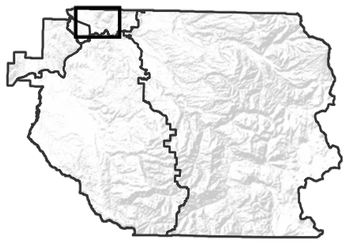
Appendix A Low Build Roadway and Intersection Performance

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 Miles

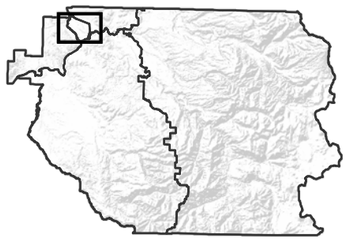
Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

H:\proj\file\11732 - Clackamas County TSP\gis\11x17 Maps\X3 Auto Deficiencies_Low Build Conditions.mxd

Summary of 2035 Low Build Roadway and Intersection Performance
Greater Clackamas Regional Center / Industrial Area

Figure
C X3

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
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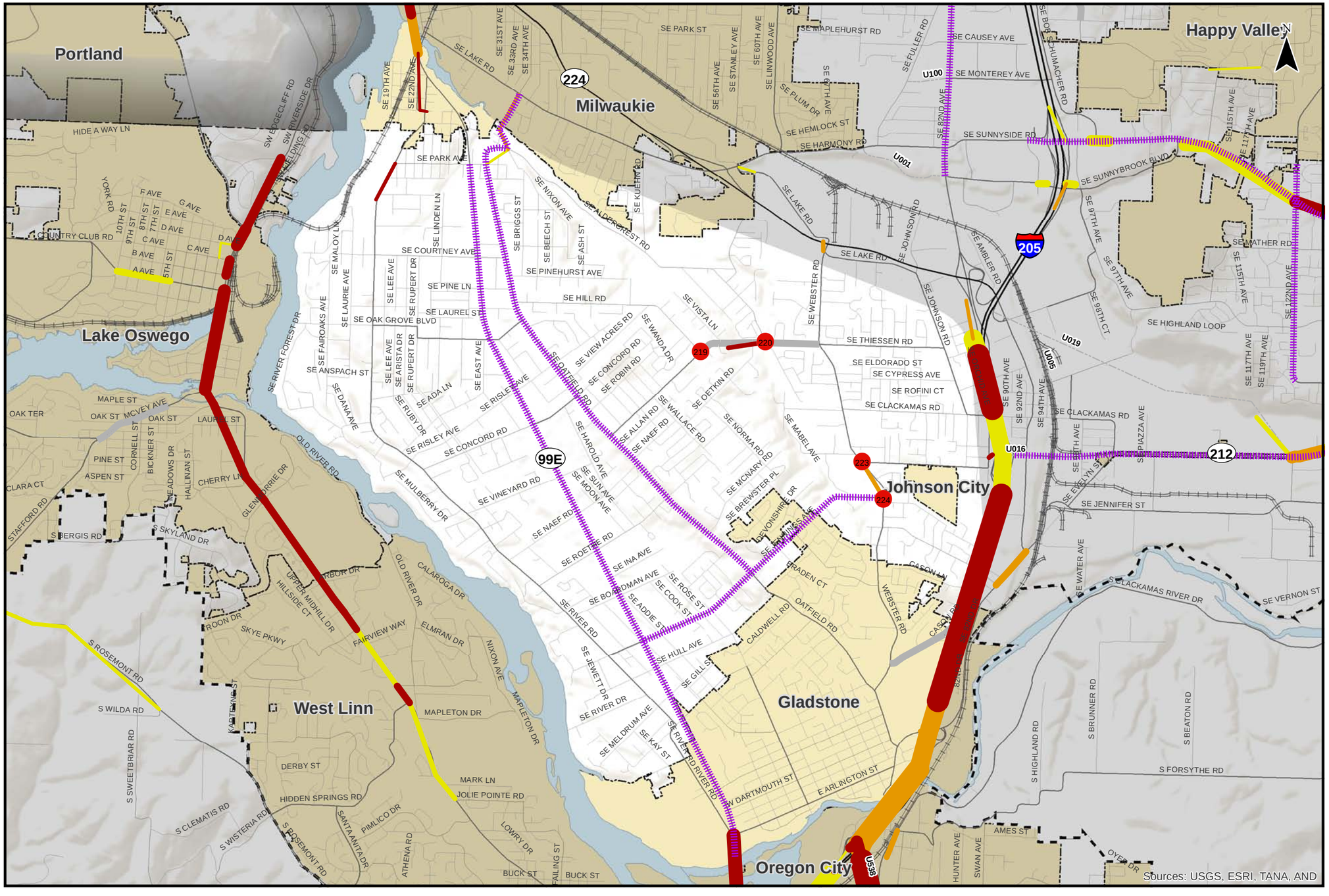

Summary of 2035 Low Build Roadway and Intersection Performance
Greater McLoughlin Area

Figure
M X3

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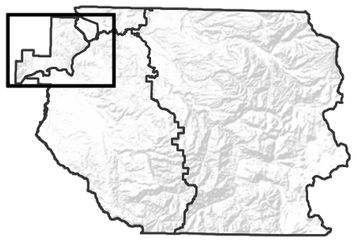
CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 2 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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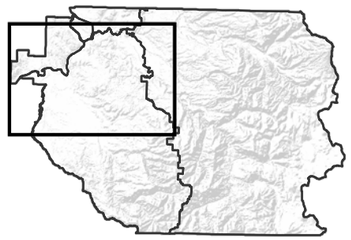
Summary of 2035 Low Build Roadway and Intersection Performance Northwest County

Figure **NW X3**

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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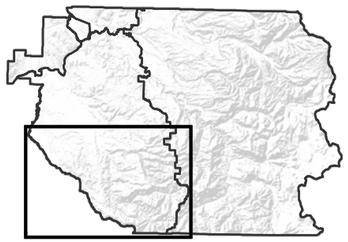
Sources: USGS, ESRI, TANA, AND

Summary of 2035 Low Build Roadway and Intersection Performance
Southwest County - Northern Portion

Figure
SN X3

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour
5,000 vehicles/hour
10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour
5,000 vehicles/hour
10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour
5,000 vehicles/hour
10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

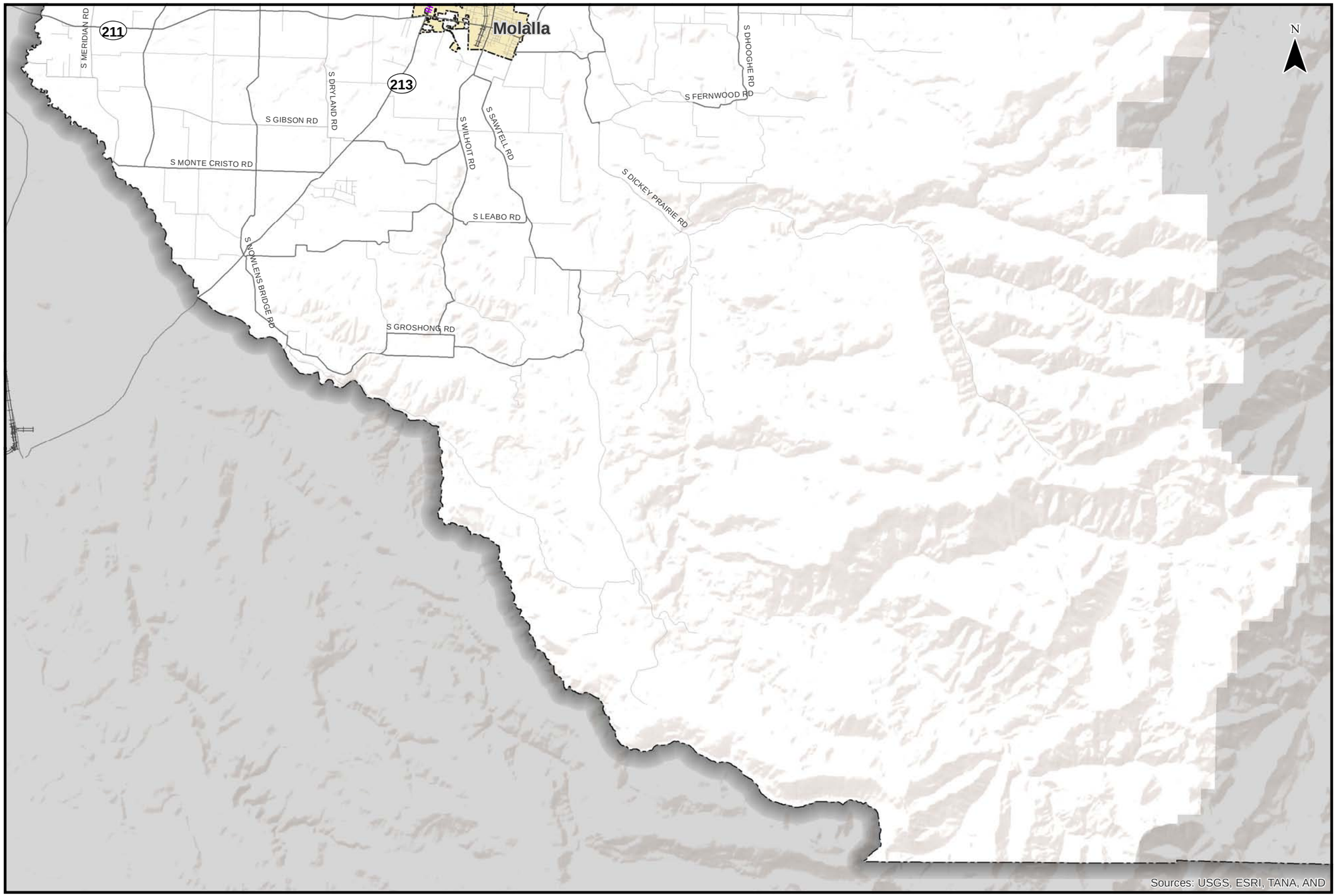
County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center



Summary of 2035 Low Build Roadway and Intersection Performance
Southwest County - Southern Portion

Figure
SS X3

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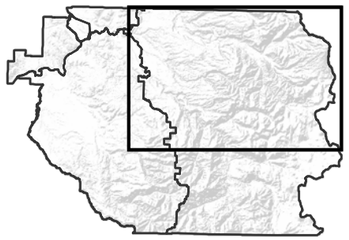
CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*



Study Intersection

- Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

- 1,000 vehicles/hour
- 5,000 vehicles/hour
- 10,000 vehicles/hour

Congested 1.0 - 1.1

- 1,000 vehicles/hour
- 5,000 vehicles/hour
- 10,000 vehicles/hour

Some Congestion 0.9 - 1.0

- 1,000 vehicles/hour
- 5,000 vehicles/hour
- 10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

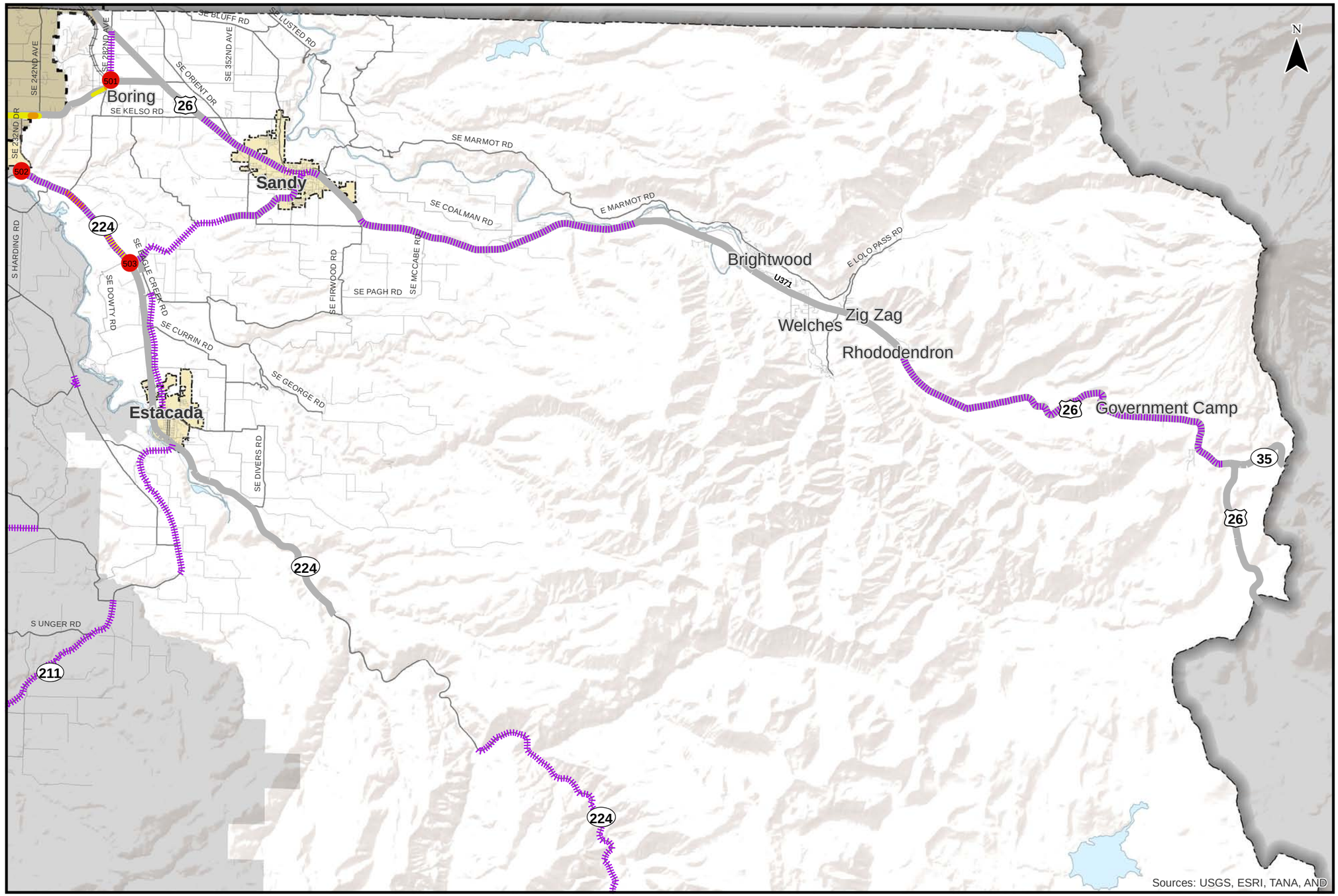
County Boundary

UGB

Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 2 3 4 5 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center



Summary of 2035 Low Build Roadway and Intersection Performance
East County - Northern Portion

Figure
EN X3

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CLACKAMAS COUNTY Transportation System Plan *Update*

Study Intersection

Does Not Meet Standards

Candidate Road Safety Audit Corridors

Very Congested >1.10

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Congested 1.0 - 1.1

1,000 vehicles/hour

5,000 vehicles/hour

10,000 vehicles/hour

Some Congestion 0.9 - 1.0

1,000 vehicles/hour

5,000 vehicles/hour

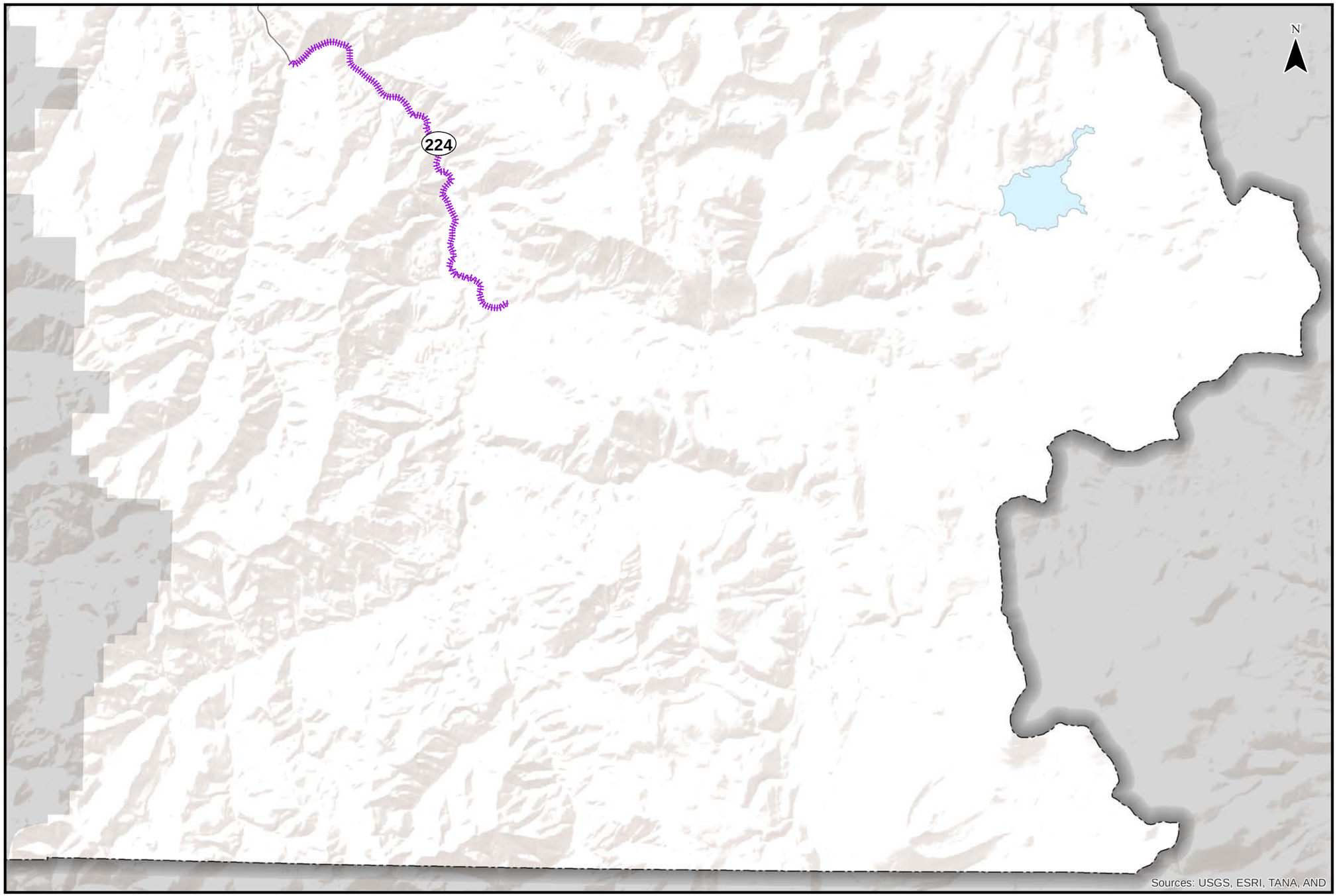
10,000 vehicles/hour

Shoulders (At Least 4ft Wide)

Incorporated Areas

County Boundary

UGB



Note: Volumes reflect weekday evening peak period roadway link volumes.

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

Summary of 2035 Low Build Roadway and Intersection Performance
East County - Southern Portion

Figure
ES X3

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Appendix B 70% Growth Scenario Intersection Operations

104 SE Johnson Creek Blvd./ 80th Ave.

LOW BUILD: CM=SB, LOS=F, Del=>50, V/C=>1.0; 110, 10, 100; 60, 910, 15; 955, 40; 40, 10, 115; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: CM=SB, LOS=F, Del=>50, V/C=>1.0; 105, 10, 100; 60, 855, 15; 855, 40; 35, 80, 115; STD =v/c < 0.99; DOES NOT MEET STD

124 SE Harmony Rd./ SE Linwood Ave.

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 35, 330, 75; 80, 95; 90, 265, 335; 80, 375, 500; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=E, Del=73.5, V/C=>1.0; 55, 235, 80; 75, 480, 70; 75, 375, 245; 65, 285, 385; STD =v/c < 0.99; DOES NOT MEET STD

138 SE Sunnybrook Blvd./ I-205 NB Ramps

LOW BUILD: LOS=D, Del=35.2, V/C=0.89; 270, 815; 300, 1005; 210, 410, 685; STD =v/c < 0.85; DOES NOT MEET STD

70% GROWTH: LOS=C, Del=30.8, V/C=0.81; 255, 745; 300, 920; 180, 390, 630; STD =v/c < 0.85

144 SE Sunnyside Rd./ SE 122nd Ave.

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 170, 175, 175; 640, 2200, 250; 155, 925, 160; 195, 290, 90; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=E, Del=62.3, V/C=0.96; 160, 235, 155; 585, 2035, 250; 135, 880, 145; 205, 190, 85; STD =v/c < 0.99; DOES NOT MEET STD

105 OR 213 (SE 82nd Ave)/ SE Johnson Creek Blvd

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 150, 970, 405; 185, 860, 200; 200, 715, 360; 365, 870, 420; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=E, Del=66.4, V/C=0.98; 130, 915, 375; 170, 790, 185; 195, 660, 370; 325, 835, 410; STD =v/c < 0.99

130 SE Sunnyside Rd./ I-205 SB Ramps

LOW BUILD: LOS=D, Del=41.2, V/C=0.98; 270, 295, 690; 1495, 395; 900, 510; STD =v/c < 0.85; DOES NOT MEET STD

70% GROWTH: LOS=C, Del=33.2, V/C=0.93; 280, 290, 680; 1405, 365; 870, 465; STD =v/c < 0.85; DOES NOT MEET STD

140 OR 224/ SE Rusk Rd.

LOW BUILD: LOS=E, Del=57.6, V/C=>1.0; 50, 115, 30; 30, 2270, 200; 20, 1340, 120; 70, 55; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=E, Del=62.9, V/C=>1.0; 45, 95, 25; 30, 2160, 180; 20, 1295, 110; 60, 50; STD =v/c < 0.99; DOES NOT MEET STD

146 SE Sunnyside Rd./ SE 142nd Ave.

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 10, 10, 15; 25, 1985; 20, 1165, 265; 150, 195; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=D, Del=53.0, V/C=0.94; 15, 5, 10; 30, 1760; 15, 1050, 200; 155, <5, 150; STD =v/c < 0.99

116 SE King Rd./ SE Fuller Rd.

LOW BUILD: CM=NB, LOS=F, Del=>50, V/C=>1.0; 20, 15, 15; <5, 460, 170; 15, 410, 160; 100, 5, 120; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: CM=NB, LOS=F, Del=>50, V/C=0.98; 20, 10, 15; <5, 460, 145; 15, 415, 135; 80, 5, 95; STD =v/c < 0.99; DOES NOT MEET STD

131 SE Sunnyside Rd./ I-205 NB Ramps

LOW BUILD: LOS=C, Del=23.4, V/C=0.88; 520, 1775; 600, 1265; 185, 5, 370; STD =v/c < 0.85; DOES NOT MEET STD

70% GROWTH: LOS=C, Del=21.8, V/C=0.79; 500, 1690; 590, 1200; 170, 5, 345; STD =v/c < 0.85; DOES NOT MEET STD

141 OR 224/SE Lake Rd./ SE Webster Rd.

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 15, 330, 315; 5, 1915, 405; 65, 1285, 210; 175, 110, 175; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=E, Del=72.1, V/C=>1.0; 10, 295, 270; 5, 1805, 405; 65, 1240, 210; 160, 110, 160; STD =v/c < 0.99; DOES NOT MEET STD

153 OR 212/ I-205 SB Ramps

LOW BUILD: LOS=D, Del=51.1, V/C=>1.0; 390; 870, 190; 650, 610; 905; STD =v/c < 0.85; DOES NOT MEET STD

70% GROWTH: LOS=D, Del=43.9, V/C=>1.0; 410; 835, 165; 600, 605; 905; STD =v/c < 0.85; DOES NOT MEET STD

123 SE Lake Rd./ SE International Way

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 75, 145, 475; 65, 895, 30; 180, 815, 370; 30, 40, 240; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=F, Del=>80, V/C=>1.0; 65, 130, 390; 50, 750, 30; 135, 675, 310; 30, 35, 230; STD =v/c < 0.99; DOES NOT MEET STD

136 OR 213 (SE 82nd Ave)/ SE Sunnybrook Blvd

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 1350, 175; <5, 440, 210; 275, 405, 410; 1205, 335; STD =v/c < 1.1; DOES NOT MEET STD

70% GROWTH: LOS=C, Del=30.2, V/C=0.67; 1240, 215; <5, <5, <5; 280, <5, 375; 1170, 375; STD =v/c < 1.1; DOES NOT MEET STD

143 OR 224/ SE Johnson Rd.

LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 40, 30, 215; 40, 2820, 35; 110, 1525, 455; 50, 15, 465; STD =v/c < 0.99; DOES NOT MEET STD

70% GROWTH: LOS=F, Del=>80, V/C=>1.0; 45, 30, 210; 40, 2510, 30; 105, 1450, 395; 50, 15, 420; STD =v/c < 0.99; DOES NOT MEET STD

157 OR 224/SE Hubbard Rd./SE 135th Ave.

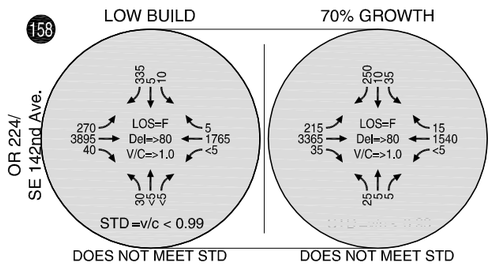
LOW BUILD: LOS=F, Del=>80, V/C=>1.0; 170, 90, 350; 315, 3175, 35; 220, 1685, 175; 40, 135, 630; STD =v/c < 0.99; DOES NOT MEET STD

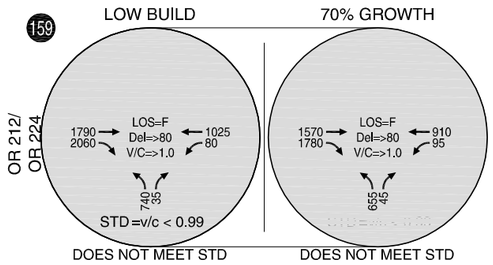
70% GROWTH: LOS=F, Del=>80, V/C=>1.0; 145, 75, 300; 290, 2705, 30; 200, 1425, 160; 35, 185, 570; STD =v/c < 0.99; DOES NOT MEET STD

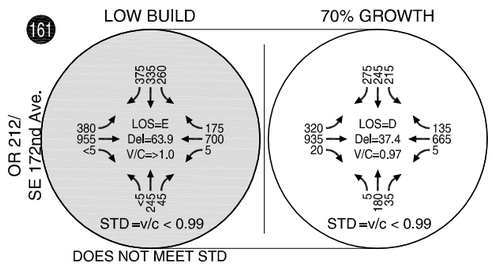
CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD
AWSC = ALL-WAY STOP CONTROL

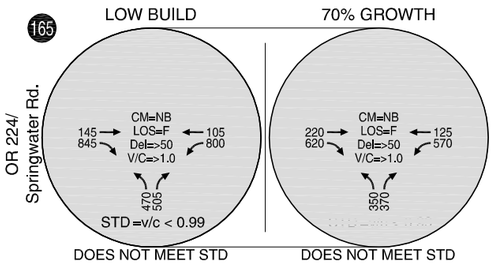
70% Growth Scenario Intersection Operations
PM Peak Hour
Greater Clackamas Regional Center/Industrial Area - 1

Figure C 70%









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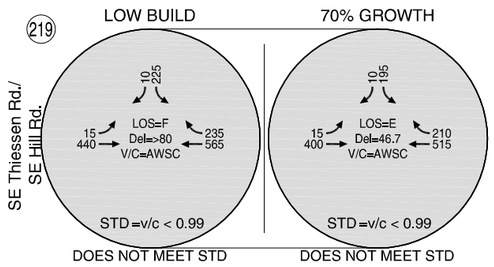
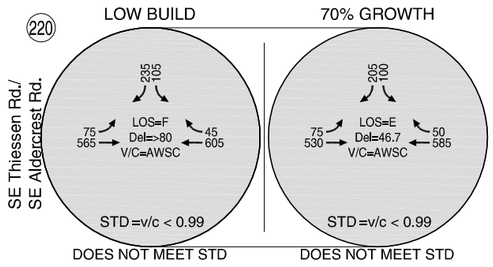
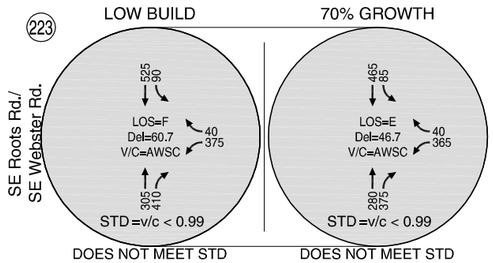
Del	=	INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C	=	CRITICAL VOLUME-TO-CAPACITY RATIO
STD	=	OPERATIONAL STANDARD
AWSC	=	ALL-WAY STOP CONTROL

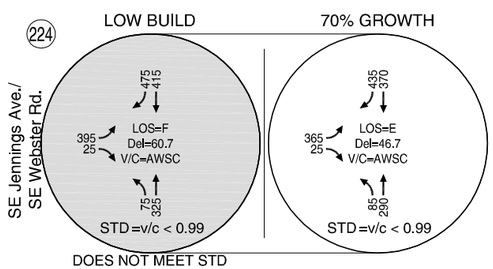
70% Growth Scenario Intersection Operations
PM Peak Hour
Greater Clackamas Regional Center/Industrial Area - 2

Figure
C 70%









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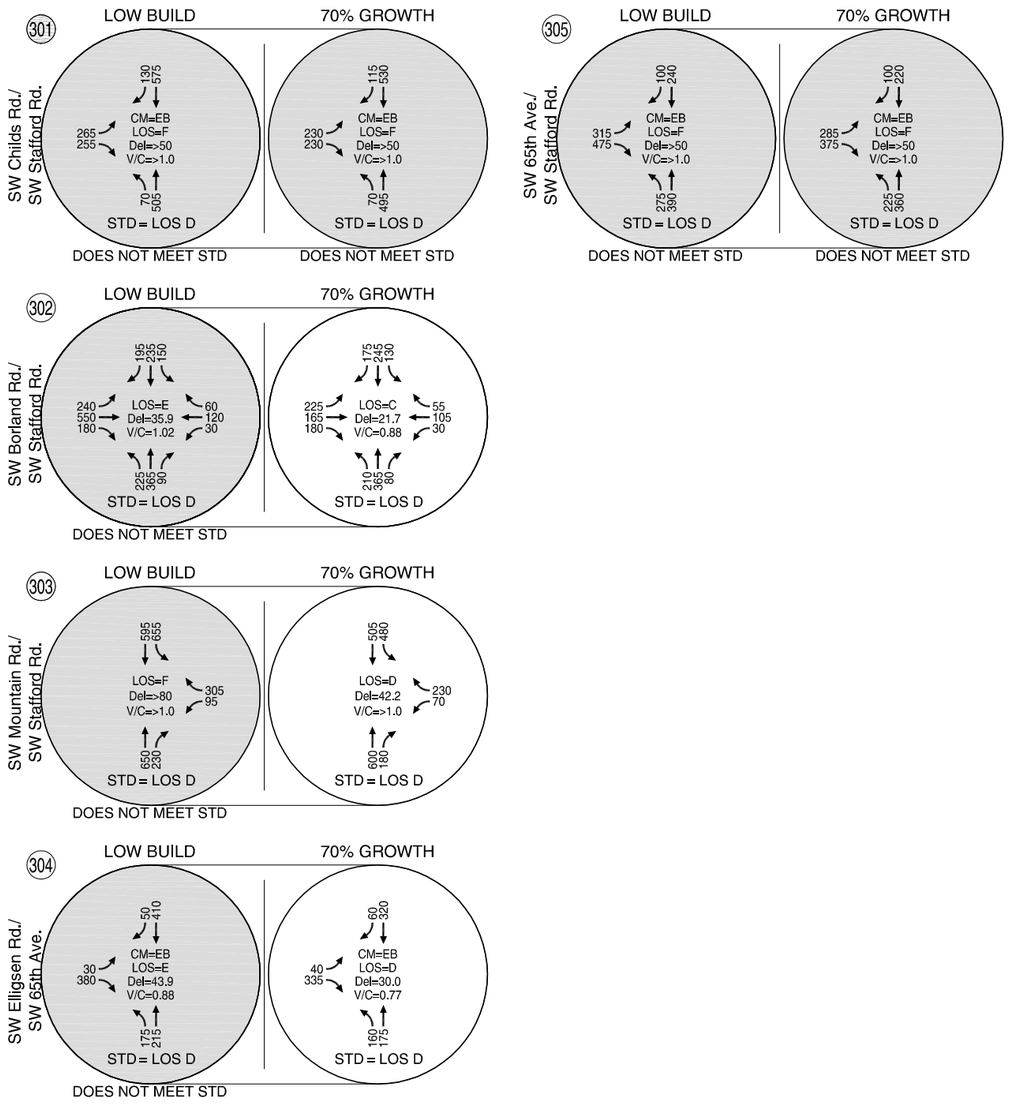
LOS	=	INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del	=	INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C	=	CRITICAL VOLUME-TO-CAPACITY RATIO
STD	=	OPERATIONAL STANDARD
AWSC	=	ALL-WAY STOP CONTROL

70% Growth Scenario Intersection Operations
PM Peak Hour
Greater McLoughlin Area

Figure
M 70%



CM	=	CRITICAL MOVEMENT (UNSIGNALIZED)
LOS	=	INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
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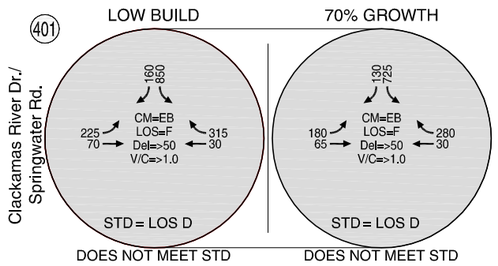
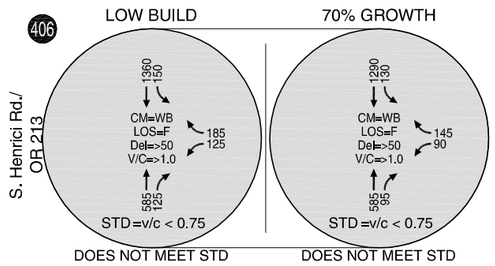
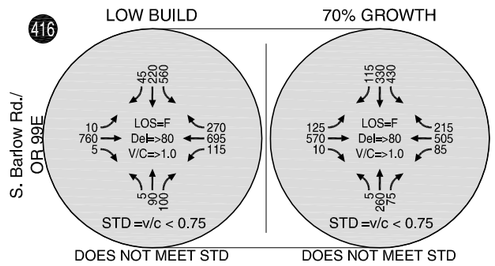
V/C	=	CRITICAL VOLUME-TO-CAPACITY RATIO
STD	=	OPERATIONAL STANDARD
AWSC	=	ALL-WAY STOP CONTROL

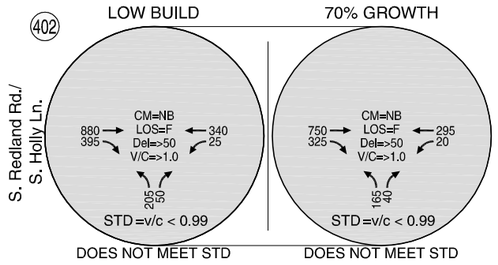
70% Growth Scenario Intersection Operations
PM Peak Hour
Northwest County

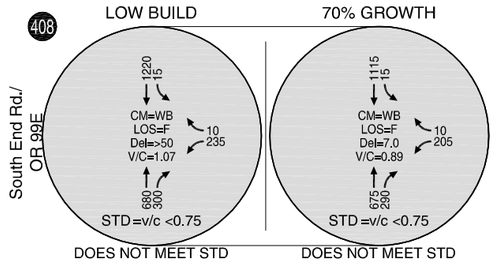
Figure
NW 70%

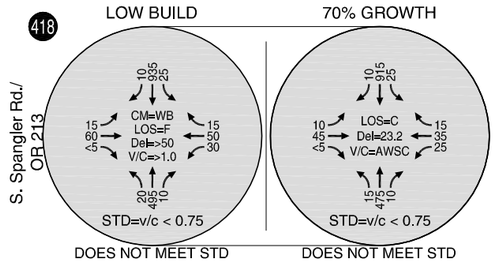


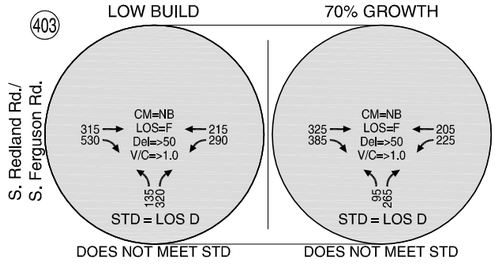


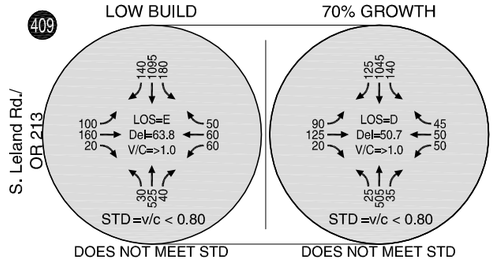


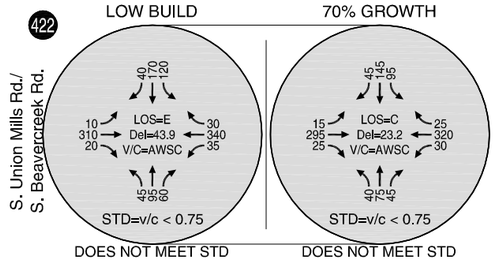


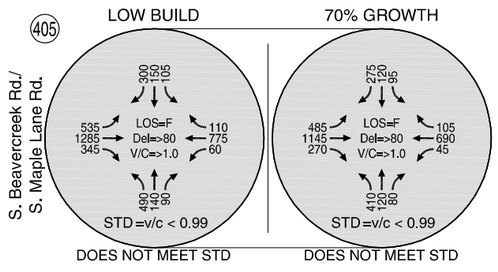


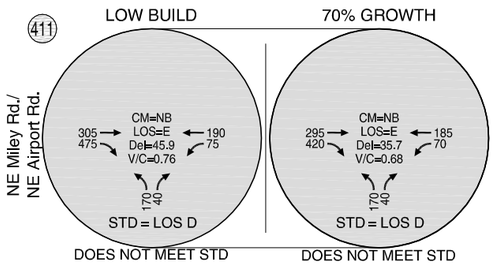








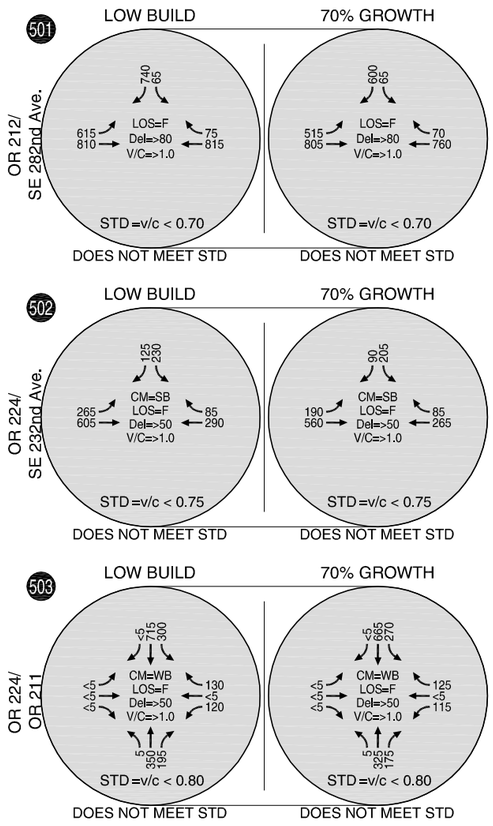




CM	=	CRITICAL MOVEMENT (UNSIGNALIZED)
LOS	=	INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del	=	INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C	=	CRITICAL VOLUME-TO-CAPACITY RATIO
STD	=	OPERATIONAL STANDARD
AWSC	=	ALL-WAY STOP CONTROL

70% Growth Scenario Intersection Operations
PM Peak Hour
Southwest County

Figure
S 70%



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STD = OPERATIONAL STANDARD

70% Growth Scenario Intersection Operations
PM Peak Hour
East County

Figure
E 70%

Appendix C Roadway Congestion

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested under Low Build
- 1,000
- 5,000
- 10,000

Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

Congested under 70% Growth
- 1,000
- 5,000
- 10,000

- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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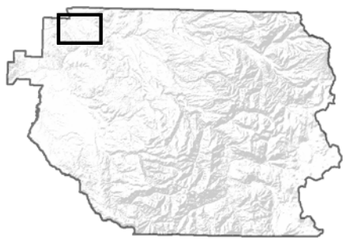
Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
Greater Clackamas Regional Center / Industrial Area

Figure
C 1

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Very Congested under Low Build
- 1,000
- 5,000
- 10,000

Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

Congested under 70% Growth
- 1,000
- 5,000
- 10,000

- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
Greater McLoughlin Area

Figure
M 1

Sources: USGS, ESRI, TANA, AND

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested under Low Build
- 1,000
- 5,000
- 10,000

Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

Congested under 70% Growth
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 2 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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Beaverton, Tigard, King City, Durham, Tualatin, Sherwood, Wilsonville, Portland, Lake Oswego, Rivergrove, Milwaukie, Happy Valley, Johnson City, Gladstone, West Linn, Oregon City, Beavercreek, Canby

Sources: USGS, ESRI, TANA, AND

Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario Northwest County

Figure
NW 1

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested under Low Build
- 1,000
- 5,000
- 10,000

Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

Congested under 70% Growth
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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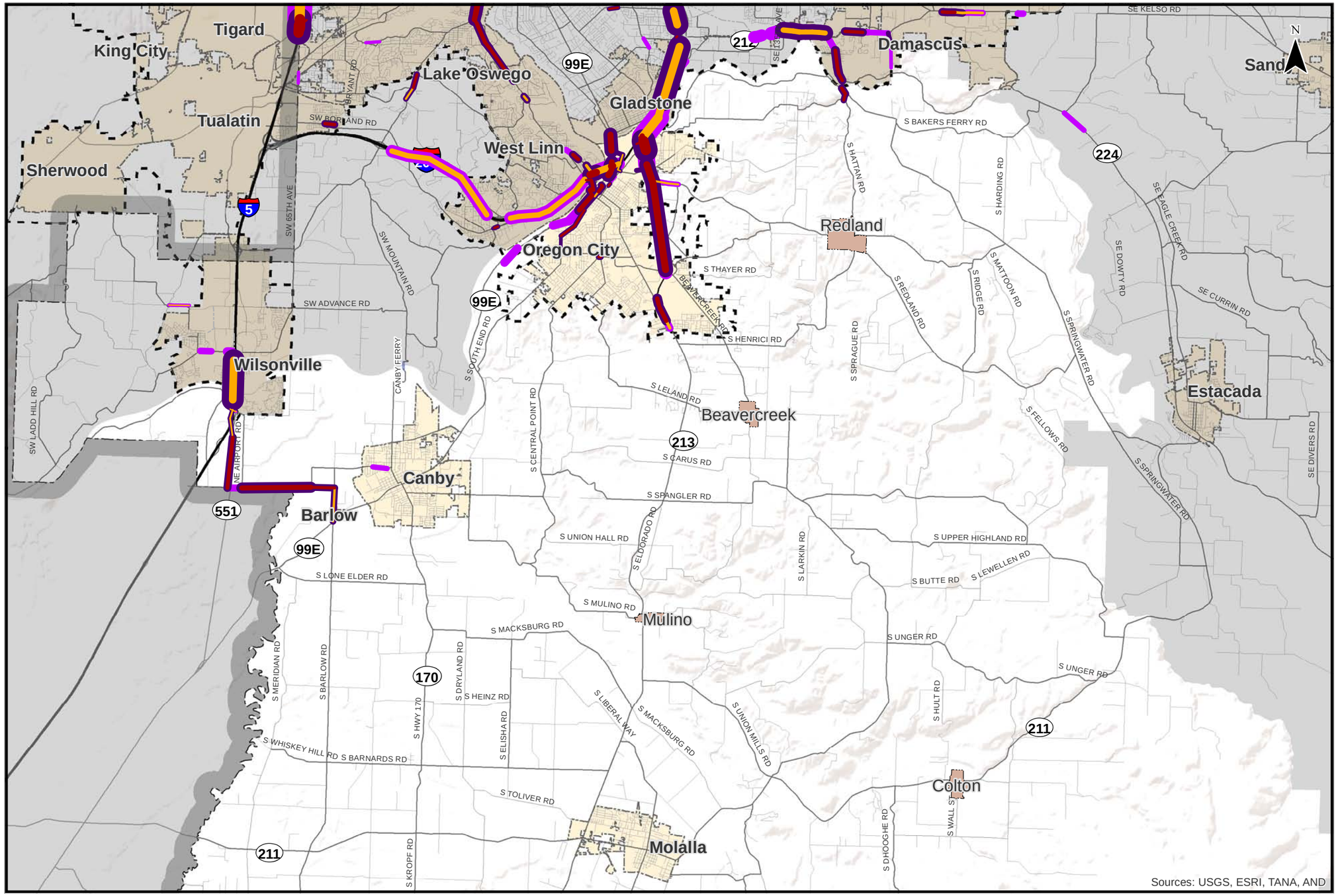


Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
Southwest County - Northern Portion

Figure
SN 1

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Very Congested under Low Build

- 1,000
- 5,000
- 10,000

Congested under Low Build

- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth

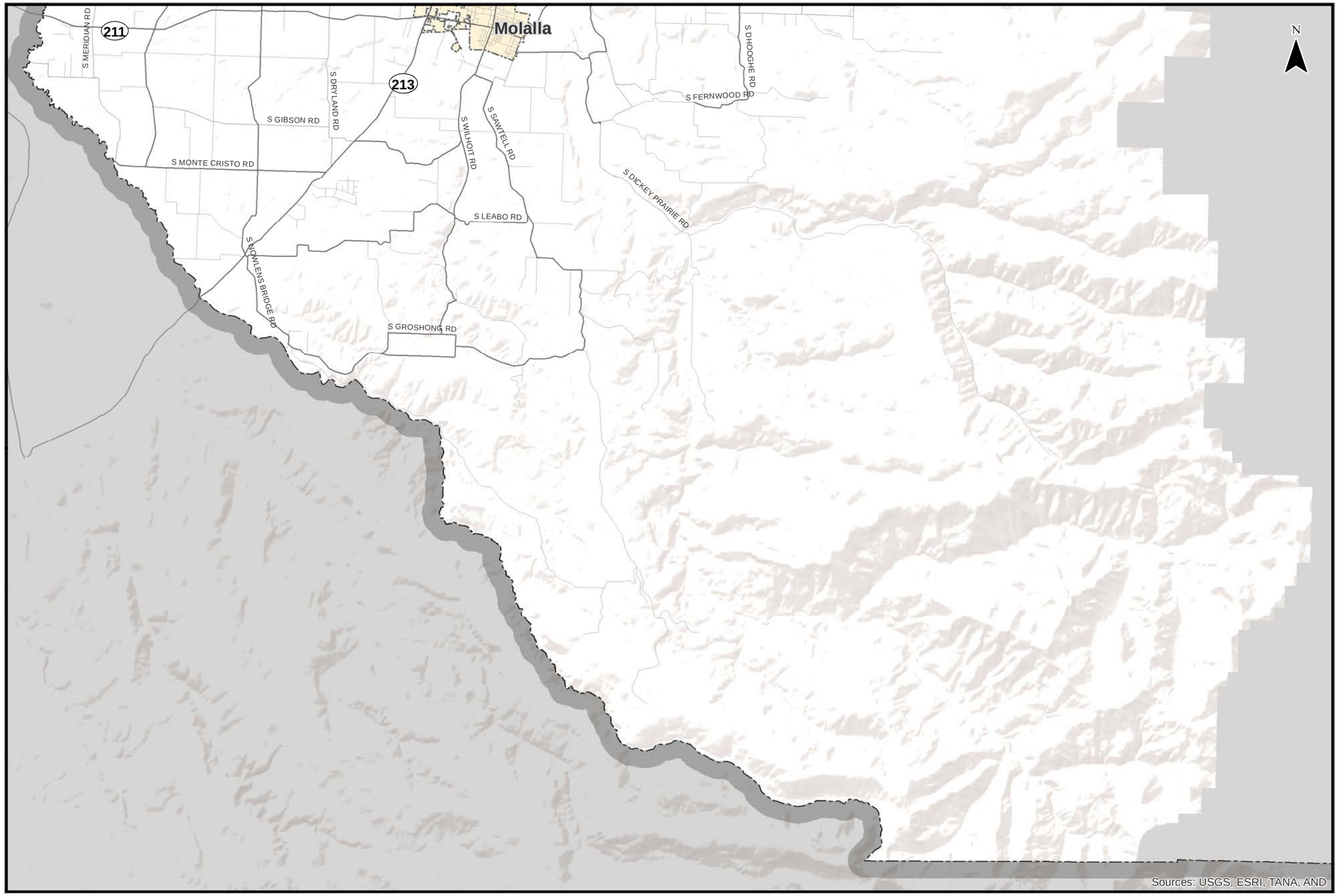
- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.



0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
Southwest County - Southern Portion

Figure
SS 1

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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Very Congested under Low Build
- 1,000
- 5,000
- 10,000

Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

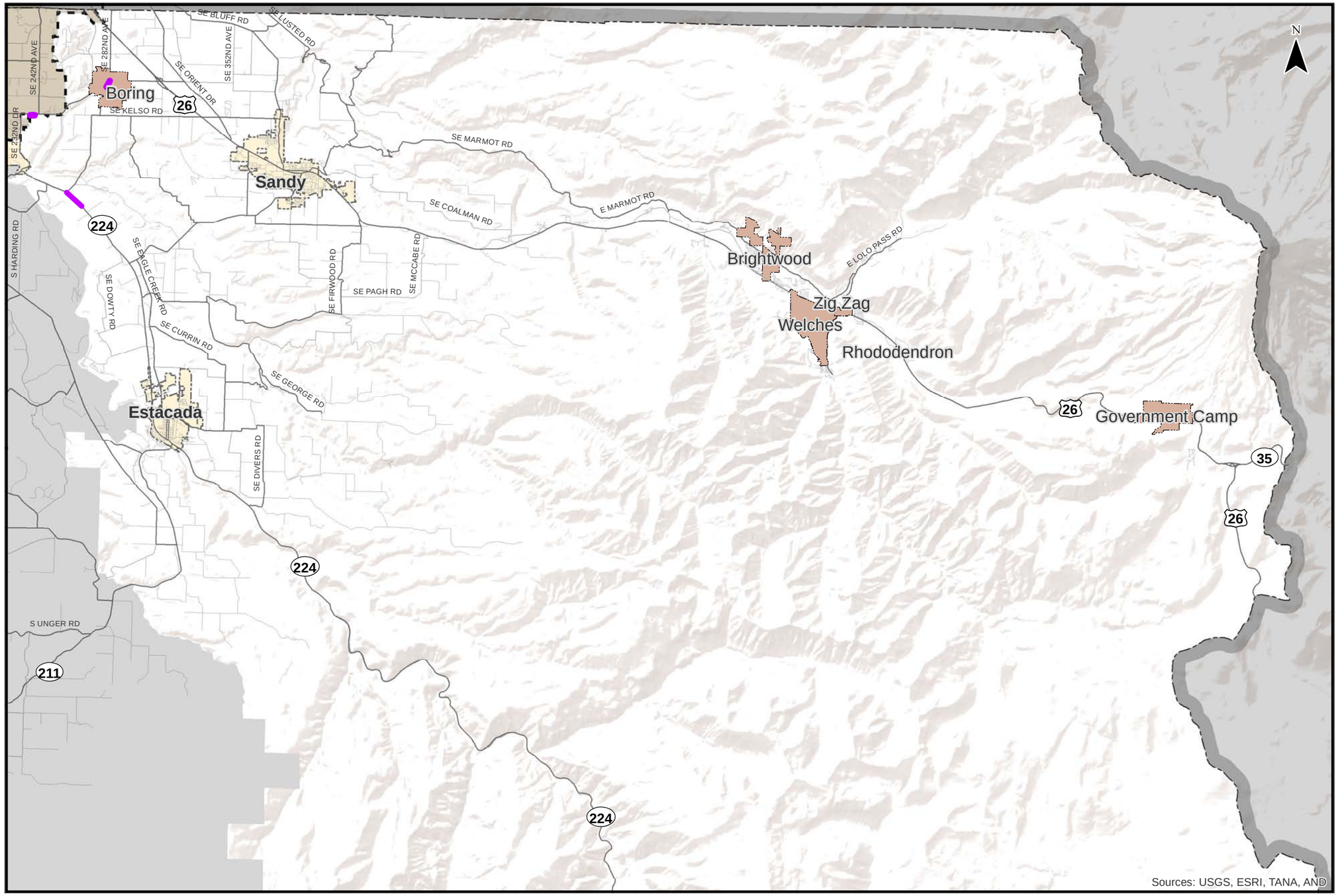
Congested under 70% Growth
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 2 3 4 5 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center



Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
East County - Northern Portion

Figure
EN 1

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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Very Congested under Low Build
- 1,000
- 5,000
- 10,000

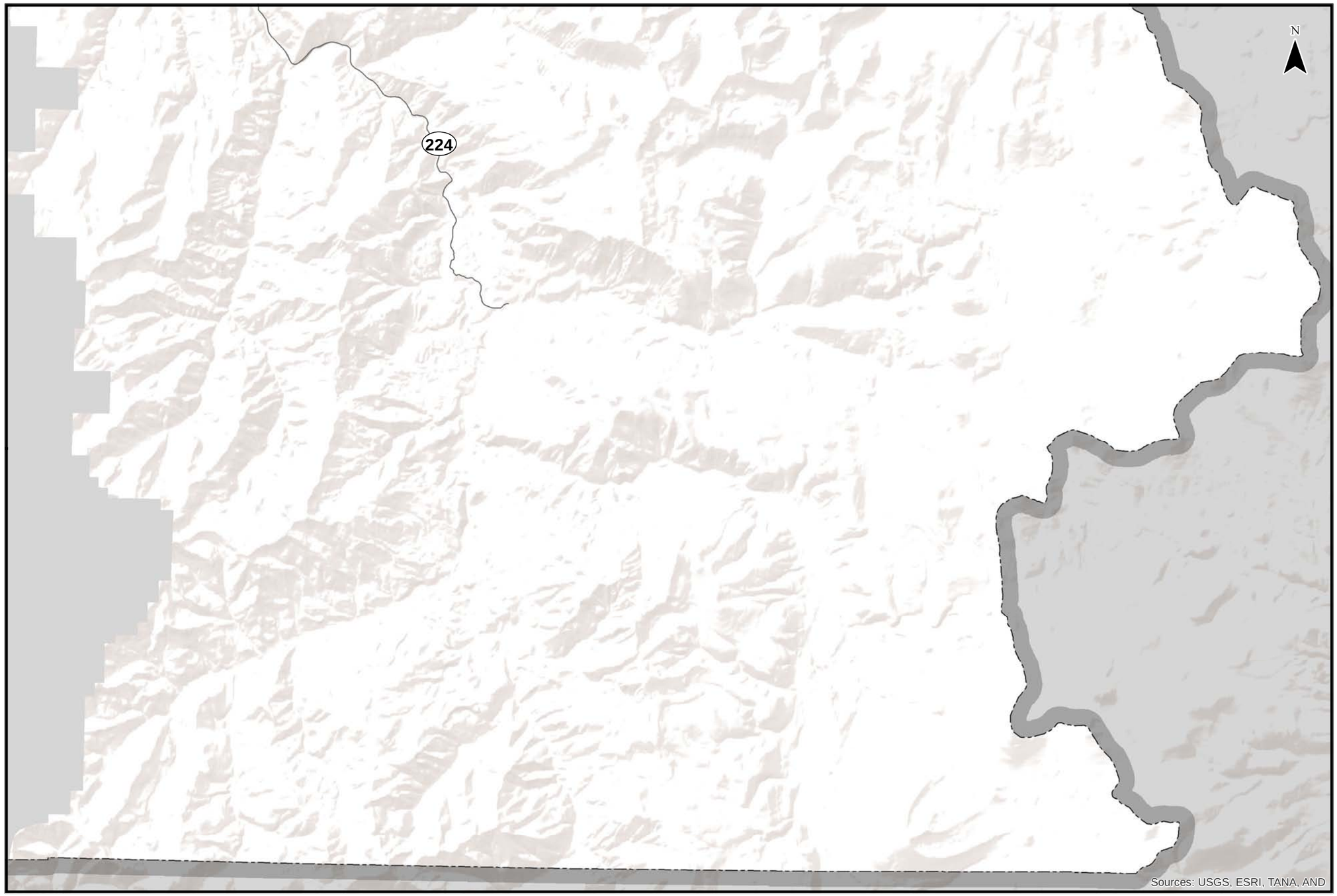
Congested under Low Build
- 1,000
- 5,000
- 10,000

Very Congested under 70% Growth
- 1,000
- 5,000
- 10,000

Congested under 70% Growth
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.



0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

Evening Weekday Peak Hour Roadway Segment Congestion: Low Build versus 70% Growth Scenario
East County - Southern Portion

Figure
ES 1

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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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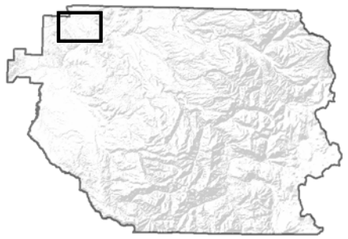
Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario
Greater Clackamas Regional Center / Industrial Area

Figure
C 70%

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario
Greater McLoughlin Area

Figure
M 70%

Sources: USGS, ESRI, TANA, AND

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

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- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 2 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario Northwest County

Figure
NW 70%

Sources: USGS, ESRI, TANA, AND

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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Tigard
King City
Tualatin
Sherwood
Wilsonville
Lake Oswego
West Linn
Oregon City
Gladstone
Happy Valley
Damascus
Sandy
Redland
Redland
Beavercreek
Beavercreek
Canby
Barlow
Estacada
Mulino
Colton
Colton
Molalla

SW BORLAND RD
SW BAKER RD
SW 65TH AVE
SW MOUNTAIN RD
SW ADVANCE RD
SW LADD HILL RD
NE AIRPORT RD
CANBY FERRY
S SOUTH END RD
S CENTRAL POINT RD
S THAYER RD
BEAVERCREEK RD
S HENRICI RD
S LELAND RD
S CARUS RD
S SPANGLER RD
S UNION HALL RD
S LONE ELDER RD
S MACKSBURG RD
S WHISKEY HILL RD S BARNARDS RD
S TOLIVER RD
S MERIDIAN RD
S BARLOW RD
S HWY 170
S DRYLAND RD
S HEINZ RD
S ELISHA RD
S KROPF RD
S LIBERAL WAY
S UNION MILLS RD
S HULT RD
S WALL ST
S DHOOGHE RD
S LARKIN RD
S ELDORADO RD
S SPRAGUE RD
S REDLAND RD
S RIDGE RD
S MATTOON RD
S HARDING RD
S HATTAN RD
S BAKERS FERRY RD
S UPPER HIGHLAND RD
S BUTTE RD
S LEWELLEN RD
S UNGER RD
S FELLOWS RD
S SPRINGWATER RD
SE KELSO RD
SE EAGLE CREEK RD
SE DOWTY RD
SE CURRIN RD
SE DIVERS RD

Sources: USGS, ESRI, TANA, AND

Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario
Southwest County - Northern Portion

Figure
SN 70%

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

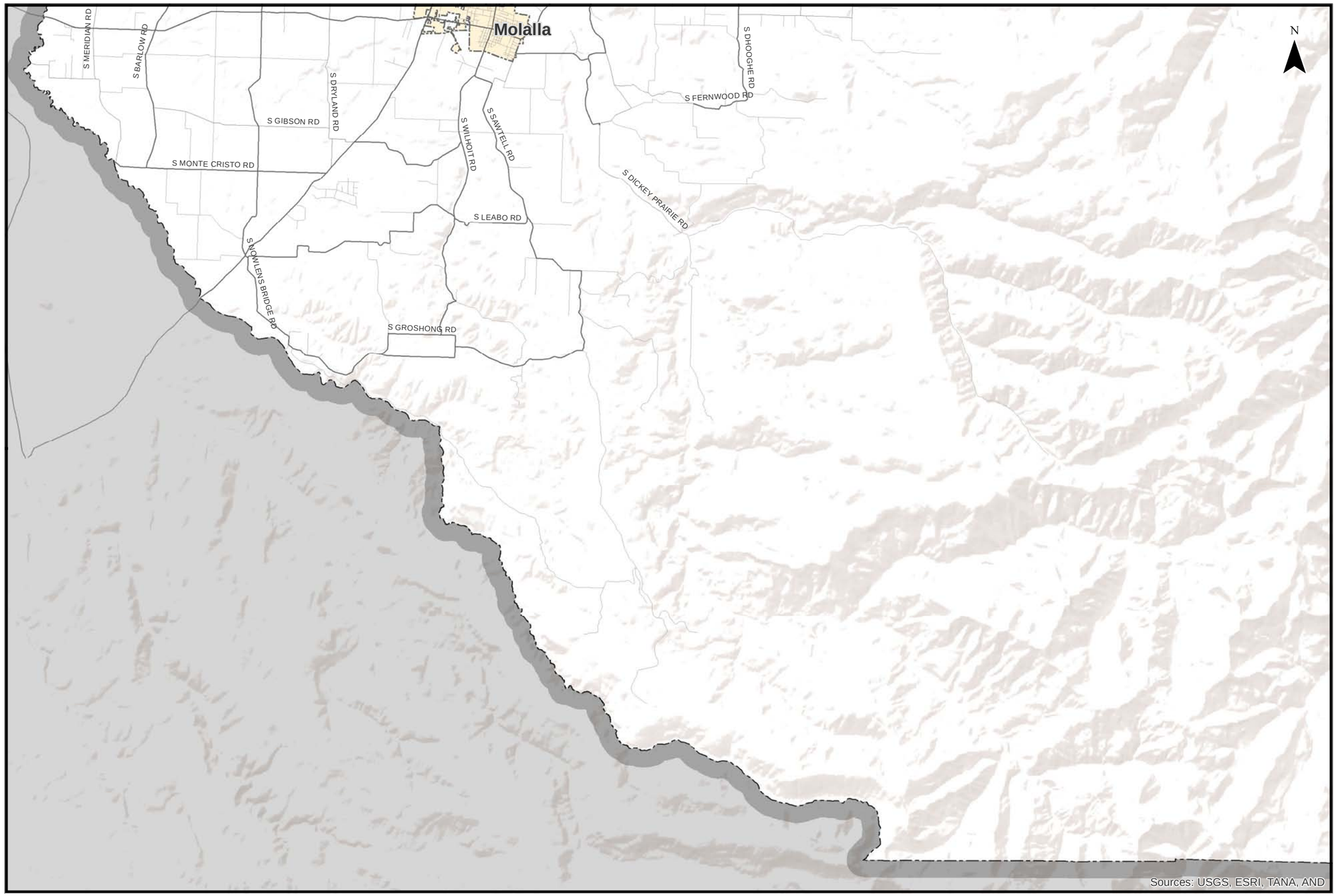
Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB



0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario Southwest County - Southern Portion

Figure
SS 70%

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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 2 3 4 5 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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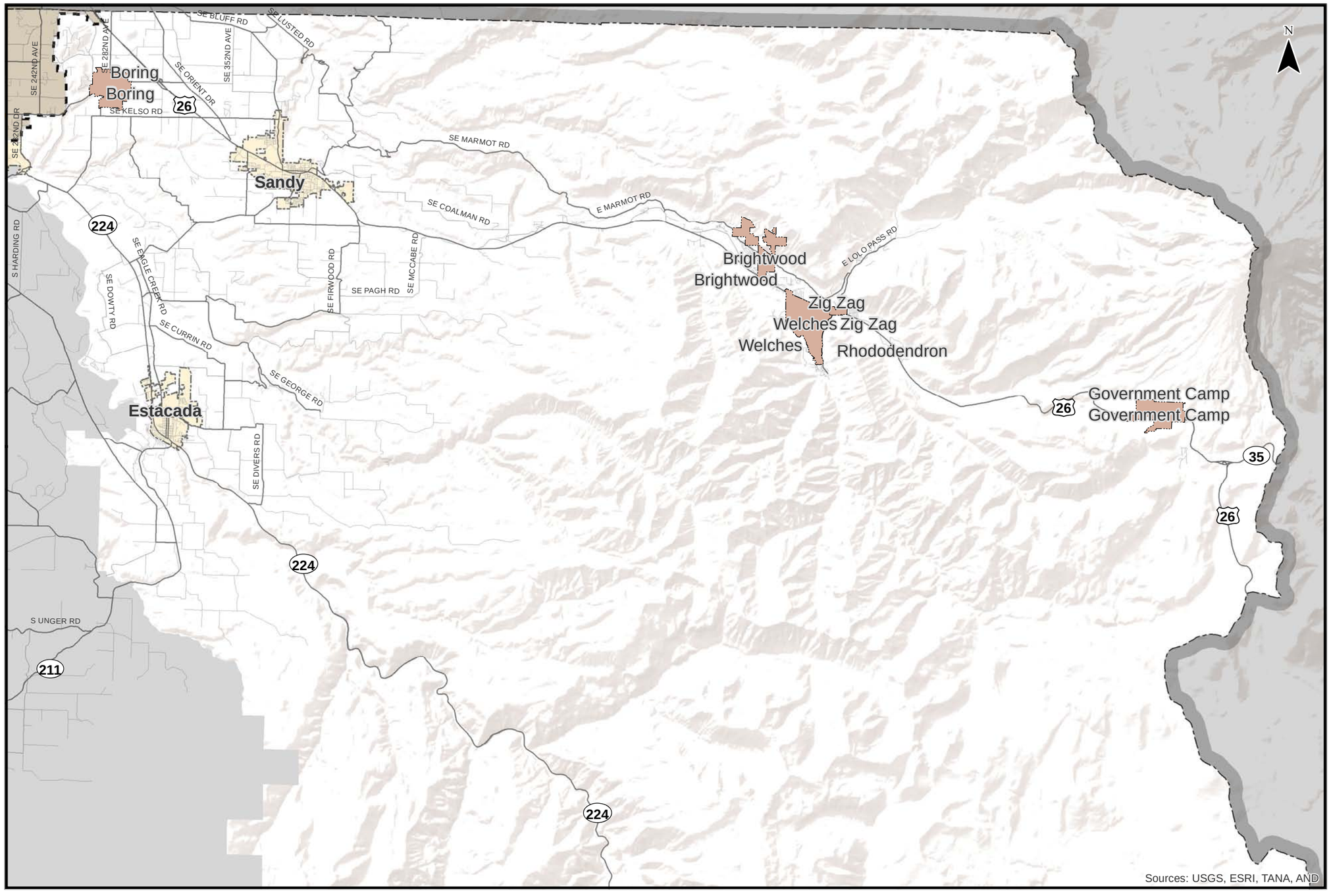

Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario
East County - Northern Portion

Figure
EN 70%

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Very Congested >1.10
- 1,000
- 5,000
- 10,000

Congested 1.0 - 1.1
- 1,000
- 5,000
- 10,000

Some Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Nearing Congestion 0.9 - 1.0
- 1,000
- 5,000
- 10,000

Less Congested <0.8
- 1,000
- 5,000
- 10,000
- Incorporated Areas
- County Boundary
- UGB

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

Evening Weekday Peak Hour Roadway Segment Congestion 70% Growth Scenario East County - Southern Portion

Figure
ES 70%

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Appendix D Assessment of Vehicle Capacity Projects

Vehicle Capacity Projects on Master List (Appendix D)

1000 - 1999: Public Suggested Projects

2000 - 2999: New Identified Projects

U000 - U999: Previously Planned Projects

TAC: Technical Advisory Committee

GAPS: Geographic Area Projects

VOH: Virtual Open House

PAC: Public Advisory Committee

PBAC: Pedestrian and Bicycle Action Committee

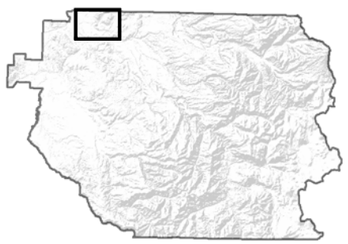
TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
2114	CRCIA	Johnson Creek Blvd	Johnson Creek Blvd / 80th Ave intersection	Add signal	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2115	CRCIA	Lake Rd	Lake Rd / International Way intersection	Add right-turn lane on Lake Rd	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2116	CRCIA	Harmony Rd	Harmony Rd / Linwood Ave intersection	Add second left-turn lane on Harmony Rd, adjust signal timing	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2118	CRCIA	OR 224	OR 224 / Lake Rd / Webster Rd intersection	Add second left-turn lane on westbound OR 224	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2119	CRCIA	OR 224	OR 224 / Johnson Rd intersection	Add second left-turn lane on westbound OR 224	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2120	CRCIA	OR 212	OR 212 / I-205 southbound Ramps intersection	Add eastbound right-turn lane on OR 212	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2121	CRCIA	OR 224	OR 224 / Hubbard Rd / 135th Ave intersection	Add intersection improvements, including right-turn lanes	Urban Upgrade - Vehicle Capacity	Yes		#N/A
U443	CRCIA	OR 224	Springwater Rd / OR 224 intersection	Add signal and turn lanes on all approaches	Urban Upgrade - Vehicle Capacity	Yes		#N/A
U543	CRCIA	OR 224	Metro boundary to Springwater Rd	Widen to 4 lanes with left-turn lanes	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2112	McLoughlin	Thiessen Rd	Thiessen Rd / Hill Rd intersection	Add right-turn lane on Thiessen Rd; consider converting to two-way stop controlled or installing roundabout	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2113	McLoughlin	Thiessen Rd	Thiessen Rd / Aldercrest Rd intersection	Add turn lanes on Thiessen Rd; consider converting to two-way stop controlled	Urban Upgrade - Vehicle Capacity	Yes		#N/A
U004	McLoughlin	Webster Rd	Webster Rd / Jennings Ave and Webster Rd / Roots Rd intersections	Construct traffic signals, turn lanes	Urban Upgrade - Vehicle Capacity	Yes (at Webster Rd/Roots)	Safety benefit	#N/A
U169	Northwest	Stafford Rd	Stafford Rd / Childs Rd intersection	Install traffic signal and southbound and northbound turn lanes	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U180	Northwest	65th Ave	65th Ave / Elligsen Rd / Stafford Rd intersection	Construct roundabout	Rural Upgrade - Vehicle Capacity	Yes		#N/A
1007	Southwest	OR 213	OR 213 / Spangler Rd intersection	Install traffic signal to replace existing two-way stop	Rural Upgrade - Vehicle Capacity	Yes		#N/A
2107	Southwest	Springwater Rd	Springwater Rd / Clackamas River Dr intersection	Install signal and second southbound left-turn lane on Clackamas River Dr	Rural Upgrade - Vehicle Capacity	Yes		#N/A
2108	Southwest	Beavercreek Rd	Beavercreek Rd / Maplelane Rd intersection	Add right-turn lanes on Beavercreek Rd, dual left-turn lane on northbound access	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2109	Southwest	OR 213	OR 213 / Henrici Rd intersection	Install traffic signal or roundabout	Rural Upgrade - Vehicle Capacity	Yes		#N/A

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
2110	Southwest	OR 213	OR 213 / Leland Rd intersection	Add northbound through auxiliary lane	Rural Upgrade - Vehicle Capacity	Yes		#N/A
2111	Southwest	OR 99E	OR 99E / Barlow Rd intersection	Add left-turn lane on southbound Barlow Rd	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U197	Southwest	Redland Rd	Redland Rd / Holly Rd intersection	Install traffic signal and westbound and southbound left-turn lanes or roundabout	Urban Upgrade - Vehicle Capacity	Yes		#N/A
U199	Southwest	Redland Rd	Redland Rd / Ferguson Rd intersection	Construct roundabout	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U276	Southwest	Airport Rd	Airport Rd / Miley Rd intersection	Realign, add turn lanes, install traffic signal	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U441	Southwest	OR 213	Leland Rd / Union Hall Rd intersection	Add southbound auxiliary lane	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U449	Southwest	OR 99E	OR 99E / Barlow Rd intersection	Add dual left-turn lanes on southbound Barlow	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U559	Southwest	I-205	Willamette River to West Linn City boundary	Add southbound truck climbing lane	Urban Upgrade - Vehicle Capacity	Yes		#N/A
2105	East	OR 212	OR 212 /282nd Ave intersection	Add second right-turn lane on 282nd	Rural Upgrade - Vehicle Capacity	Yes		#N/A
2106	East	OR 224	OR 224 /232nd Ave intersection	Install traffic signal or roundabout	Rural Upgrade - Vehicle Capacity	Yes		#N/A
U427	East	OR 224	Eaglecreek / OR 224 intersection	Install signal	Rural Upgrade - Vehicle Capacity	Yes		#N/A
2117	CRCIA	Sunnybrook Blvd	Sunnybrook Blvd / 82nd Ave intersection	Add turn lanes on all approaches	Urban Upgrade - Vehicle Capacity	No	Pending DTA analysis	#N/A
2122	CRCIA	OR 212	OR 212 / 172nd Ave intersection	Add second eastbound left-turn lane	Urban Upgrade - Vehicle Capacity	No		#N/A
U087	CRCIA	Johnson Creek Blvd	I-205 / Johnson Creek Blvd interchange	Add loop ramp and northbound on-ramp; realign southbound off-ramp	Urban Upgrade - Vehicle Capacity	No		#N/A
U131	CRCIA	Mather Rd	Mather Rd / 122nd Ave intersection	Install traffic signal or compact roundabout	Urban Upgrade - Vehicle Capacity	No		#N/A
U155	CRCIA	Strawberry Ln	Strawberry Ln / 82nd Dr intersection	Install traffic signal	Urban Upgrade - Vehicle Capacity	No		#N/A
U389	CRCIA	OR 212	OR 212 / SE 162nd Ave intersection	Add left-turn pockets and traffic signal	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A
U536	CRCIA	OR 212	Rock Creek Junction to Damascus	Construct climbing lane	Urban Upgrade - Vehicle Capacity	No		#N/A
U659	CRCIA	OR 213	OR 213 / Johnson Creek Blvd intersection	Extend westbound left-turn lane and rebuild median	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A
1039	McLoughlin	Risley Ave	Risley Ave / Trolley Trail	Pave Risley Ave across the Trolley trail	Urban Upgrade - Vehicle Capacity	No		#N/A
1067	McLoughlin	Oatfield Rd	Oatfield Rd	Provide center lane on Oatfield Rd	Urban Upgrade - Vehicle Capacity	No		#N/A
U141	McLoughlin	Oatfield Rd	Oatfield Rd / Park Rd intersection	Install traffic signal and add turn lanes	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A
U143	McLoughlin	Oatfield Rd	Oatfield Rd / Hill Rd intersection	Add left-turn lanes, install signal if warranted	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A
U144	McLoughlin	Oatfield Rd	Oatfield Rd / Concord Rd intersection	Widen, add turn lanes	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A
U152	McLoughlin	Webster Rd	Webster Rd / Strawberry Ln intersection	Add signal; construct westbound left-turn lane	Urban Upgrade - Vehicle Capacity	No	Safety benefit	#N/A

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
1089	Southwest	Graves Rd	Ranch Hills Rd to OR 213	Realign to create four-way intersection with Mulino Road and OR 213. Install traffic signal.	Rural Upgrade - Vehicle Capacity	No		#N/A
U201	Southwest	Redland Rd	Redland Rd / Bradley Rd intersection	Install eastbound left-turn lanes	Rural Upgrade - Vehicle Capacity	No		#N/A
U265	Southwest	Beavercreek Rd	Beavercreek Rd / Leland Rd / Kamrath Rd intersection	Construct roundabout	Rural Upgrade - Vehicle Capacity	No		#N/A
U277	Southwest	Airport Rd	Arndt Rd to Miley Rd	Add turn lanes at major intersections	Rural Upgrade - Vehicle Capacity	No		#N/A
U431	Southwest	OR 211	OR 170 (Canby-Marquam Hwy) / OR 211 intersection	Install eastbound and westbound left-turn lanes, and eastbound right-turn lane; remove or decrease horizontal curve	Rural Upgrade - Vehicle Capacity	No		#N/A
U551	Southwest	OR 99E	Barlow Rd to Marion County line	Four lane widening with median, left-turn lanes from mile post 24.05	Rural Upgrade - Vehicle Capacity	No		#N/A
U520	East	US 26	Lolo Pass Rd to Govt. Camp Loop Rd. W	Widen to 4 lanes with left-turn lanes, add passing/climbing lanes and westbound right-turn lane at Lolo Pass	Rural Upgrade - Vehicle Capacity	No		#N/A
U634	East	US 26	Govt. Camp Loop W to Warm Springs Hwy	Widen to four lanes with median, add left-turn lanes, widen shoulders	Rural Upgrade - Vehicle Capacity	No		#N/A
1082	CRCIA	OR 224 (Milwaukie Expressway)	Webster Rd and 82nd Ave	Provide frontage connection on the north side of OR 244	Urban Upgrade - Vehicle Capacity	Not Studied		#N/A
1038	McLoughlin	Naef Rd	Naef Rd / Oatfield Rd connection	Open intersection of Naef Rd and Oatfield Rd to through traffic	Urban Upgrade - Vehicle Capacity	Not Studied		#N/A
U145	McLoughlin	Oatfield Rd	Oatfield Rd / McNary Rd intersection	Add southbound and eastbound left-turn lanes	Urban Upgrade - Vehicle Capacity	Not Studied		#N/A
1006	Southwest	OR 213	OR 213 / Carus Rd intersection	Install traffic signal to replace existing two-way stop	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U189	Southwest	Hattan Rd	Hattan Rd / Gronlund Rd intersection	Install southbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U203	Southwest	Fischers Mill Rd	Fischers Mill / Hattan Rd intersection	Reconstruct intersection; install eastbound left-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U204	Southwest	Redland Rd	Redland Rd / Fischers Mill Rd / Henrici Rd intersection	Install eastbound left-turn lane and east and westbound right-turn lanes at Henrici Rd	Rural Upgrade - Vehicle Capacity	Not Studied	Safety benefit	#N/A
U250	Southwest	Springwater Rd	Springwater Rd / Bakers Ferry Rd intersection	Install southbound left-turn lane; realign intersection to fix skew.	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U295	Southwest	Canby-Marquam Highway (OR 170)	Canby-Marquam Hwy / Lone Elder Rd intersection	Reconstruct intersection; install northbound left-turn lane and southbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U298	Southwest	OR 170 (Canby-Marquam Highway)	OR 170 / Macksburg Rd intersection	Reconstruct intersection; install southbound left-turn lane and northbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U442	Southwest	OR 213	Carus Rd / OR 213 intersection	Install southbound left-turn and right-turn lanes	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
1011	East	US 26	US 26 / Haley Rd intersection	Install traffic signal, prohibit left-turns off US 26, install ramp over US 26 for left-turns	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
1100	East	US 26	US 26 / Haley Rd intersection	Install traffic signal	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U444	East	OR 224	Bakers Ferry Rd / OR 224 intersection	Add eastbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U445	East	OR 224	Amisigger Rd / OR 224 intersection	Install traffic signal; add southbound and eastbound left-turn lanes and westbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U446	East	OR 224	Heiple Rd / OR 224 intersection	Add southbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U454	East	US 26	US 26 / Firwood Rd intersection	Add eastbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U456	East	US 26	US 26 / Brightwood Loop W	Add westbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A
U457	East	US 26	US 26 / Brightwood Loop E	Add westbound right-turn lane	Rural Upgrade - Vehicle Capacity	Not Studied		#N/A

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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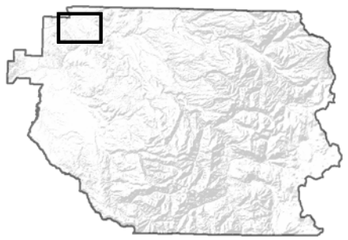
Capacity Projects and Deficient Roadways and Intersections
Greater Clackamas Regional Center / Industrial Area

Figure
C App D

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 Miles

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Capacity Projects and Deficient Roadways and Intersections Greater McLoughlin Area

Figure
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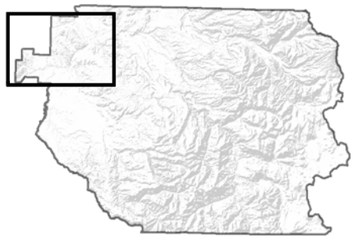
CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

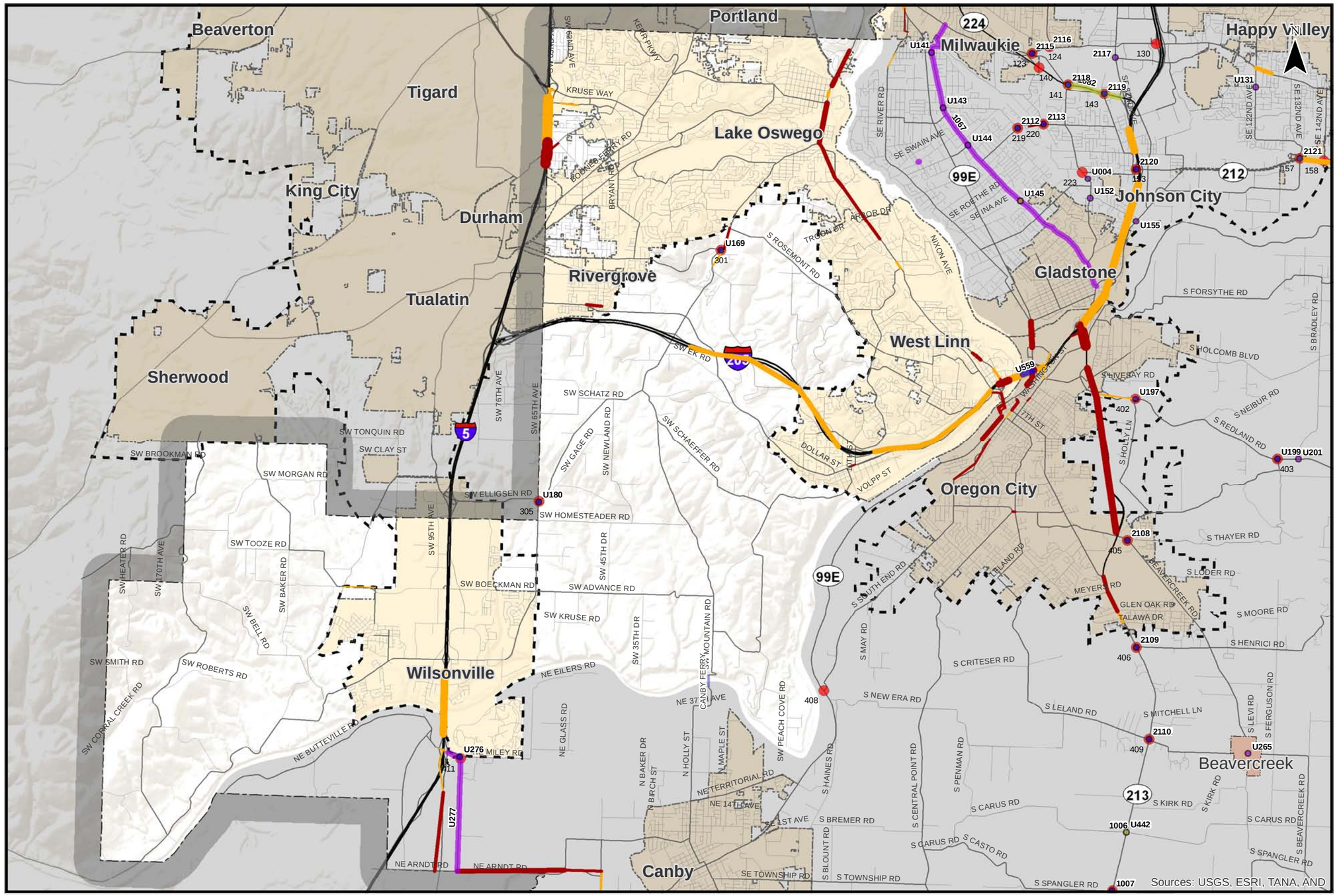
- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.



0 1 2 Miles

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Capacity Projects and Deficient Roadways and Intersections Northwest County

Figure
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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 2 3 4 Miles

Coordinate System:
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Data Source:
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Sources: USGS, ESRI, TANA, AND

Capacity Projects and Deficient Roadways and Intersections
Southwest County - Northern Portion

Figure
SN App D

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

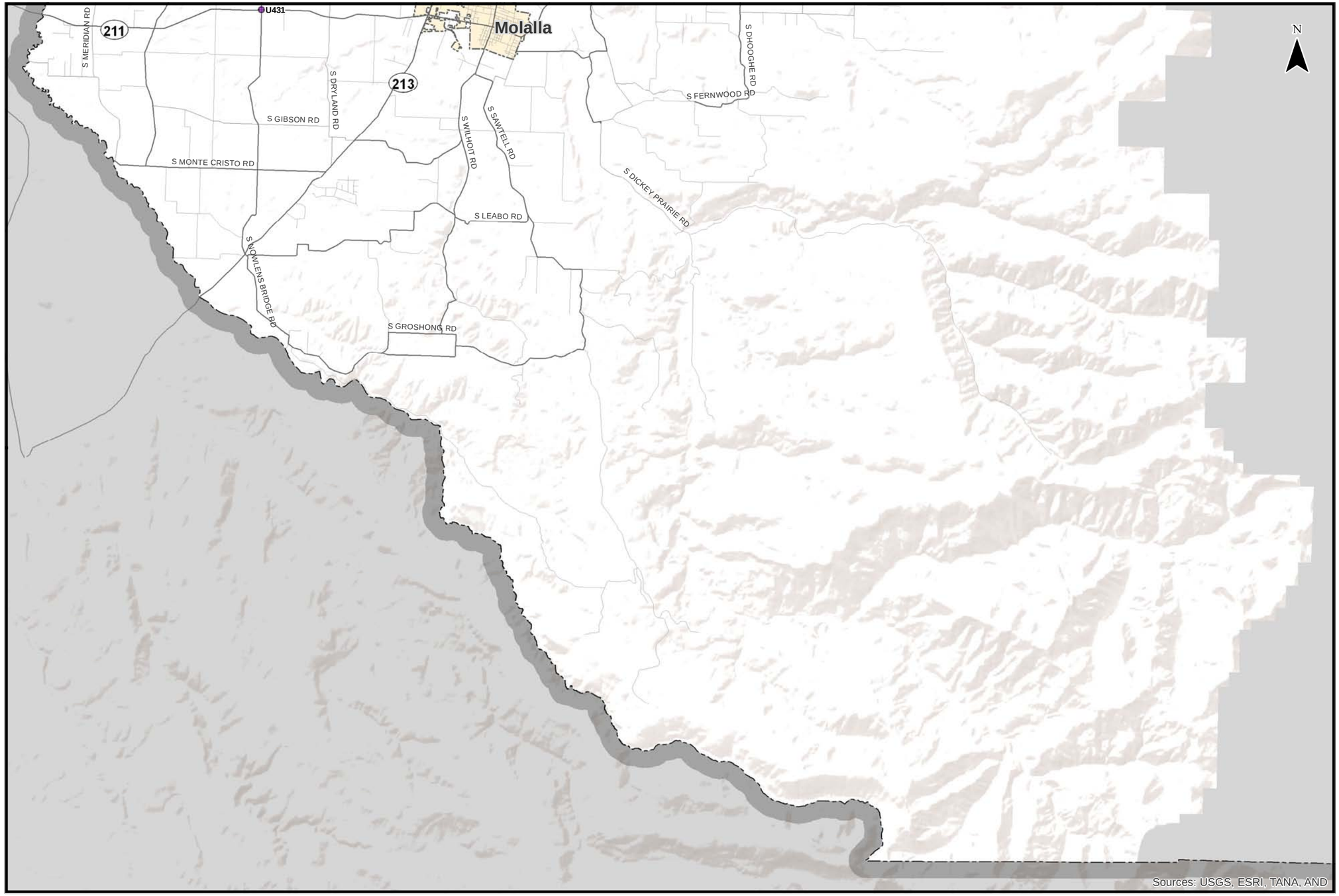
Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.



0 1 2 3 4 Miles

Coordinate System:
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Data Source:
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Capacity Projects and Deficient Roadways and Intersections
Southwest County - Southern Portion

Figure
SS App D

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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 2 3 4 5 Miles

Coordinate System:
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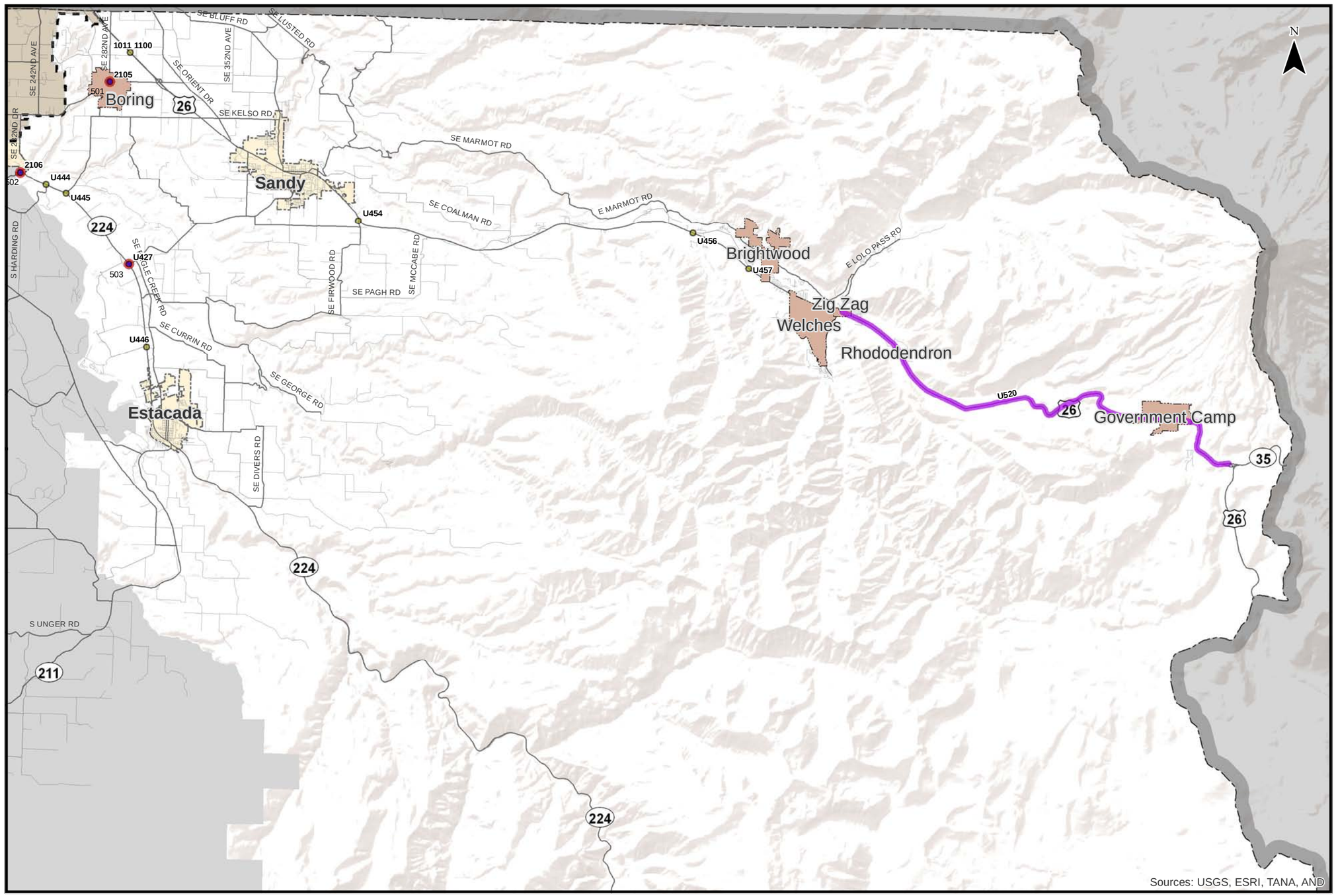


Capacity Projects and Deficient Roadways and Intersections
East County - Northern Portion

Figure
EN App D

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Master List Capacity Projects

Addresses 70% Deficiency?

- Yes
- No
- Not Studied

- Yes
- No
- Not Studied

Very Congested under 70% Growth

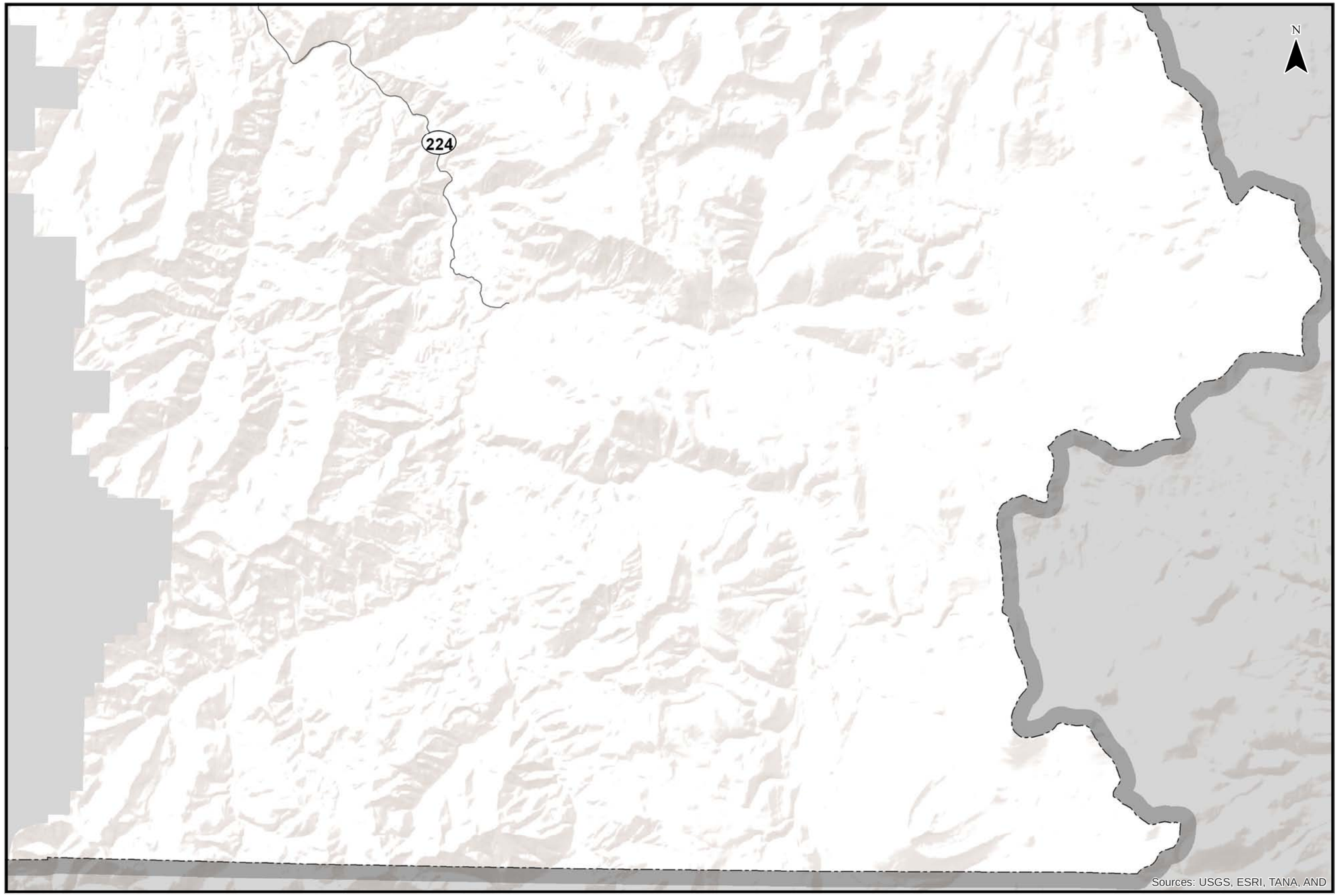
- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000
- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.



0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
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Capacity Projects and Deficient Roadways and Intersections
East County - Southern Portion

Figure
ES App D

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Appendix E Assessment of Upgrade Projects

Upgrade Projects on Master List (Appendix E)

1000 - 1999: Public Suggested Projects

2000 - 2999: New Identified Projects

U000 - U999: Previously Planned Projects

TAC: Technical Advisory Committee

GAPS: Geographic Area Projects

VOH: Virtual Open House

PAC: Public Advisory Committee

PBAC: Pedestrian and Bicycle Action Committee

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U915	CRCIA	OR 224	Rock Creek Junction to Carver Bridge	Widen to four lanes with turn lanes at intersections to Carver Bridge. Add bikeways. Add pedways over the bridge and into Carver.	Urban Upgrade	Yes		
U423	CRCIA	OR 212	SE 162nd to Anderson Rd	Add bikeways, pedways, and landscaped buffer; widen to 6 lanes within Happy Valley; add center turn lane within Damascus	Urban Upgrade	Yes	OR 212 projects to be congested between SE 162nd and SE 172nd	#N/A
U184	CRCIA	Springwater Rd	OR 224 to Hattan Rd	Widen to 3 lanes with shoulders and pedways.	Urban Upgrade	Yes		VOH: Unlikely to happen. New bridge being built for 2 lanes.PBAC: Does this project include ped/bike facilities? Is it a part of the Carver bridge project or separate
U103	CRCIA	Harmony Rd	Lake Rd / Linwood Ave / Harmony Rd intersection	Grade separated railroad crossing, include bikeways and pedways	Urban Upgrade	Yes		GAPS #2: prioritize above Harmony, Sunnybrook
U177	Northwest	Stafford Rd	I-205 to Boeckman Rd (Advance Rd)	Widen to rural major arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at SW 65th Avenue/SW Stafford Road (Int 305)	TAC #5:Ped/Bike Committee - high priorityPBAC: Important project, high priority
U168	Northwest	Stafford Rd	Rosemont Rd to I-205	Widen to rural major arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at SW Childs Road/SW Stafford Road (Int 301)	GAPS #2: VOH 2. There are 5 schools within a mile of Wankers Corner; Please do give us bike lanes to every one of these schools, for the safety and health of our children.VOH: 1. This project should receive the HIGHEST priority in the NW area - It addresses safety, peds, bikes, and commercial traffic deficiencies. The extent of the key needs is not the length defined by this labelPBAC: Important project, high priority
U531	Southwest	OR 211	Beavercreek Rd, Union Hall Rd to Dhooghe Rd	Widen to include shoulders, bikeways, add passing lanes where needed and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at S. Union Mills Road/S. Beavercreek Road (Int 422)	TAC #5: Road Safety Audit
U469	Southwest	Clackamas River Dr	Oregon City limits to Springwater Rd	Widen to minor arterial with pedways, bikeways, shoulders, and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at Clackamas River Drive/Springwater Road (Int 401)	TAC #5: Annual landslides. Hard barrier and wall prevent widening in certain locations. Look for alternative solutions to the trouble spots such as local access only and trail use. VOH: This project is not going to happen. There are multiple landslides on this route, along with steep cliffs. In some areas there is literally not 1 foot of room for widening. Maybe some strategically targeted areas are possible, but the project as a whole is not feasible.PBAC: washes out, repeated closures, close and allow peds and bikes! Important project, high priority
U302	Southwest	Union Mills Rd	OR 213 to OR 211	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at S. Union Mills Road/S. Beavercreek Road (Int 422)	TAC #5: Road Safety Audit completed for this roadway
U279	Southwest	Arndt Rd	OR 551 to Knights Bridge Rd	Widen to 4 lanes with median, left-turn lanes, shoulders and bikeways	Rural Upgrade	Yes	Forecasted to be very congested under 70% Growth Scenario	
U270	Southwest	Spangler Rd	Casto Rd to Beavercreek Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	Yes	Turn lanes would improve operations at S. Spangler Road/Highway 213 (Int 418)	TAC #5: Low volumes
U214	Southwest	South End Rd	Oregon City limits to OR 99E	Widen lanes and smooth curves; add shoulders and bikeways	Rural Upgrade	Yes	Turn lanes would improve operations at South End Rd./Highway 99E (Int 408)	TAC #5: Active slide on this segmentPBAC: good project
U913	CRCIA	Hemrick Rd	172nd Ave to Foster Rd	Widen to three lanes with bikeways and pedways	Urban Upgrade	No		
U911	CRCIA	Foster Rd	Cheldelin Rd to Troge Rd	Widen to three lanes with bikeways and pedways	Urban Upgrade	No		

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U677	CRCIA	162nd Ave	Sager Rd north to County line	Add bikeways, pedways, turn lanes at major intersections, and signal at Foster Rd / 162nd Ave	Urban Upgrade	No	Foster Rd/ 162nd Ave outside of County boundary	
U580	CRCIA	OR 212	Sunrise JTA mainline to 257th Ave	Widen to 4 lanes with bike lanes, planted median and turn pockets at signalized locations.	Urban Upgrade	No	Relationship to Sunrise project?	
U394	CRCIA	OR 213	OR 213 / Harmony Rd / Sunnyside Rd intersection	Add bikeways, pedways, traffic signals and lighting	Urban Upgrade	No	Pending DTA analysis	TAC #5:Not needed if U109 is completedPBAC: What is this project?
U220	CRCIA	Tillstrom Rd	Foster Rd to 190th Dr	Widen to three lanes with bikeways and pedways. Realign at Foster Rd intersection	Urban Upgrade	No		
U156	CRCIA	82nd Dr	OR 212 to Gladstone Phase 2	Widen to 5 lane with bikeways and pedways	Urban Upgrade	No		TAC #5:Alternative to U338
U136	CRCIA	152nd Ave Phase 2	Sunnyside Rd to OR 212	Add bikeways, pedways and turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	GAPS #2: Why is the evaluating so different for U135? Major topography issues RESOLVED
U130	CRCIA	97th Ave / Mather Rd	Lawnfield Rd to 122nd Ave	Widen to 2 lane urban collector standard with bikeways, pedways and eastbound left-turn lanes at Mather Rd / Summers Ln and Mather Rd / 122nd Ave	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	GAPS #2: PriorityPBAC: Recommend alternative project; add bikeway and pedway facilities without capacity improvements
U128	CRCIA	172nd Ave	172nd/190th Connector to Cheldelin Rd	Widen to three lanes with bikeways and pedways.	Urban Upgrade	No		
U123	CRCIA	122nd Ave	Sunnyside Rd to Timber Valley Dr	Add bikeways and turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U109	CRCIA	OR 213	Sunnyside Rd to Sunnybrook Rd	Widen to 7 lanes with boulevard treatments	Urban Upgrade	No	Pending DTA analysis	TAC #5:Not needed if U394 is completed
U104	CRCIA	Harmony Rd	OR 213 to OR 224	Widen to 5 lanes with bikeways and pedways	Urban Upgrade	No	Widening not shown to be needed, but would ipmrove operations at SE Lake Road/SE International Way (123) and SE Harmony Road/SE Linwood Avenue (124); Pending DTA analysis	
U102	CRCIA	Lake Rd	OR 224 west to Milwaukie city limits	Add pedways and turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit; Pending DTA analysis	
U090	CRCIA	Otty Rd	OR 213 to 92nd Ave	Improve to minor arterial standard consistent with Fuller Road Station Plan; improve curb radius, add turn lanes, on-street parking, central median, landscaping, add bikeways and pedways	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Fuller Road Station Plan has cross section detailsPBAC: Recommend alternative project; add bikeway and pedway facilities without capacity improvements
U088	CRCIA	Fuller Rd	Otty St to Johnson Creek Blvd	Add pedways, turn lanes, on-street parking, central median and landscaping.	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Fuller Road Station Plan has cross section detailsPBAC: Change from JCB to Co Line; remove U797 (Does this conflict with Fuller Rd plan? - SJA)
U075	CRCIA	Clatsop St / Luther Rd	72nd Ave to Fuller Rd	Upgrade to 3-lane collector standard add signal at OR 213 intersection; add bikeways and pedways	Urban Upgrade	No		

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U074	CRCIA	Johnson Creek Blvd	Bell Ave to OR 213	Widen to 3 lanes from Bell Ave to 76th Ave and 5 lanes from 76th Ave to 82nd Ave with bikeways and pedways	Urban Upgrade	No		PBAC: Recommend alternative project; add bikeway and pedway facilities without capacity improvements
U072	CRCIA	Johnson Creek Blvd	55th Ave to Bell Ave	Widen to 3 lanes with bikeways and pedways	Urban Upgrade	No		PBAC: Recommend alternative project; add bikeway and pedway facilities without capacity improvements
U058	CRCIA	132nd Ave	Sunnyside Rd to OR 212	Add bikeways, pedways, traffic calming and turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PBAC: Support project but too expensive and may never happen so recommend alternative project; add pedway facilities on east side of street (west side will have sidewalks funded through TE grant); if not part of another project add bikeways on both sides of the
U057	CRCIA	122nd Ave	Sunnyside Rd to Hubbard Rd	Add bikeways, pedways, traffic calming and turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	GAPS #2: Existing sidewalks on the west side of 122ndPBAC: Support project but too expensive and may never happen so recommend alternative project; add pedway facilities on east side of street (west side will have sidewalks funded through TE grant); if not part of another project add bikeways on both sides of the street if there are none (maybe can get consistent biekways in some areas through restriping)
U003	CRCIA	172nd Ave	Sunnyside Rd to 172nd/190th Connector	Widen to five lanes with bikeways and pedways	Urban Upgrade	No		
U635	East	US 26	OR 35 Junction to Wasco County line	Widen roadway to include bikeways /shoulders, add passing lanes where needed and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PBAC: Important improvement, high priority
U532	East	OR 211	Hayden Rd to OR 224	Widen to rural arterial standard with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U502	East	Firwood Rd	Wildcat Mountain Dr to US 26	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Physical constraints, not feasible along entire segment
U495	East	Bull Run Rd	Ten Eyck Rd to Multnomah County line	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U258	East	Coupland Rd	Edgehill Dr to Divers Rd	Widen to rural minor arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Ped/Bike Committee - low priority
U257	East	Eagle Creek Rd	Currin Rd to Duus Rd	Remove horizontal curve, relocate intersection, widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections; investigate speed zone south of Currin Road	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U254	East	Hayden Rd	Springwater Rd to OR 211	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Ped/Bike Committee - physically not feasible, low priority
U237	East	Ten Eyck Rd	Lusted Rd to US 26	Remove vertical curve, relocate intersection, widen to rural arterial standard (2 lanes) with shoulders and bikeways, turn lanes at major intersections; investigate speed zone	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Physical constraints, low priority

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U233	East	Kelso Rd	Orient Dr to Sandy UGB	Remove vertical curve, relocate intersection, widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections; investigate speed zone	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PAC4B: Combine with U232, overlap with U753 (Ben)
U232	East	Kelso Rd	Richey Rd to Orient Dr	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PAC4B: Combine with U233, overlap with U753 (Ben)
U231	East	Amisigger Rd	OR 224 to Kelso / Richey Rd	Widen to rural arterial standard (2 lanes) with shoulders and bikeways and turn lanes at major intersections; smooth curves.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U229	East	Richey Rd	Kelso Rd to OR 212	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	GAPS #2: Expensive: Right of way needed
U140	McLoughlin	Concord Rd	River Rd to Oatfield Rd	Reconstruct and widen (2 lanes) with pedway and bikeway infill; add turn lanes at major intersections	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U702	Northwest	Carman	Lake Oswego City Limits to I-5	Widen to two lane County standard and analyze for turn lanes; add bikeways and pedways	Urban Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U466	Northwest	Petes Mountain Rd	Willamette Falls Rd to Hoffman Rd	Widen to rural minor arterial standard with bikeways, shoulders and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Ped/Bike Committee - low priorityGAPS #2: Terrible bike ride because of elevation. Adding bike lanes may not make sense because it wouldn't increase bike ridership.
U462	Northwest	Childs Rd	Stafford Rd to 65th Ave	Reconstruct and widen to 3 lanes; add bikeways	Urban Upgrade	No		
U272	Northwest	Ladd Hill Rd	Wilsonville Rd to Washington County line	Widen to rural minor arterial standard with bikeways, shoulders and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Ped/Bike Committee - multi-use path may be a better option
U173	Northwest	Rosemont Rd	Stafford Rd to Salamo Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Ped/Bike Committee - low priority
U167	Northwest	Borland Rd	65th Ave to Stafford Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5:Ped/Bike Committee - high priority GAPS #2: Modify extent to outside of city VOH: Yes, this area is destined for mixed commercial/residential development, and should receive high priority!
U529	Southwest	OR 211	Marion County line to OR 170 (Canby-Marquam Hwy)	Widen to include shoulders, bikeways, add passing lanes where needed and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Road Safety Audit
U503	Southwest	Mattoon Rd	Fischers Mill Rd to Redland Rd	Widen to rural collector with shoulder / bikeway and turn lanes at major intersections. Remove vertical curves, remove horizontal curves north of Redland Rd	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U475	Southwest	Henrici Rd	Beavercreek Rd to Redland Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections. Remove horizontal and vertical curves, investigate 40 mph speed zone extension to east of Ferguson Rd	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Analyze for fiscally responsible and sustainable. Related to U206
U473	Southwest	Holcomb Blvd	Edenwild Ln to Bradley Rd	Widen to standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U326	Southwest	Maple Grove Rd	Nowlens Bridge Rd to Sawtell Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	#N/A
U325	Southwest	Bird Rd	Groshong Rd to Wilhoit Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes. Ped / Bike Committee okay with removing bikeways. GAPS #2: Why keep if removing U324PAC4B: Low use roadways, therefore not a priority. Consider removing.
U323	Southwest	Blair Rd	Groshong Rd to Maple Grove Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes. Ped / Bike Committee okay with removing bikeways. GAPS #2: Why keep if removing U324PAC4B: Low use roadways, therefore not a priority. Consider removing.
U322	Southwest	Nowlens Bridge Rd	OR 213 to Maple Grove Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes. Ped / Bike Committee okay with removing bikeways. PAC4B: Low use roadways, therefore not a priority. Consider removing.
U321	Southwest	Wildcat Rd	Wilhoit Rd to OR 213	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PAC4B: Low use roadways, therefore not a priority. Consider removing.
U320	Southwest	Sawtell Rd	Maple Grove Rd to Wilhoit Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	PAC4B: Low use roadways, therefore not a priority. Consider removing.
U317	Southwest	Dhooghe Rd	OR 211 to Fernwood Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U316	Southwest	Fernwood Rd	Dhooghe Rd to Callahan Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes
U315	Southwest	Callahan Rd S (beginning on Ramsby Rd)	Dickie Prairie Rd to Fernwood Rd	Widen to rural collector standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes
U311	Southwest	Molalla Ave / Vaughan Rd	OR 213 to Molalla City limits	Bring section up to County standards for rural minor arterial with shoulders and bikeways	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	VOH: Include improvements to prevent flooding.
U300	Southwest	Macksburg Rd	OR 170 (Canby Marquam Hwy) to OR 213	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U299	Southwest	Dryland Rd	Macksburg Rd S to Macksburg Rd N	Realign to form one intersection at Dryland Rd	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U290	Southwest	Township Rd	Central Point Rd to Canby City limit	Widen to rural major arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Ped / Bike Committee okay with removing bikeways
U269	Southwest	Casto Rd	Spangler Rd to Central Point Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low volumes, steep road, low priority. Ped / Bike Committee okay with removing bikeway.
U264	Southwest	Unger Rd	Beavercreek Rd to OR 211	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Low bike volume. Gravel shoulders only?
U263	Southwest	Lower Highland Rd	Beavercreek Rd to Fellows Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U262	Southwest	Redland Rd	Henrici Rd to Springwater Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Road Safety AuditPBAC: good project
U260	Southwest	Fellows Rd	Redland Rd to Lower Highland Rd	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Physically challenging, low volumes

TSP Update ID	Geographic Area	Project Name / Street Name	Segment / Locations	Project Description	Project Category	Identified Capacity Deficiency Under 70% Growth?	Notes	Comment
U249	Southwest	Springwater Rd	Hattan Rd to Hayden Rd	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Physical constraints, costly
U247	Southwest	Bakers Ferry Rd	Springwater Rd to OR 224	Widen to rural arterial standard (2 lanes) with shoulders, bikeways and turn lanes at major intersections; remove horizontal curve and relocate intersection from Faden Rd to OR 224	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U211	Southwest	Beavercreek Rd	Henrici Rd to Yeoman Rd/Steiner Rd	Bring up to County standards; widen to include shoulders, bikeways, pedways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	GAP 3 #2: Priority PAC4B: ADD to Steiner/ Yeoman at the elemantary school of the Fire Department a bit further. This covers the main core of the community. (Elizabeth) U739 covers, so adjusted boundaries of U739 accordingly.
U210	Southwest	Henrici Rd	OR 213 to Beavercreek Rd	Widen to rural minor arterial standard with shoulders, shoulders bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U194	Southwest	Bradley Rd	Redland Rd to Holcomb Blvd	Widen to rural collector standard with shoulders, bikeways and turn lanes at major intersections	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U190	Southwest	Hattan Rd	Fischers Mill Rd to Gronlund Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	
U188	Southwest	Gronlund Rd / Hattan Rd	Bradley Rd to Springwater Rd	Widen to rural minor arterial standard with shoulders, bikeways and turn lanes at major intersections.	Rural Upgrade	No	Turn lanes not shown to be needed for capacity, but provide safety benefit.	TAC #5: Reoccuring slide, this may not be fiscally responsible. Ped / Bike Committee okay to remove bikeways. Separate out project from Gronlund to Hattan.
U186	Southwest	Forsythe Rd	Oregon City to Bradley Rd	Widen to 3 lanes; add shoulders and bikeways	Rural Upgrade	No		

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

Congested: roadway v/c ratio is between 1.0 and 1.1.

0 1 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source:
Clackamas County, Metro Data Resouce Center

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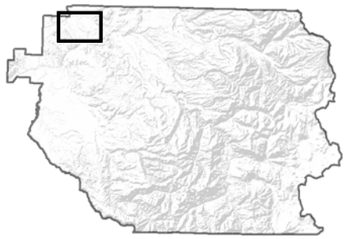
Upgrade Projects and Deficient Roadways and Intersections
Greater Clackamas Regional Center / Industrial Area

Figure
C App E

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

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- 5,000
- 10,000

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- Incorporated Areas
- County Boundary
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Upgrade Projects and Deficient Roadways and Intersections Greater McLoughlin Area

Figure
M App E

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

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0 1 2 Miles

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Upgrade Projects and Deficient Roadways and Intersections Northwest County

Figure
NW App E

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

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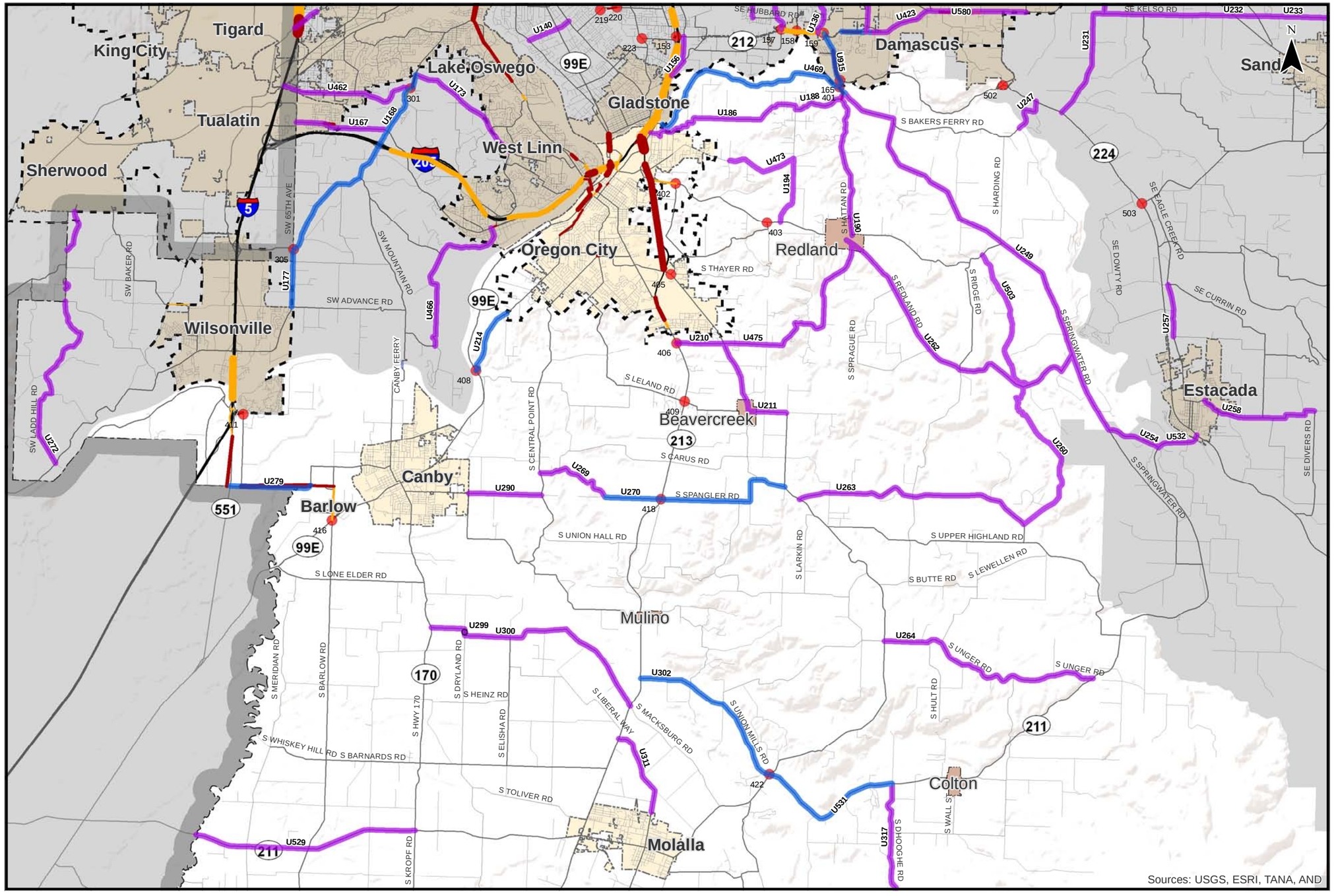

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
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Clackamas County, Metro Data Resouce Center

Upgrade Projects and Deficient Roadways and Intersections
Southwest County - Northern Portion

Figure
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CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update

Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

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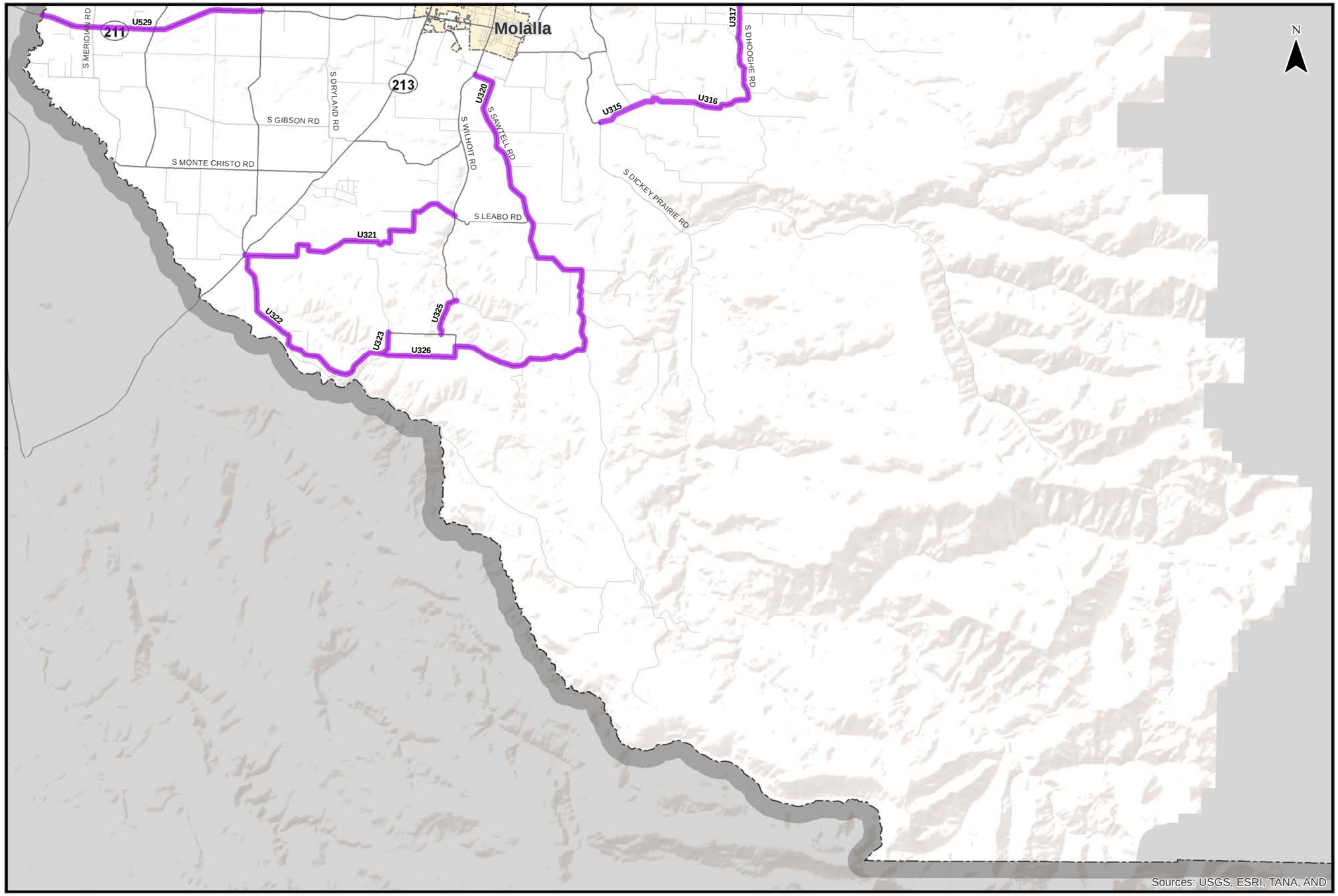

0 1 2 3 4 Miles

Coordinate System:
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Data Source:
Clackamas County, Metro Data Resouce Center

Upgrade Projects and Deficient Roadways and Intersections
Southwest County - Southern Portion

Figure
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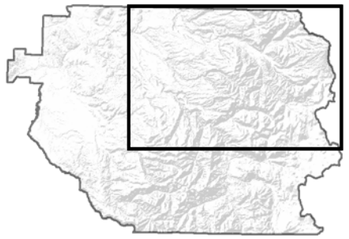
CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN Update



Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
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0 1 2 3 4 5 Miles

Coordinate System:
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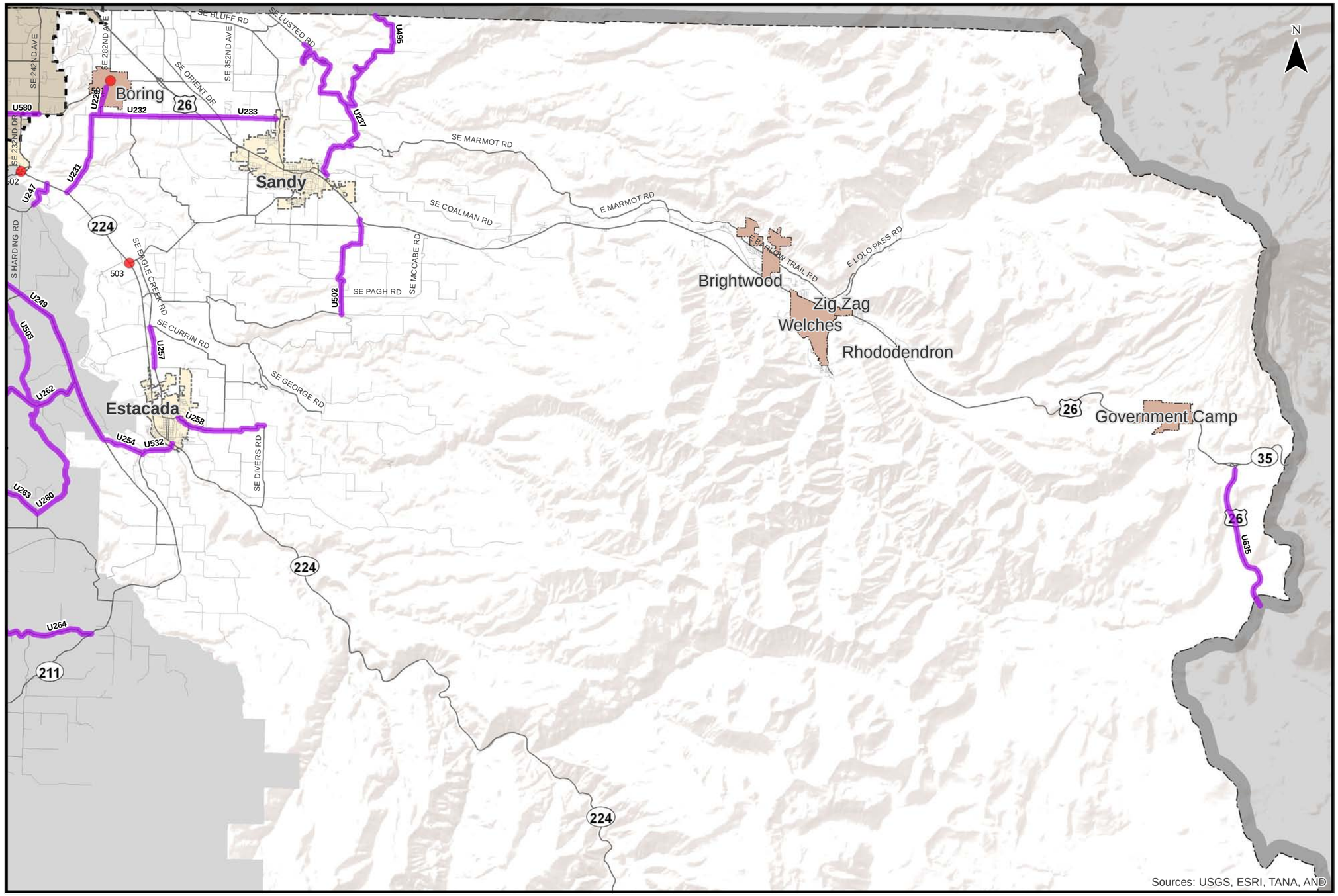

Upgrade Projects and Deficient Roadways and Intersections
East County - Northern Portion

Figure
EN App E

CLACKAMAS COUNTY TRANSPORTATION SYSTEM PLAN *Update*

Master List Upgrade Projects

Addresses 70% Deficiency?

- Yes
- No

- Yes
- No

Very Congested under 70% Growth

- 1,000
- 5,000
- 10,000

Congested under 70% Growth

- 1,000
- 5,000
- 10,000

- Study Intersections Failing Under 70% Growth
- Incorporated Areas
- County Boundary
- UGB

Note:
Very Congested: roadway v/c ratio is greater than 1.1.

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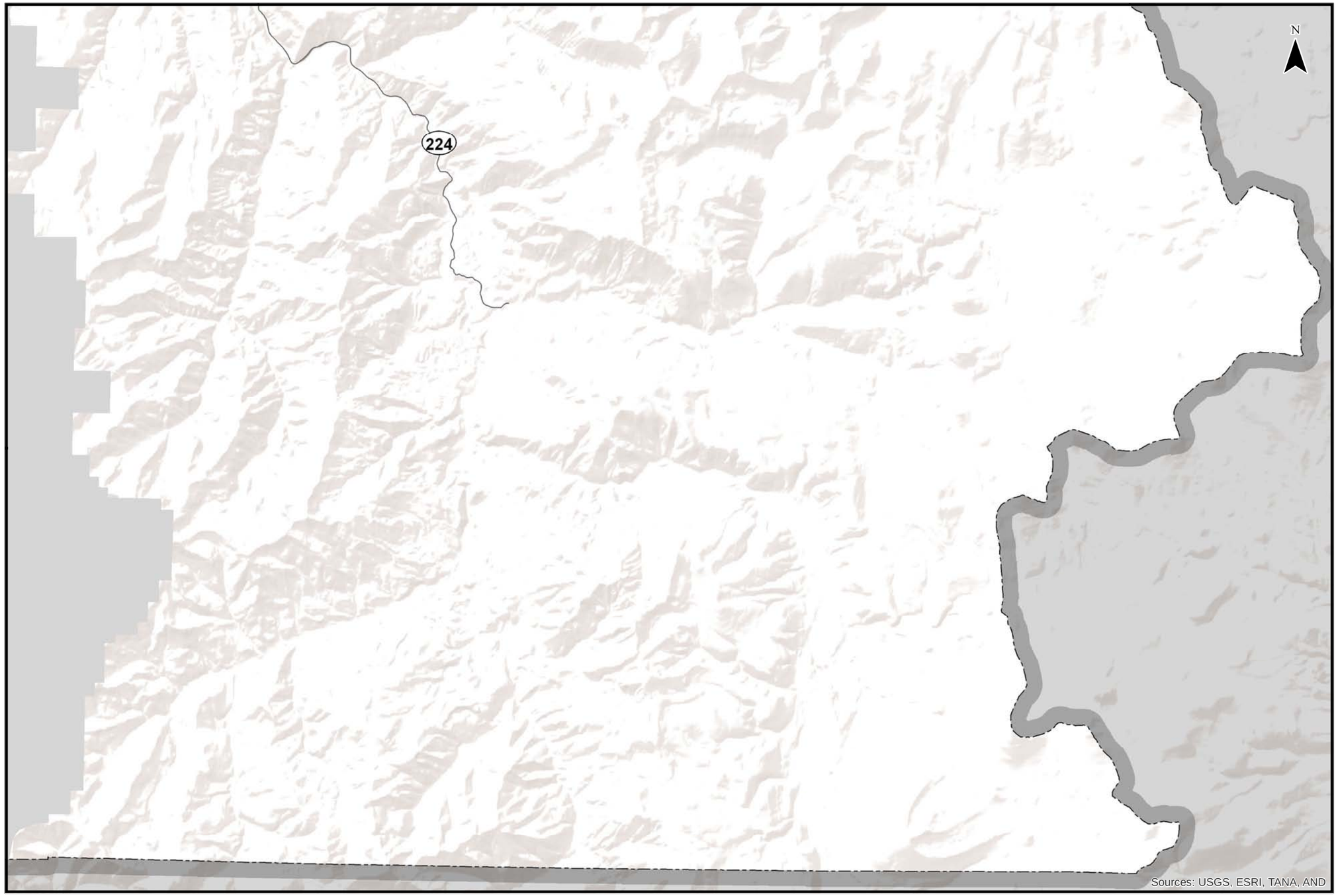

0 1 2 3 4 Miles

Coordinate System:
NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
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Upgrade Projects and Deficient Roadways and Intersections
East County - Southern Portion

Figure
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