

MEMORANDUM

Date: May 12, 2020 Project #: 23641.0

To: Virginia Elandt, Oregon Department of Transportation
Kar; MacNair, City of Medford

From: Matt Hughart, AICP, Matt Bell, and Miranda Barrus, Kittelson & Associates, Inc.

Project: I-5 Exit 30 Interchange Area Management Plan (IAMP)

Subject: Final TM#2B Appendix: Existing Inventory and Land Use Assumptions

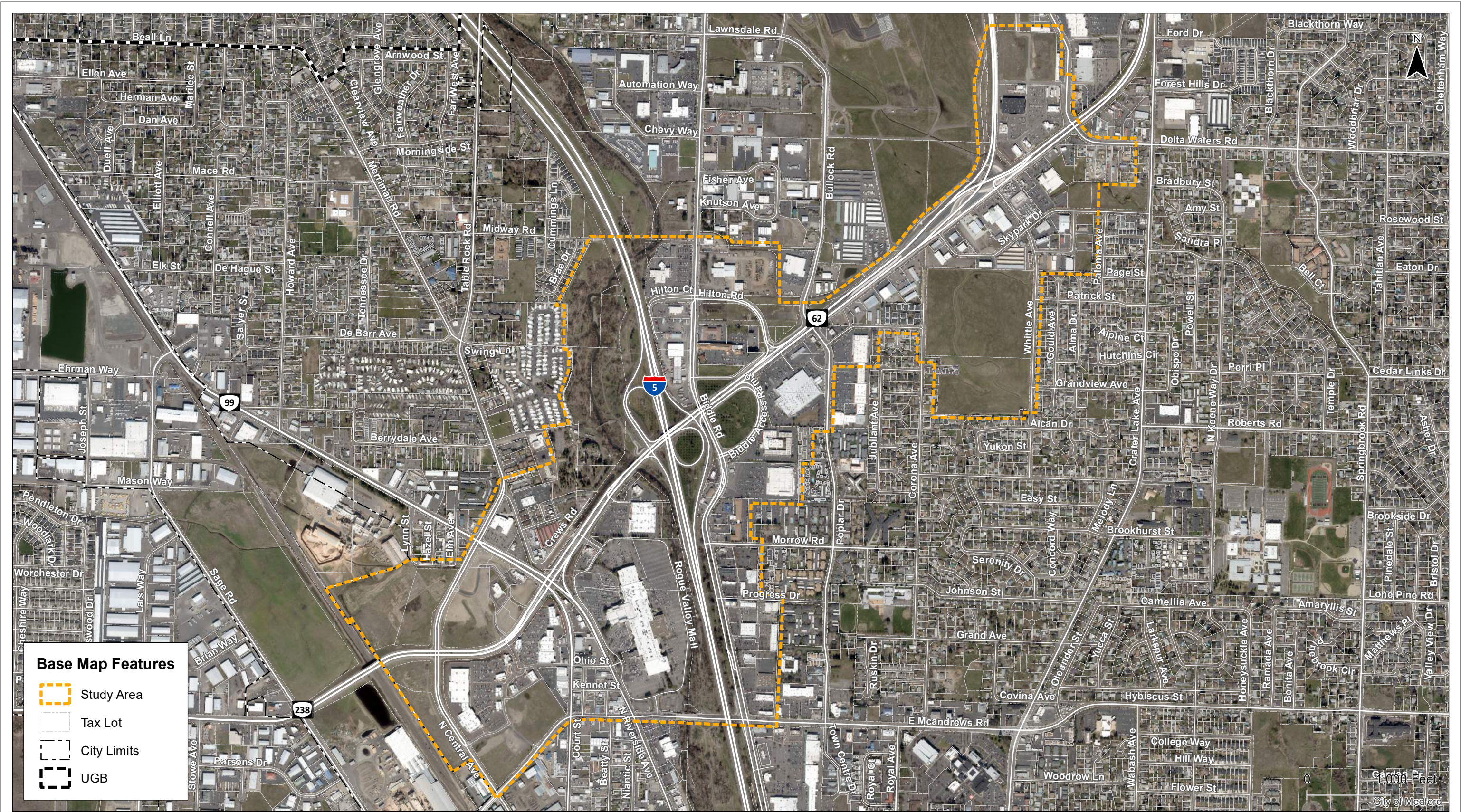
This memorandum provides an inventory of existing transportation facilities and services within the Interchange Management Study Area (IMSA) for the I-5, Exit 30 Interchange Area Management Plan (I-5, Exit 30 IAMP). Figure 1 illustrates the IMSA. This memorandum complements the memorandum prepared by Angelo Planning Group and OBEC that provides an inventory of existing land use, population, and demographics for the IMSA. The information provided in this memorandum serves as the basis for identifying existing gaps and deficiencies and for evaluating existing and projected future traffic conditions within the IMSA. This memorandum includes an inventory of the transportation facilities and services, right-of-way, and access points along the corridor. The information provided in this memorandum will be updated based on feedback from the project team and project advisory committees and refined throughout the planning process.

TRANSPORTATION INVENTORY

The transportation inventory documents the existing physical and operational characteristics of roadways within the IMSA including jurisdiction, functional classification, roadway characteristics (e.g. pavement width, shoulder width, number of lanes, lane width, etc.), stop control devices, bridges and culverts, bicycle and pedestrian facilities, freight facilities, and rail facilities.

Jurisdiction

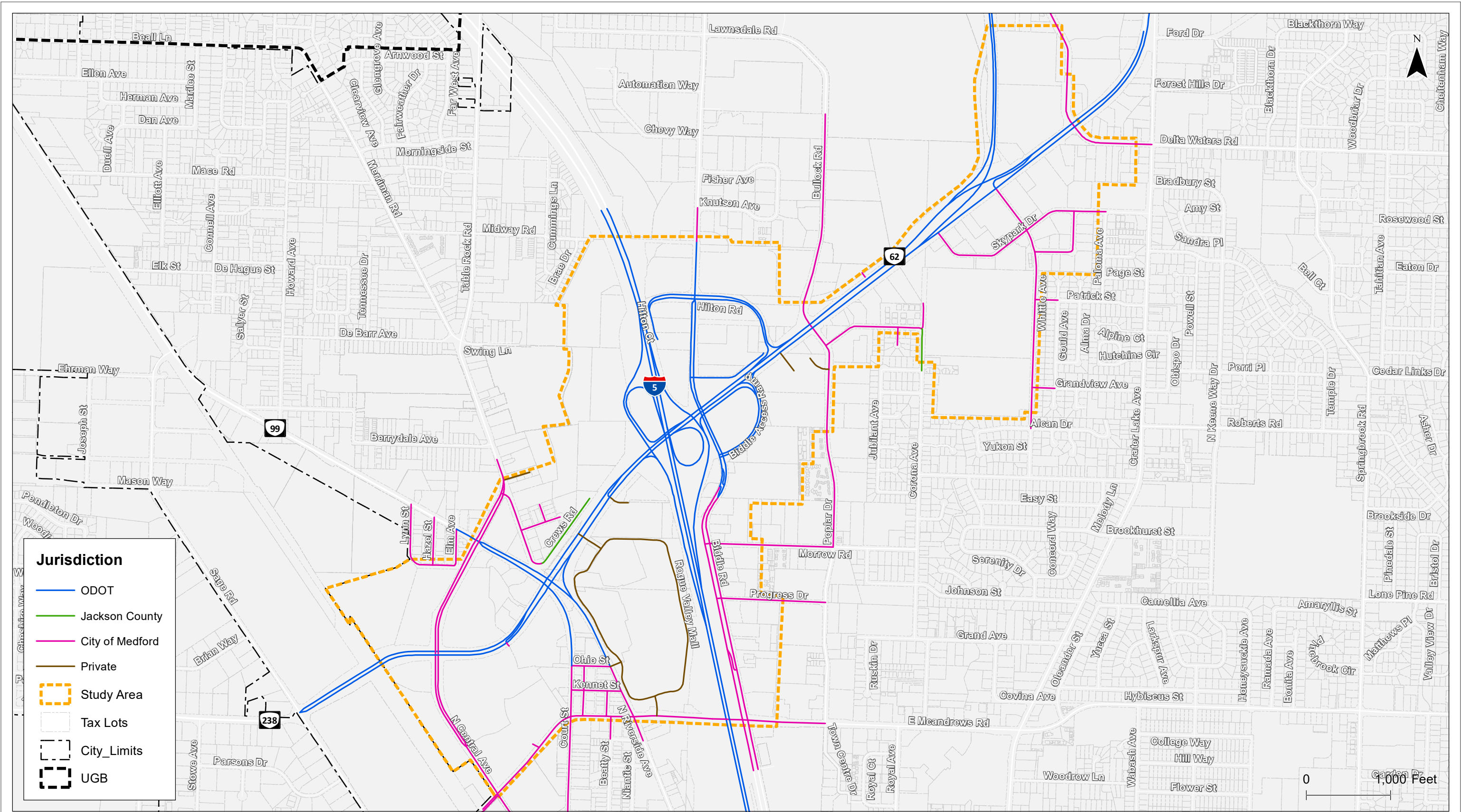
Streets within the IMSA are owned and maintained by the Oregon Department of Transportation (ODOT), Jackson County (County), and City of Medford (City). Coordination is required among the jurisdictions to ensure the streets are planned, operated, maintained, and improved to safely meet public needs. Figure 2 illustrates the jurisdiction of the streets within the IMSA. As shown, ODOT owns and maintains the state highways (I-5, OR 238, OR 62, OR 62 bypass, OR 99) as well as segments of Riverside Avenue, Court Street, Biddle Road, Hilton Court-Road, and Old Biddle Ramp; the County owns and maintains segments of Crews Road and Corona Avenue, and the City owns and maintains all other public streets within the IMSA. It should be noted that ODOT is currently in the process of transferring the jurisdiction of OR 62 east of Whittle Avenue (mile 1.5 to 4.25) to the City of Medford.



Interchange Management Study Area (IMSA)
Medford, Oregon

Figure
1

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Roadway Maintenance/Jurisdiction
Medford, Oregon

Figure
2

Functional Classification

The Oregon Highway Plan (OHP) identifies the functional classification of State highways within the IMSA and the City of Medford Transportation System Plan (TSP) identifies the functional classification of both state highways and City streets. A roadway's functional classification defines its role in the transportation system and its desired operational and design characteristics such as right-of-way, pavement width, pedestrian and bicycle facilities, and driveway (access) spacing standards. Table 1 summarizes the functional classifications of roadways within the IMSA and illustrates the differences in classification by jurisdiction. The classification shown in bold highlights the jurisdictional ownership of the roadway. As noted, there are several inconsistencies amongst the Federal and Local classifications that will need to be addressed as part of this planning process of future Medford Transportation System Plan updates. Figure 3 illustrates the functional classification of streets within the IMSA per the Medford TSP.

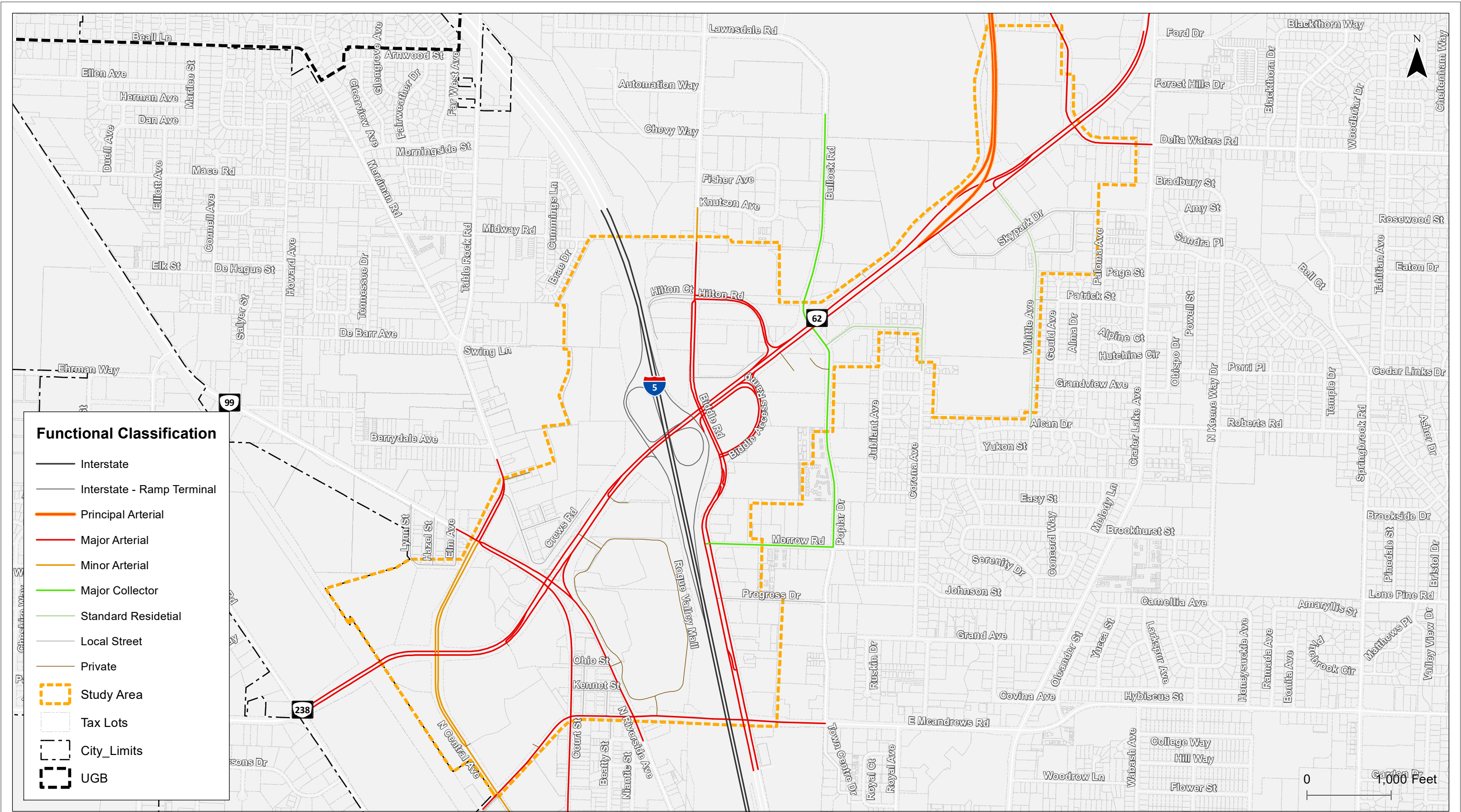
Table 1: Functional Classification Comparison

Roadway	Functional Classification		
	Federal	State	Local
OR 238	Principal Arterial	District Highway	Major Arterial
OR 62 ¹	Principal Arterial	Statewide Highway	Major Arterial
OR 62 Jug Handle	Principal Arterial	Local Interest Road	Major Arterial
OR 62 Bypass	Principal Arterial	Statewide Highway	Principal Arterial
OR 99 (north of OR 238-OR 62)	Principal Arterial	District Highway	Major Arterial
Riverside Avenue	Principal Arterial		Major Arterial
Court Street	Principal Arterial		Major Arterial
Table Rock Road	Minor Arterial		Major Arterial
Central Avenue	Minor Arterial		Minor Arterial
Biddle Road	Minor Arterial	Local Interest Road	Major Arterial
Biddle Road (south of Jug Handle)	Minor Arterial		Major Arterial
Hilton Road (east of Biddle Road)	Local	Local Interest Road	Major Arterial
Bullock Road	Collector		Major Collector
Poplar Drive	Collector		Major Collector
Sky Park Drive			Local Street
Whittle Avenue			Standard Residential
Delta Waters Road (north of OR 62)	Collector		Major Arterial
Delta waters Road (south of OR 62)	Minor Arterial		Major Arterial

1. ODOT is currently in the process of transferring the jurisdiction of OR 62 east of Whittle Avenue (mile 1.5 to 4.25) to the City of Medford.

Roadway Characteristics

Roadway characteristics within the IMSA were inventoried using Geographic Information System (GIS) data obtained from ODOT and the City of Medford. The data was supplemented with information obtained from aerial images of the study area and through a site visit. The data include pavement and shoulder width, number and width of travel lanes, pavement type and condition, median locations, on-street parking locations, and posted speed limits within the IMSA.



Functional Classification
Medford, Oregon

Figure
3

Pavement Width

Pavement width data for streets within the IMSA is currently unavailable. However, the data can be derived from the number and width of travel lanes and shoulder width.

Shoulder Width

Shoulder width data is available for OR 238, OR 62, OR 62 Bypass, OR 99, Biddle Road, and Hilton Court-Road. Figure 4 illustrates the shoulder width data. As shown, 6-8 foot “shoulders” are generally provided along both sides of OR 62 with 0-2 foot “shoulders” adjacent to raised median islands – while the data identifies the facilities on OR 62 as “shoulders,” aerial imagery indicates that the facilities are on-street bike lanes and buffered bike lanes. Additional information on these facilities is provided below.

Number of Lanes

Number of lanes data is available for OR 238, OR 62, OR 62 Bypass, OR 99, Biddle Road, and Hilton Court-Road. Figure 5 illustrates the number of lanes data. As shown, 2-3 lanes are generally provided along both sides of OR 62 – the segments with raised median islands are shown with 2-3 lanes in each direction, while the segments without raised median islands are shown with 5-6 lanes.

Lane Width

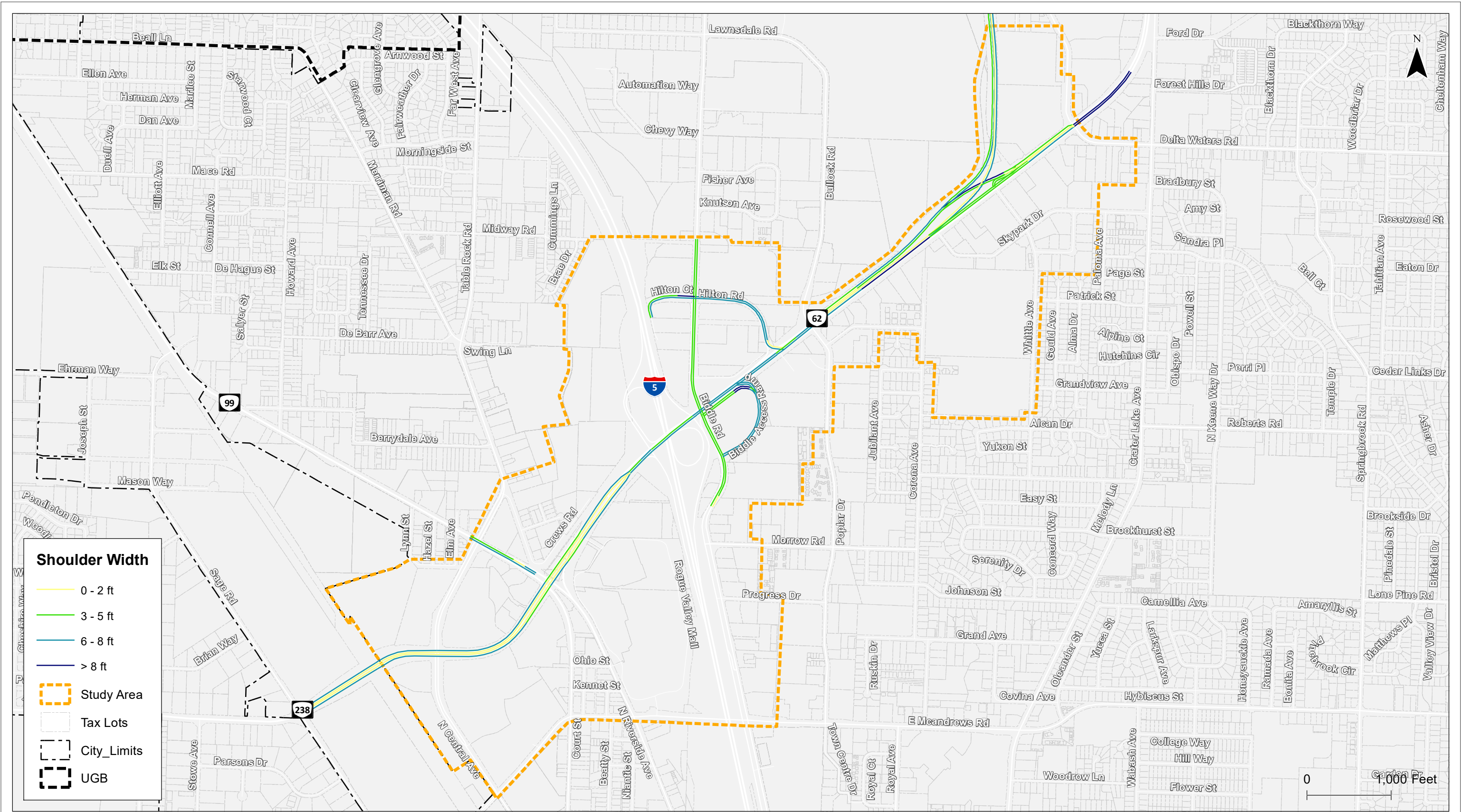
Lane width data is available for OR 238, OR 62, OR 62 Bypass, Biddle Road, and Hilton Court-Road. The data shows that 12-foot lanes are generally provided along both sides of OR 62 as well as most other state facilities within the IMSA. The exceptions include Biddle Road, which has 11-foot lanes in both directions, and the Biddle Road slip lane, which has a single 14-foot travel lane. Figure 6 illustrates the lane width data.

Pavement Type

Pavement type data is available for all streets within the within the IMSA. The data shows that most streets are paved with asphalt while one street (Adams Lane) is dirt and one street (Corona Avenue, north of Hilton Road) is gravel – aerial imagery indicates that Corona Avenue, north of Hilton Road is now paved with Asphalt. Figure 7 illustrates pavement type.

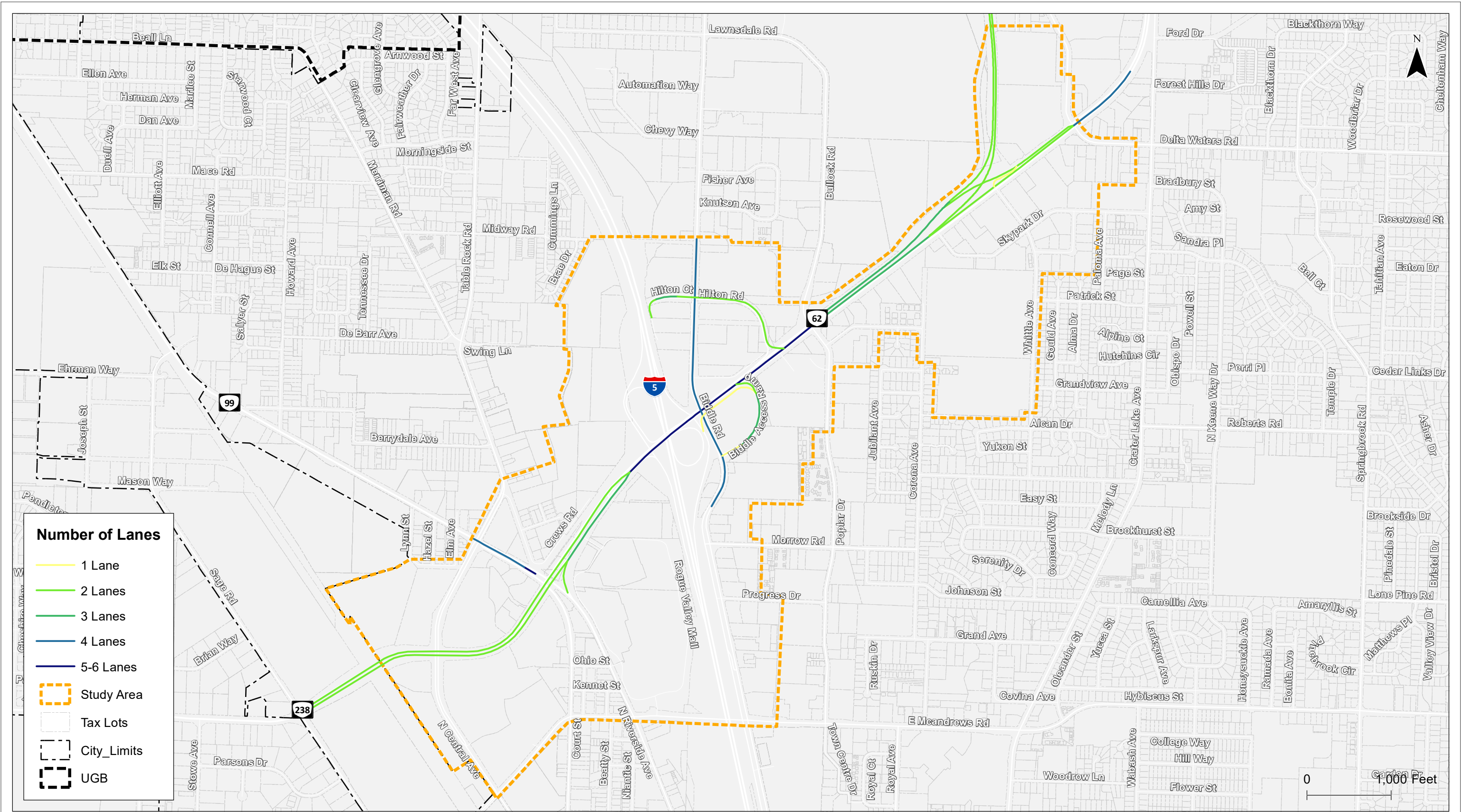
Pavement Condition

ODOT conducts pavement condition surveys biennially. It employs two separate and distinct pavement rating procedures; one for NHS routes, which consist of the most important routes in the County, and one for non-NHS routes. The NHS routes are surveyed using the Objective Rating Method, which provides detailed data on pavement surface distress types, severity, and quantities. The methodology is time- and labor-intensive. For non-NHS highways, ODOT applies a subjective Good-Fair-Poor (GFP) Rating Method, which relies on visual inspection of pavement surface and is rated from 1.0 to 5.0 based on the ride quality and surface distresses. The indexes resulting from both methodologies are then categorized into five conditions: “Very Good”, “Good”, “Fair”, “Poor” and “Very Poor.”



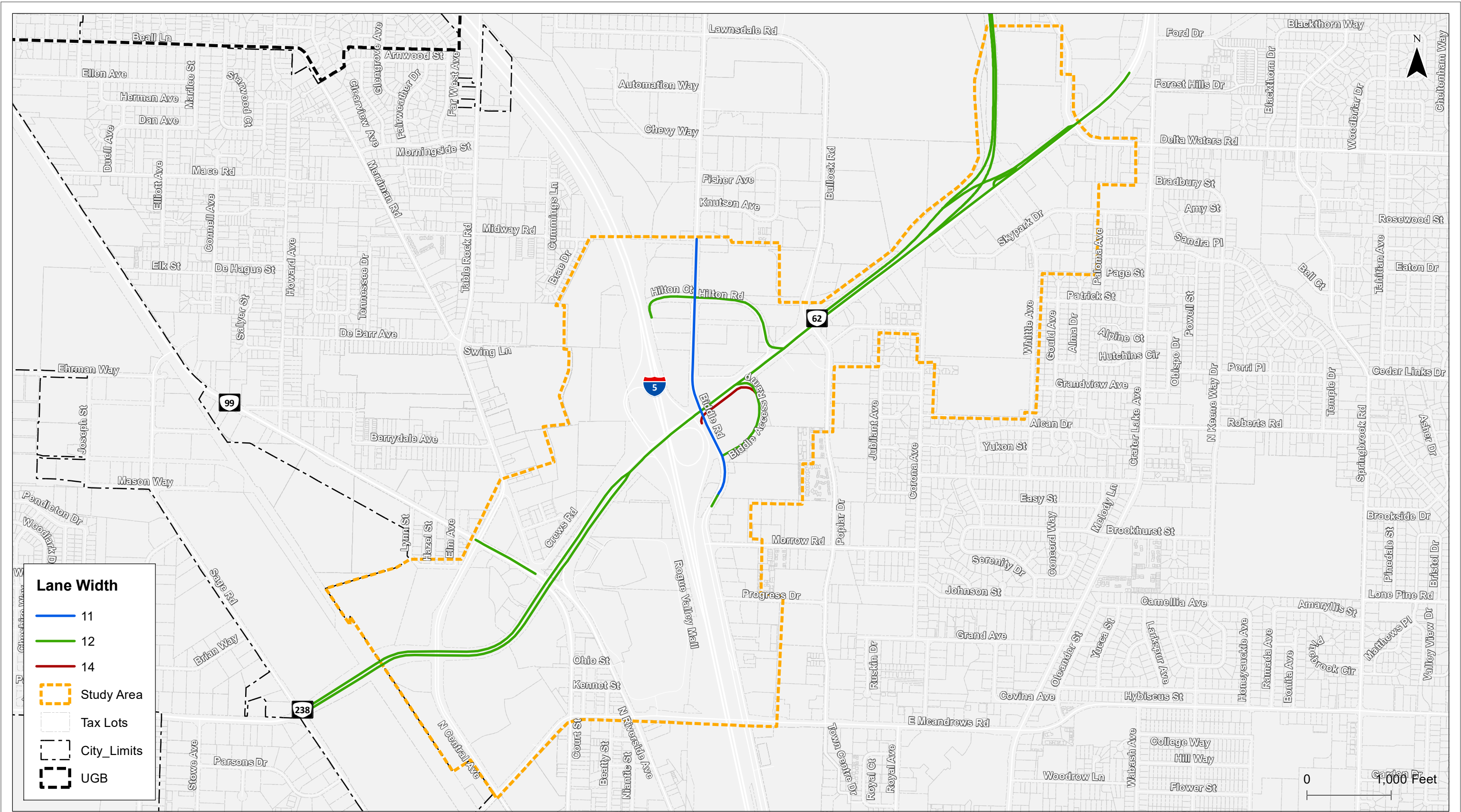
Shoulder Width
Medford, Oregon

Figure
4



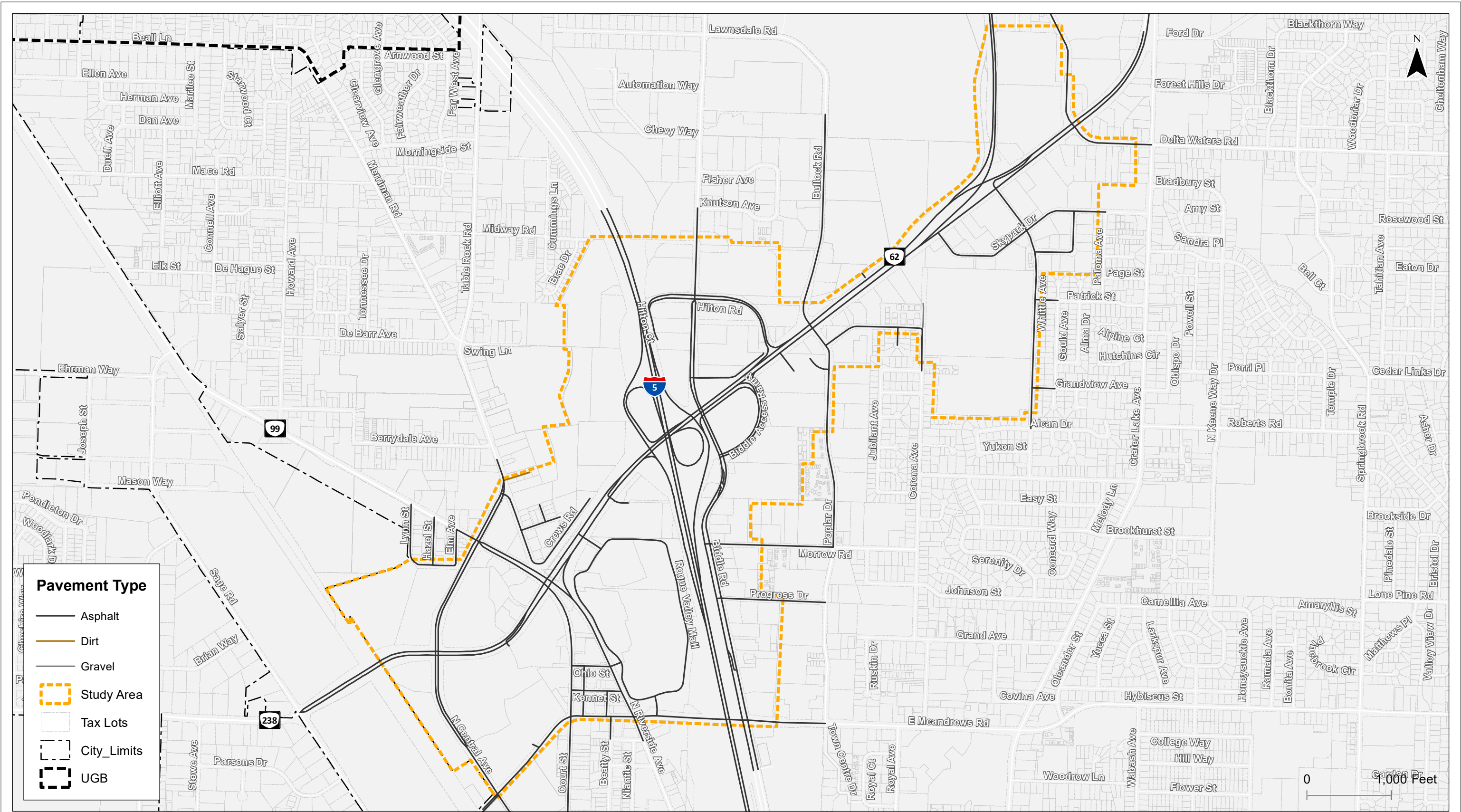
Number of Lanes
Medford, Oregon

Figure
5



Lane Width
Medford, Oregon

Figure
6



Pavement Type
Medford, Oregon

Figure
7

Pavement conditions data is available for OR 238, OR 62, and OR 99. Figure 8 illustrates the pavement condition data, which reflects conditions in 2016. As shown, OR 238 and the segment of OR 99 north of OR 238 are in poor condition and the segment of OR 62 from OR 99 to east of Bullock-Poplar Road is in fair condition. The remaining segment of OR 62 is in good condition.

Medians

Median data is available for OR 238, OR 62, OR 99, and several other streets within the IMSA. The data provides the location, size, and type (e.g. barrier, curbed, painted, painted center turn lane) of medians. Figure 9 illustrates the location and type of medians. As shown, medians are located along most of OR 62 with the exception of the segment between the I-5 ramp terminals and two segments east of Bolluck Road-Poplar Drive – aerial imagery indicates that the two segments east of Bullock Road-Poplar Drive now include curbed medians.

On-street Parking

On-street parking data is not available for streets within the IMSA; however, aerial imagery and field observations indicate that on-street parking is generally not allowed within the IMSA.

Posted Speed Limits

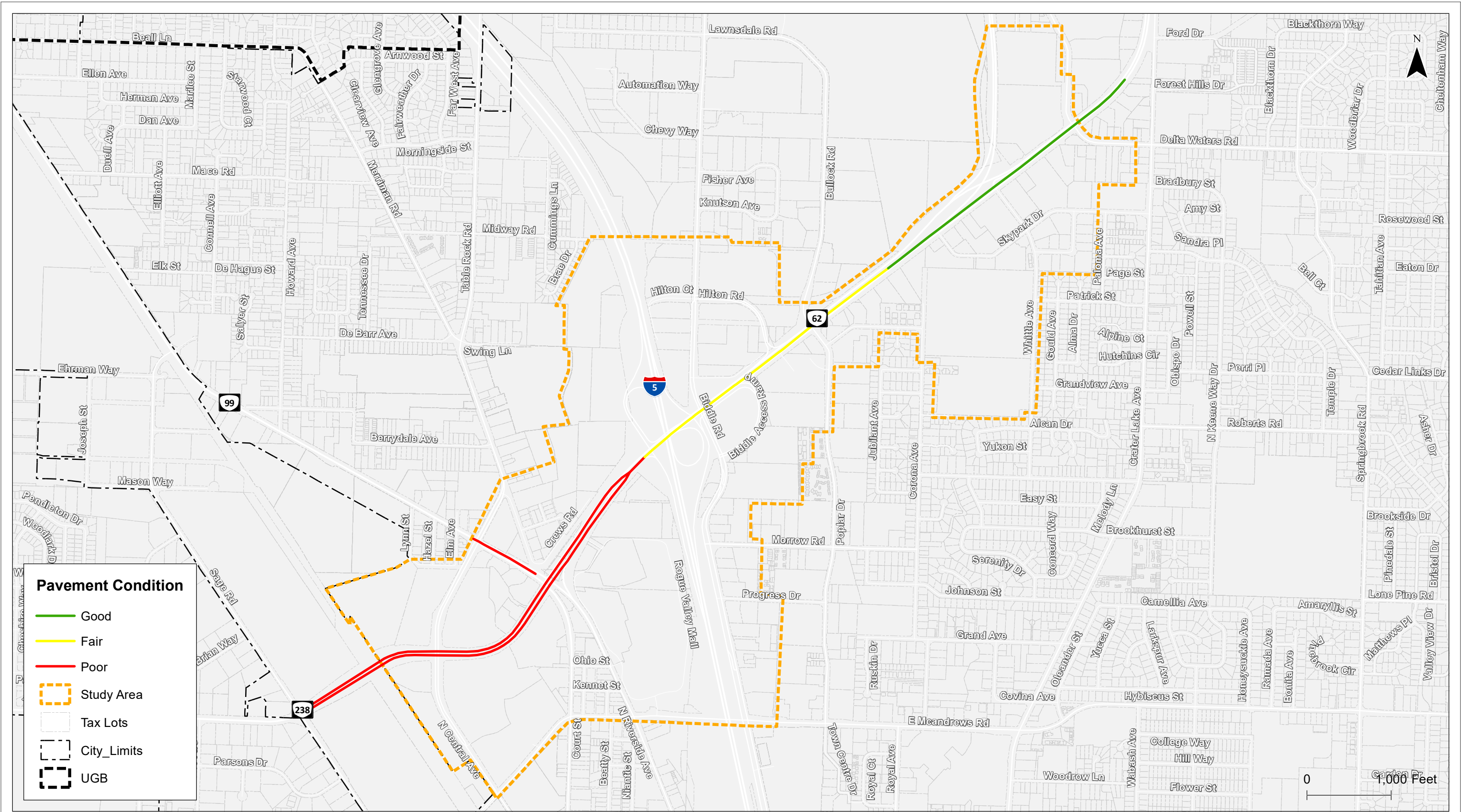
Posted speed limits typically correspond with functional classifications, with higher classifications (e.g. arterials and collectors) having greater speeds and lower classifications (e.g. locals) having lesser speeds. Posted speed limit data is available for most streets within the IMSA. Figure 10 illustrates the posted speed limits data. As shown, the segment of OR 62 from OR 99 to Bullock-Poplar Road is posted 35 miles per hour (mph) while all other segments of OR 62 are posted 40 mph and above.

Stop Control Devices

The majority of intersections within the IMSA are signalized with the exception of several local street and private connections. Figure 11 illustrates the stop control devices at the study intersections. As shown, nine of the 15 study intersections are signalized and six are stop controlled.

Bridges and Culverts

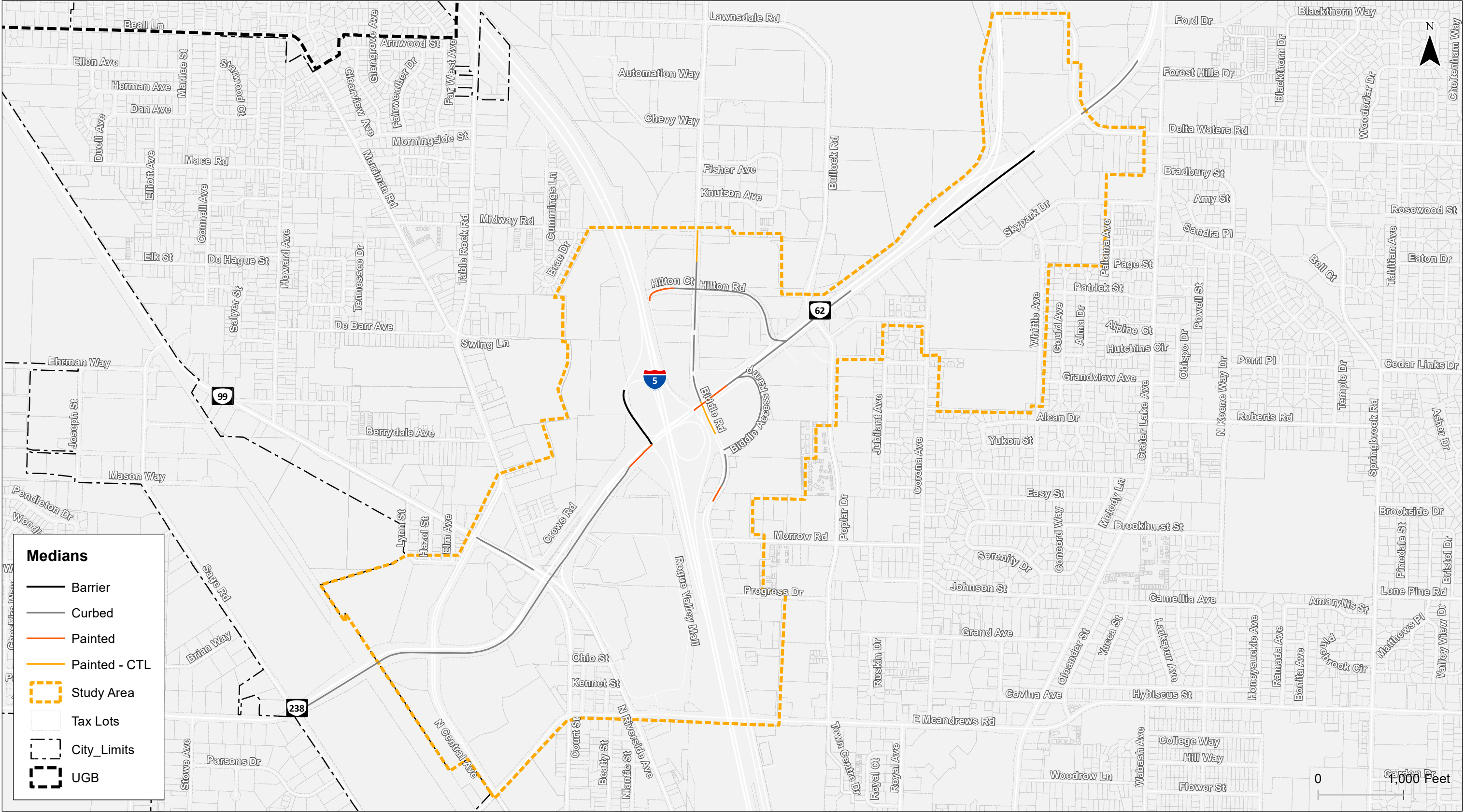
There are seven bridges and three culverts located within the IMSA. Figure 12 illustrates the location of the bridges and culverts along State and County facilities. ODOT owns and maintains the bridges and culverts shown along I-5, OR 62, and OR 238 and the County owns and maintains the bridge shown along McAndrews Road, west of I-5. Table 2 summarizes key information related to the bridges and culverts from ODOT's bridge database.



Pavement Condition
Medford, Oregon

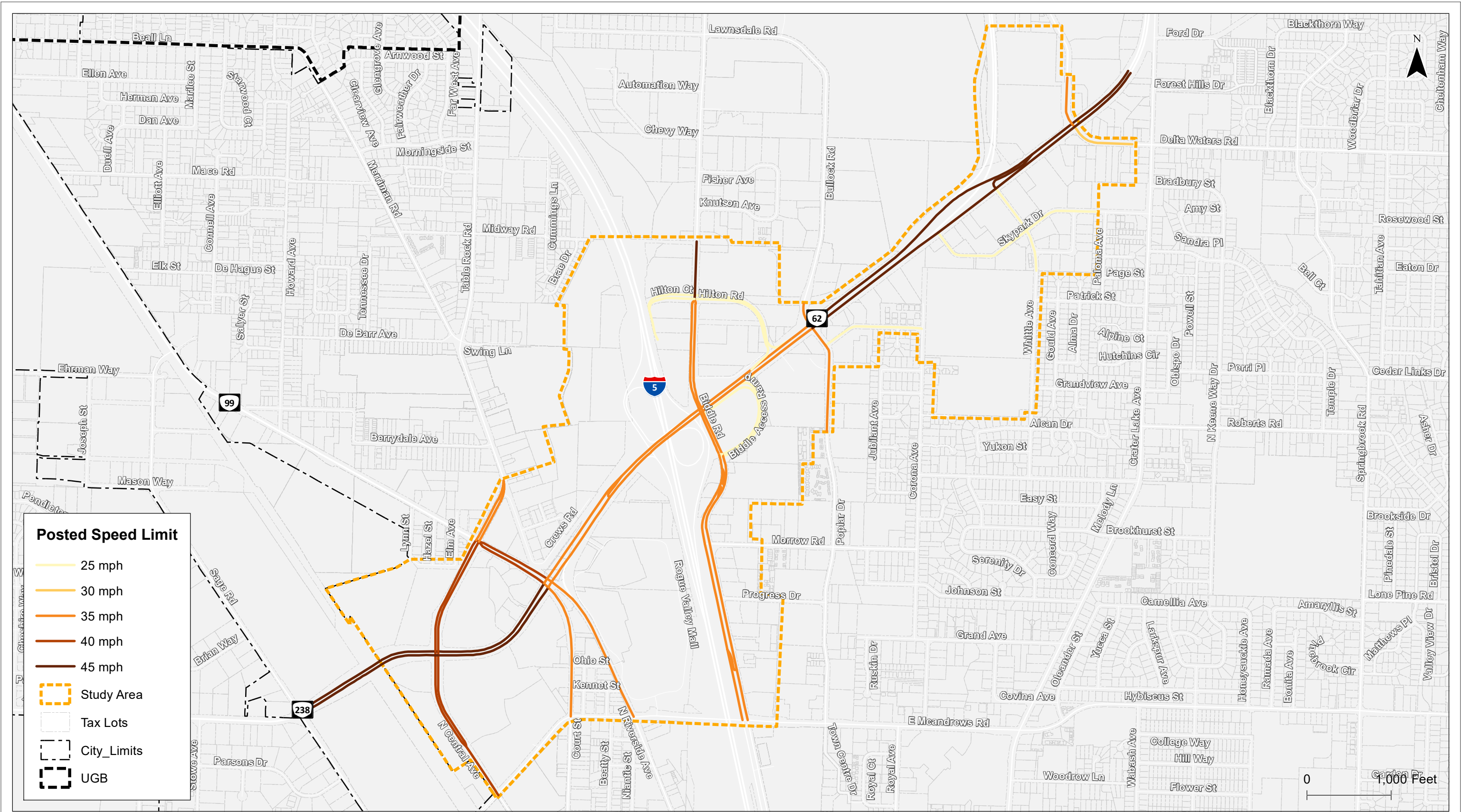
Figure
8

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Medians
Medford, Oregon

Figure
9



Posted Speed Limit
Medford, Oregon

Figure
10

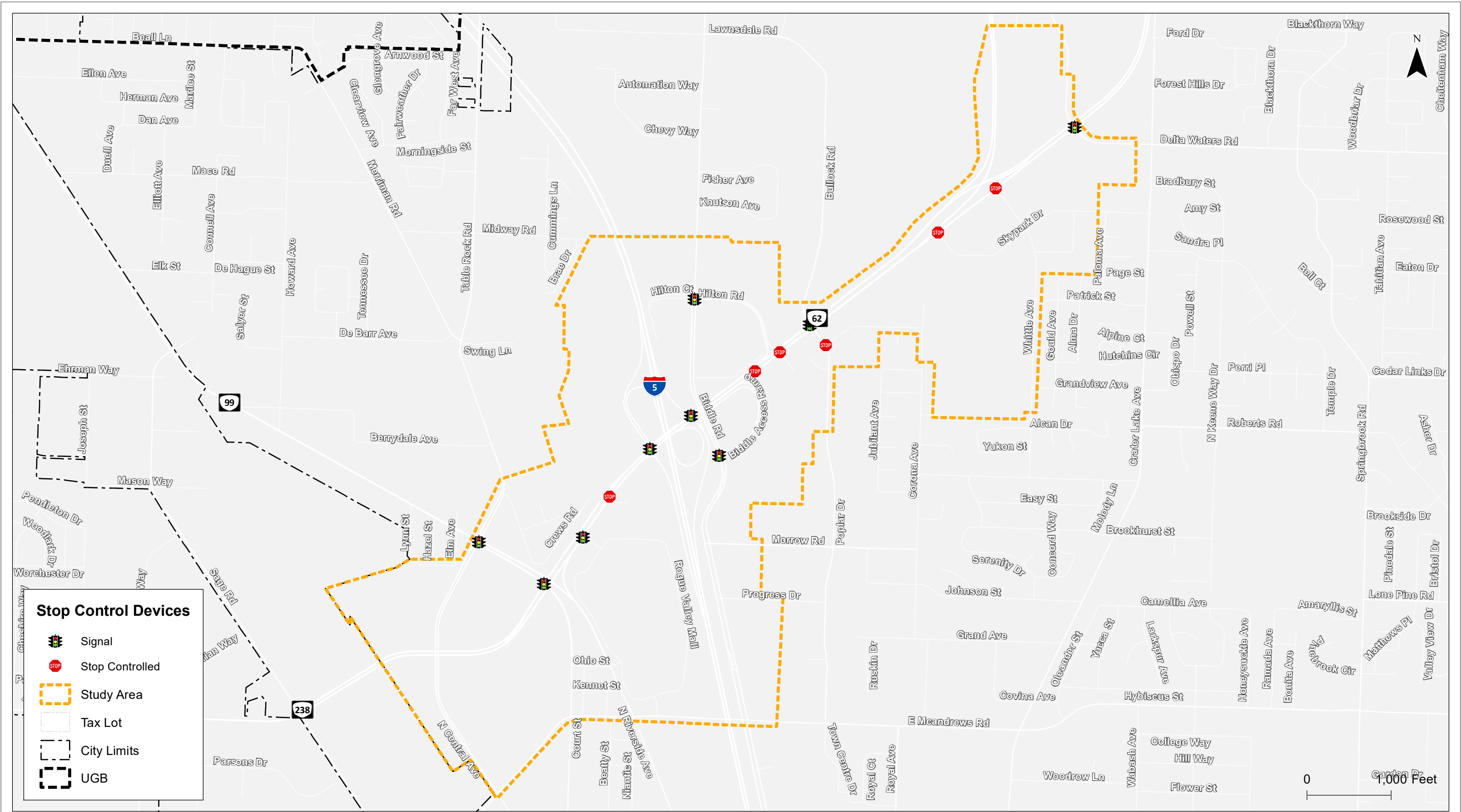
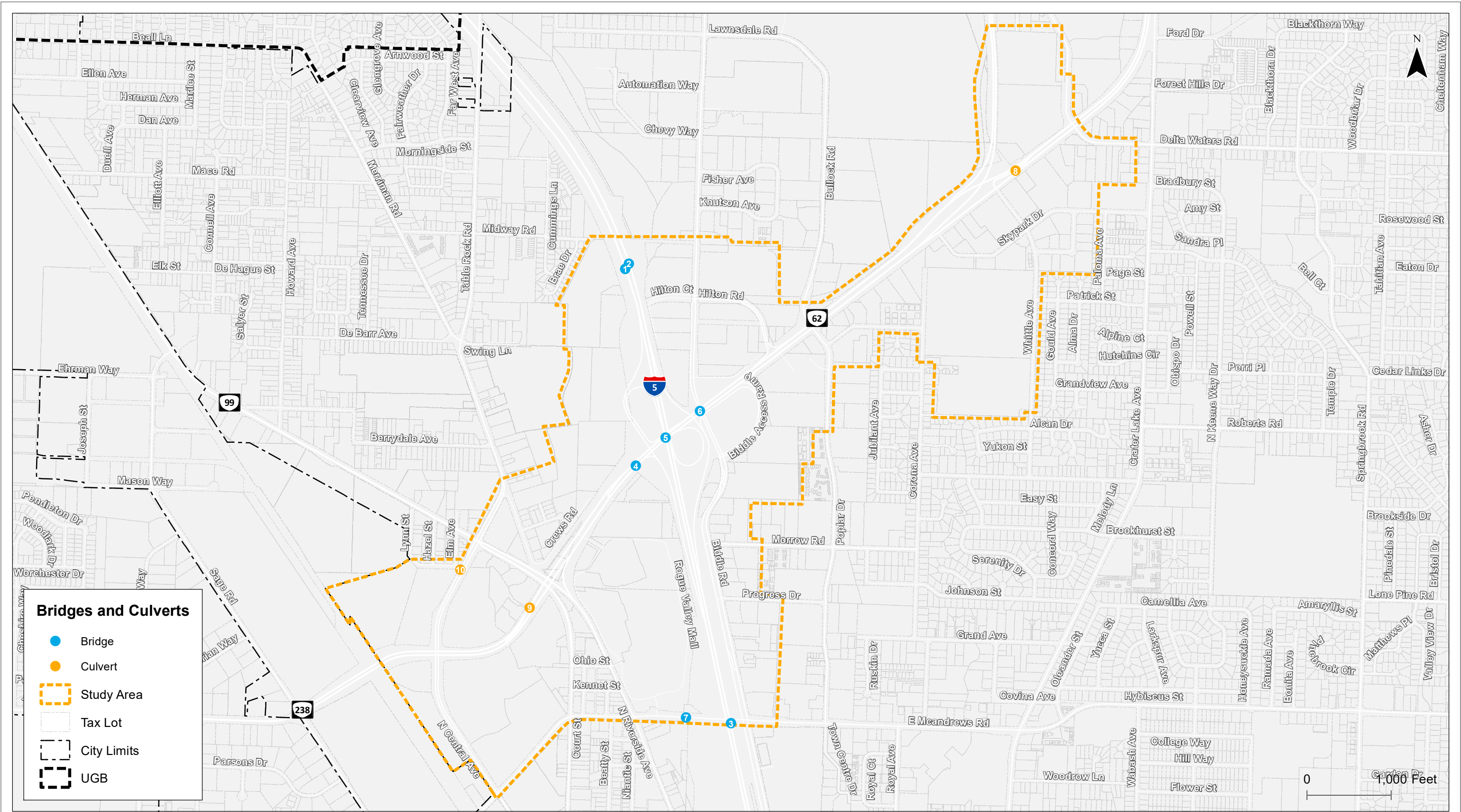


Figure
11



**Bridges and Culverts
Medford, Oregon**

**Figure
12**

Table 2: Bridges and Culverts

Map ID	Location	Bridge ID	Carries	Crosses	Status	Sufficiency Rating
Bridges						
1	I-5	08771S	I-5 SB	Bear Creek	Not Deficient	84.8
2	I-5	08771N	I-5 NB	Bear Creek	Not Deficient	84.8
3	I-5	08851	I-5	McAndrews Rd	Functionally Obsolete	73.8
4	OR 62	06605A	OR 62	Bear Creek	Not Deficient	82.0
5	OR 62	08821	OR 62	I-5	Functionally Obsolete	79.0
6	OR 62	09590	OR 62	Biddle Road	Functionally Obsolete	64.6
7	McAndrews Rd	20043	McAndrews Rd	Bear Creek	Not Deficient	90.1
Culverts						
8	OR 62	0P247	OR 62	N/A	N/A	85.0
9	OR 238	18777	OR 238	N/A	N/A	97.0
10	OR 238	18778	OR 238	N/A	N/A	97.0

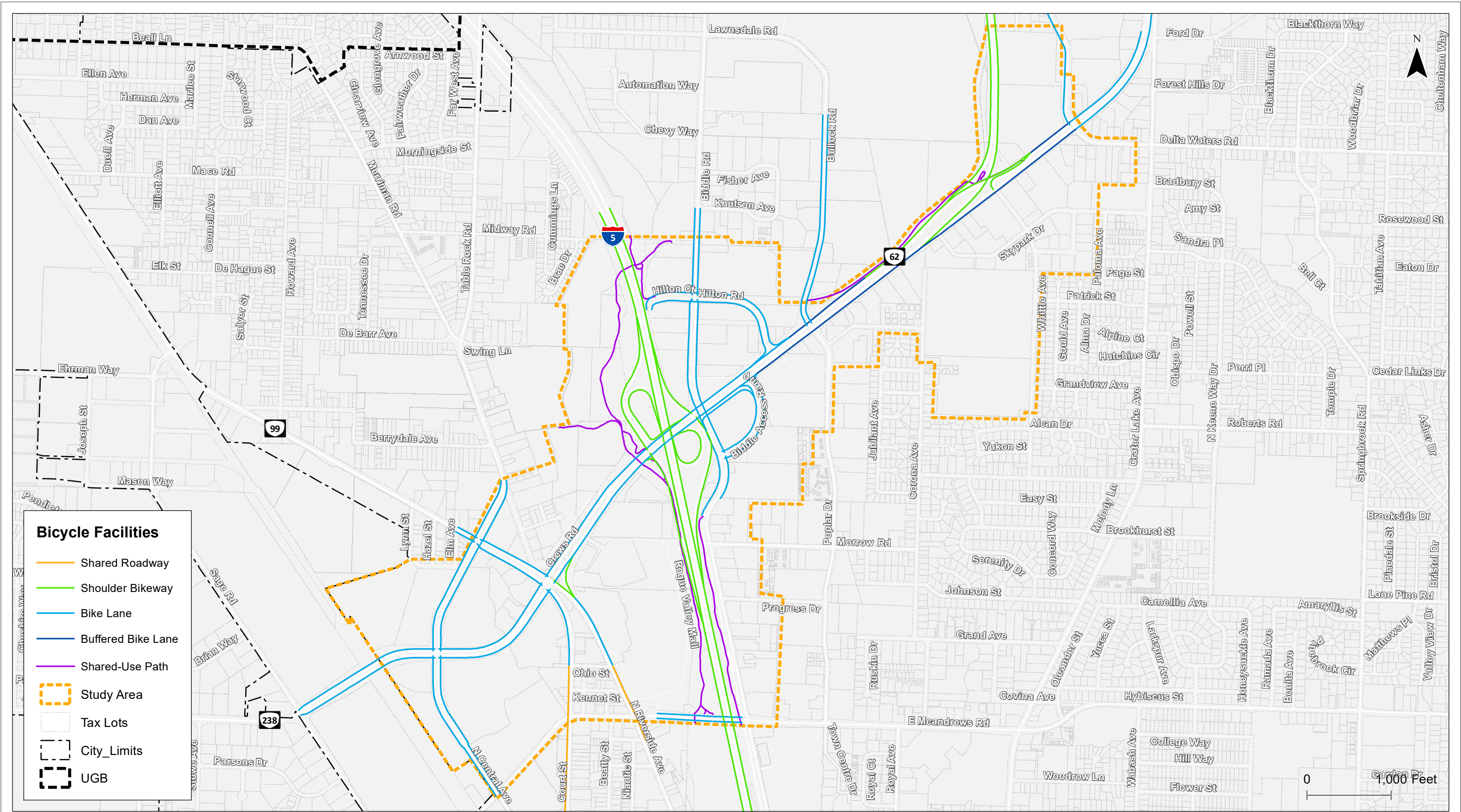
As shown in Table 2, three bridges are functionally obsolete, which means they were built to outdated construction standards (e.g. narrow travel lanes, narrow shoulders, etc.) and/or not built for current traffic volumes. The bridges also have a sufficiency rating between 50 and 80, which means they are in fair condition and rehabilitation, if cost-effective, will bring the bridge up to current standards. All other bridges and culverts are built to standard and have sufficiency rating above 80; bridges with sufficiency ratings above 80 may have specific elements that do not meet current standards, but overall are considered to be in good or adequate condition in all areas and are not eligible for federal funding.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities within the IMSA were inventoried using Geographic Information System (GIS) data obtained from ODOT and the City of Medford. The data was supplemented with information obtained from aerial images of the study area and through a site visit.

Bicycle Facilities

Bicycle facilities within the IMSA primarily consist of shared roadways, shoulder bikeways, on-street bike lanes, and shared-use paths as well as bicycle crossings at major intersections. Figure 13 illustrates the bicycle facilities within the IMSA. As shown, bike lanes and buffered bike lanes are located along both sides of OR 62 and bike lanes are located along the majority of other roadways within the IMSA – it can be difficult to differentiate between bike lanes and shoulder bikeways within the IMSA given that both bike lanes and shoulders are striped with a 4" stripe, also some have bike symbols and some do not. Therefore, for the purpose of this analysis, bike lanes are assumed where there is an adjacent sidewalk or where bike symbols are present.



**Bicycle Facilities
Medford, Oregon**

**Figure
13**

Pedestrian Facilities

Pedestrian facilities within the IMSA primarily consists of sidewalks and shared-use paths as well as signalized and unsignalized pedestrian crossings at major intersections. Figure 14 illustrates the pedestrian facilities within the IMSA. As shown, sidewalk are located along both sides of OR 62 as well as the majority of other roadways within the IMSA. Also shown, signalized pedestrian crossings are located at each of the signalized intersections.

Freight Facilities

Freight routes in the IMSA include Oregon Highway Plan (OHP) designated freight routes and National Highway System (NHS) routes. The Motor Carrier Transportation Division (MCTD) also includes designations for all state highways within the IMSA.

Freight Routes

The primary purpose of the State Highway Freight System is to facilitate efficient and reliable interstate, intrastate, and regional truck movement through a designated freight system. This freight system, made up of Interstate highways and certain Statewide, Regional and District highways, includes routes that carry significant tonnage of freight by truck and serve as the primary interstate and intrastate highway freight connections to ports, intermodal terminals, and urban areas. Figure 15 illustrates the OHP designated freight routes within the IMSA. As shown, I-5, the segment of OR 62 from I-5 to the OR 62 Bypass, and the OR 62 Bypass are designated Freight Routes. The Freight Route designations impact highway design elements, such as roadway section width, median barrier type and width, and intersection design. Statewide Freight Routes also have higher mobility standards than other highways of the same classification.

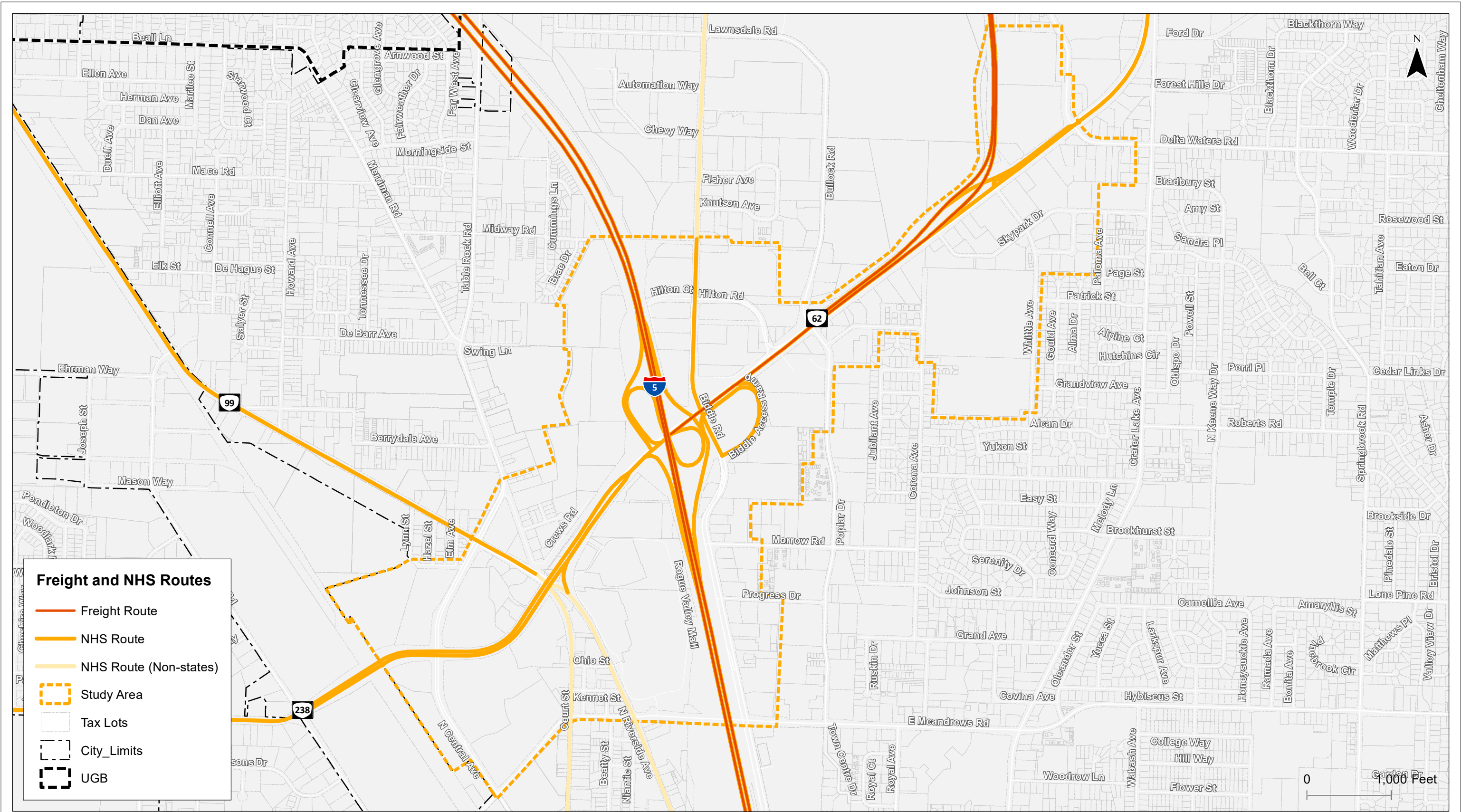
National Highway System

The National Highway System (NHS) is a network of strategic highways within the United States, including the Interstate Highway System and other roads serving major airports, ports, rail or truck terminals, railway stations, pipeline terminals and other strategic transport facilities. In Oregon, the NHS highways include all the Interstate and Statewide Highways and intermodal connectors. Figure 15 also illustrates the location of NHS routes in the IMSA. As shown, nearly all roads within the study area or on NHS roads.

Freight Highway Bottlenecks

A freight highway bottleneck is a part of the transportation system that exhibits disproportionally high costs to the freight industry in terms of delay and unreliability. Based on the Oregon Freight Highway Bottleneck Project, there are no freight highway bottlenecks in the IMSA.





Freight Routes and NHS Routes
Medford, Oregon

Figure
15

Intermodal Connectors

Intermodal connectors link airports, ports, rail terminals, and other passengers and freight facilities to Interstate and Statewide Highways and are of particular importance to Oregon's economy. State-owned intermodal connectors are either Regional or District Highways and are managed according to the state highway classification. Intermodal connectors within the IMSA include Biddle Road from the Biddle Road Jug handle to the north IMSA boundary and Hilton Road from Biddle Road to OR 62.

Highway Over-dimension Load Pinch Points

Highway over-dimensional load pinch points are physical features on the state highway system that restrict the movement of an over-dimension load because of height, width, weight or length constraints. Based on the There are no highway over-dimensional load pinch points within the IMSA.

Rail Facilities

There are no rail facilities within the IMSA. The closest rail facilities are located southeast of the IMSA and consist of multiple rail lines and a below grade rail crossing along OR 238. Figure 16 illustrates the location of the rail facilities.

RIGHT OF WAY INVENTORY

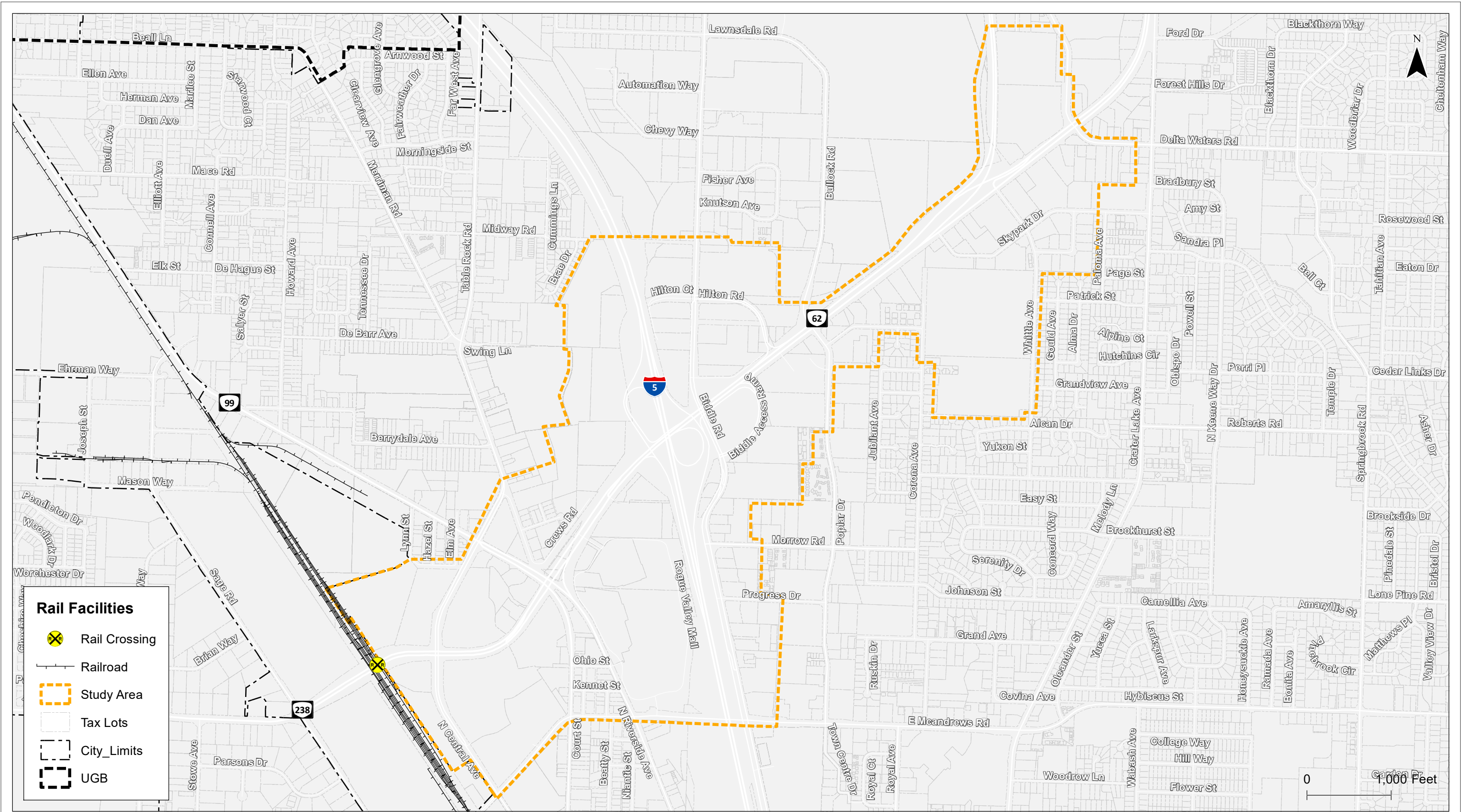
Right-of-way widths vary significantly within the IMSA. However, a cursory review of tax lot lines indicates that the existing right-of-way is sufficient along most of OR 62 as well as most other state and city facilities. Information on easements within the IMSA is currently not available. Figure 17 illustrates the tax lot lines overlaid on an aerial of the study area.

ACCESS INVENTORY

ODOT and the City of Medford have adopted access spacing standards for study area roadways. This section identifies ODOT's access spacing standards per Oregon Administrative Rule (OAR) 734 Division 51, and the City's access spacing standards per the current TSP. This section also identifies the access points along OR 62 and highlights access points within ¼ mile of the I-5 ramp terminal.

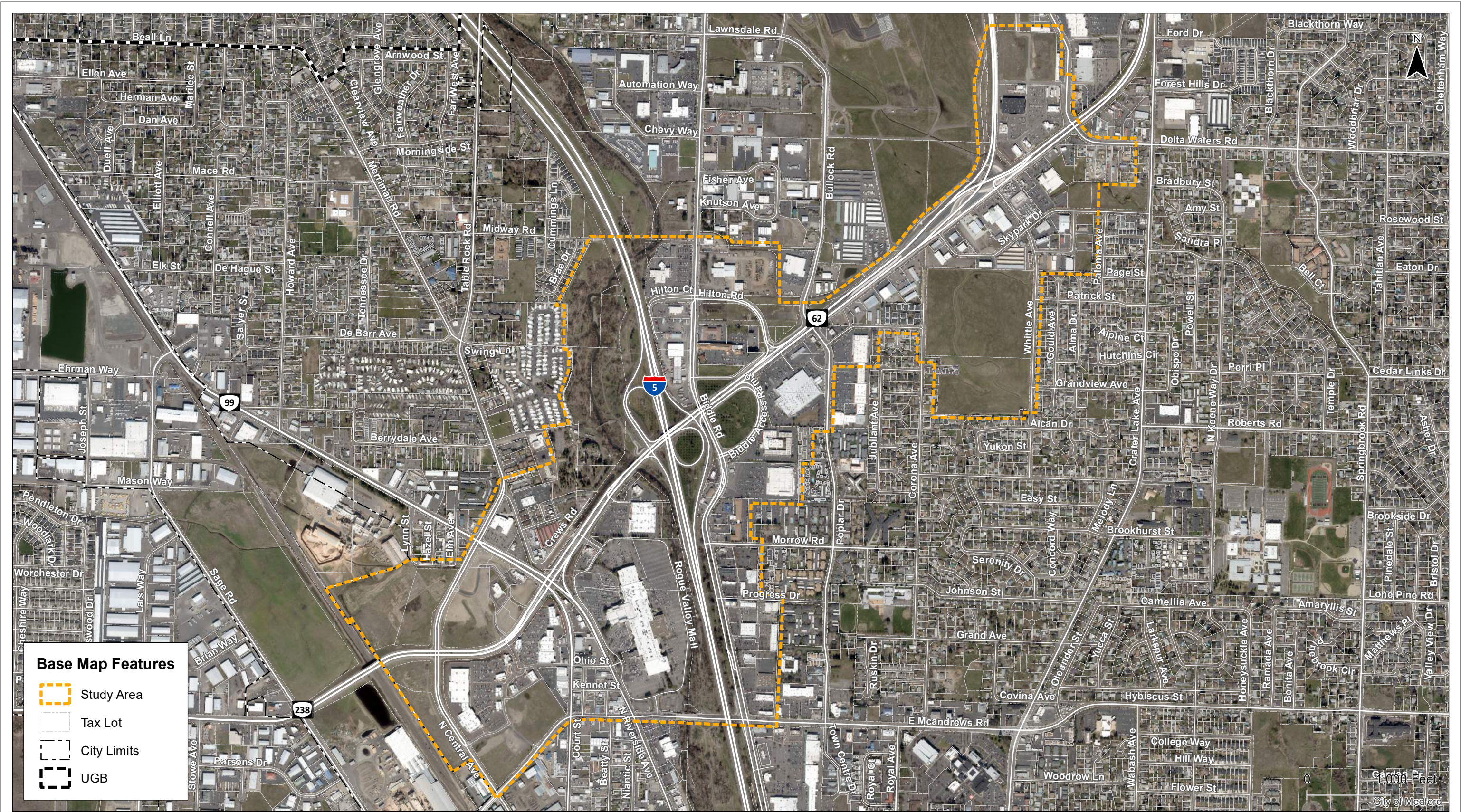
ODOT Access Spacing Standards

Access spacing standards for approaches to state highways are based on the classification of the highway and differ depending on average annual daily traffic (AADT) and posted speed. Table 3 summarizes the OHP classifications and designations of highways within the IMSA along with AADT, posted speeds, and the associated access spacing standards.



Rail Facilities
Medford, Oregon

Figure
16



Right-of-way
Medford, Oregon

Figure
17

Table 3: ODOT Access Spacing Standards

Route Name	Facility Extents	Classification/ Designation	2019 AADT	Posted Speed Limit (mph)	Access Spacing Standard (Feet)
OR 238	West IMSA Boundary to OR 99	District Highway	>5,000	45	500
OR 62	OR 99 to Bullock Road-Poplar Drive	Statewide Highway	>5,000	35	500
OR 62	Bullock Road-Poplar Drive to East IMSA Boundary	Statewide Highway	>5,000	45	800
OR 62 Bypass	OR 62 to North IMSA Boundary	Statewide Highway/ Expressway	>5,000	55	2,640
OR 99	North IMSA Boundary OR238-OR 62	District Highway	>5,000	40	500

City Access Spacing Standards

Access spacing standards for approaches to City arterial and collector streets are based on the speed limit of the roadway. Table 4 summarizes the City access spacing standards

Table 4: City Access Spacing Standards (Center-to-Center – Arterial and Collector Streets)

Posted Speed Limit (mph)	Access Spacing Standard (Feet)
25	145
30	195
35	250
40	315
45	385

Access Inventory

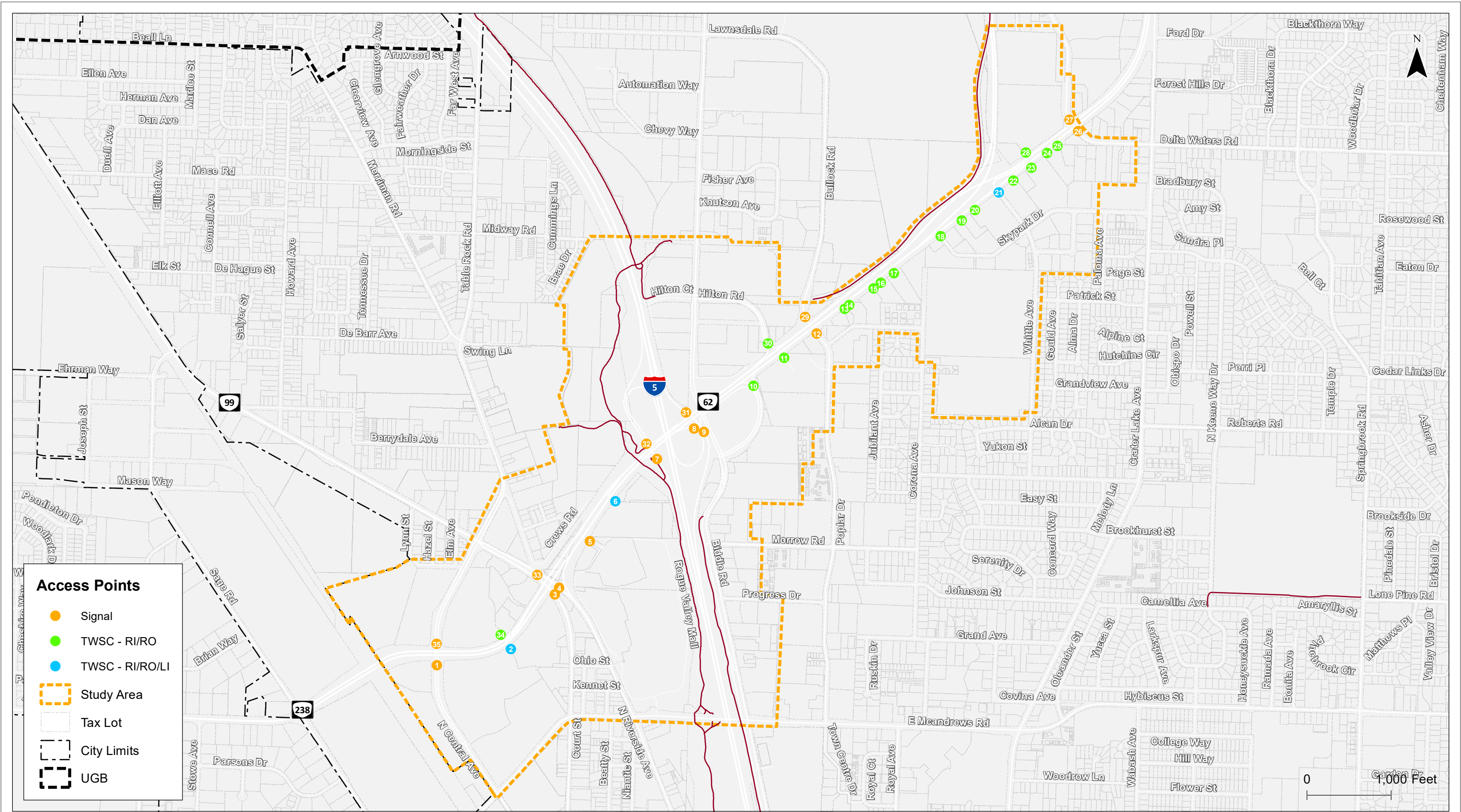
Figure 18 illustrates the location of access points along OR 62. Table 5 summarizes information related to the access points, including the location, approach type, approach control, restrictions, access width, and the tax lots and types of businesses/street connections served by the access. The access points shown in grey include the ramp terminals and all access points located within ¼ mile of the ramp terminals.

Table 5: Access Inventory (OR 62)

Map ID	Approach Type	Approach Control	Restrictions	Access Width (ft) ¹	Tax Lot	What Does the Access Serve?
1	Public	Signal	None	55	N/A	Central Avenue
2	Public	TWSC	RI/RO/LI	62	400, 401, 500, 700, 800, 900, 1100, 1400	Ohio Street
3	Public	Signal	None	35	N/A	Court Street (one-way SB)
4	Public	Signal	None	59	N/A	Riverside Avenue (one-way northbound)
5	Private	Signal	None	78	500, 501, 600, 601, 602, 2800	Rogue Valley Mall Entrance (west)
6	Private	TWSC	RI/RO/LI	42	100, 101, 103, 500, 501, 603, 604	Rogue Valley Mall Entrance (Target, east)
7	Public	Signal	None	25	N/A	I-5 SB On-ramp (one-way southbound)
8	Public	Free	None	25	N/A	I-5 NB On-ramp (one-way southbound)

Map ID	Approach Type	Approach Control	Restrictions	Access Width (ft) ¹	Tax Lot	What Does the Access Serve?
9	Public	Signal	None	43	N/A	I-5 NB off-ramp (one-way northbound)
10	Public	TWSC	RI/RO	58	N/A	Biddle Road Jug-handle (one-way NB)
11	Private	TWSC	RI/RO	35	100, 600, 700, 1400	Fred Meyer
12	Public	Signal	None	75	N/A	Poplar Street
13	Private	TWSC	RI/RO	30	900, 1000	Lakeway Veterinary Hospital
14	Private	TWSC	RI/RO	35	1100, 1200	Abby's Pizza
15	Private	TWSC	RI/RO	35	1300	Sherman Williams Paints
16	Private	TWSC	RI/RO	37	1400	Guitar Center
17	Private	TWSC	RI/RO	35	1500, 1600	Auto Complex
18	Public	TWSC	RI/RO	36	N/A	Sky Park Drive
19	Private	TWSC	RI/RO	36	4100, 4104	O'Reilly
20	Private	TWSC	RI/RO	44	2100	Dazey's
21	Public	TWSC	RI/RO/LI	36	N/A	Whittle Avenue
22	Private	TWSC	RI/RO	35	2100	All RV Needs
23	Private	TWSC	RI/RO	28	1900, 2000	Lava Lanes
24	Private	TWSC	RI/RO	35	1500, 1600, 1700, 1800, 2200	Arco
25	Private	TWSC	RI/RO	52	1500, 1600, 1700, 1800, 2200	Arco
26	Public	Signal	None	62	N/A	Delta Waters Road
27	Public	Signal	None	94	N/A	Delta Waters Road
28	Private	TWSC	RI/RO	30	500, 3000	Discount Tire
29	Public	Signal	None	98	N/A	Bullock Road
30	Public	TWSC	RI/RO	46	N/A	Hilton Road
31	Public	Signal	None	32	N/A	I-5 NB On-ramp (one-way northbound)
32	Public	Signal	None	80	N/A	I-5 SB Off-ramp (one-way southbound)
33	Public	Signal	None	110	N/A	OR 99
34	Private	TWSC	RI/RO	32	101, 102, 103, 105, 400 4300, 4600	Starbucks
35	Public	Signal	None	68	N/A	Central Avenue

¹Data from Google Earth aerial imagery – measured at stop bar location or approximately 10 feet from edge of roadway.



Access Points
Medford, Oregon

Figure
18