APPENDIX A

RVMPO ALTERNATIVE MEASURES UPDATE

TECHNICAL MEMORANDUMS

&

MAPS

Attachment #2B
(Agenda Item 4)

Rogue Valley
Metropolitan Planning Organization

Regional Transportation Planning

Ashland • Central Point • Eagle Point • Jacksonville • Medford • Phoenix •Talent • White City
Jackson County • Rogue Valley Transportation District • Oregon Department of Transportation

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DATE: July 10, 2014

TO: RVMPO Technical Advisory Committee

FROM: Dan Moore, Planning Coordinator

SUBJECT: Technical Memorandum #1: Final Alternative Measures Analysis Methodologies

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Background

On April 3, 2001, the Land Conservation and Development Commission approved seven Alternative Measures adopted by the RVMPO in place of the Vehicle Miles Traveled (VMT) reduction standard contained in the state Transportation Planning Rule (TPR). The Alternative Measures meet requirements for an alternative measure of reduced reliance on the automobile as specified in OAR 660-012-0035(5). **It is important to note that at the time the Alternative Measures were developed by the MPO and approved by LCDC, the RVMPO included the cities of Phoenix, Medford and Central Point and Jackson County.** This raises questions concerning the baseline (year 2000) Alternative Measures percentages from which five (5) year benchmarks were established (approximately 10% increase every 5 years), and how this relates to the present-day RVMPO planning area. The RVMPO expanded in 2002 to include Ashland, Talent, and Jacksonville, and in 2012 to include Eagle Point.

The RVMPO completed an analysis of the 2005 Alternative Measures benchmark targets in 2007 – 2008 (see Table 1, Page 3 below), based on the larger MPO. The full 2008 benchmark analysis report is included in the *2013-2038 RVMPO Regional Transportation Plan (RTP), Appendix B.*

The purpose of this project is to conduct an analysis of the seven adopted Alternative Measures to determine the region's progress in meeting the 2010 and future 2015 Benchmark targets - and if necessary - modify the existing Alternative Measures to comply with the Transportation Planning Rule (TPR) that meet local needs and are consistent with local objectives. For example, one modification might be to redo the baseline percentages to reflect the larger MPO area (post-2001).

Technical Memorandum #1 describes the proposed methodologies and the data needed for analyzing the seven Alternative Measures which include:

1. Measure 1 - Transit and Bike/Pedestrian (Ped) Mode Share
2. Measure 2 - % Dwelling Units (DUs) within ¼ mile walk to 30 minute Transit Service
3. Measure 3 - % Collectors/Arterials with Bike Facilities
4. Measure 4 - % Collectors/ Arterials in Transit Oriented Development (TOD) areas with Sidewalks
5. Measure 5 - % Mixed-Use Dwelling Units (DUs) in New Development

6. Measure 6 - % Mixed-Use Employment in New Development
7. Measure 7 - Alternative Transportation Funding

Proposed Methodologies for Analyzing Alternative Measures

Measure 1: Transit and Bicycle/Pedestrian Mode Share

Mode share to be determined by utilizing data output from RVMPOv3.1 (or v4.0 if available) travel demand model, 2012 Household Survey, Rogue Valley Transportation District (RVTD) ridership and passenger survey data, and 2010 Census information.

Measure 2: Percent of Dwelling Units Within ¼ Mile Walk of Thirty-Minute Transit Service

Geographic Information System (GIS) mapping software will be used for the Measure 2 analysis. The data will be compiled by utilizing GIS and Jackson County Assessor tax codes for (existing) 2014 taxlots to determine the total of non-vacant housing in the RVMPO in 2014. Using GIS, the analysis will look at total dwelling units in the RVMPO area compared to those dwelling units that are within ¼ mile of the 30-minute transit service.

Measure 3: Percentage of Collectors/Arterials with Bicycle Facilities

GIS software will be utilized to determine the total linear feet of collectors and arterial roadways within the RVMPO. Then, each RVMPO arterial and collector roadway will be analyzed to determine the presence of dedicated bike lanes using Jackson County GIS data, inventories from jurisdictions, completed urban roadway upgrade projects, aerial photos, Google Map, and windshield surveys (as necessary).

For purposes of this analysis the RVMPO will inventory dedicated bike lanes at least four feet in width or wider. The 2007-08 benchmark analysis used the different categories of bikeways as depicted in Appendix B. The 2007-08 analysis was not consistent with the Measure #3 baseline established for the year 2000 (see Table 1 below), which only accounted for bike lanes four feet in width or wider.

Measure 4: Percentage of Collectors and Arterials in TOD Areas With Sidewalks

For purposes of this entire analysis - not just this specific measure - a TOD area is considered to be one of three things:

1. A transit-oriented development
2. An activity area, and/or
3. A downtown/central business district.

GIS software will be utilized to determine the total linear feet of collectors and arterial roadways in TOD areas within the RVMPO. Then, each RVMPO arterial and collector roadway in the TOD areas (as defined above and indicated on *TOD/Activity Center Map* on Page 9) will be analyzed to determine the presence of sidewalks using Jackson County GIS data, inventories

from jurisdictions, aerial photos, Google Map, and windshield surveys (as necessary). A review of urban roadway upgrade projects noted in Measure #3 applies to this measure as well.

Measure 5: Percentage of New Dwelling Units in Mixed-Use/Pedestrian-Friendly Areas

Measurements here will be determined by researching building permits and comparing the ratio between new dwelling units in TODs (considered a mixed-land-use overlay) and total new dwelling units in the MPO from 2000 to 2014. Procedures for evaluating Measure 5 are described in Appendix A below.

Measure 6: Percentage of New Employment in Mixed-Use/Pedestrian-Friendly Areas

Data and measurements here will be estimated through review of annual employment files issued from the State of Oregon Employment Division. The percentages will represent a ratio of new employment in TODs (mixed-use developments) as compared with total new employment in the MPO. Procedures for evaluating Measure 6 are described in Appendix A below.

Measure 7: Alternative Transportation Funding

This represents funding committed to transit or bicycle/pedestrian/TOD projects. Amounts listed are intended to represent half of the RVMPO's established accumulation of discretionary Surface Transportation Program (STP) funding. As of 2007 this amount was determined to be $1.4 million. The specific sums shown as benchmarks and the target for this measure are estimates based on the best financial forecasts available at the time the measure was adopted (2002). The actual financial commitment of this measure is half of the total STP allocation.

Table 1 – Alternative Measures and 2007 Benchmark Analysis Results

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Benchmark 2015	Target 2020
Measure 1: Transit and bicycle/pedestrian mode share	The percent of total daily trips taken by transit and the combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	**%daily trips**	**%daily trips**	***%daily trips***	**% daily trips**	**% daily trips**	**% daily trips**
		transit: 1.0 bike/ped: 8.2	**transit: 1.2 bike/ped: 8.4**	***transit: 0.9 bike/ped: 7.3***	**transit: 1.6 bike/ped: 8.4**	**transit: 2.2 bike/ped: 9.8**	**transit: 3.0 bike/ped: 11**
Measure 2: % Dwelling Units (DUs) w/in ¼ mile walk to 30-min. transit service	Determined through GIS mapping. Current estimates are that 34% of DUs are within ¼ mile walking distance of RVTD transit routes.	**12%**	**20%**	***34%***	**30%**	**40%**	**50%**
Measure 3: % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping. Current estimates are that 37% of collectors and arterials in the MPO have provisions for bicyclists.	**21%**	**28%**	***37%***	**37%**	**48%**	**60%**
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping. Current estimates are that 56% of collectors and arterials in TOD areas have sidewalks.	**47%**	**50%**	***55%***	**56%**	**64%**	**75%**
Measure 5: % Mixed-use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	**0%**	**9%**	***10%***	**26%**	**41%**	**49%**
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State – represents the ratio of new employment in TODs over total regional employment.	**0%**	**9%**	***17%***	**23%**	**36%**	**44%**
Measure 7: Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP).	**N/A**	**$950,000**	***$1.4 Million***	**$2.5 Million**	**$4.3 Million**	**$6.4 Million**

Appendix A

RVMPO Evaluation Procedures for Alternative Measures 5 & 6

The following steps set out a process for evaluating development in RVMPO cities to show progress toward meeting the benchmarks and targets for mixed-use housing and employment growth, as established in the RVMPO's Regional Transportation Plan, Alternative Measures.

Information gathered (from building permits issued) is to be recorded on the attached chart.

Step 1. Determine location of development (from maps in previous task)

1. If development is within the Downtown area, and is not auto oriented (gas station, storage facility, or drive-through commercial), it qualifies. Check box and go to Step 2.
2. If development is within a TOD site, appropriate box and go to Step 2.
3. If development is adjacent to an existing neighborhood activity center, as noted in previous mapping task, and is vertically or horizontally mixed use (single structure with residential and commercial uses, check box and go to Step 5.
4. If none of the above, check "Not qualify" and enter "No" in far right column. Go to Step 2.

Step 2. Determine type of development

1. Is the project residential? If yes, enter number of total units and units per acre (or the equivalent) on chart. Go to Step 3.
2. Is the project retail commercial (generally Community Commercial or Regional Commercial), office (Service Commercial or Professional Office), or light industrial? If yes, go to Step 4.
3. Is the project mixed use, generally combining uses in 1 and 2 above? If yes, go to Step 5.
4. If none of the above, project does not qualify. Enter "No" in far right column. Go to Step 4.1 to determine number of jobs associated with this project.

Step 3. Determine whether residential development counts toward meeting benchmarks

1. Determine the number of units per acre, or the equivalent, i.e. one home on a 4,356 sq. ft. lot would be 10 homes per acre, meeting the standard for Alternative Measure 5. Enter number on chart. If number is 10 or greater, go to next question. If number is smaller than 10, enter "No" in far right column.
2. Is the project within ¼ mile (measured as actual walking distance from the nearest edge of projects and following the most direct pedestrian walkway, existing or proposed) of a significant retail center (20,000 sq. ft. or larger)? If yes, go to next question. If no, enter 'No" in far right column.
3. Is there a completed pedestrian walkway connection to the retail center above and no significant (more than 120 feet) out-of-direction travel required for the pedestrian? A completed pedestrian walkway is defined as a facility that is:

    a. Identified by the city as a public sidewalk along a street,
    b. An off-street multi-use path meeting city design standards, or

c. A pathway that replicates a sidewalk in parking lots, including physical separation from vehicles, and sidewalk-like features. Where street crossing are included as part of the pedestrian route to connect with the retail center, these crossing should not be unprotected crossings of streets carrying significant traffic volumes, or where speeds exceed 30 mph. If there is a completed walkway connection, the project qualifies. Enter M5 in the far right column. If not, enter "no."

Step 4. Determine whether commercial and industrial development counts toward meeting benchmarks

1. Determine the number of jobs to be created, using the appropriate formulas, and enter result on chart:
   - Commercial – divide building square footage by 600 sq. ft., equals number of jobs;
   - Office – divide building square footage by 500 sq. ft., equals number of jobs; or
   - Light Industrial – divide building square footage by 1000 sq. ft. equals number of jobs
2. Does the building front the street (so parking between building and street) and have a main entrance from that street? If yes, go to next question. If no, enter "No" at far right.
3. Does the project include a vertical mix of uses (single structure with above floors used for residential office use, and a portion of the ground floor for retail/commercial or services)? If yes, the project qualifies. Enter M6 at far right. If no, go to next question.
4. Is the project located within ¼ mile of higher density residential development (10 or more units per acre) measured as actual walking distance from the nearest edge of the project and following the most direct pedestrian walkway (existing or proposed as part of this project)? If yes, go to next question. If no, enter "No" at far right.
5. Is there a complete (or proposed as part of this project) pedestrian walkway between the project and the residential development identified in this section? If yes, the project qualifies. Enter M6 in column at far right. If no, the project does not qualify.

Step 5. Determine whether mixed-use project outside of TOD areas qualifies toward meeting benchmarks

1. Enter number of residential units in chart. Calculate number of units per acre following step 3.1.
2. Enter number of jobs following step 4.1
3. Does the building front the street (no parking between building and street) and have a main entrance from that street? If yes, go to next question. If no, enter "No" at far right.
4. Is the project within ¼ mile (measured as actual walking distance from the nearest edge of the project and following the most direct pedestrian walkway, existing or proposed as part of this project) of an existing major transit stop as defined by the state Transportation Planning Rule. If yes, the project qualifies. Fill in M5 and M6 in the far right column. If no, the project does not qualify. Enter "No" in far right column.

RVMPO Alternative Measures 5 & 6 Tracking Chart

_____ **January 2000 – June 2014**

(City)

Development name **Address** **Legal Description** [1]	**Location**[1]	**Type of Development** *(res/com/mixed use)*[2]	**Housing** *# units* [3]	**Housing** *# units/ acre* [4]	**Commercial** *# Jobs* [5]	**Qualifies** *(AM 5,AM 6, or No)* [6]
	□ Downtown □ TOD □ Activity Center □ Not Qualify					
	□ Downtown □ TOD □ Activity Center □ Not Qualify					
	□ Downtown □ TOD □ Activity Center □ Not Qualify					
	□ Downtown □ TOD □ Activity Center □ Not Qualify					

1. Location: address and legal description; and check area that applies (if none applies, also enter "No" in far right column).
2. List one of three uses: Residential, Commercial/Industrial, Mixed Use.
3. If residential, list number of units.
4. Lot-size determination: distinguish whether lot is greater or less that .10 acre (i.e. one home on a 4,356 sq. ft. lot is equivalent to 10 homes/ac., meeting the standard for Alternative Measure 5).
5. To be filled out for all commercial uses (retail, industrial, manufacturing, etc.). List potential employment by the following standard (from Medford TSP):
    - Commercial – divide building square footage by 600 sq. ft. equals number of jobs
    - Office – divide building square footage by 500 sq. ft. equals number of jobs
    - Light Industrial – divide building square footage by 1000 sq. ft. equals number of jobs
6. Alternative Measures determination. For qualifying dwellings enter AM5; for qualifying commercial enter AM6; mixed use enter AM5 & AM6; for developments that don't qualify enter "No."

Appendix B
Alternative Measures Benchmark Analysis
Types of Bikeways Inventoried in 2007

The 2007 Alternative Measures benchmark analysis inventoried bikeways within the RVMPO as outlined below.

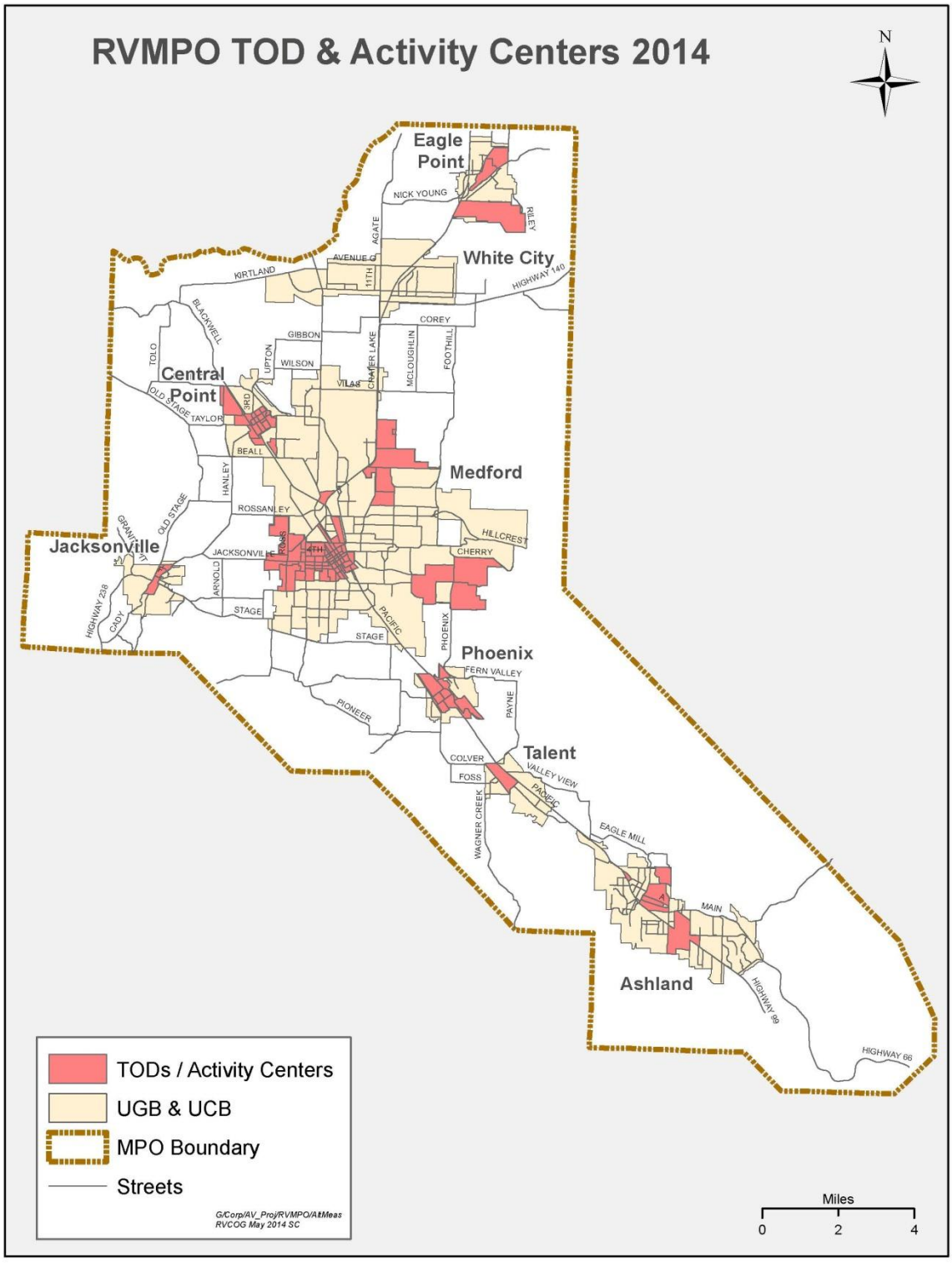
- 4-ft shoulders with bike signage painted on street
- 5-ft shoulders with bike signage painted on street
- 4-ft shoulders with bike signage painted on street and a posted road sign
- Unmarked 4-ft + (plus) shoulder

Again, the 2007 benchmark analysis for Measure #3 was not consistent with the 2000 baseline analysis. Below are some examples of what was accounted for in the 2007 analysis.

Shared Roadway: Bicyclists and motorists ride in the same travel lanes. There are no specific dimensions for shared roadways. They are usually narrow, so a motorist has to cross over into the adjacent travel lane to pass a cyclist. Shared roadways are common on neighborhood residential streets, on rural roads and low volume highways.

Shoulder Bikeway: A shoulder bikeway is a paved shoulder that provides a suitable area for bicycling, reducing conflicts with faster moving motor vehicle traffic. Most bicycle travel on the rural state highway system, and on many county roads, is accommodated on shoulder bikeways.

Bike Lane: A portion of the roadway designated for preferential use by bicyclists. Bike lanes are appropriate on busy urban thoroughfares. They may be used on other streets where bicycle travel and demand is substantial. Bike lanes are marked to call attention to their preferential use by bicyclists.


RVMPO TOD & Activity Centers 2014
N
Eagle Point
White City
Central Point
Medford
Jacksonville
Phoenix
Talent
Ashland
NICK YOUNG
AVENUE G
KIRTLAND
HIGHWAY 140
COREY
GIBBON
WILSON
VILAS
TAYLOR
BEALL
ROSSANLEY
HILLCREST
CHERRY
JACKSONVILLE
14TH
STAGE
FERN VALLEY
PIONEER
COLVER
FOSS
VALLEY VIEW
EAGLE MILL
MAIN
HIGHWAY 99
HIGHWAY 66
HIGHWAY 238
TODs / Activity Centers
UGB & UCB
MPO Boundary
Streets
G/Corp/AV_Proj/RVMPO/AltMeas
RVCOG May 2014 SC
Miles
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2
4

DATE: July 1, 2014

TO: RVMPO Technical Advisory Committee

FROM: Dan Moore, Planning Coordinator

SUBJECT: Technical Memorandum #2: Alternative Measures Analysis Areas

The objective of this memo is to describe the Alternative Measures analysis areas within the RVMPO that contribute to meeting the benchmarks and targets of:

- Measure 5: Percentage of New Dwelling Units in Mixed-Use/Pedestrian-Friendly Areas and,
- Measure 6: Percentage of New Employment in Mixed-Use/Pedestrian-Friendly Areas.

What can be Counted?

The LCDC order approving the Alternative Measures (Order 02—LCDC-026) required that the RVMPO define the kinds of dwelling units and employment that will count toward meeting the benchmarks and targets. The definition must recognize three principles:

a) *Development in some locations, such as in the downtowns, should count toward meeting targets, because development in these areas contributes to mixed-use, pedestrian-friendly centers;*

b) *Development outside downtowns and central business districts should not count toward meeting the targets unless that development clearly is consistent with transit-oriented development and appropriate zoning and land development regulations necessary to implement the TODs have been adopted; and*

c) *Some of the TOD areas, such as the Southeast Medford TOD, are quite large and include some areas where the planned development is unlikely to contribute to mixed-use, pedestrian-friendly development. Only development that clearly contributes to achieving mixed-use, pedestrian friendly development should be counted toward this target.*

For the 2005 Alternative Measures Benchmark Analysis, the RVMPO developed the concept of *Activity Centers* to evaluate Alternative Measures 5 & 6. The concept of activity centers was described in Medford's TSP, and locations of these centers were identified and mapped. Although, DLCD in June 2004 remanded portions of the TSP for additional work (including work on steps needed to meet AM requirements), the department did accept the concept of activity centers as places that, like designated TOD sites, can foster the kind of compact, pedestrian-friendly development that meets Alternative Measures requirements and contributes to the RVMPO's compliance with the TPR.

What are Activity Centers?
Activity Centers include parks, schools, and neighborhood commercial and employment centers. *Activity center areas generally are an area within ¼-mile of the defined activity (school, employment center, etc.). In these areas, only development that is vertically or horizontally mixed use can qualify toward meeting benchmarks.* The proposed Activity Centers described below will serve as the analysis areas for Alternative Measures 5 & 6.

Ashland

The analysis will look at high-density residential in the downtown area, and in four activity centers around the city. The activity centers have generally defined themes. Two centers include dedicated health care zones – one is Ashland Community Hospital. Another activity center focuses on light industrial employment opportunities. The fourth activity center includes both the state university and local school district and includes many businesses catering to student clientele.

Zones to be examined: R-1 3.5; R-2; R-3; E-1; HC; and C-1.

Area descriptions:

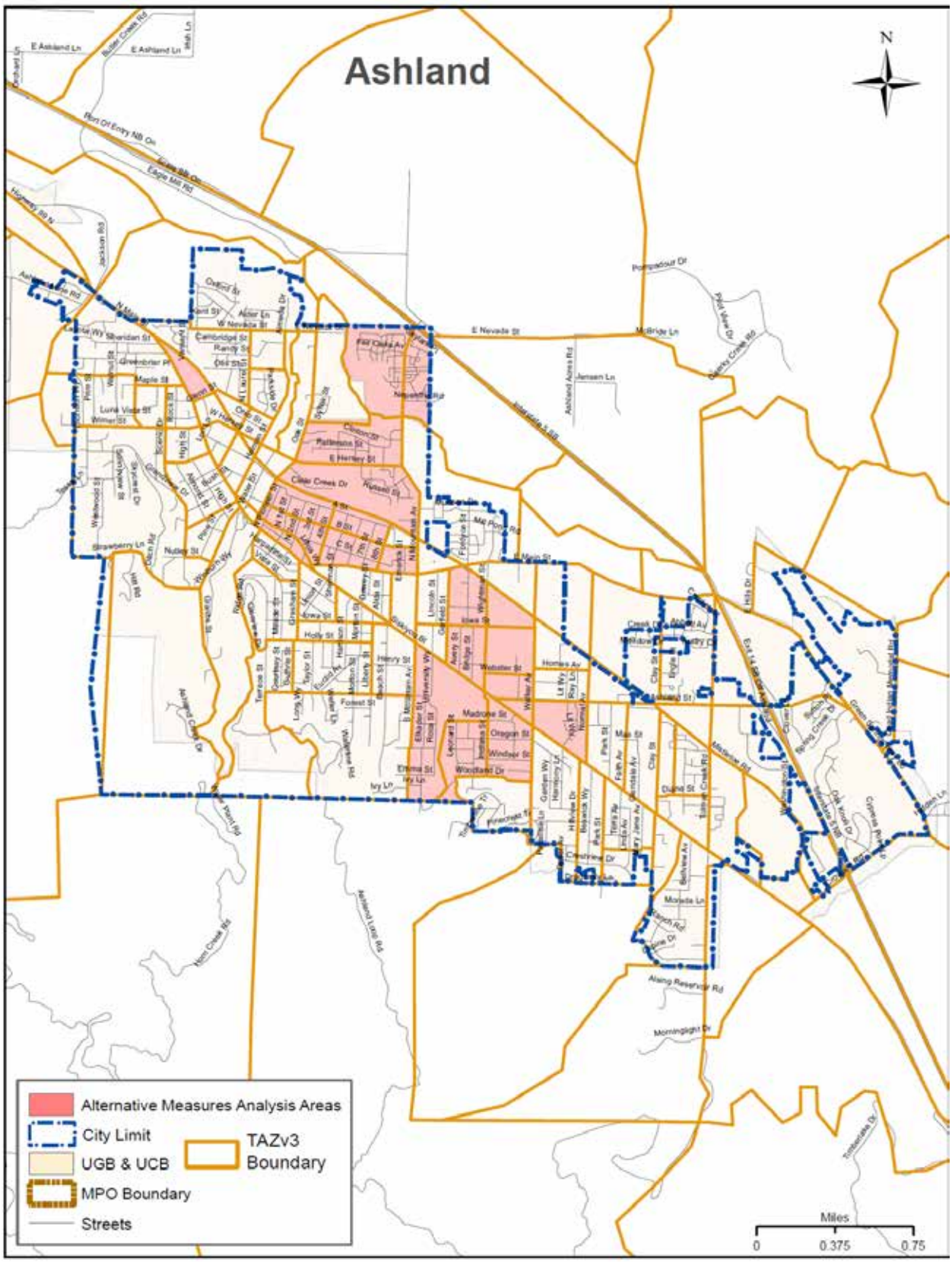
Downtown-Historic Railroad District area includes mixed commercial with theaters and restaurants, parks and is served by transit. The area core is roughly a 10-block stretch of North Main Street, from Helman Street to Union Street, extending north to the railroad tracks (A Street area), with a surrounding residential area, which is mostly developed. High-density residential development has occurred at the southern end of this area.

Ashland Community Hospital area, including east side of N. Main Street, contains care residences which, along with medical clinics and labs represent a sizable neighborhood employment center. Transit service available. Commercial development and high-density residential development has occurred off Scenic Drive.

North Mountain Avenue area includes Mountain Meadows Retirement Community in northeast Ashland. An area to the west is designated as the North Mountain Neighborhood area, and a health care area is designated on the east. A park is nearby. Some high-density residential development, and commercial development has occurred in and around this area.

Hersey Street Employment District includes low-density housing as well as high-density dwellings with commercial uses. This area includes a park and mixed commercial/light industrial uses. High-density development has occurred around the eastern edge of this area.

Southern Oregon University zone, in addition to the university, includes Ashland High School and district administrative offices and a mix of commercial uses along and around Siskiyou Boulevard. High-density residential development has occurred at the north end of this area.



Central Point

The analysis will examine four distinct areas for their potential to help Central Point meet AM benchmarks, and recent, high-density development. The areas are: downtown; Central Point TOD site west of Highway 99 and north of Taylor Road; mixed use area around Freeman Road, south of the Pine Street interchange; and residential development along Hamrick Road in east Central Point. These areas were selected because they offer compact residential areas, nearby commercial development or the potential for commercial development that would reduce reliance on automobiles.

Zones to examine are: R-2; R-3; C-N; C-2; C-3; C-4; C-5; M1; and TOD zones LMR (parcels smaller than 4,356 sq. ft.), MMR , HMR, EC, GC, C.

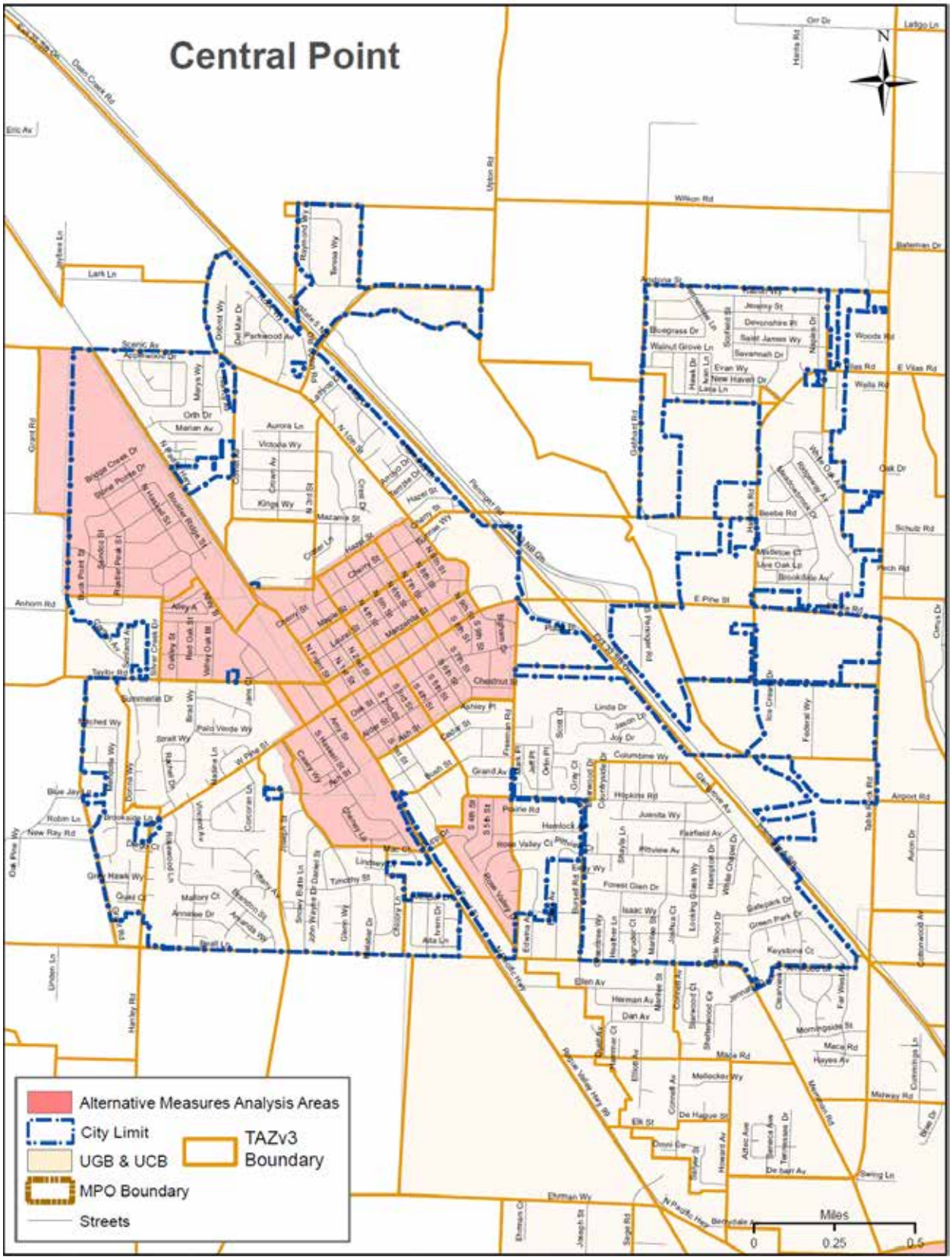
Area descriptions:

Downtown – bordered on the east by 10th Street; on the north by Hazel Street and including Crater High School; crossing Hwy. 99 to include Haskell Street, Glenn Way and Snowy Butte Lane on the west; and a southern boundary that includes Bush Street to Freeman Road. A mixed-use commercial, retail and residential development has been built in the reporting period.

Central Point TOD – a triangular area bordered on the east by Hwy. 99; Scenic Avenue on the north; Grant Road on the southwest and city limits (a line extending directly north of Grant Road to Scenic, intersecting with Scenic east of Grant Road; and Taylor Road on the south, extending directly east to Hwy. 99.

Freeman Road activity center – high-density residential area associated with and south of a regional shopping center; bordered by Freeman Road, Hopkins Road, Interstate 5 and Pine Street. The area is within ¼-mile of a major commercial area and is served by transit.

Hamrick Road/East Central Point – a new, residential area that includes high-density dwellings, but lacks commercial development. With the addition of commercial uses, development in this area could qualify to meet AM benchmarks.


Central Point
N
Alternative Measures Analysis Areas
City Limit
UGB & UCB
MPO Boundary
Streets
TAZv3 Boundary
Miles
0
0.25
0.5

Eagle Point

The city is a fast-growing residential community at the north end of the RVMPO – one of the fastest growing in Oregon – with a population exceeding 6,000. This is the only RVMPO city that is not served by transit. The largest employer is the Eagle Point School District, and many residents commute south on Hwy. 62 to jobs in White City and Medford. High-density development has occurred in two locations: downtown area, near Eagle Point High School, and in the northeast corner of the city, off Reese Creek Road.

Zones to be examined: R-2; R-3; R-4; C-1; C-2; I-1

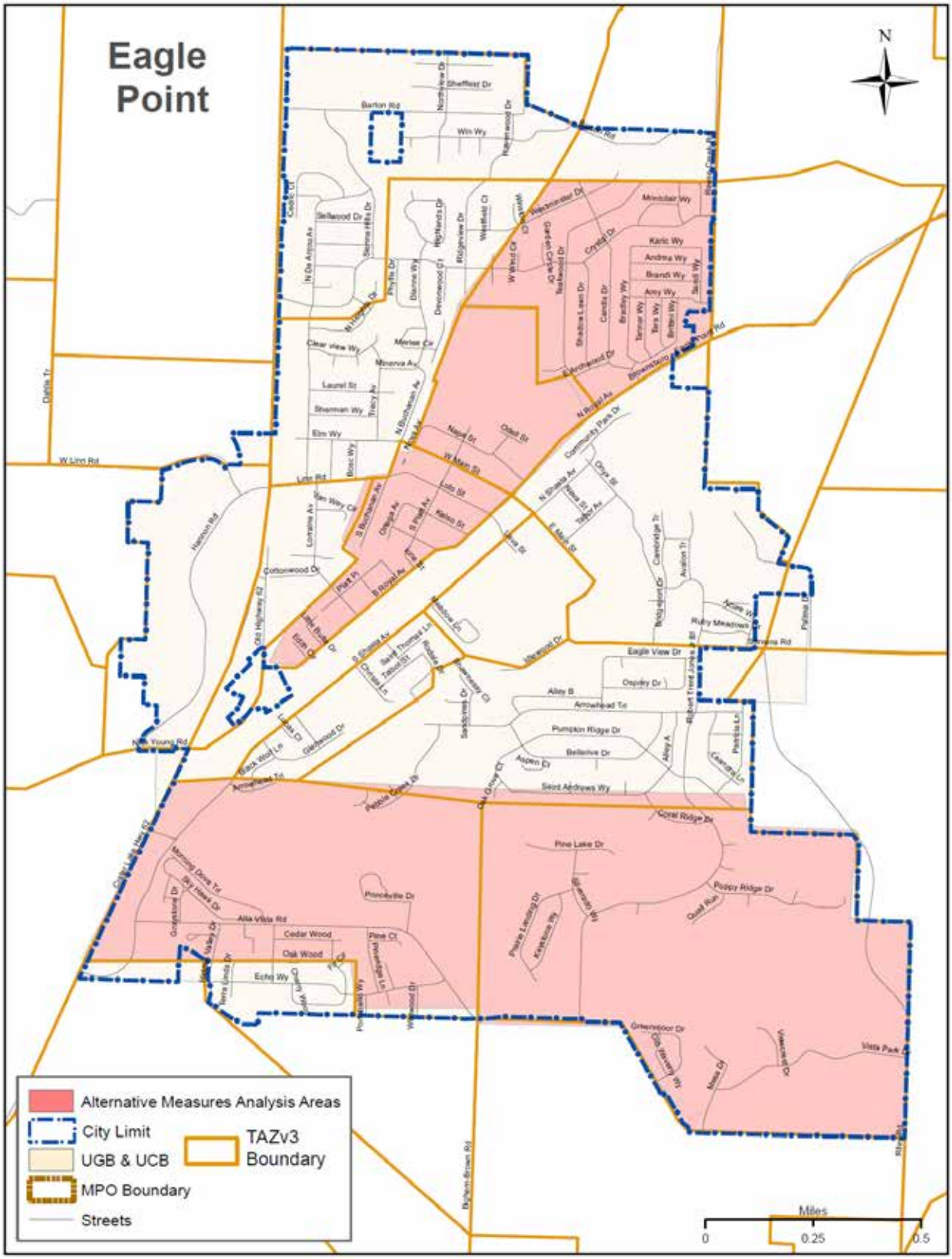
Area descriptions:

Downtown area includes a major commercial area along Hwy. 62. The core of the area includes Main and Loto streets, Linn Road, Royal and Shasta avenues. High-density residential development has occurred on Minerva Avenue, near the high school.

Reese Creek Road area is more than a half-mile from the downtown area – as the crow flies – and considerably longer along existing roads. Additionally, this area lacks the commercial/employment or park aspects that could help it qualify it toward AM benchmarks. It is discussed here, however, because it has been the site of high-density residential development, as well as larger-lot residential development (at densities too low to qualify under AM standards).

Golf course area, located at the southern end of Eagle Point, consists of single family homes surrounding a championship, 18-hole golf course with a restaurant and other golf-related businesses. This location lacks the high-density and mixed use development necessary to count toward benchmarks.

Attachment #2B
(Agenda Item 4)



Jacksonville

Three areas were examined, the downtown and Nunan Square and Fifth Street TOD.

Zones to examine: MF; CI; GC; HC.

Area descriptions:

> The downtown area is bordered by F Street to the north; one block west of Oregon Street on the west; one block south of Pine Street (Fir Street) on the south; and one block east of Fifth Street on the east.
>
> Nunan Square is a planned unit development that includes residential (including attached homes), general commercial, and park areas. It is located in a triangular area between N. Oregon Street, F Street and N. Fifth Street. Commercial and high-density residential development has occurred in the reporting period.
>
> Fifth Street TOD site covers area along Jacksonville Highway, north of the downtown area, includes G Street, Shafer Lane and Jacksonville Elementary School.

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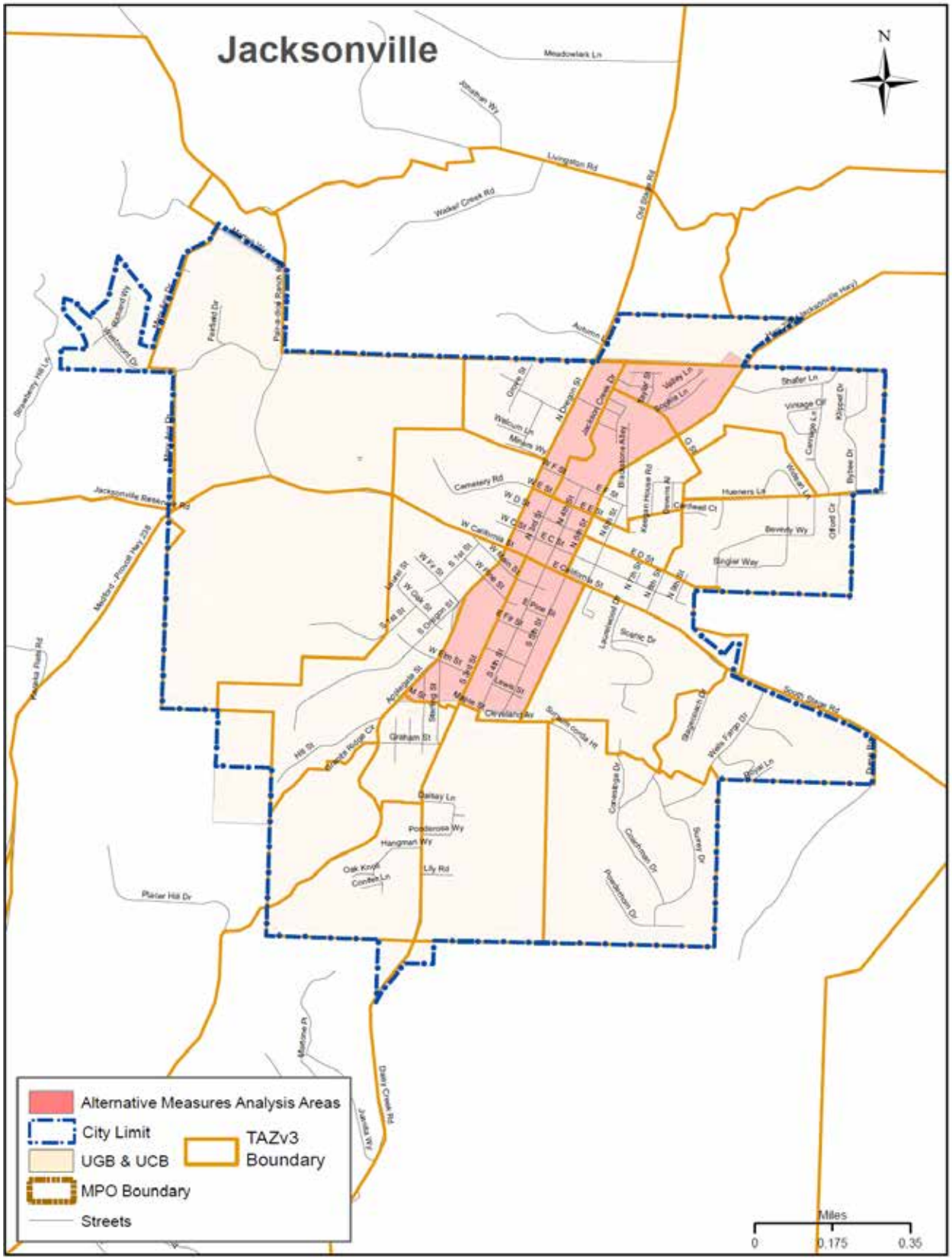


Medford

Medford's TSP identifies more than 60 activity areas – schools, parks and neighborhood commercial centers. This examination focused on areas where high-density residential and commercial development occurred in the 2000-2003 period.

Zones to examine: SFR-10; MFR-15; MFR-20; MFR-30; C-SP; CN; CC; CR; CH; IL.

Area descriptions:

Northeast Medford

North Medford TOD is located on the east side of Crater Lake Hwy., and covers about 460 acres. It is bordered by city limits on the north, Springbrook Road and McLaughlin Drive on the east and, roughly, Delta Waters Road on the south. The development examined in this reporting period occurred at the northern end and the southern tip of the TOD.

North Medford High School (activity center), high-density residential development on Camellia Avenue, near transit service.

Northwest Medford

Medford Railroad Park (activity center) area, high-density residential on Berrydale Avenue.

West Medford

West Medford TOD includes about 450 acres directly west of the City Center TOD. Current land uses include auto-oriented, low-density commercial and residential, with transit service available at the perimeter. Some development near the McAndrews Road/Jackson Street intersection, and just beyond the southeast TOD boundary, at Cherry Street and Meadow Lane, meet AM density standards. A row-store development has been built in the reporting period.

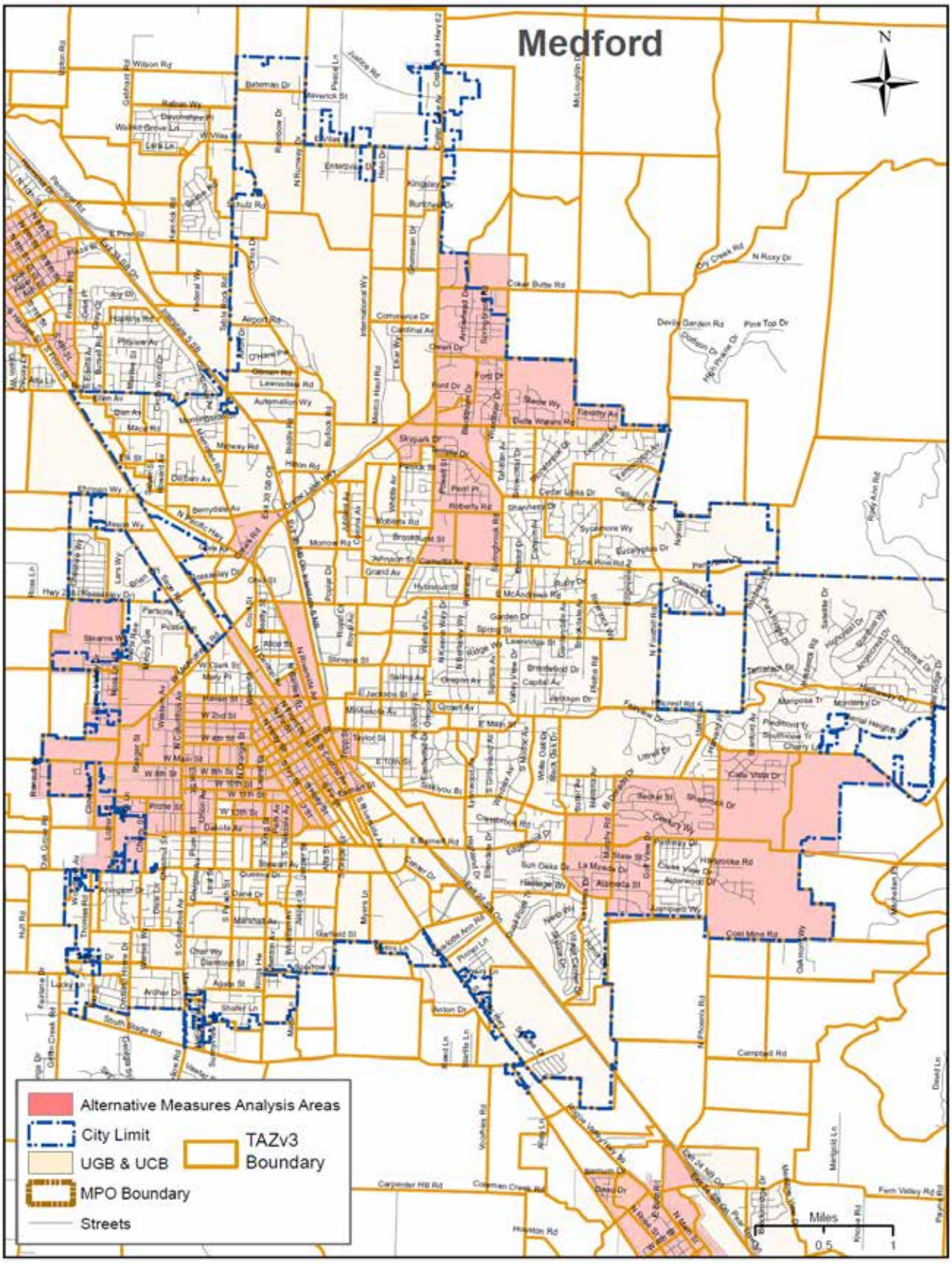
Central Medford

City Center TOD has new design standards and guidelines to protect historic and pedestrian character of this core downtown area. The TOD is bordered by Jackson Street, Oakdale Avenue, Tenth Street, and Interstate 5.

Siskiyou Boulevard (activity center), high-density residential near Portland Avenue, within ¼-mile of a park, and served by transit.

South Medford

Asante/Rogue Valley Medical Center (activity center) area.



Phoenix

Much of the City of Phoenix is designated as the City Center TOD. It is located on the west side of Interstate 5 and includes both sides of Hwy. 99. On the north, this TOD includes commercial and residential development on the northwest side of the interchange and northern city limits. The area is bordered on the west by Colver Road. The city has developed a mixed-use plan for the city center with standards that are consistent with the RVMPO TOD study. High density development in this TOD would meet AM requirements.

Zones examined were: R-2; R-3; MX; C-1; CT; CH; LI.

Area descriptions:

> City Center TOD shows high-density development areas on Cheryl Lane and Colver Road.

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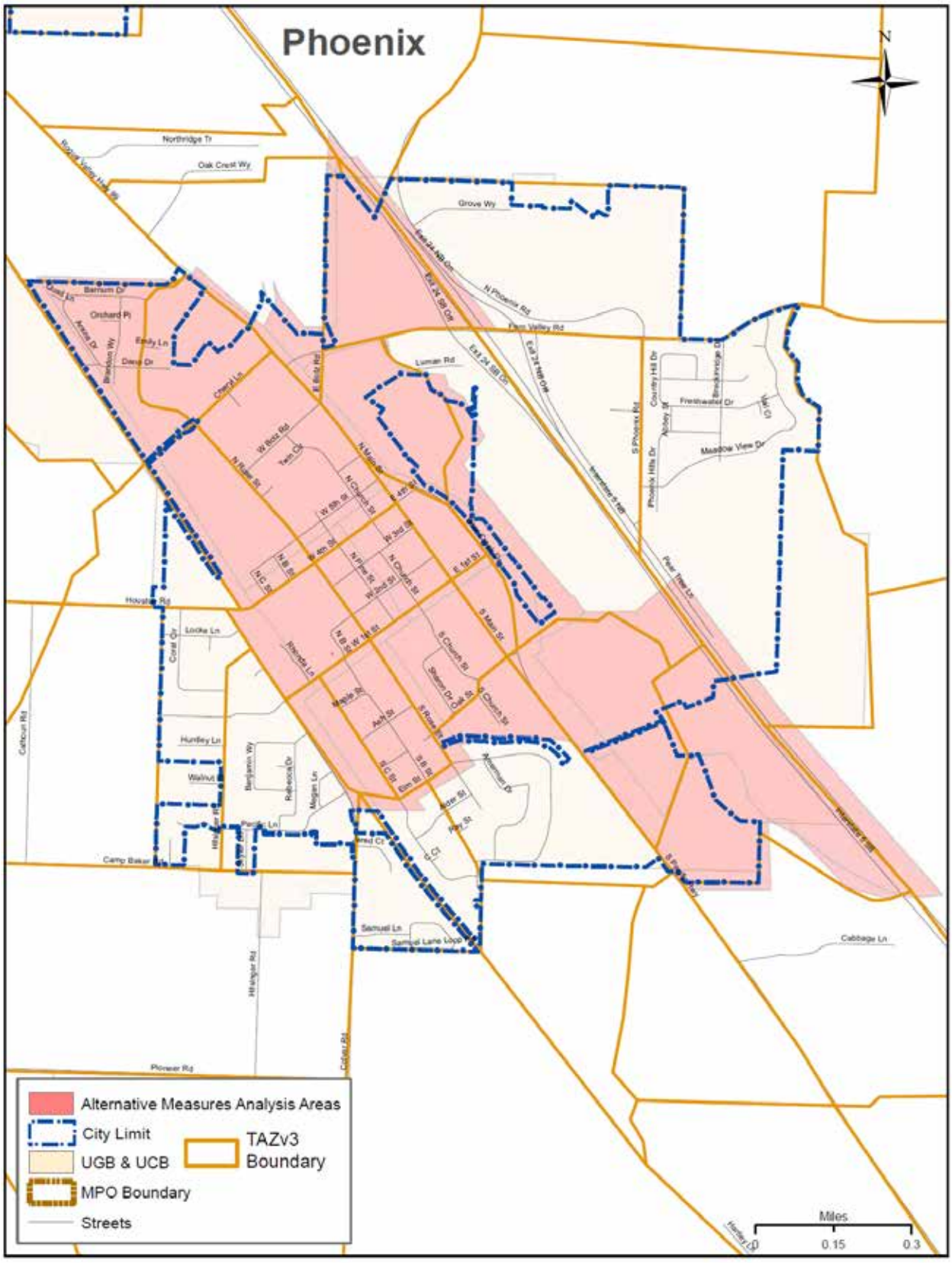


Talent

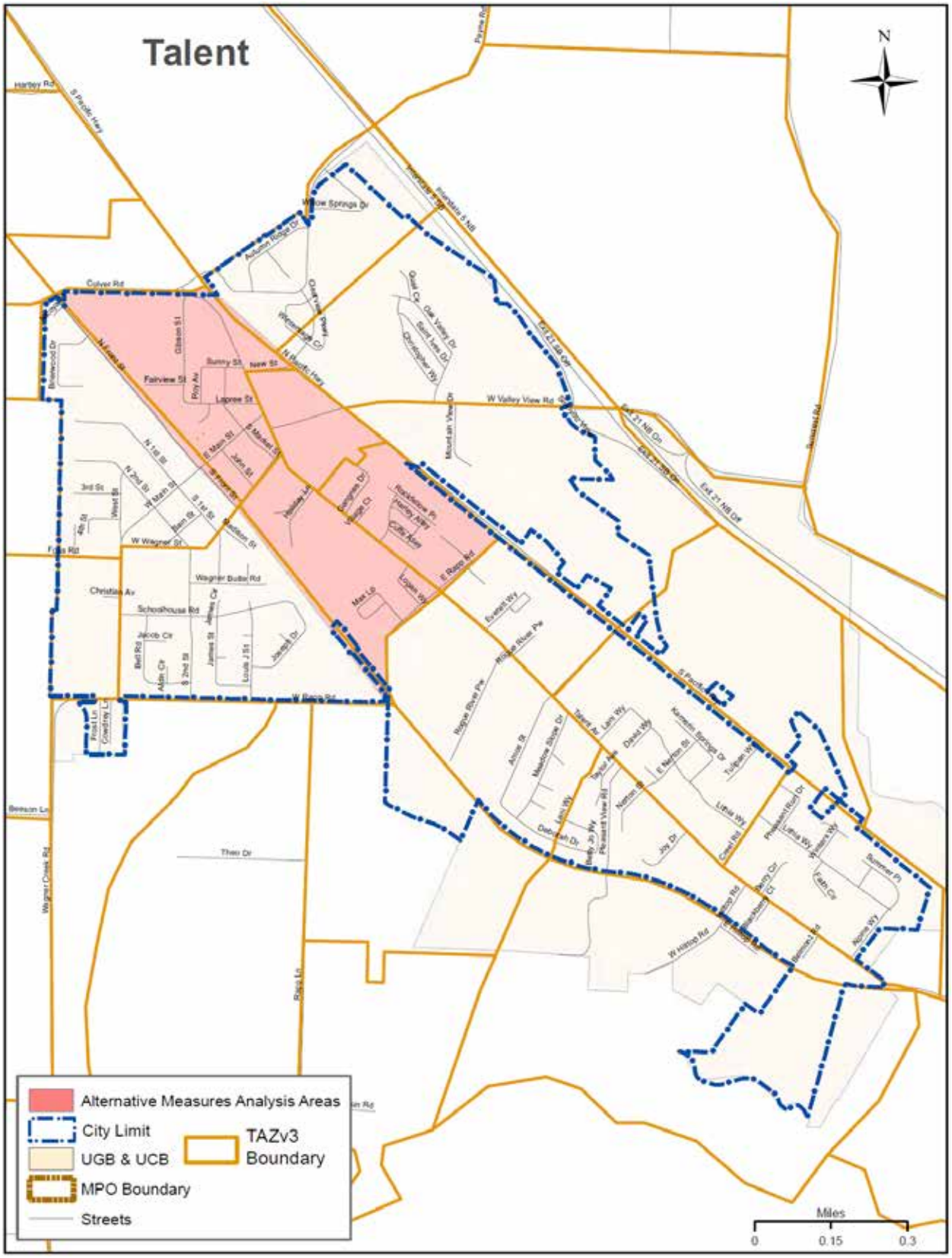
No high-density residential construction took place in this reporting period. For most of this period a building moratorium was in effect because of water system inadequacies. A new water system was completed and the moratorium was lifted in summer, 2003. Some recently approved projects are expected to meet benchmark qualifications once built. A civic center with retail space was built in the downtown area during the reporting period.

Zones examine were: R-2; MH; C-1; C-2; C-3; C-4; LI.

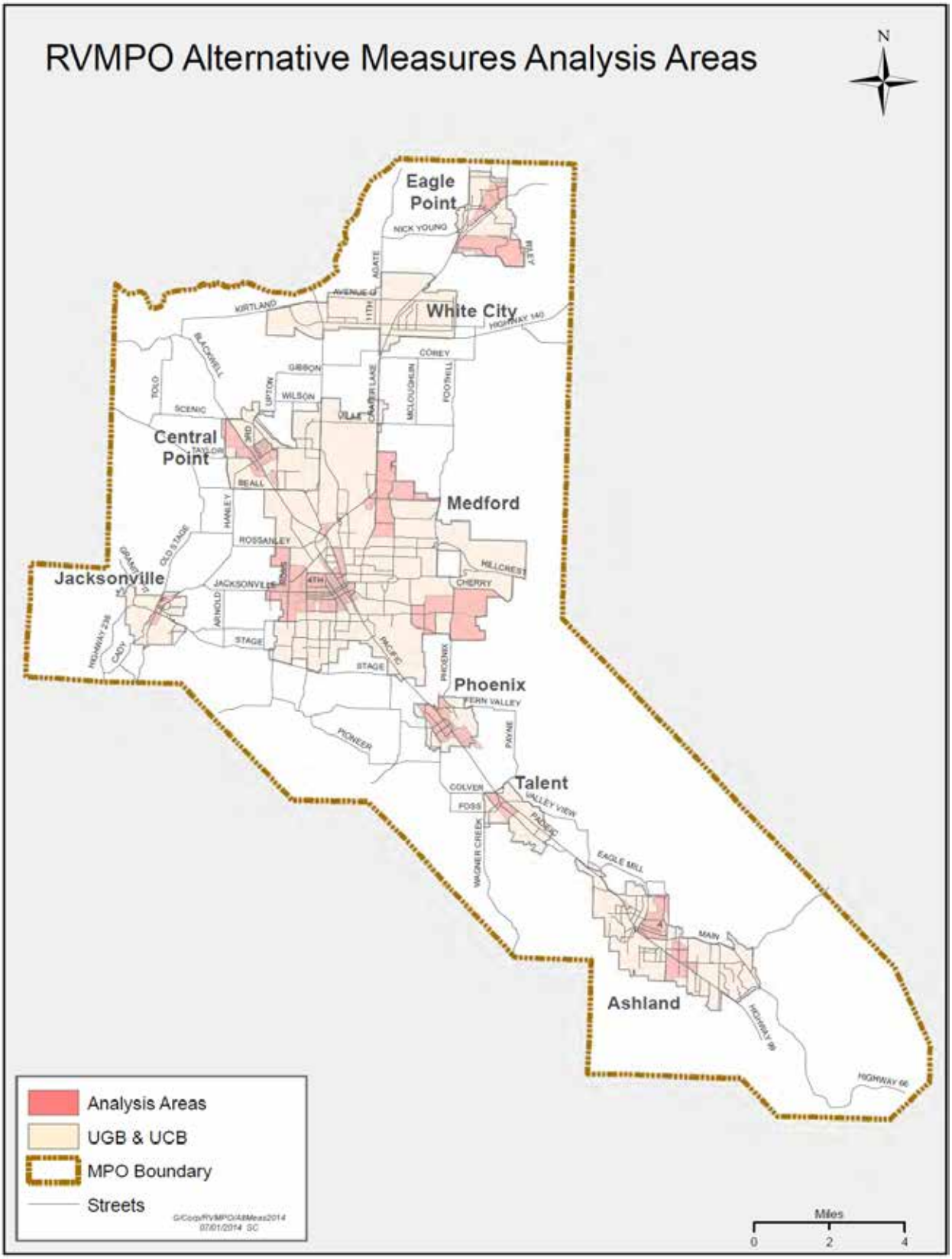
Area descriptions:

> Downtown area extends west of Hwy. 99, and north and south of W. Main Street to include Talent Elementary and Middle schools

Attachment #2B
(Agenda Item 4)



Attachment #2B
(Agenda Item 4)



Attachment #2B
(Agenda Item 4)

Rogue Valley
Metropolitan Planning Organization

Regional Transportation Planning

Ashland • Central Point • Eagle Point • Jacksonville • Medford • Phoenix •Talent • White City
Jackson County • Rogue Valley Transportation District • Oregon Department of Transportation

DATE:	November 18, 2014
TO:	RVMPO Technical Advisory Committee
FROM:	Dan Moore, Planning Coordinator
SUBJECT:	Final Draft Alternative Measures Data Collection Memorandum

The RVMPO Technical Advisory Committee (TAC) reviewed and commented on the proposed Alternative Measures data collection memorandum at their October 8, 2014 and November 12, 2014 meetings. This memo includes all of the revisions requested by the TAC from both meetings.

Overview of Measure and Description of Data Collected

Measure 1 – Transit and Pedestrian/Bicycle Mode Share

This measure is intended to demonstrate a shift in travel behavior away from the automobile. This shift is anticipated to result from the region's planned improvements in the transit, bicycle and pedestrian infrastructure, as well as from the implementation of planned Transit-Oriented Developments (TODs). The benchmarks and target for this measure are shown in Table 1. A three-fold increase in transit mode share (from 1% to 3%) and a 35% increase in bicycle and walking (non-motorized) mode share (from 8.2% to 11%) have been set as 20-year targets for this measure.

In 2000, the RVCOG travel demand model was used to predict mode share over the 20-year planning period (2000 – 2020). The analysis showed that the transit mode share would remain about the same (increase to 1.2%) and bicycling and walking mode share would decrease from 8.2% to 7.7%. This modeling effort assumed that transit service levels would be reduced and that only three of seven proposed TOD sites would be developed. Conservative assumptions concerning bicycling and walking were also implemented in the model.

Given the mode share levels predicted by the RVCOG travel demand model, the benchmarks and target identified for the mode share measure represent significant increases in alternative mode use. The mode share target is based on the belief that changes in the urban environment to which the model currently lacks a high degree of sensitivity, such as the development of mixed-use, pedestrian friendly areas, will result in the higher figures shown in Table 1. Due to the timing of construction of the mixed-use, pedestrian friendly areas, changes in travel behavior will proceed more slowly in the first 10 years of the planning period than in the final 10 years. The 2005 benchmark analysis completed in 2007 showed that the percent of daily trips for transit was 0.9% and bike/ped was 7.3%.

Table 1 - 20-Year Target for Mode Share

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 1: Transit and bicycle/pedestrian mode share	The percent of total daily trips taken by transit and the combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	*% daily trips* transit: 1.0 bike/ped: 8.2	*% daily trips* transit: 1.2 bike/ped: 8.4	*% daily trips* transit: 1.6 bike/ped: 8.4	*% daily trips* transit: 2.2 bike/ped: 9.8	*% daily trips* transit: 3.0 bike/ped: 11

Mode Share Data Collected for 2010 Benchmark Analysis

ODOT's Transportation Planning Analysis Unit (TPAU) ran the RVMPO-v3.1 model to produce the 2006, 2010 & 2015 mode share percentages. The model is calibrated to the 1995/1996 Oregon Household Travel Survey, and 2010 is interpolated between 2006 and 2015. Results are depicted on Table 1.1 below.

Table 1.1 – 2006, 2010 & 2015 Mode Share Percentages – RVMPO v3.1

2006, 2010 & 2015 Mode Share - RVMPO v3.1 Model								
2006 RVMPO-v3.1	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	267,501	200,755	248,498	3,622	360	11,200	54,694	786,630
Daily Period Mode %	34.01%	25.52%	31.59%	0.46%	0.05%	1.42%	6.95%	100%
2006	**Auto**			**Transit**		**Bike/Walk**		
	91.12%			**0.51%**		**8.38%**		
2010 RVMPO-v3.1 Interpolated	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	287,260	234,723	266,054	3,618	328	9,336	54,762	856,081
Daily Period Mode %	33.56%	27.42%	31.08%	0.42%	0.04%	1.09%	6.40%	100%
2010	**Auto**			**Transit**		**Bike/Walk**		
	92.05%			**0.46%**		**7.49%**		
2015 RVMPO-v3.1	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	311,959	277,182	287,999	3,613	289	7,007	54,847	942,896
Daily Period Mode %	33.09%	29.40%	30.54%	0.38%	0.03%	0.74%	5.82%	100%
2015	**Auto**			**Transit**		**Bike/Walk**		
	93.03%			**0.41%**		**6.56%**		

Other sources of mode share data include the U.S. Census and American Community Survey (ACS). Both of these sources only provide "Journey to Work" data, and not for any other activity or trip purpose. The v3.1 model does show all household trips by mode for seven trip

purposes, and is calibrated to the 1995/1996 household travel survey. TPAU recommends using the 2010 OHAS statistics calibrated to the v4.1 model.

Table 1.2 below depicts mode share data provided by TPAU derived from the 1994 and 2010 Household Surveys. For 2010, the mode share is a hybrid based on four pieces of information from the RVMPO area:

- 2010 Oregon Household Activity Survey (OHAS)
- 2013 RVTD On-Board Transit Survey
- 2010 TBest Transit Model
- 2010 RVMPO v4.1 Model with Transit Enhancements

Table 1.2

Mode Share Data - 1994 & 2010 Household Surveys				
1994 Survey	**Auto**	**Bike/Ped**	**Transit**	**Sub-Total**
Daily Period Mode %	91.79%	7.89%	0.32%	100%
2010 Survey	**Auto**	**Bike/Ped**	**Transit**	**Sub-Total**
Daily Period Mode %	90.53%	8.95%	0.51%	100%

The data in Table 1.2 shows that the 2010 bicycle/pedestrian and transit mode shares are higher than the 1994 survey data. The Alternative Measure Mode Share 2010 Benchmark for bicycle/pedestrian is 8.4 % and 1.6% for transit. The 2010 data in Table 1.2 above shows an 8.95% bike/ped mode share, which exceeds the benchmark. Transit mode share is at 0.51% (less than 1%) and more than 1% lower than the benchmark of 1.6%.

Table 1.3

Medford, OR Metro Area 2013 American Community Survey 1-Year Estimates						
Car, Truck, or Van	**Public Transportation**	**Walked**	**Bicycle**	**Taxi Cab, motorcycle, or other**	**Worked at Home**	**Sub-Total**
84.9%	0.8%	4.3%	1.2%	1.5%	7.4%	100%

Table 1.3 includes "journey to work" data from the 2013 American Community Survey (ACS). The data show that 0.8% (less than 1%) of work trips are by public transportation mode. Walking and biking make up 5.5% of the mode share for work trips.

Table 1.4

Mode to Work Jackson County	CTPP2000			2006-2010 ACS			Is Change Statistically Significant in Number?**
	Number	Percent	MOE(+/-)*	Number	Percent	MOE (+/-)*	
	At Place of Residence						
Total Workers	79,195	100%	932	86,340	100%	1,449	Yes
Drove alone	61,330	77.4%	889	66,324	76.8%	1,591	Yes
2-person Carpool	6,885	8.7%	359	7,203	8.3%	887	No
3-or-more-person Carpool	1,760	2.2%	184	1,194	1.4%	1,285	No
Public Transportation	484	0.6%	97	814	0.9%	223	Yes
Bike	670	0.8%	114	1,205	1.4%	240	Yes
Walked	2,815	3.6%	232	2,901	3.4%	359	No
Taxi, Motorcycle and Other means	805	1.0%	125	890	1.0%	239	No
Worked at Home	4,440	5.6%	290	5,809	6.7%	537	Yes

* The coefficient of variation (CV) can be derived by the standard error (SE) divided by the estimate, while SE = MOE/1.645.
** The z-value of the difference of the two estimates is used to determine if the two estimates are statistically significantly different at 90% confidence level.

Other mode share data includes the 2000 Census Transportation Planning Package (CTPP) and 2006-2010 American Community Survey (ACS). This data is available at the county and city level and not at the metropolitan (MPO) level. Table 1.4 above depicts CTPP 2000 and 2006-10 ACS mode to work data for Jackson County. Overall, the percentages of the bike/ped and transit mode shares for both the CTPP (bike/ped 4.4% & transit 0.6%) and ACS (bike/ped 4.8% & transit 0.9%) data are much lower than the Alternative Measure 2010 benchmarks.

The conclusion is that the Table 1.2, 2010 mode share data is the most accurate and should be used for the 2010 benchmark analysis.

Measure 2 – Percent Dwelling Units within ¼ Mile Walk to 30 Minute Transit Service

This measure is intended to demonstrate improvements in transit accessibility. Unlike Measure 1 which considers mode share and tracks overall transit system usage regardless of service levels; this measure considers distance to a transit route, the routes service levels, and improving density around transit routes. For this measure to be successful, it requires development of dwelling within ¼ mile of transit routes and RVTD improving service levels system wide. A walking distance of ¼ mile from a dwelling is assumed to provide reasonable pedestrian access to a transit line. Only those transit lines that provide at least 30-minute or better headway will be counted towards meeting the benchmarks and target shown in Table 2. Progress on this measure is tracked through GIS.

To determine the year 2000 baseline, a GIS analysis of tax-lot, street, geographic and transit data was used to determine the percentage of dwelling units in the MPO that were within ¼ mile walking distance to RVTD transit lines. The GIS analysis showed that 12% of dwelling units in the MPO were within ¼ mile walking distance to 30-minute transit service.

Currently, four of RVTD's transit lines provide 30-minute service; one provides 45-minute service, and two provide 60-minute service. During the 20-year planning period, all of these routes are planned to go to at least 30-minute service frequency with 15-minute service during the peak hours to routes serving TOD areas (assuming increased transit revenues). In addition, a large percentage of new development in the RVMPO area is planned to occur along existing or future transit lines. These changes are expected to result in an increase in the transit accessibility measure from 12% to 50% over the 20-year planning period[1]. Table 2 shows the 5-year benchmarks and 20-year target for the proposed measure. The 2005 benchmark analysis completed in 2007 showed that 34% of dwelling units are within ¼ mile walking distance of RVTD 30-minute transit routes.

Table 2 - 20-Year Target for Transit Accessibility

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 2: % Dwelling Units (DU's) w/in ¼ mile walk of 30-minute transit service	Determined through GIS mapping.	12%	20%	30%	40%	50%

Dwelling Unit Data Collected for 2010 Benchmark Analysis

Staff collected tax lot data from the Jackson County's Assessor's Office that will be used to identify dwelling-units within a ¼ mile along 30-minute transit lines. GIS transit route data was provided by RVTD. Below is a progress report on this measure.

1. All GIS data layers have been obtained. Updated/new files include 30 minute bus routes from RVTD, and tax lots from Jackson County. Other data files to be used include the RVMPO Boundary. ***Completed.***
2. Create new shape files with the data layers using intersects and buffers. ***In process.***
3. Create the non-vacant housing layer using the property class look up codes created by Jackson County. Layer was created by querying selected property classes and looking at the value of some improvements on selected property classes. ***In process.***

Measure 3 - Percentage of Collectors/Arterials with Bicycle Facilities

The RVMPO programs projects along collector and arterial streets within the MPO boundaries. Consistent with the TPR, the RVMPO's policy is for these facilities to include bicycle lanes or, in rural areas, shoulders with a width greater than four feet. This measure is intended to track the progress of including these facilities on the MPO's street network and as a way to demonstrate improved accessibility for bicyclists.

Progress on this measure is determined through GIS analysis. In 2000, 21% of collectors and arterials in the MPO had provisions for cyclists, i.e., 4 foot or greater shoulders or bike lanes. Also, in 2000, an analysis showed that by 2020 bike lanes on collectors and arterials would increase to approximately 60%. The 2005 benchmark analysis completed in 2007 showed that 37% of collectors and arterials in the MPO had provisions for bicycles.

[1] The increases are based on analyses completed for the 2000 Alternative Measures.

5-year benchmarks and 20-year targets are shown below in Table 3.

Table 3 - 20-Year Target for Bicycle Facilities

Measure	How Measured	2000	Benchmark 2005	Benchmark 2010	Benchmark 2015	Target 2020
Measure 3: % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping.	21%	28%	37%	48%	60%

Bicycle Facility Data Collected for 2010 Benchmark Analysis

Each RVMPO member jurisdiction was sent a hardcopy map depicting existing bicycle facilities within their jurisdiction. The maps were created using data provided by Jackson County and/or individual jurisdictions. The data provided to RVMPO did not specifically identify shoulders and bike lanes 4-ft in width, or greater. Jurisdictions were asked to identify these facilities using the map provided. All of the bicycle lane data has been collected and ready to be analyzed.

Measure 4 - Percentage of Collectors and Arterials in TOD Areas With Sidewalks

The RVMPO has areas that are currently planned for mixed-use, pedestrian friendly development or are in downtown areas. This measure is intended to demonstrate improvements in pedestrian accessibility in these portions of the MPO area - where pedestrian access is most critical. For purposes of this entire analysis - not just this specific measure - a TOD area is considered to be one of three things:

1. A transit-oriented development
2. An activity area, and/or
3. A downtown/central business district.

In 2000, 47% of the collectors and arterials in the TOD/Downtown areas of Central Point, Medford, and Phoenix had sidewalks[2]. An analysis completed in 2000 showed that another 29% of these facilities will have sidewalks by the year 2020. This will bring the total sidewalk coverage within the TOD/Downtown areas in the MPO to approximately 75%. The 2005 benchmark analysis completed in 2007 showed that 56% of collectors and arterials in the MPO had sidewalks. Proposed 5-year benchmarks and 20-year targets are shown below in Table 4.

Table 4 – 20-Year Target for Pedestrian Facilities

Measure	How Measured	2000	Benchmark 2005	Benchmark 2010	Benchmark 2015	Target 2020
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping.	47%	50%	56%	64%	75%

[2] Analysis was completed prior to the expansion of the RVMPO to include; Ashland, Talent, Jacksonville and Eagle Point.

Sidewalk Data Collected for 2010 Benchmark Analysis
Jackson County does not have GIS sidewalk data. Jurisdictions will be asked to provide GIS sidewalk data (if available) for arterials/collectors located in the Activity Centers. Data is still being collected.

Measure 5 - Percentage of New Dwelling Units in Mixed-Use/Pedestrian-Friendly Areas

Measure 6 - Percentage of New Employment in Mixed-Use/Pedestrian-Friendly Areas

The objective of these measures is to demonstrate progress towards creating mixed use, pedestrian-friendly developments in the MPO. Progress towards meeting the benchmarks and targets for these measures is determined by monitoring development after the appropriate land use and development regulations have been adopted. Mixed use, pedestrian-friendly development occurring within downtown areas in Ashland, Talent, Phoenix, Jacksonville, Medford, Central Point and Eagle Point, as well as within proposed TOD sites, will count towards meeting the benchmark and target figures shown below in Tables 5 & 6. The benchmarks and targets shown in the tables represent the projected development for 2000 to 2020.

Table 5 – 20-Year Target for New Dwelling-Units in Mixed-Use Pedestrian Friendly Areas

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 5: % Mixed-use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	26%	41%	49%

The 2005 benchmark analysis completed in 2007 showed that 10% of new development was mixed-use.

Table 6 – 20-Year Target New Employment for Mixed-Use Pedestrian Friendly Areas

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State - represents the ratio of new employment in TODs over total regional employment.	0%	9%	23%	36%	44%

The 2005 benchmark analysis completed in 2007 showed that 17% of new employment (over regional employment) occurred in mixed-use areas.

Dwelling Unit & Employment Data Collected for 2010 Benchmark Analysis
Staff collected tax lot data from the Jackson County's Assessor's Office that will be used to identify new dwelling-units and employment (that fit the criteria) within the Activity Centers that were developed by each jurisdiction.

Measure 7 - Alternative Transportation Funding

This measure has been developed to demonstrate the RVMPO's commitment to implementing the alternative transportation projects upon which many of the proposed measures rely. Funds made available to the RVMPO through the Surface Transportation Program (STP) are the only funds over which the RVMPO has complete discretion. RVMPO jurisdictions have agreed to direct 50% of this revenue stream, historically used for vehicular capacity expansion projects, towards alternative transportation projects. STP funds would be used to expand transit service, or, if RVTD is successful with a local funding package, to fund bicycle/pedestrian and TOD-development supportive projects. Table 7 shows 5-year benchmarks and the 20-year target for this measure.

Table 7 – 20-Year Target for Alternative Transportation Funding

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 7: Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP*).	N/A	$950,000	$2.5 Million	$4.3 Million	$6.4 Million

*STP revenue estimates developed by Oregon Department of Transportation.

The following list of priorities for STP–funded transit projects has been developed in consultation with MPO jurisdictions. The list is intended as a starting point for determining how STP funds will be spent by the Rogue Valley Transportation District. Projects are not listed in any particular order.

STP Funding Priorities for Rogue Valley Transportation District (RVTD):

Central Point

- RVTD will increase service on Route 40 (Central Point) to 30 minute headways and provide service to the TOD site when feasible.

Medford

- RVTD will serve the Southeast Plan Area (Medford TOD) when feasible.

Phoenix

- RVTD will improve transit stops within Phoenix.
- RVTD will explore ways to improve Hwy 99 (Main Street) pedestrian crossing to a northbound transit stop, and in the interim, will provide shuttle service for this purpose.

Jackson County

- RVTD will increase transit service to White City (unincorporated Jackson County).

Alternative Transportation Funding Data Collected for 2010 Benchmark Analysis

Alternative transportation funding data is derived from RVMPO TIPs, and STP Status Excel spreadsheets (maintained by RVCOG). The 2005 benchmark analysis completed in 2007 showed that $1.4 million in MPO STP funds was committed to transit.

50% RVMPO STP Funds to RVTD 2002 - 2010					
Federal Fiscal Year	Federal		Federal Required Match		Total Fed+Req Match
	$	Source	$	Source	
2002	$252,622	MPO STP	$ 28,914	RVTD	$ 281,536
2003	$368,077	MPO STP	$ 42,128	RVTD	$ 410,205
2004	$563,380	MPO STP	$ 64,481	RVTD	$ 627,861
2005	$607,439	MPO STP	$ 69,524	RVTD	$ 676,963
2006	$644,533	MPO STP	$ 73,770	RVTD	$ 718,303
2007	$605,354	MPO STP	$ 69,285	RVTD	$ 674,639
2008	$625,354	MPO STP	$ 71,575	RVTD	$ 696,929
2009	$645,467	MPO STP	$ 73,877	RVTD	$ 719,344
2010	$660,049	MPO STP	$ 75,546	RVTD	$ 735,595
Total	**$4,972,275**		**$ 569,099**		**$ 5,541,374**

50% RVMPO STP Funds to RVTD 2002 - 2015					
Federal Fiscal Year	Federal		Federal Required Match		Total Fed+Req Match
	$	Source	$	Source	
2002	$252,622	MPO STP	$ 28,914	RVTD	$ 281,536
2003	$368,077	MPO STP	$ 42,128	RVTD	$ 410,205
2004	$563,380	MPO STP	$ 64,481	RVTD	$ 627,861
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2007	$605,354	MPO STP	$ 69,285	RVTD	$ 674,639
2008	$625,354	MPO STP	$ 71,575	RVTD	$ 696,929
2009	$645,467	MPO STP	$ 73,877	RVTD	$ 719,344
2010	$660,049	MPO STP	$ 75,546	RVTD	$ 735,595
2011	$688,237	MPO STP	$ 78,772	RVTD	$ 767,009
2012	$814,368	MPO STP	$ 93,208	RVTD	$ 907,576
2013	$838,505	MPO STP	$ 95,971	RVTD	$ 934,476
2014	$887,953	MPO STP	$ 101,630	RVTD	$ 989,583
2015	$940,163	MPO STP	$ 107,606	RVTD	$ 1,047,769
Total	**$9,141,501**		**$1,046,286**		**$10,187,787**

APPENDIX A

Table 1 – Alternative Measures Analysis Methodologies

Measure	How Measured
Measure 1: Transit and bicycle/pedestrian mode share	Mode share to be determined by utilizing data output from RVMPOv3.1 (or v4.0 if available) travel demand model, 2012 Household Survey, Rogue Valley Transportation District (RVTD) ridership and passenger survey data, and 2010 Census information.
Measure 2: % Dwelling Units (DUs) w/in ¼ mile walk to 30-min. transit service	Geographic Information System (GIS) mapping software will be used for the Measure 2 analysis. The data will be compiled by utilizing GIS and Jackson County Assessor tax codes for (existing) 2014 taxlots to determine the total of non-vacant housing in the RVMPO in 2014. Using GIS, the analysis will look at total dwelling units in the RVMPO area compared to those dwelling units that are within ¼ mile of the 30-minute transit service.
Measure 3: % Collectors and arterials w/ bicycle facilities	GIS software will be utilized to determine the total linear feet of collectors and arterial roadways within the RVMPO. Then, each RVMPO arterial and collector roadway will be analyzed to determine the presence of dedicated bike lanes using Jackson County GIS data, inventories from jurisdictions, completed urban roadway upgrade projects, aerial photos, Google Map, and windshield surveys (as necessary). For purposes of this analysis the RVMPO will inventory dedicated bike lanes at least four feet in width or wider.
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	For purposes of this entire analysis - not just this specific measure - a TOD area is considered to be one of three things: 1. A transit-oriented development 2. An activity area, and/or 3. A downtown/central business district. GIS software will be utilized to determine the total linear feet of collectors and arterial roadways in TOD areas within the RVMPO. Then, each RVMPO arterial and collector roadway in the TOD areas will be analyzed to determine the presence of sidewalks using Jackson County GIS data, inventories from jurisdictions, aerial photos, Google Map, and windshield surveys (as necessary). A review of urban roadway upgrade projects noted in Measure #3 applies to this measure as well.
Measure 5: % Mixed-use DUs in new development	Measurements here will be determined by researching building permits and comparing the ratio between new dwelling units in TODs (considered a mixed-land-use overlay) and total new dwelling units in the MPO from 2000 to 2014.
Measure 6: % Mixed-use employment in new development	Data and measurements here will be estimated through review of annual employment files issued from the State of Oregon Employment Division. The percentages will represent a ratio of new employment in TODs (mixed-use developments) as compared with total new employment in the MPO.
Measure 7: Alternative Transportation Funding	This represents funding committed to transit or bicycle/pedestrian/TOD projects. Amounts listed are intended to represent half of the RVMPO's established accumulation of discretionary Surface Transportation Program (STP) funding. As of 2007 this amount was determined to be $1.4 million. The specific sums shown as benchmarks and the target for this measure are estimates based on the best financial forecasts available at the time the measure was adopted (2002). The actual financial commitment of this measure is half of the total STP allocation.

Attachment #2B
(Agenda Item 4)

Rogue Valley
Metropolitan Planning Organization

Regional Transportation Planning

Ashland • Central Point • Eagle Point • Jacksonville • Medford • Phoenix •Talent • White City
Jackson County • Rogue Valley Transportation District • Oregon Department of Transportation

DATE: October 6, 2014
TO: RVMPO Technical Advisory Committee
FROM: Dan Moore, Planning Coordinator
SUBJECT: Additional Mode Share Data

ODOT's Transportation Planning Analysis Unit (TPAU) provided mode share data from the RVMPO v3.1 model for the Alternative Measures 2010 benchmark analysis. This data was included in the September 29, 2014 Draft Alternative Measures Data Collection Memorandum to the TAC (Table 1.1). The purpose of this memo is to provide the TAC with additional mode share data from other sources for comparative purposes.

Table 1 below depicts mode share data provided by TPAU derived from the 1994 and 2010 Household Surveys. For 2010, the mode share is a hybrid based on four pieces of information from the RVMPO area:

- 2010 Oregon Household Activity Survey (OHAS)
- 2013 RVTD On-Board Transit Survey
- 2010 TBest Transit Model
- 2010 RVMPO v4.1 Model with Transit Enhancements

Table 1

Mode Share Data - 1994 & 2010 Household Surveys				
1994 Survey	**Auto**	**Bike/Ped**	**Transit**	**Sub-Total**
Daily Period Mode %	91.79%	7.89%	0.32%	100%
2010 Survey	**Auto**	**Bike/Ped**	**Transit**	**Sub-Total**
Daily Period Mode %	90.53%	8.95%	0.51%	100%

The data in Table 1 shows that the 2010 bicycle/pedestrian and transit mode shares are higher than the 1994 survey data. The Alternative Measure Mode Share 2010 Benchmark for bicycle/pedestrian is 8.4 % and 1.6% for transit. The 2010 data in Table 1 above shows an 8.95% bike/ped mode share, which exceeds the benchmark. Transit mode share is at 0.51% (less than 1%) and more than 1% lower than the benchmark of 1.6%.

Table 2

Medford, OR Metro Area 2013 American Community Survey 1-Year Estimates						
Car, Truck, or Van	Public Transportation	Walked	Bicycle	Taxi Cab, motorcycle, or other	Worked at Home	Sub-Total
84.9%	0.8%	4.3%	1.2%	1.5%	7.4%	100%

Table 2 includes "journey to work" data from the 2013 American Community Survey (ACS). The data show that 0.8% (less than 1%) of work trips are by public transportation mode. Walking and biking make up 5.5% of the mode share for work trips.

Table 3

Mode to Work Jackson County	CTPP2000			2006-2010 ACS			Is Change Statistically Significant in Number?**
	Number	Percent	MOE(+/-)*	Number	Percent	MOE (+/-)*	
	At Place of Residence						
Total Workers	79,195	100%	932	86,340	100%	1,449	Yes
Drove alone	61,330	77.4%	889	66,324	76.8%	1,591	Yes
2-person Carpool	6,885	8.7%	359	7,203	8.3%	887	No
3-or-more-person Carpool	1,760	2.2%	184	1,194	1.4%	1,285	No
Public Transportation	484	0.6%	97	814	0.9%	223	Yes
Bike	670	0.8%	114	1,205	1.4%	240	Yes
Walked	2,815	3.6%	232	2,901	3.4%	359	No
Taxi, Motorcycle and Other means	805	1.0%	125	890	1.0%	239	No
Worked at Home	4,440	5.6%	290	5,809	6.7%	537	Yes

* The coefficient of variation (CV) can be derived by the standard error (SE) divided by the estimate, while SE = MOE/1.645.
** The z-value of the difference of the two estimates is used to determine if the two estimates are statistically significantly different at 90% confidence level.

Other mode share data includes the 2000 Census Transportation Planning Package (CTPP) and 2006-2010 American Community Survey (ACS). This data is available at the county and city level and not at the metropolitan (MPO) level. Table 3 above depicts CTPP 2000 and 2006-10 ACS mode to work data for Jackson County. Overall, the percentages of the bike/ped and transit mode shares for both the CTPP (bike/ped 4.4% & transit 0.6%) and ACS (bike/ped 4.8% & transit 0.9%) data are much lower than the Alternative Measure 2010 benchmarks.

The conclusion is that the Table 1 2010 mode share data is the most accurate and should be used for the 2010 benchmark analysis.

Attachment #2B
(Agenda Item 4)

Rogue Valley
Metropolitan Planning Organization

Regional Transportation Planning

Ashland • Central Point • Eagle Point • Jacksonville • Medford • Phoenix •Talent • White City
Jackson County • Rogue Valley Transportation District • Oregon Department of Transportation

DATE:	February 26, 2015
TO:	RVMPO Technical Advisory Committee
FROM:	Dan Moore, Planning Coordinator
SUBJECT:	Final Alternative Measures Analysis Memorandum

Staff finalized the Alternative Measures Analysis memo based on the comments received at the February 11, 2015 TAC meeting. Staff is preparing the draft Alternative Measures Report to be presented to the TAC at the April 8, 2015 meeting for review and comment along with a recommendation on Policy Committee approval of the final report. The report will also be presented to the Public Advisory Council at their May 19, 2015 meeting for their review/comment and recommendation to the Policy Committee.

The Policy Committee will conduct a Public Hearing on June 23, 2015 to consider adoption of the Alternative Measures Report. The final report will be in a format suitable for adoption by the Land Conservation and Development Commission (LCDC).

Measure 1 – Transit and Pedestrian/Bicycle Mode Share

1.1 - Measure Description

This measure is intended to demonstrate a shift in travel behavior away from the automobile. This shift is anticipated to result from the region's planned improvements in the transit, bicycle and pedestrian infrastructure, as well as from the implementation of planned Transit-Oriented Developments (TODs). The benchmarks and target for this measure are shown in Table 1.1 below. A three-fold increase in transit mode share (from 1% to 3%) and a 35% increase in bicycle and walking (non-motorized) mode share (from 8.2% to 11%) have been set as 20-year targets for this measure.

Table 1.1 - 20-Year Target for Transit and Pedestrian/Bicycle Mode Share

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 1: Transit and bicycle/pedestrian mode share	The percent of total daily trips taken by transit and the combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	*% daily trips* transit: 1.0 bike/ped: 8.2	*% daily trips* transit: 1.2 bike/ped: 8.4	*% daily trips* transit: 1.6 bike/ped: 8.4	*% daily trips* transit: 2.2 bike/ped: 9.8	*% daily trips* transit: 3.0 bike/ped: 11

1.2 – Data - Mode Share 2010 Benchmark Analysis

The mode share data used for 2010 benchmark analysis were derived from the RVMPOv3.1 travel demand model provided by the Oregon Department of Transportation (ODOT) Transportation Planning Analysis Unit (TPAU).

1.3 - Methodology - Mode Share 2010 Benchmark Analysis

The mode share for 2010 was determined by utilizing home-based and non-home-based activity data output from the RVMPOv3.1 travel demand model as shown in Table 1.2 below.

Table 1.2 below depicts the 2006, 2010 & 2015 home-based and non-home-based trip purpose mode share percentages derived from the RVMPO v3.1 travel demand model. The model is calibrated to the 1995/1996 Oregon Household Travel Survey, and 2010 is interpolated between 2006 and 2015.

Table 1.2 – 2006, 2010 & 2015 Home-Based & Non-Home-Based Trips Mode Share Percentages – RVMPO v3.1

2006, 2010 & 2015 Home-Based & Non-Home-Based Trip Purpose Mode Share - RVMPO v3.1 Model								
2006 RVMPO-v3.1	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	266,971	194,535	253,963	11,690	359	7,530	59,606	794,654
Daily Period Mode %	33.60%	24.48%	31.96%	1.47%	0.05%	0.95%	7.50%	100%
2006	**Auto**			**Transit**		**Bike/Walk**		
	90.04%			**1.52%**		**8.45%**		
2010 RVMPO-v3.1 Interpolated	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	287,125	209,517	271,756	12,012	328	7,834	61,935	850,507
Daily Period Mode %	33.76%	24.63%	31.95%	1.41%	0.04%	0.92%	7.28%	100%
2010	**Auto**			**Transit**		**Bike/Walk**		
	90.35%			**1.45%**		**8.20%**		
2015 RVMPO-v3.1	**Drive-Alone**	**Drive-w-Passenger**	**Passenger**	**Bus-Walk**	**Bus/Park & Ride**	**Bike**	**Walk**	**Sub-Total**
Daily Period Total	312,318	228,243	293,999	12,414	289	8,214	64,847	920,324
Daily Period Mode %	33.94%	24.80%	31.95%	1.35%	0.03%	0.89%	7.05%	100%
2015	**Auto**			**Transit**		**Bike/Walk**		
	90.68%			**1.38%**		**7.94%**		

Table 1.3 – Definitions for Table 1.2 Trip Purpose Mode Share Categories

Trip Purpose Mode Share Sub-Category Definitions	
Auto	
Sub-Category	**Definition**
Drive Alone	Single occupancy vehicle (SOV) trip.
Drive-w-Passenger	Person driving auto trip with 1 or more passengers. Passengers are not counted here (counted below).
Passenger	Passengers in Drive-w-Passenger are counted here.
Transit	
Bus-Walk	Pedestrians walking to and from public transit and school buses.
Bus/Park & Ride	Vehicle parking at park and ride and occupant(s) boarding transit.
Bike/Walk	
Bike	Bicyclists
Walk	Pedestrians

1.4 – Findings - Measure 1 – Mode Share 2010 Benchmark Analysis

Using the RVMPO v3.1 interpolated 2010 home-based and non-home-based trip purpose data shows that transit makes up 1.45% of the mode share, which is 0.15 percentage points below the 2010 benchmark of 1.6%. The 2010 Bike/Walk data from the model shows 8.20% mode share which is 0.20 percentage points below the 8.4% benchmark.

Table 1.4 – Measure 1: Transit & Bike/Ped Mode Share 2010 Benchmark Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 1: Transit and Bicycle/Pedestrian Mode Share	The percent of total daily trips taken by transit and combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips
		Transit: 1.0 Bike/Ped: 8.2	Transit: 1.0 Bike/Ped: 8.2	**Transit: 0.9** **Bike/Ped: 7.3**	Transit: 1.6 Bike/Ped: 8.4	**Transit: 1.45** **Bike/Ped: 8.20**	Transit: 2.2 Bike/Ped: 9.8	Transit: 3.0 Bike/Ped: 11

1.5 - Conclusions - Measure 1 – Mode Share 2010 Benchmark Analysis

This analysis included review of several different sources of information including; RVMPOv3.1 travel demand model data, 2010 Oregon Household Activity Survey (OHAS), 2013 Rogue Valley Transportation District (RVTD) On-Board Transit Survey, 2010 Transit Boardings Estimation and Simulation (TBest) model, Census and American Community Survey (ACS) data. Below is a description of the different data sets reviewed and the final mode share data used for the analysis.

In September 2014, ODOT's Transportation Planning Analysis Unit (TPAU) provided mode share data from the RVMPO v3.1 regional travel demand model for the Alternative Measures 2010 benchmark analysis. The model estimated 0.51%, 0.46% and 0.41% transit mode share (not including school student bus trips) percentages for 2006, 2010, and 2015 respectively. The 2010 transit mode benchmark is 1.6%. The model also estimated bicycle and walking (bike/ped) mode share percentages of 8.38%, 7.49% and 6.56% for 2006, 2010 and 2015 respectively. The bike/ped mode share benchmark for 2010 is 8.4%. The results showed that 2010 benchmarks for transit and bike/ped were not achieved.

In October, TPAU provided new mode share data based on 2010 OHAS survey, 2013 RVTD On-Board Transit Survey, 2010 TBest Transit model, and 2010 RVMPO v4.1(work in progress) model with transit enhancements. The 2010 data showed an 8.95% bike/ped mode share which exceeds the 2010 benchmark of 8.45%. The transit mode share was at 0.51% (less than 1%) and more than 1 percentage point lower than the benchmark of 1.6% for 2010. In addition, Census and American Community Survey (ACS) journey-to-work data was analyzed. It was determined that this data only captured work trips and was not an accurate representation of RVMPO daily mode share. It was concluded that the 2010 survey/v4.1 data provided by TPAU (8.95% bike/ped and 0.51% transit) would be used for the 2010 mode share benchmark.

In December 2014, TPAU and RVCOG staff had further discussions about the mode share data, and decided to run the RVMPO v3.1 model again using home-based trip and non-home-based activity parameters. TPAU and RVCOG staff agreed that these categorical trips would more accurately reflect the daily RVMPO mode choices. The model run included daily person trip forecasts by seven (7) travel modes and eight (8) purposes. For the previous model runs, TPAU only reported the total daily mode

share not by different purposes, and neither included school student trips in the daily mode share calculation. The results of this model runs show that:

- In 2006, transit makes up 1.52% of the mode share, which is 0.08 percentage points below the 2010 benchmark of 1.6%. The 2006 bike/walk data from the model shows 8.45% mode share which is 0.05% percentage points above the 8.4% 2010 benchmark.
- In 2010, transit makes up 1.45% of the mode share, which is 0.15 percentage points below the 2010 benchmark of 1.6%. The 2010 bike/walk data from the model shows 8.20% mode share which is 0.20 percentage points below the 8.4% 2010 benchmark.
- In 2015, transit makes up 1.38% of the mode share, which is 0.22 percentage points below the 2010 benchmark of 1.6%. The 2015 bike/walk data from the model shows 7.94% mode share which is 0.46 percentage points below the 8.4% 2010 benchmark.

The RVMPO v3.1 home-based and non-home-based trip activity data – being the best available data – was used for the benchmark analysis. It was determined that this data more accurately reflects the daily RVMPO travel mode choices. However, the results of the analysis show that the 2010 benchmarks for transit and bike/walk mode shares using the RVMPO v3.1 travel demand model have not been achieved (albeit by fractions of percentages). The preference was to use the updated RVMPO v4.1 model which was not available for this analysis. It is recommended that when the RVMPO v4.1 model is ready (early 2015) for use, that the mode share analysis be redone with that model. It is anticipated that future analyses will continue to show a decline in mode share, unless the region adds more transit service.

1.6 – Observations - Mode Share 2010 Benchmark Analysis

Interpreting the mode share analysis results from the RVMPO travel demand model is complicated due to the many factors (data and assumptions) associated with how the model determines mode choice. The effort was also hobbled by the in-progress model update, which made only 2006-based forecast of 2014 model results available (the 2006 model was also used in the prior Alternative Measures analysis). 2010-based results will be available in 2015, calibrated to the best compilation of the various 2010/2011 "observed" datasets (2010 Census and surveys) examined in the effort.

1.7 – Recommendations – Mode Share 2010 Benchmark Analysis

The RVMPO TAC made several recommendations pertaining to estimating mode share. One recommendation supported by ODOT TPAU includes looking at "observed" trends directly rather than modeled or synthesized values, updated infrequently. Regional data such as bicycle and pedestrian counts, and transit ridership numbers could be collected and analyzed. Many of these sources are readily available and updated more frequently than models. Benchmarks and targets would ideally be modified to use this data directly without relying on the model, e.g., transit trips per capita or comparable quarterly bike/pedestrian counts, or limiting mode share to commute trips where annual Census Journey-to Work data could be used.

The TAC requested that another mode share analysis be done using the RVMPO v4.1 travel demand model when it is available (April 2015) as a way to see if the new data in the model would make a difference in the results. The TAC also recommended that the MPO explore alternative transit scenarios with the new model to see the impact pricing policies, land use, and transit service would have on mode share. This could provide a better understanding of what combinations of transportation and land use actions might be most effective at increasing non-auto travel modes in the MPO.

Measure 2 – Percent Dwelling Units within ¼ Mile Walk to 30 Minute Transit Service

2.1 - Measure Description

This measure is intended to demonstrate improvements in transit accessibility. Unlike Measure 1 which considers mode share and tracks overall transit system usage regardless of service levels; this measure considers distance to a transit route, the routes service levels, and improving density around transit routes. For this measure to be successful, it requires development of dwellings within ¼ mile of transit routes and RVTD improving service levels system wide. A walking distance of ¼ mile from a dwelling is assumed to provide reasonable pedestrian access to a transit line. Only those transit lines that provide at least 30-minute or better headway will be counted towards meeting the benchmarks and target shown in Table 2.1. Progress on this measure is tracked through GIS.

Table 2.1 - 20-Year Target for Transit Accessibility

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 2: % Dwelling Units (DU's) w/in ¼ mile walk of 30-minute transit service	Determined through GIS mapping.	12%	20%	30%	40%	50%

2.2 - Data - Transit Accessibility 2010 Benchmark Analysis

Staff collected tax lot data from the Jackson County's Assessor's Office that was used to identify dwelling-units within a ¼ mile along 30-minute transit lines. GIS transit route data was provided by RVTD. Other data files included the RVMPO Boundary GIS shape file.

2.3 – Methodology – Transit Accessibility 2010 Benchmark Analysis

Geographic Information System (GIS) mapping software was used for the Measure 2 analysis. The data was compiled by utilizing GIS and Jackson County Assessor tax codes for (existing) 2014 taxlots to determine the total housing in the RVMPO in 2014. Using GIS, the analysis looked at total dwelling units in the RVMPO area compared to those dwelling units that are within ¼ mile of the 30-minute transit service.

Below is the step-by-step process for analyzing the transit accessibility Alternative Measure.

1. Requested and/or uploaded new data for 30 minute bus routes (RVTD provided) and taxlots (Jackson County Smartmap/RVCOG internal GIS server). Revised existing coverage to select the 30 minute bus routes only.
2. Created a map (GIS Project) with the taxlots, RVMPO Boundary, bus routes, and taxlots. Map was sent to Dan in December.
3. Intersected taxlots and the RVMPO boundary using ArcGIS Intersect. 70,096 records.
4. Buffered 30 minute bus routes with a 0.25 mile buffer. Used buffer feature on ArcGIS.
5. Intersected taxlots and 30 minute buffer to create taxlots layer within 0.25 miles of bus routes. Used intersect feature on ArcGIS. 25,062 records.
6. Exported intersect data to access (default export of data is dbf).
7. Filtered improvements to select all improved values above $19,999.00. 19,850 records

8. Filtered property class data to select all features related to dwellings. 16,403 records.
9. Repeated filter of $19,999.00 for all taxlots in RVMPO. 70,096 records.
10. Filtered property class data to select all features related to dwellings. 45,638 records.
11. 16,403/45,638 = 35.9 % of selected taxlots are within 0.25 miles of the bus route.

2.4 – Findings - Measure 2 – Transit Accessibility 2010 Benchmark Analysis

Based on the GIS analysis described above, thirty-six percent (36%) of dwelling units in the RVMPO are located within ¼ mile walking distance of 30-minute RVTD bus routes, which is 6 percentage points above the 2010 benchmark of 30%. Table 2.2 below shows the results of the 2005 & 2010 benchmark analyses, completed in 2007 and 2014.

Table 2.2 – Measure 2: Transit Accessibility 2010 Benchmark Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 2: % Dwelling Units (DU's) w/in 1/4 Mile Walk to 30-Min. Transit Service	Determined through GIS mapping.	12%	20%	**34%**	30%	**36%**	40%	50%

2.5 – Conclusions - Measure 2 – Transit Accessibility 2010 Benchmark Analysis

The analysis completed in 2014, shows that the MPO exceeded the Measure 2 – Transit Accessibility 2010 benchmark of 30% by 6 percentage points. In 2007, the analysis showed that 34% of dwelling units were within ¼ mile of 30-minute transit, which surpassed the 2005 benchmark by 14 percentage points. Dwelling units within ¼ mile of 30-minute transit have increased by 2 percentage points since 2007. In order to meet the 2015 benchmark of 40% there will have to be a 4% increase in dwelling units, and/or RVTD adding more 30-minute transit routes in the MPO area.

2.6 – Observations – Transit Accessibility 2010 Benchmark Analysis

The TAC concurred with the methodology and the results of the analysis.

2.7 – Recommendations – Transit Accessibility 2010 Benchmark Analysis

Continue using the methodology described above in Section 2.3 to measure transit accessibility.

Measure 3 - Percentage of Collectors/Arterials with Bicycle Facilities

3.1 - Measure Description

The RVMPO programs projects along collector and arterial streets within the MPO boundaries. Consistent with the TPR, the RVMPO's policy is for these facilities to include bicycle lanes or, in rural areas, shoulders with a width greater than four feet. This measure is intended to track the progress of including these facilities on the MPO's street network and as a way to demonstrate improved accessibility for bicyclists.

5-year benchmarks and 20-year target are shown below in Table 3.1.

Table 3.1 - 20-Year Target for Bicycle Facilities

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 3: % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping.	21%	28%	37%	48%	60%

3.2 – Data - Bicycle Facilities 2010 Benchmark Analysis

Base maps were distributed to Eagle Point, White City, Jackson County, Jacksonville, Central Point, Medford, Phoenix, Talent and Ashland. The jurisdictions identified bicycle facilities on the base maps within their UGBs (UCB for White City) using the using the following criteria:

- Shoulders 4-ft in width, or greater
- Striped bike lanes 4-ft in width, or greater

A GIS shapefile was created with the base map data returned from the jurisdictions, data from consultants working on local TSP updates, data from various city GIS staff, and the most current Jackson County bike lane GIS file.

3.3 - Methodology - Bicycle Facilities 2010 Benchmark Analysis

1. Measured total linear feet of arterials and collectors within the RVMPO boundary (both directions)
2. Measured total linear feet of bicycle facilities identified by the jurisdictions
3. Calculated percentage of bicycle facilities on arterials and collectors within the MPO boundary

3.4 – Findings - Bicycle Facilities 2010 Benchmark Analysis

There is a total of 4,640,107 linear feet of arterials and collectors within the RVMPO planning area (both directions). The jurisdictions in the RVMPO reported a total of 2,507,130 linear feet of bicycle facilities on arterials and collectors. The percentage of bike facilities is 54% within the RVMPO, which is 17 percentage points greater than the 2010 benchmark of 37%.

Table 3.2 below depicts the results of the 2005 & 2010 benchmark analyses completed in 2007 and 2014.

**Table 3.2 – Measure 3: Percentage of Arterials/Collectors with Bicycle Facilities
2010 Benchmark Analysis**

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 3: % Collectors and arterials w/bicycle facilities	Determined through GIS mapping.	21%	28%	**37%**	37%	**54%**	48%	60%

3.5 – Conclusions - Bicycle Facilities 2010 Benchmark Analysis

The results of the 2010 bike facility analysis shows that 54% of the region's arterial and collector roadways have provisions for bicyclists. This not only exceeds the 2010 benchmark of 37%, but also the 48% 2015 benchmark. At this time, the RVMPO is within 6% of the 2020 target of 60%. Additionally, the 262,045 linear feet of multi-use paths (Bear Creek Greenway, Ashland Multi-Use Path, and Larson Creek Multi-Use Path) were not counted as part of the 2010 benchmark analysis. However, it is important to note that these multi-use paths add more options for bicyclists and pedestrians, which is an overall benefit to the region.

3.6 - Observations – Bicycle Facilities 2010 Benchmark Analysis

The TAC concurred with the results of the analysis. The analysis did not include multi-use paths. Including the paths would result in 59% of arterials/collectors with bicycle facilities. The City of Medford considers the Larson Creek Multi-Use Path (21,090 linear feet, both directions) as bicycle facilities for sections of Barnett Road that are not able to accommodate bike facilities due to inadequate right-of-way width.

3.7 – Recommendations – Bicycle Facilities 2010 Benchmark Analysis

Continue to use the methodology described in Section 3.3 above.

Measure 4 - Percentage of Collectors and Arterials in TOD Areas with Sidewalks

4.1 - Measure Description

The RVMPO has areas that are currently planned for mixed-use, pedestrian friendly development or are in downtown areas. These areas are considered "Activity Centers." To be consistent with Measures 5 and 6, "Activity Centers" were used in this measure instead of the more restrictive "TOD Areas". This measure is intended to demonstrate improvements in pedestrian accessibility in these portions of the MPO area - where pedestrian access is most critical. Proposed 5-year benchmarks and 20-year targets are shown below in Table 4.1.

Table 4.1 – 20-Year Target for Pedestrian Facilities

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping.	47%	50%	56%	64%	75%

4.2 – Data - Sidewalks 2010 Benchmark Analysis

Data was derived from an existing RVCOG GIS sidewalk shapefile created in 2007 using GPS equipment, data from local TSPs, and GIS data from Ashland. Staff used Google Map for additional sidewalk identification.

4.3 – Methodology – Sidewalks 2010 Benchmark Analysis

1. Identified arterials and collectors in Activity Centers
2. Edited/updated RVCOG GPS 2007 shapefile to include additional sidewalks (subtracted Ashland out of GPS file and added in GIS file provided by city)
3. Calculated total linear feet of sidewalks
4. Calculated total linear feet of arterials and collectors in activity centers (both directions)
5. Percent of sidewalks calculated using linear feet totals of sidewalks and arterials/collectors (both directions)

4.4 – Findings - Sidewalks 2010 Benchmark Analysis

There is a total of 1,512,648 lane feet of arterials and collectors (both directions) and 461,445 linear feet of sidewalks in Activity Centers located in the RVMPO. The 2014 analysis shows that 30% of arterials and collectors within RVMPO Activity Centers have sidewalks, which falls below the 2010 benchmark of 56% by 26 percentage points. Table 4.2 below shows the results of the 2005 & 2010 benchmark analyses completed in 2007 and 2014.

Table 4.2: Measure 4 - Percentage of Arterials/Collectors with Sidewalks 2010 Benchmark Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 4: % Collectors and Arterials in TOD Areas w/Sidewalks	Determined through GIS mapping.	47%	50%	**55%**	56%	**30%**	64%	75%

4.5 – <u>Conclusions</u> - Sidewalks 2010 Benchmark Analysis

The sidewalk inventory accounted for the presence of a sidewalk on one or both sides of an arterial or collector street within the defined RVMPO Activity Centers. The total sidewalk inventory was compared to the total linear feet of Activity Center arterial/collector roadways in both travel directions. The result is 30% of the total linear feet of arterials/collectors in Activity Centers have sidewalks.

4.6 – <u>Observations</u> – Sidewalks 2010 Benchmark Analysis

The original intent of Measure 4 was to count sidewalks in proposed TOD areas within the MPO. Subsequently, the definition of TOD areas changed to "Activity Centers" described as bicycle/pedestrian-friendly development around schools, downtowns and retail development areas. The conclusion is that the original benchmarks and target (including the 2007 benchmark analysis) were calculated using proposed TOD areas (smaller geographic areas). The 2010 benchmark analysis used Activity Centers, which is a much larger geographic area compared to the original TOD areas. This likely explains the lower (30%) 2014 benchmark analysis result. The original benchmarks and target need to be adjusted to reflect the larger geographic Activity Center areas in order to have a fair comparison of improvements.

4.7 – <u>Conclusions</u> – Sidewalks 2010 Benchmark Analysis

The TAC recommends changing the name of Measure 4 to, "Measure 4 - Percentage of Collectors and Arterials in ***Activity Centers*** with Sidewalks." The TAC also recommends revising the benchmarks and target to reflect the larger geographic Activity Center areas.

Measure 5 - Percentage of New Dwelling Units in Mixed-Use/Pedestrian-Friendly Areas

5.1 - Measure Description

The objective of Measure 5 is to demonstrate progress towards creating mixed use, pedestrian-friendly developments in the MPO. Progress towards meeting the benchmarks and target for this measure is determined by monitoring development after the appropriate land use and development regulations have been adopted. Mixed use, pedestrian-friendly development occurring within downtown areas in Ashland, Talent, Phoenix, Jacksonville, Medford, Central Point, White City and Eagle Point, as well as within Activity Centers (TOD sites), will count towards meeting the benchmark and target figures shown below in Table 5.1. The benchmarks and target shown in the table represent the projected mixed-use development for 2000 to 2020.

Table 5.1 – 20-Year Target for New Dwelling-Units in Mixed-Use Pedestrian Friendly Areas

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 5: % Mixed-use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	26%	41%	49%

5.2 – Data - Dwelling Unit 2010 Benchmark Analysis

Staff collected tax lot data from the Jackson County's Assessor's Office to identify new dwelling-units (that fit the criteria) within the Activity Centers that were identified by each jurisdiction.

5.3 – Methodology – Dwelling Unit 2010 Benchmark Analysis

For the 2010 analysis, staff followed the methodology outlined in a TAC memo written in August 2008, using activity center maps provided by participating jurisdictions. Qualifying structures in the activity centers include apartments, single-family dwellings on parcels no larger than.10 acre, duplexes on parcels no larger than .20 acre, triplexes on parcels no larger than .30 acre, and four-plexes on parcels no larger than .40 acre.

5.4 – Findings - Dwelling Unit 2010 Benchmark Analysis

Staff found a total of 12,530 units constructed since 2000 throughout the MPO, of which 2,785 units met the benchmark requirements. This represents 22.2 percent of the total. The number of units built in activity centers since 2000 is significantly higher, but the methodology requires that only those developments meeting the target density of ten units per acre may be counted. Table 5.2 below shows the results of the 2005 & 2010 benchmark analyses completed in 2007 and 2014.

Table 5.2: Measure 5 - New Dwelling Units in Mix-Used Pedestrian-Friendly Areas 2010 Benchmark Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 5: % Mixed-Use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	**10%**	26%	**22%**	41%	49%

5.5 – Conclusions – Dwelling Unit 2010 Benchmark Analysis

The 2010 benchmark for new dwelling units in mixed-use, pedestrian-friendly areas is 26%. The 2014 analysis shows that 22% of the dwelling units – meeting the density requirements - constructed since 2000 are located within mixed-use, pedestrian-friendly areas (RVMPO Activity Centers), which is 4 percentage points lower than the benchmark.

5.6 – Observations – Dwelling Unit 2010 Benchmark Analysis

This measure asks for a comparison of the number of new dwellings in Activity Centers (TOD's) versus region-wide dwelling units built. The evaluation procedures developed for the 2007 benchmark analysis – and used for the 2014 analysis - define qualifying dwellings as those that were on parcels the equivalent of .10 acre or smaller. Significant numbers of new dwellings in the Activity Centers did not qualify because they were built on larger parcels.

5.7 – Recommendations – Dwelling Unit 2010 Benchmark Analysis

The TAC recommends changing the measure description to, "Measure 5 – Percentage of New Dwelling Units in *Activity Centers*." Another recommendation is to revise the "How Measured" description to read, "Determined by reviewing assessor's data to determine the ratio between new DUs in Activity Centers and total new DUs in the region." The evaluation criteria for this measure needs to be revised to avoid confusion on what dwelling units should count towards the benchmarks and target. In addition, a new way of measuring density may need to be developed in order to ensure that proper credit is given to new development within Activity Centers. Another suggested option is to establish the existing density for residential development in all identified activity centers and then document the increase in density from one benchmark to the next.

Because some of the newly identified activity centers to do not have commercial uses at their hub, consideration should be given to amending or eliminating the requirement that the dwellings be within ¼ mile of a commercial center having a minimum of 20,000 square feet.

Measure 6 - Percentage of New Employment in Mixed-Use/Pedestrian-Friendly Areas

6.1 - Measure Description

The objective of Measure 6 is to demonstrate progress towards creating mixed use, pedestrian-friendly developments in the MPO. Progress towards meeting the benchmarks and target for this measure is determined by monitoring development after the appropriate land use and development regulations have been adopted. Mixed use, pedestrian-friendly development occurring within downtown areas in Ashland, Talent, Phoenix, Jacksonville, Medford, Central Point and Eagle Point, as well as within Activity Centers (TOD sites), will count towards meeting the benchmark and target figures shown below in Table 6.1. The benchmarks and target shown in the table represent the projected mixed-use employment for 2000 to 2020.

Table 6.1 – 20-Year Target New Employment for Mixed-Use Pedestrian Friendly Areas

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State - represents the ratio of new employment in TODs over total regional employment.	0%	9%	23%	36%	44%

6.2 – Data - Mixed-Use Employment 2010 Benchmark Analysis

Staff collected tax lot data from the Jackson County's Assessor's Office that will be used to identify new mixed-use employment (that fit the criteria) within the Activity Centers that were developed by each jurisdiction.

6.3 – Methodology – Mixed-Use Employment 2010 Benchmark Analysis

The measurement methodology was refined in August 2008, resulting in much lower levels of qualifying employment. In order to satisfy the benchmark, businesses must meet the following standards:

- Provide no parking between the building and street
- Provide a main entrance from the street
- Include a vertical mix of housing
- Be within ¼ mile of higher density residential development
- Contain a complete pedestrian connection between the project and the higher density residential development.

6.4 – Findings - Mixed-Use Employment 2010 Benchmark Analysis

Using formulas that calculate the number of employees based on the size of the structure, staff estimated that 209 employees work in the qualifying businesses, which is only 12 percent of the estimated total of 1,740 employed in businesses constructed since 2000. Table 6.2 below shows the results of the 2005 & 2010 benchmark analyses completed in 2007 and 2014.

Table 6.2: Measure 6 - New Employment in Mix-Used Pedestrian-Friendly Areas 2010 Benchmark Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State - represents the ratio of new development in TODs over total regional employment	0%	9%	**17%**	23%	**12%**	36%	44%

6.6 – Conclusions - Mixed-Use Employment 2010 Benchmark Analysis

The 2010 benchmark for new employment in Activity Centers is 23%. The analysis shows that only 12% of new employment is within Activity Centers, which is 11 percentage points lower than the benchmark and 5 percentage points below the 2007 results of 17%.

6.7 – Observations – Mixed-Use Employment 2010 Benchmark Analysis

This measure asks for the percentage of new employment in Activity Centers over new employment region-wide. The evaluation procedures developed for the 2007 benchmark analysis – and used for the 2014 analysis – outline specific criteria for qualifying which commercial and industrial development count towards meeting benchmarks. Several commercial/industrial developments did not meet the eligibility requirements of entrance fronting sidewalk and parking in rear of building, even though the development was located in an Activity Center, and the structures were placed at the front property line.

6.8 – Recommendations – Mixed-Use Employment 2010 Benchmark Analysis

The TAC recommends changing the measure description to, "Measure 6 – Percentage of New Employment in *Activity Centers*." Another recommendation is to revise the "How Measured" description to read, "Determined by reviewing assessor's data to determine the number of jobs per square footage of new commercial/industrial development in Activity Center to number of jobs per square footage of new commercial/industrial development in the region." The evaluation criteria for this measure needs to be revised to remove obstacles to counting new employment, particularly regarding building entrances and parking between the building and the street.

Measure 7 - Alternative Transportation Funding

7.1 – Measure Description

This measure has been developed to demonstrate the RVMPO's commitment to implementing the alternative transportation projects upon which many of the proposed measures rely. Funds made available to the RVMPO through the Surface Transportation Program (STP) are the only funds over which the RVMPO has complete discretion. RVMPO jurisdictions have agreed to direct 50% of this revenue stream, historically used for vehicular capacity expansion projects, towards alternative transportation projects. STP funds would be used to expand transit service, or, if RVTD is successful with a local funding package, to fund bicycle/pedestrian and TOD-development supportive projects. Table 7.1 shows 5-year benchmarks and the 20-year target for this measure.

Table 7.1.1 – 20-Year Target for Alternative Transportation Funding

Measure	*How Measured*	*2000*	*Benchmark 2005*	*Benchmark 2010*	*Benchmark 2015*	*Target 2020*
Measure 7: Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP*).	N/A	$950,000	$2.5 Million	$4.3 Million	$6.4 Million

*STP revenue estimates developed by Oregon Department of Transportation.

As part of Measure 7, priorities for STP–funded transit projects were developed in consultation with MPO jurisdictions. The list was intended as a starting point for determining how STP funds will be spent by RVTD. Table 7.1.2 below lists the transit projects by jurisdiction. Projects are not listed in any particular order.

Table 7.1.2 - STP Funding Priorities for Rogue Valley Transportation District (RVTD)

Measure 7 - STP-Funded Transit Projects	
Central Point	RVTD will increase service on Route 40 (Central Point) to 30 minute headways and provide service to the TOD site when feasible.
Medford	RVTD will serve the Southeast Plan Area (Medford TOD) when feasible.
Phoenix	RVTD will improve transit stops within Phoenix.
	RVTD will explore ways to improve Hwy 99 (Main Street) pedestrian crossing to a northbound transit stop, and in the interim, will provide shuttle service for this purpose.
Jackson County	RVTD will increase transit service to White City (unincorporated Jackson County).

7.2 – Data - Alternative Transportation Funding 2010 Benchmark Analysis

Alternative transportation funding data is derived from RVMPO TIPs, and STP Status Excel spreadsheets (maintained by RVCOG). The current status of the STP-Funded transit projects was provided by RVTD.

7.3 – **Methodology – Alternative Transportation Funding 2010 Benchmark Analysis**
Two Excel spreadsheets were developed that lists the amounts of STP funds provided to RVTD for Federal Fiscal Years 2002 – 2010 for the 2010 benchmark analysis, and another spreadsheet that totals the amount of STP funds to RVTD for 2002 to 2015.

7.4 – Findings - Alternative Transportation Funding 2010 Benchmark Analysis
Table 7.2.1 below shows a total of $1,184,079 for 2002 – 2004 ($234,079 more than the 2005 benchmark of $950,000); $3,128,147 for 2005 – 2009 ($628,147 more than the 2010 benchmark of $2.5M); and $3,889,112 for 2010 – 2014 ($410,888 less than the 2015 benchmark of $4.3M). The net difference between the 3 benchmarks is $451,338 additional funds.

Table 7.2.1 – 50% RVMPO STP Funds to RVTD 2002 – 2010

50% RVMPO STP Funds to RVTD 2002 - 2014			
Federal Fiscal	Federal		Sub-Total
	$	Source	
2002	$252,622	MPO STP	$1,184,079
2003	$368,077	MPO STP	
2004	$563,380	MPO STP	
2005	$607,439	MPO STP	$3,128,147
2006	$644,533	MPO STP	
2007	$605,354	MPO STP	
2008	$625,354	MPO STP	
2009	$645,467	MPO STP	
2010	$660,049	MPO STP	$3,889,112
2011	$688,237	MPO STP	
2012	$814,368	MPO STP	
2013	$838,505	MPO STP	
2014	$887,953	MPO STP	
Total	**$8,201,338**		**$8,201,338**

Table 7.2.3 – Measure 7: Alternative Transportation Funding Analysis

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 7: Alternative Transportation Funding	Funding Committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent 1/2 of the MPO's estimated accumulation of discretionary funding (STP).	NA	$950,000	**$1.4 Million**	$2.5 Million	**$3.1 Million**	$4.3 Million	$6.4 Million

Table 7.2.3 above shows the results of the benchmark analyses for 2005 & 2010 that were completed in 2007 and 2014. Almost $1.2 million in STP funds has been committed to RVTD for transit projects from 2002 to 2004; $3.1 million from 2005 to 2009; and $3.9 million from 2010 to 2014.

Table 7.2.4 below outlines the status of the Alternative Measures STP-funded transit projects.

Table 7.2.4 – Measure 7: Transit Project Status

Measure 7 - STP-Funded Transit Projects		2010 Status
Central Point	RVTD will increase service on Route 40 (Central Point) to 30 minute headways and provide service to the TOD site when feasible.	• Route 40 has 30 minute headways (~$315,000 investment annually) • Service to the TOD site is not feasible at this time
Medford	RVTD will serve the Southeast Plan Area (Medford TOD) when feasible.	• Service to the SE Plan Area is not feasible at this time
Phoenix	RVTD will improve transit stops within Phoenix.	• RVTD is working with Phoenix Urban Renewal on transit improvements
	RVTD will explore ways to improve Hwy 99 (Main Street) pedestrian crossing to a northbound transit stop, and in the interim, will provide shuttle service for this purpose.	
Jackson County	RVTD will increase transit service to White City (unincorporated Jackson County).	• Route 60 has 30 minute headways (~$578,000 investment annually)

Table 7.2.5 below shows the expenditures made by RVTD with STP funds from Federal Fiscal Year (FFY) 2002 to FFY 2012)

Table 7.2.5 – Measure 7: Transit STP Expenditures

Measure 7 – RVTD STP-Funded Transit Expenditures		
Federal Fiscal Year	**Project/Activity**	**Total Expenditure**
FFY 2002-2005	• Purchased seven (7) vehicles	$1,791,518
FFY 2006	• Preventive Maintenance • Installed bus wash equipment • Bus stop shelters and facilities	$1,251,972
FFY 2007	• Preventive maintenance • CNG facility (built in 2011)	$605,354
FFY 2008-2009	• Preventive maintenance • Purchase two (2) vehicles	$1,270,821
FFY 2010-2011	• Preventive maintenance • Purchased surveillance equipment • Bus route signage and shelter rehabilitation	$1,348,286
FFY 2012	• Preventive maintenance • Front Street Station renovation • Bus route shelters and rehabilitation • Shop equipment	$814,748

7.5 – Measure 7 – Alternative Transportation Funding Analysis Conclusions

The MPO exceeded the 2010 benchmark for providing 50% of STP funds to RVTD, and the transit projects listed in Table 7.2.4 are moving forward. It is important to note that STP funds cannot be used for transit operations. Therefore, RVTD uses the funds to offset maintenance and capital costs, which frees up other RVTD funding sources for transit service.

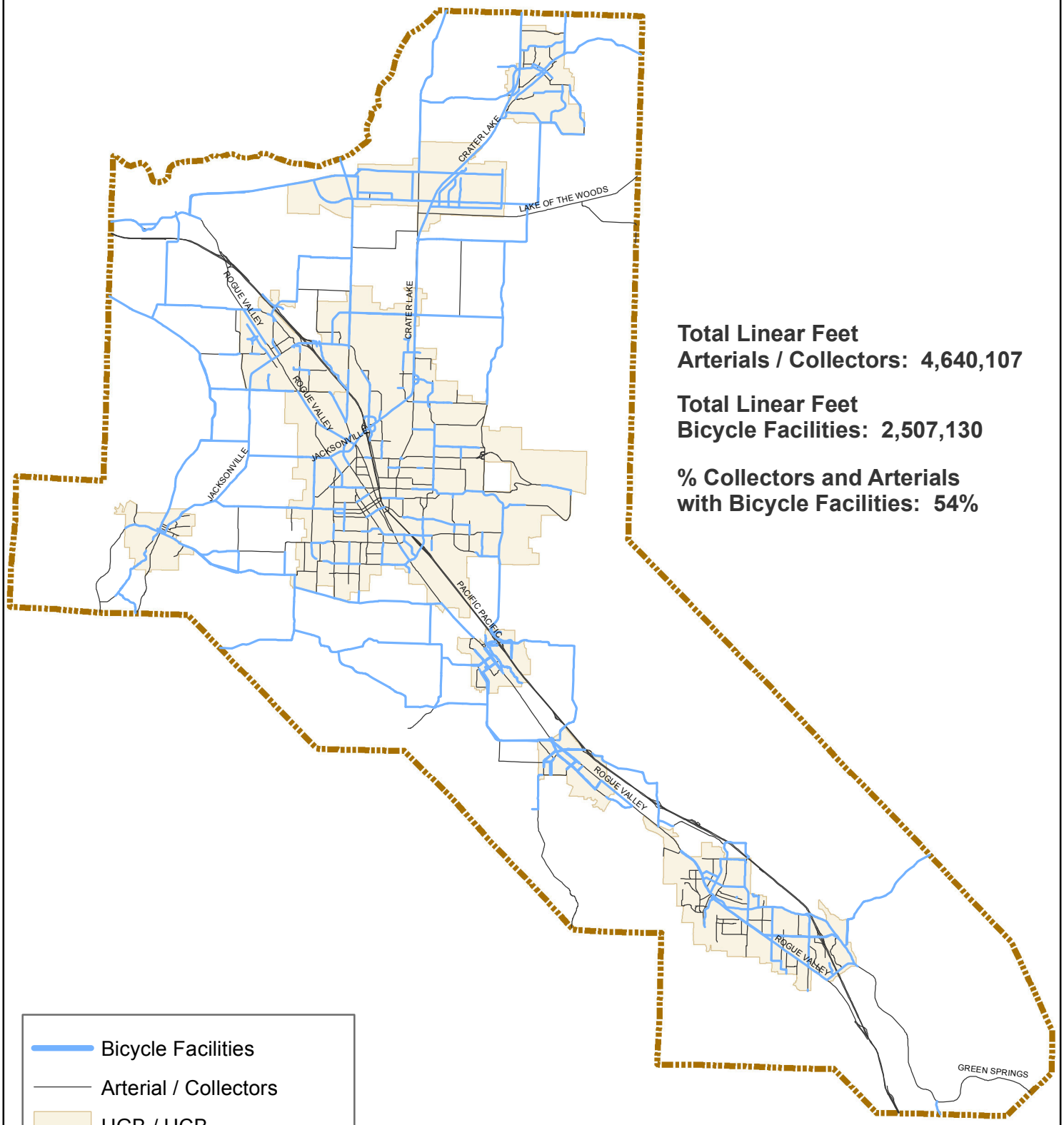
2015 Benchmark Analysis Results

Table 8 – Alternative Measures 2007 & 2014 Benchmark Analysis Results

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 1: Transit and Bicycle/Pedestrian Mode Share	The percent of total daily trips taken by transit and combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips	% Daily Trips
		Transit: 1.0 Bike/Ped: 8.2	Transit: 1.0 Bike/Ped: 8.2	**Transit: 0.9 Bike/Ped: 7.3**	Transit: 1.6 Bike/Ped: 8.4	**Transit: 1.52 Bike/Ped: 8.45**	Transit: 2.2 Bike/Ped: 9.8	Transit: 3.0 Bike/Ped: 11
Measure 2: % Dwelling Units (DU's) w/in 1/4 Mile Walk to 30-Min. Transit Service	Determined through GIS mapping.	12%	20%	**34%**	30%	**36%**	40%	50%
Measure 3: % Collectors and arterials w/bicycle facilities	Determined through GIS mapping.	21%	28%	**37%**	37%	**54%**	48%	60%
Measure 4: % Collectors and Arterials in TOD Areas w/Sidewalks	Determined through GIS mapping.	47%	50%	**55%**	56%	**30%**	64%	75%
Measure 5: % Mixed-Use DUs in new development	Determined by tracking building permits - the ratio between new DUs in TODs and total new DUs in the region.	0%	9%	**10%**	26%	**22%**	41%	49%
Measure 6: % Mixed-use employment in new development	Estimated from annual employment files from State - represents the ratio of new development in TODs over total regional employment	0%	9%	**17%**	23%	**12%**	36%	44%
Measure 7: Alternative Transportation Funding	Funding Committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent 1/2 of the MPO's estimated accumulation of discretionary funding (STP).	NA	$950,000	**$1.4 Million**	$2.5 Million	**$3.1 Million**	$4.3 Million	$6.4 Million

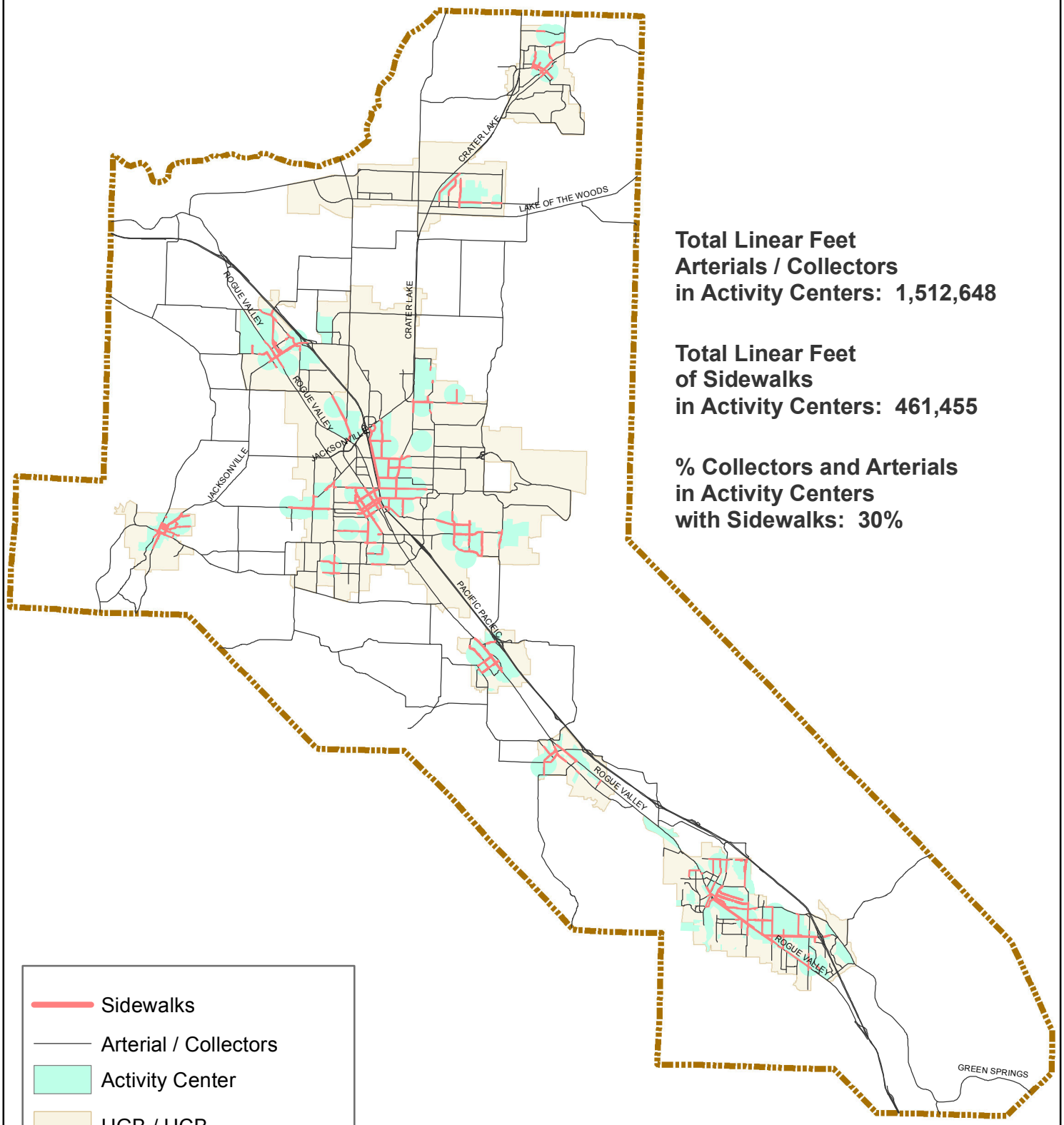
Attachment #2B
(Agenda Item 4)

RVMPO Alternative Measure 3
% Collectors and Arterials w/Bicycle Facilities
2010 Benchmark Analysis



Attachment #2B
(Agenda Item 4)

RVMPO Alternative Measure 4
% Collectors and Arterials in Activity Centers w/Sidewalks
2010 Benchmark Analysis



Attachment #2B
(Agenda Item 4)

RVMPO Alternative Measure 2
% Dwelling Units (DUs) within 1/4 mile walk to 30 minute Transit Service