	0	0	0	0	0	0	0	95
05:00	0	142	46	0	1	1	0	0	0	0	0	0	0	190
06:00	0	338	105	0	**13**	**2**	0	**5**	**3**	0	1	0	0	467
07:00	0	**687**	**163**	0	5	2	0	1	3	0	1	0	0	**862**
08:00	0	502	119	0	4	1	0	1	1	0	**5**	0	**1**	634
09:00	0	447	133	0	5	2	0	5	1	0	1	0	0	594
10:00	0	442	149	1	5	0	0	1	0	0	2	0	1	601
11:00	0	487	133	1	5	1	0	1	1	0	2	0	1	632
12 PM	0	465	116	0	5	0	0	0	3	**1**	4	0	0	594
13:00	0	533	140	0	**20**	1	0	**3**	**4**	1	1	0	**1**	704
14:00	0	581	159	0	11	**4**	**1**	1	4	0	1	0	1	763
15:00	0	682	**205**	0	5	3	0	3	2	0	1	0	0	901
16:00	0	**741**	178	0	3	1	0	2	2	0	**5**	**1**	1	**934**
17:00	**1**	709	185	0	7	1	0	0	1	0	4	0	0	908
18:00	0	414	89	0	5	2	0	0	0	0	1	0	0	511
19:00	0	231	43	0	0	0	0	0	1	0	1	0	0	276
20:00	0	208	53	**1**	2	0	0	0	0	0	0	0	0	264
21:00	0	130	24	0	0	0	0	0	0	0	0	0	0	154
22:00	0	67	9	0	0	0	0	1	0	0	0	0	0	77
23:00	0	48	4	0	1	0	0	0	0	0	0	0	0	53
Day Total	1	8038	2103	4	98	21	1	26	26	2	30	1	6	10357
Percent	0.0%	77.6%	20.3%	0.0%	0.9%	0.2%	0.0%	0.3%	0.3%	0.0%	0.3%	0.0%	0.1%	
AM Peak		07:00	07:00	04:00	06:00	06:00		06:00	06:00		08:00		08:00	07:00
Vol.		687	163	1	13	2		5	3		5		1	862
PM Peak	17:00	16:00	15:00	20:00	13:00	14:00	14:00	13:00	13:00	12:00	16:00	16:00	13:00	16:00
Vol.	1	741	205	1	20	4	1	3	4	1	5	1	1	934
Grand Total	5	24390	6373	11	312	65	2	96	83	3	94	14	15	31463
Percent	0.0%	77.5%	20.3%	0.0%	1.0%	0.2%	0.0%	0.3%	0.3%	0.0%	0.3%	0.0%	0.0%	

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Latitude: 0' 0.000 Undefined

Northbound, Southbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/18/14	0	50	10	0	0	0	0	2	0	0	0	0	0	62
01:00	0	35	7	0	0	0	0	1	0	0	0	0	0	43
02:00	0	34	19	0	0	0	0	0	0	0	0	0	0	53
03:00	0	66	25	0	1	0	0	0	0	0	0	0	0	92
04:00	0	135	62	0	2	0	0	3	0	0	0	0	0	202
05:00	0	308	95	0	3	1	0	2	0	0	0	0	0	409
06:00	0	766	278	0	**25**	2	0	**10**	1	0	1	0	1	1084
07:00	0	**1419**	**398**	2	9	3	**1**	3	**15**	0	**8**	1	**10**	**1869**
08:00	0	929	311	**3**	22	2	0	5	5	0	5	**3**	1	1286
09:00	1	786	255	1	11	**5**	0	8	4	0	4	2	1	1078
10:00	**2**	822	260	0	16	4	0	4	5	0	4	2	0	1119
11:00	1	860	279	2	21	4	0	5	3	0	2	1	8	1186
12 PM	1	902	292	1	**26**	**7**	0	**6**	6	0	10	1	4	1256
13:00	**2**	942	315	1	25	4	**1**	5	4	0	9	**2**	1	1311
14:00	1	1177	325	2	26	6	1	6	13	0	5	1	2	1565
15:00	1	1310	**404**	**3**	23	1	0	6	8	0	**12**	2	**8**	1778
16:00	0	**1439**	381	2	13	4	0	5	**16**	0	4	1	4	**1869**
17:00	0	1327	346	1	9	3	0	1	3	0	4	2	0	1696
18:00	1	821	191	0	7	3	0	1	2	0	7	0	0	1033
19:00	0	489	116	0	0	1	0	0	1	0	1	0	0	608
20:00	0	539	118	0	3	1	0	0	1	0	1	0	0	663
21:00	0	330	74	0	0	2	0	0	1	0	0	0	0	407
22:00	0	137	24	0	0	0	0	0	0	0	0	0	0	161
23:00	0	87	14	0	0	0	0	1	0	0	0	0	0	102
Day Total	10	15710	4599	18	242	53	3	74	88	0	77	18	40	20932
Percent	0.0%	75.1%	22.0%	0.1%	1.2%	0.3%	0.0%	0.4%	0.4%	0.0%	0.4%	0.1%	0.2%	
AM Peak	10:00	07:00	07:00	08:00	06:00	09:00	07:00	06:00	07:00		07:00	08:00	07:00	07:00
Vol.	2	1419	398	3	25	5	1	10	15		8	3	10	1869
PM Peak	13:00	16:00	15:00	15:00	12:00	12:00	13:00	12:00	16:00		15:00	13:00	15:00	16:00
Vol.	2	1439	404	3	26	7	1	6	16		12	2	8	1869

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A &
Granville Pkwy.
Latitude: 0' 0.000 Undefined

Northbound, Southbound

Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/19/14	0	53	16	0	0	0	0	1	1	0	0	0	0	71
01:00	0	74	13	0	0	0	0	1	0	0	0	0	0	88
02:00	0	72	15	0	0	0	0	0	0	0	0	0	0	87
03:00	0	78	23	0	1	0	0	0	0	0	0	0	0	102
04:00	0	153	51	0	3	0	0	2	0	0	0	0	0	209
05:00	0	329	107	0	6	0	0	2	0	0	0	0	0	444
06:00	0	685	257	2	17	0	0	8	4	0	6	1	2	982
07:00	1	**1393**	**374**	**3**	14	4	**1**	4	**10**	0	**7**	**5**	**5**	**1821**
08:00	0	952	311	3	**20**	**5**	1	6	1	0	2	1	1	1303
09:00	**2**	800	197	2	10	3	1	**10**	2	0	5	1	1	1034
10:00	1	775	255	1	16	3	0	5	4	0	2	3	1	1066
11:00	1	885	289	0	12	1	0	7	6	0	5	0	1	1207
12 PM	0	954	281	0	**27**	4	0	**5**	3	**1**	6	1	1	1283
13:00	1	999	294	**4**	22	3	0	3	2	0	5	3	4	1340
14:00	1	1105	334	1	15	5	0	4	**9**	0	10	2	**5**	1491
15:00	0	1262	346	1	14	5	0	4	7	1	9	**5**	3	1657
16:00	**2**	1278	334	0	5	6	0	5	9	0	**16**	3	4	1662
17:00	2	**1402**	**369**	1	2	**10**	0	4	4	1	5	2	2	**1804**
18:00	0	893	242	1	5	1	0	2	1	0	2	0	0	1147
19:00	0	518	142	0	0	3	0	2	2	0	1	0	0	668
20:00	0	507	96	0	0	1	0	1	1	0	0	0	0	606
21:00	0	290	65	0	0	0	0	1	0	0	0	0	0	356
22:00	0	147	25	0	1	0	0	0	0	0	1	0	0	174
23:00	0	82	17	0	0	0	0	0	0	0	0	0	0	99
Day Total	11	15686	4453	19	190	54	3	77	66	3	82	27	30	20701
Percent	0.1%	75.8%	21.5%	0.1%	0.9%	0.3%	0.0%	0.4%	0.3%	0.0%	0.4%	0.1%	0.1%	
AM Peak	09:00	07:00	07:00	07:00	08:00	08:00	07:00	09:00	07:00		07:00	07:00	07:00	07:00
Vol.	2	1393	374	3	20	5	1	10	10		7	5	5	1821
PM Peak	16:00	17:00	17:00	13:00	12:00	17:00		12:00	14:00	12:00	16:00	15:00	14:00	17:00
Vol.	2	1402	369	4	27	10		5	9	1	16	5	5	1804

Field Data Services of Arizona, Inc.
21636 N. Dietz Dr.
Maricopa, AZ 85138
(520) 316-6745

Site Code: 14-1062-002
Station ID:
Glassford Hill Rd. btwn. SR-89A & Granville Pkwy.
Latitude: 0' 0.000 Undefined

Northbound, Southbound

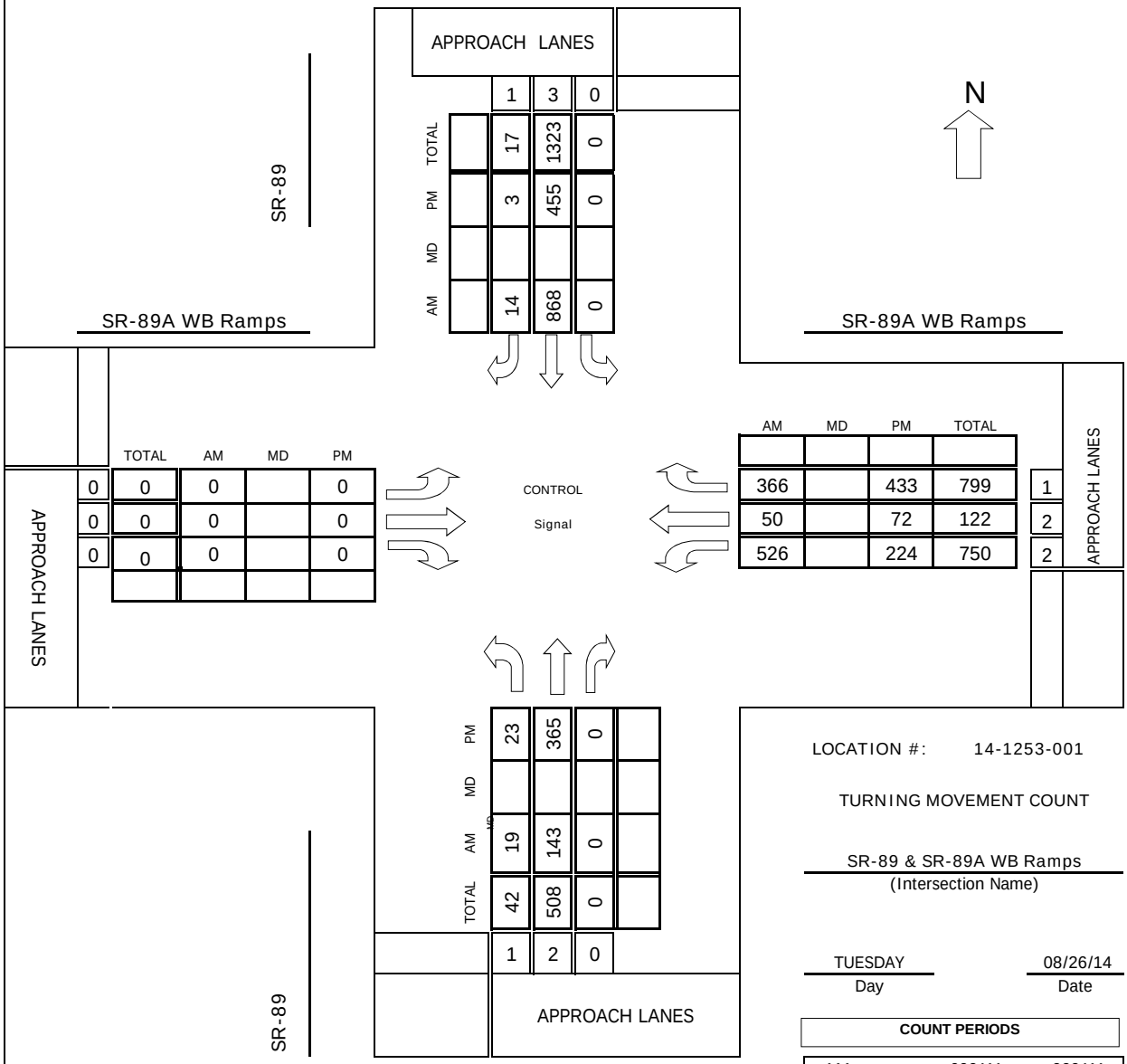
Start Time	Bikes	Cars & Tlrs	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
2/20/14	0	41	17	0	0	0	0	2	0	0	0	0	0	60
01:00	0	67	8	1	0	0	0	2	0	0	1	0	1	80
02:00	0	49	10	0	0	1	**1**	0	0	0	0	0	0	61
03:00	0	78	18	0	1	0	0	1	0	0	0	0	0	98
04:00	0	144	52	1	2	1	0	0	1	0	0	1	0	202
05:00	0	307	108	1	5	1	0	0	0	0	0	1	1	424
06:00	0	689	239	0	**16**	2	1	6	**4**	0	3	0	0	960
07:00	0	**1400**	**395**	**3**	16	**5**	0	3	3	0	**6**	**3**	1	**1835**
08:00	1	966	337	1	16	2	0	6	1	0	6	1	2	1339
09:00	0	748	248	0	16	3	1	**8**	2	**1**	1	1	0	1029
10:00	**2**	750	243	2	13	0	0	4	1	0	3	1	**3**	1022
11:00	2	850	267	1	9	2	0	2	2	0	5	0	2	1142
12 PM	0	929	253	1	6	1	0	1	**5**	**2**	**6**	0	1	1205
13:00	1	1065	244	**3**	**23**	7	**1**	**5**	5	1	2	0	2	1359
14:00	**2**	1113	261	3	13	**8**	1	2	4	0	2	1	1	1411
15:00	0	1206	**368**	0	7	6	0	5	3	1	4	1	1	1602
16:00	1	**1266**	343	1	5	4	0	5	4	0	6	**4**	**5**	**1644**
17:00	1	1204	338	0	13	3	0	0	3	0	4	0	0	1566
18:00	1	783	182	1	8	2	0	0	0	0	2	0	1	980
19:00	0	514	119	0	0	1	0	1	3	0	2	0	0	640
20:00	0	426	90	1	2	0	0	0	0	0	0	0	0	519
21:00	0	292	73	0	0	0	0	1	0	0	0	0	0	366
22:00	0	142	29	0	1	0	0	1	0	0	1	0	0	174
23:00	0	98	18	0	1	0	0	0	0	0	0	0	0	117
Day Total	11	15127	4260	20	173	49	5	55	41	5	54	14	21	19835
Percent	0.1%	76.3%	21.5%	0.1%	0.9%	0.2%	0.0%	0.3%	0.2%	0.0%	0.3%	0.1%	0.1%	
AM Peak	10:00	07:00	07:00	07:00	06:00	07:00	02:00	09:00	06:00	09:00	07:00	07:00	10:00	07:00
Vol.	2	1400	395	3	16	5	1	8	4	1	6	3	3	1835
PM Peak	14:00	16:00	15:00	13:00	13:00	14:00	13:00	13:00	12:00	12:00	12:00	16:00	16:00	16:00
Vol.	2	1266	368	3	23	8	1	5	5	2	6	4	5	1644
Grand Total	32	46523	13312	57	605	156	11	206	195	8	213	59	91	61468
Percent	0.1%	75.7%	21.7%	0.1%	1.0%	0.3%	0.0%	0.3%	0.3%	0.0%	0.3%	0.1%	0.1%	

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 14-1253-001

TMC SUMMARY OF SR-89 & SR-89A WB Ramps



LOCATION #: 14-1253-001

TURNING MOVEMENT COUNT

SR-89 & SR-89A WB Ramps
(Intersection Name)

TUESDAY — Day

08/26/14 — Date

COUNT PERIODS

AM	600AM	-	900AM
NOON		-	
PM	300PM	-	600PM

AM PEAK HOUR: 700 AM

NOON PEAK HOUR:

PM PEAK HOUR: 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-89	DATE:	08/26/14	LOCATION:	Prescott
E-W STREET:	SR-89A WB Ramps	DAY:	TUESDAY	PROJECT#	14-1253-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2.5	0.5	0	0	0	1.5	1.5	1	
6:00 AM	1	19	0	0	112	0	0	0	0	28	2	40	202
6:15 AM	1	29	0	0	141	3	0	0	0	35	4	24	237
6:30 AM	2	41	0	0	178	1	0	0	0	76	11	59	368
6:45 AM	2	25	0	0	170	4	0	0	0	69	16	65	351
7:00 AM	3	33	0	0	197	2	0	0	0	101	14	66	416
7:15 AM	7	35	0	0	250	4	0	0	0	120	12	81	509
7:30 AM	5	37	0	0	220	6	0	0	0	188	17	122	595
7:45 AM	4	38	0	0	201	2	0	0	0	117	7	97	466
8:00 AM	4	19	0	0	210	4	0	0	0	86	9	69	401
8:15 AM	7	38	0	0	163	3	0	0	0	77	9	68	365
8:30 AM	6	40	0	0	172	4	0	0	0	78	10	66	376
8:45 AM	4	46	0	0	116	3	0	0	0	86	11	61	327
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	46	400	0	0	2130	36	0	0	0	1061	122	818	4613
Approach %	10.31	89.69	0.00	0.00	98.34	1.66	####	####	####	53.02	6.10	40.88	
App/Depart	446	/	1218	2166	/	3191	0	/	0	2001	/	204	

AM Peak Hr Begins at: 700 AM

PEAK													
Volumes	19	143	0	0	868	14	0	0	0	526	50	366	1986
Approach %	11.73	88.27	0.00	0.00	98.41	1.59	####	####	####	55.84	5.31	38.85	
PEAK HR. FACTOR:	0.964			0.868			0.000			0.720			0.834

CONTROL:	Signal
COMMENT 1:	
GPS:	34.632736, -112.429197

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-89	DATE:	08/26/14	LOCATION:	Prescott
E-W STREET:	SR-89A WB Ramps	DAY:	TUESDAY	PROJECT#	14-1253-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2.5	0.5	0	0	0	1.5	1.5	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	6	78	0	0	138	2	0	0	0	73	26	101	424
3:15 PM	8	84	0	0	141	2	0	0	0	65	25	87	412
3:30 PM	9	84	0	0	115	1	0	0	0	71	21	107	408
3:45 PM	11	63	0	0	98	1	0	0	0	52	25	80	330
4:00 PM	10	79	0	0	105	0	0	0	0	63	15	88	360
4:15 PM	6	70	0	0	93	3	0	0	0	58	21	76	327
4:30 PM	6	77	0	0	143	1	0	0	0	51	20	105	403
4:45 PM	6	71	0	0	107	0	0	0	0	57	11	132	384
5:00 PM	6	110	0	0	115	1	0	0	0	72	28	109	441
5:15 PM	5	107	0	0	90	1	0	0	0	44	13	87	347
5:30 PM	12	79	0	0	95	2	0	0	0	64	15	85	352
5:45 PM	4	58	0	0	86	1	0	0	0	34	9	81	273
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	89	960	0	0	1326	15	0	0	0	704	229	1138	4461
Approach %	8.48	91.52	0.00	0.00	98.88	1.12	####	####	####	33.99	11.06	54.95	
App/Depart	1049	/	2098	1341	/	2030	0	/	0	2071	/	333	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	23	365	0	0	455	3	0	0	0	224	72	433	1575
Approach %	5.93	94.07	0.00	0.00	99.34	0.66	####	####	####	30.73	9.88	59.40	
PEAK HR. FACTOR:	0.836			0.795			0.000			0.872			0.893

CONTROL:	Signal
COMMENT 1:	0
GPS:	34.632736, -112.429197

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

Pedestrian & Bicycle Study

N-S STREET: SR-89
E-W STREET: SR-89A WB Ramps

Date: 08/26/14
Day: TUESDAY

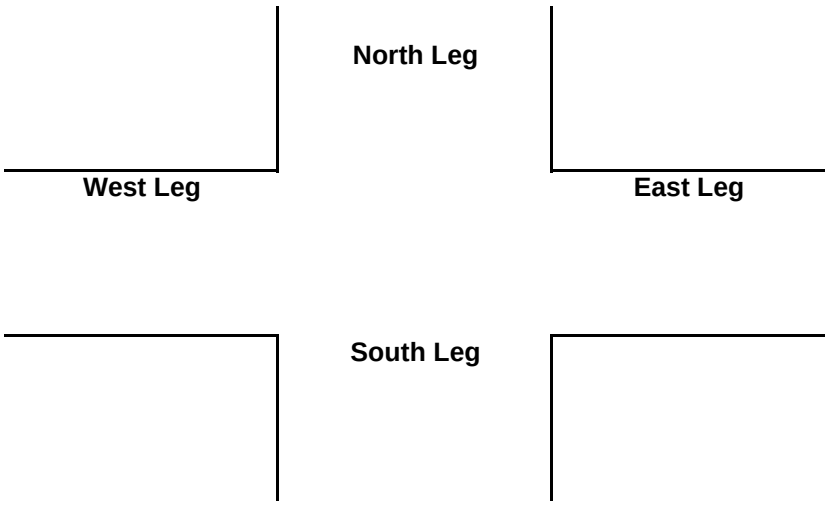
City: Prescott
Project #: 14-1253-001

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	1
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**



Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 14-1253-002

TMC SUMMARY OF SR-89 & SR-89A EB Ramps

APPROACH LANES

	1	2	2
TOTAL	0	1404	779
PM	0	464	314
MD			
AM	0	940	465

SR-89

SR-89A EB Ramps

N

SR-89A EB Ramps

APPROACH LANES

	TOTAL	AM	MD	PM
1	25	15		10
1	145	95		50
1	79	48		31

CONTROL
Signal

AM	MD	PM	TOTAL	
0		0	0	0
0		0	0	0
0		0	0	0

APPROACH LANES

	0	2	1
PM	0	376	310
MD			
AM	0	143	228
TOTAL	0	519	538

APPROACH LANES

SR-89

LOCATION #: 14-1253-002

TURNING MOVEMENT COUNT

SR-89 & SR-89A EB Ramps
(Intersection Name)

TUESDAY — Day
08/26/14 — Date

COUNT PERIODS

AM	600AM	-	900AM
NOON		-	
PM	300PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 300 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-89	DATE:	08/26/14	LOCATION:	Prescott
E-W STREET:	SR-89A EB Ramps	DAY:	TUESDAY	PROJECT#	14-1253-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	2	2	1	0.5	1	0.5	0	0	0	
6:00 AM	0	16	14	73	73	0	2	9	4	0	0	0	191
6:15 AM	0	26	28	82	91	0	4	30	5	0	0	0	266
6:30 AM	0	38	48	102	155	0	4	22	7	0	0	0	376
6:45 AM	0	26	32	108	138	0	5	26	8	0	0	0	343
7:00 AM	0	31	47	97	202	0	5	9	16	0	0	0	407
7:15 AM	0	39	60	138	247	0	8	20	8	0	0	0	520
7:30 AM	0	40	55	101	300	0	3	25	11	0	0	0	535
7:45 AM	0	37	55	110	201	0	2	32	14	0	0	0	451
8:00 AM	0	27	58	116	192	0	2	18	15	0	0	0	428
8:15 AM	0	41	51	81	145	0	1	17	11	0	0	0	347
8:30 AM	0	42	57	75	168	0	4	19	13	0	0	0	378
8:45 AM	0	44	35	54	146	0	4	16	11	0	0	0	310
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	407	540	1137	2058	0	44	243	123	0	0	0	4552
Approach %	0.00	42.98	57.02	35.59	64.41	0.00	10.73	59.27	30.00	####	####	####	
App/Depart	947	/	451	3195	/	2181	410	/	1920	0	/	0	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	0	143	228	465	940	0	15	95	48	0	0	0	1934
Approach %	0.00	38.54	61.46	33.10	66.90	0.00	9.49	60.13	30.38	####	####	####	
PEAK HR. FACTOR:		0.937			0.876			0.823			0.000		0.904

CONTROL: Signal
COMMENT 1:
GPS: 34.631752, -112.428918

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-89	DATE:	08/26/14	LOCATION:	Prescott
E-W STREET:	SR-89A EB Ramps	DAY:	TUESDAY	PROJECT#	14-1253-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	2	2	1	0.5	1	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	105	72	96	120	0	4	16	7	0	0	0	420
3:15 PM	0	82	71	84	129	0	3	15	8	0	0	0	392
3:30 PM	0	105	88	68	138	0	2	9	5	0	0	0	415
3:45 PM	0	84	79	66	77	0	1	10	11	0	0	0	328
4:00 PM	0	74	65	57	106	0	3	10	5	0	0	0	320
4:15 PM	0	70	66	49	101	0	0	6	12	0	0	0	304
4:30 PM	0	89	89	78	108	0	3	21	10	0	0	0	398
4:45 PM	0	81	79	66	103	0	1	4	8	0	0	0	342
5:00 PM	0	115	119	64	112	0	4	2	5	0	0	0	421
5:15 PM	0	104	101	58	89	0	4	5	3	0	0	0	364
5:30 PM	0	90	71	50	92	0	0	8	4	0	0	0	315
5:45 PM	0	59	48	62	51	0	1	9	6	0	0	0	236
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	1058	948	798	1226	0	26	115	84	0	0	0	4255
Approach %	0.00	52.74	47.26	39.43	60.57	0.00	11.56	51.11	37.33	####	####	####	
App/Depart	2006	/	1084	2024	/	1310	225	/	1861	0	/	0	

PM Peak Hr Begins at: 300 PM

PEAK													
Volumes	0	376	310	314	464	0	10	50	31	0	0	0	1555
Approach %	0.00	54.81	45.19	40.36	59.64	0.00	10.99	54.95	34.07	####	####	####	

PEAK HR. FACTOR:	0.889	0.900	0.843	0.000	0.926

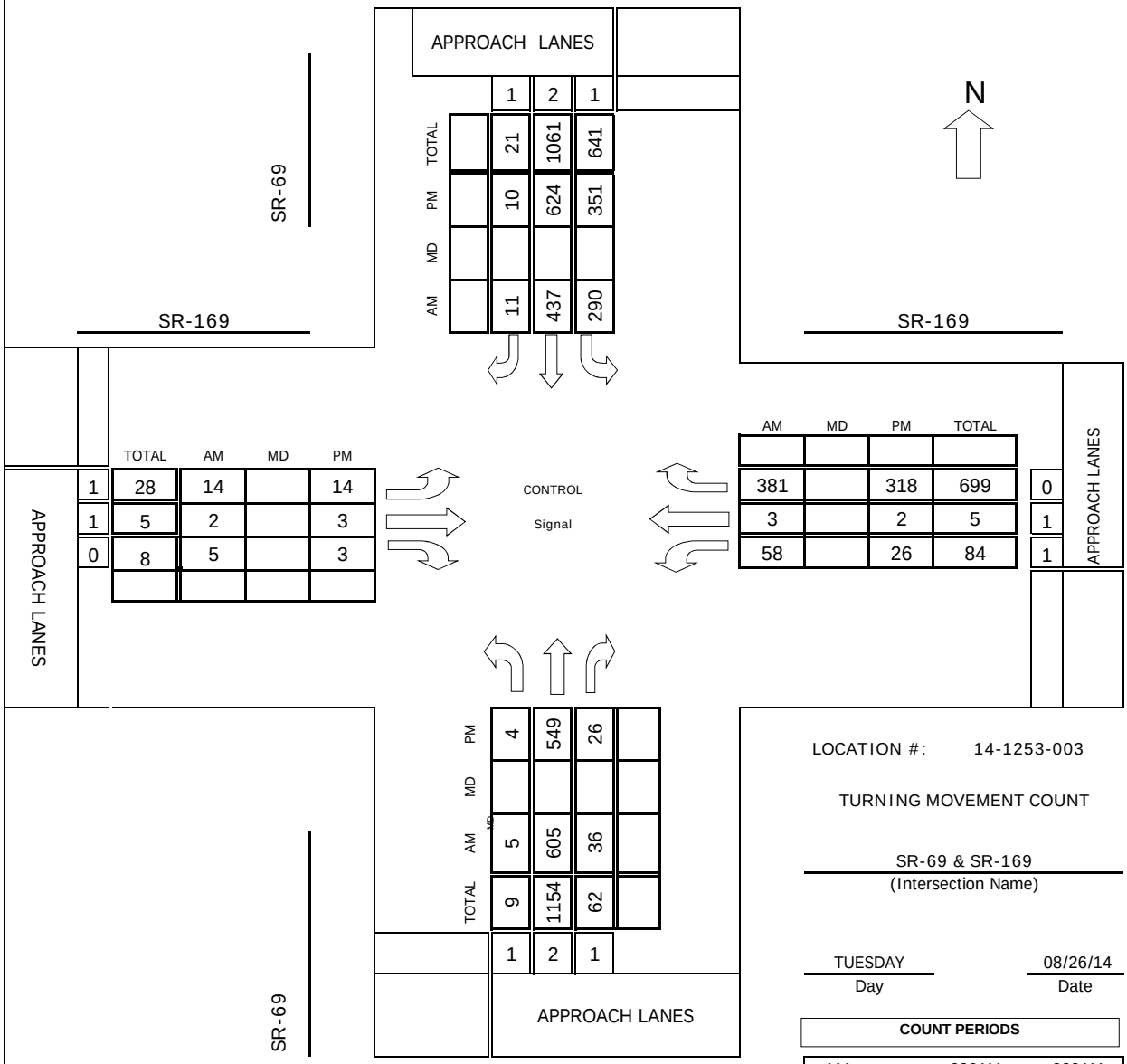
CONTROL:	Signal
COMMENT 1:	0
GPS:	34.631752, -112.428918

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 14-1253-003

TMC SUMMARY OF SR-69 & SR-169



LOCATION #: 14-1253-003

TURNING MOVEMENT COUNT

SR-69 & SR-169
(Intersection Name)

TUESDAY — Day

08/26/14 — Date

COUNT PERIODS

AM	600AM	-	900AM
NOON		-	
PM	300PM	-	600PM

AM PEAK HOUR: 715 AM

NOON PEAK HOUR:

PM PEAK HOUR: 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-69	DATE:	08/26/14	LOCATION:	Dewey
E-W STREET:	SR-169	DAY:	TUESDAY	PROJECT#	14-1253-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	1	0	1	1	0	
6:00 AM	0	67	5	36	45	1	2	0	0	4	1	37	198
6:15 AM	0	84	4	44	63	2	5	1	1	6	1	55	266
6:30 AM	0	101	1	50	77	1	2	2	0	8	0	62	304
6:45 AM	0	97	13	64	83	3	1	0	0	4	0	66	331
7:00 AM	0	140	7	48	92	4	1	0	0	5	1	110	408
7:15 AM	1	144	5	73	103	3	4	0	1	10	0	95	439
7:30 AM	1	150	5	70	97	3	7	1	1	17	2	125	479
7:45 AM	0	145	9	82	126	2	0	1	1	22	1	83	472
8:00 AM	3	166	17	65	111	3	3	0	2	9	0	78	457
8:15 AM	1	118	11	79	128	1	0	1	1	7	1	84	432
8:30 AM	0	146	5	59	130	3	5	1	2	10	0	86	447
8:45 AM	0	141	9	71	108	3	2	1	0	7	2	79	423
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	6	1499	91	741	1163	29	32	8	9	109	9	960	4656
Approach %	0.38	93.92	5.70	38.33	60.17	1.50	65.31	16.33	18.37	10.11	0.83	89.05	
App/Depart	1596	/	2491	1933	/	1281	49	/	840	1078	/	44	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	5	605	36	290	437	11	14	2	5	58	3	381	1847
Approach %	0.77	93.65	5.57	39.30	59.21	1.49	66.67	9.52	23.81	13.12	0.68	86.20	
PEAK HR. FACTOR:		0.868			0.879			0.583			0.767		0.964

CONTROL: Signal
COMMENT 1:
GPS: 34.529816, -112.242124

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	SR-69	DATE:	08/26/14	LOCATION:	Dewey
E-W STREET:	SR-169	DAY:	TUESDAY	PROJECT#	14-1253-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	1	0	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	124	6	92	136	1	2	0	2	5	0	78	446
3:15 PM	2	136	12	87	160	2	4	1	0	7	0	103	514
3:30 PM	3	143	5	90	154	3	5	1	3	10	0	68	485
3:45 PM	1	105	6	82	169	2	7	0	2	4	1	69	448
4:00 PM	0	130	6	84	155	3	4	2	1	7	1	77	470
4:15 PM	1	131	5	98	154	1	2	1	0	9	1	94	497
4:30 PM	2	144	9	97	163	1	3	0	1	6	0	73	499
4:45 PM	1	144	6	72	152	5	5	0	1	4	0	74	464
5:00 PM	1	114	1	83	137	2	7	2	1	5	0	97	450
5:15 PM	0	98	6	110	129	1	7	2	1	3	0	82	439
5:30 PM	0	111	7	76	129	0	9	1	0	5	1	79	418
5:45 PM	0	85	3	101	116	2	5	1	0	8	1	70	392
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	11	1465	72	1072	1754	23	60	11	12	73	5	964	5522
Approach %	0.71	94.64	4.65	37.63	61.57	0.81	72.29	13.25	14.46	7.01	0.48	92.51	
App/Depart	1548	/	2489	2849	/	1839	83	/	1155	1042	/	39	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	4	549	26	351	624	10	14	3	3	26	2	318	1930
Approach %	0.69	94.82	4.49	35.63	63.35	1.02	70.00	15.00	15.00	7.51	0.58	91.91	
PEAK HR. FACTOR:		0.934			0.943			0.714			0.832		0.967

CONTROL:	Signal
COMMENT 1:	0
GPS:	34.529816, -112.242124