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MEMORANDUM

DATE: February 16, 2016

TO: 82nd Avenue Implementation Plan Project Team

FROM: John Bosket, PE
Gary Riggins
Darryl Michaud

SUBJECT: **82nd Avenue Implementation Plan**
Baseline Conditions Transportation Summary Memorandum P15230-000-002

The purpose of this memorandum is to present a broad overview of existing conditions over a segment of 82nd Avenue extending from NE Killingsworth Street (milepoint 0.23) in the City of Portland to Johnson Creek Boulevard (milepoint 7.54) in Clackamas County. The information provided was obtained from prior studies and readily available, pre-compiled data sources. No new analysis has been conducted of conditions on 82nd Avenue for this plan.

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Summary of Key Findings

- 82nd Avenue serves many purposes and is intended to accommodate multimodal travel, with shorter trips that access major activity centers being as important as longer trips.
- While there is only one bus route along 82nd Avenue (Route 72), it provides frequent service and access most hours of the day, every day of the week. There are over 20,000 boardings and alightings per weekday along 82nd Avenue.
- Bus Route 72 provides access to MAX at I-84. These bus stops are by far the most heavily used in the corridor and generate a high amount of pedestrian activity.
- The intersection at SE Division Street has the second most heavily used bus stops and the second highest amounts of both pedestrian and bicycle traffic.
- Sidewalks are available nearly everywhere in the corridor, but no separate bicycle facilities are available anywhere.
- Traffic volumes north of NE Freemont Street generally stay below 20,000 vehicles per day. From NE Freemont Street to the south, traffic volumes are consistently between 22,000 and 27,000 vehicles per day, but reach almost 30,000 at SE Johnson Creek Boulevard.
- While traffic volumes vary throughout the corridor, the percentage of truck traffic stays at around 2 to 3%.
- There are 30 traffic signals between NE Killingsworth Street and SE Johnson Creek Boulevard, with an average of ¼-mile spacing between them.
- The intersection at SE Johnson Creek Boulevard experiences the most crashes, but the segment of 82nd Avenue between SE Clinton Street and SE Schiller Street (including the intersections at SE Woodward Street, SE Powell Boulevard, and SE Holgate Boulevard) experiences far more crashes than any other segment of comparable length.

82nd Avenue Functional Classifications and Designations

The Oregon Department of Transportation (ODOT) owns and maintains 82nd Avenue throughout the 82nd Avenue of Roses project area (from NE Killingsworth Street to SE Johnson Creek Boulevard).[1] ODOT maintains the road from curb to curb, but shares jurisdiction over some of the sidewalks with the City of Portland. ODOT and the City of Portland also share responsibility in the maintenance and adjustments of traffic signals.

ODOT has classified 82nd Avenue as a District Highway and has designated it as part of the National Highway System. 82nd Avenue has no state or federal designation as a freight or truck route.

The City of Portland has classified 82nd Avenue as a Major City Traffic Street, a Major Transit Priority Street, a City Walkway, a Regional Truckway, Major Emergency Response route, and a Regional Main Street/ Regional Corridor (varies with location). However, in the current Draft Transportation System Plan update the following classifications are being proposed:

Regional Corridor (intended to serve people throughout the City and are designed to emphasize multimodal mobility between cities in the region)

- Killingsworth Street to Sandy Boulevard

Civic Main Street (intended to serve people throughout the City and are designed to emphasize multimodal access to major activity centers)

- Sand Boulevard to Siskiyou Street
- Thompson Street to Glisan Street
- Burnside Street to Alder Street
- Mill Street to Lafayette Street
- Raymond Court to Woodstock Boulevard

Civic Corridor (intended to serve people throughout the City and are designed to emphasize multimodal mobility between major activity centers)

- Siskiyou Street to Thompson Street
- Glisan Street to Burnside Street
- Alder Street to Mill Street
- Lafayette Street to Raymond Court
- Woodstock Boulevard to Clatsop Street

Within Clackamas County, the county has classified 82nd Avenue as a Principal Arterial.

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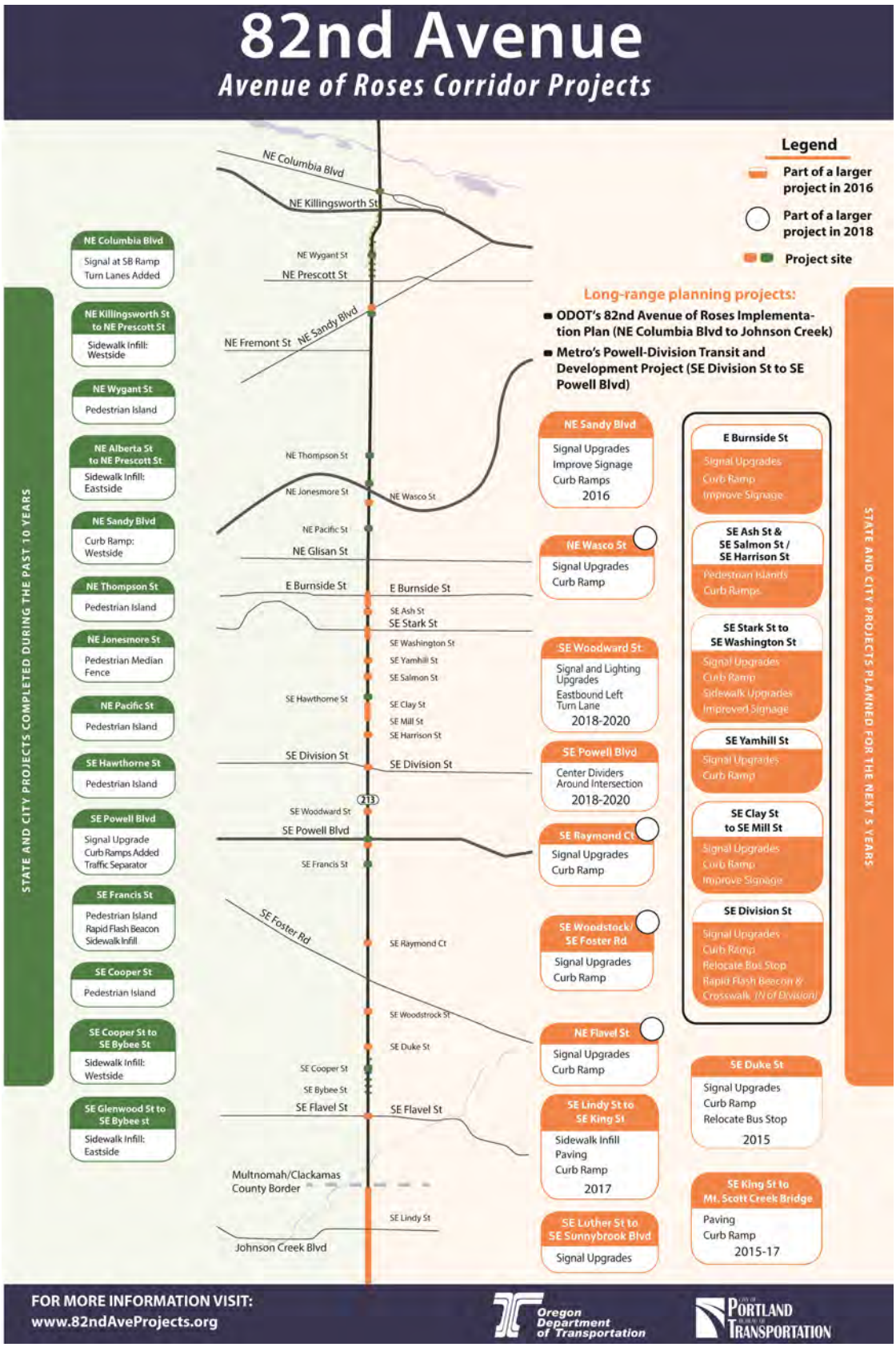
[1] 82nd Avenue is a resoluted highway, meaning it is a state highway routed over an existing city street. Resoluted right-of-way means ODOT received, via resolution formally enacted by a County Commission/ Court, county acquired rights-of-way for a given route for use as a state highway under the old establishment laws. These transferred rights-of-way were usually an easement or donated lands by deed from the adjacent property owners. Generally, for resoluted ODOT highways that are routed over existing city streets, ODOT only has curb-to-curb (or to the outside of the ditch line if there is no curb) surface jurisdiction and maintenance responsibility (ORS 373.020).

Completed and Planned Corridor Projects

Exhibit 1



Traffic Signal Locations[2]

Exhibit 2: Distance between Traffic Signals

Note: Distances are approximate to the center of the crossing

Distance	Signal Location to Signal Location (north to south)
2637’	NE Killingsworth to NE Prescott St. (light at Webster allows for continuous turn for eastbound vehicles)
1090’	NE Prescott to NE Sandy Blvd.
1561’	NE Sandy Blvd. to NE Fremont St.
1320’	NE Fremont St. to NE Siskiyou St.
684’	NE Siskiyou St. to NE Alameda St. (pedestrian activated signal)
1976’	NE Alameda St. to NE Tillamook St.
1164’	NE Tillamook St. to NE Jonesmore St.
602’	NE Jonesmore St. to NE Wasco St.
255’	NE Wasco St. to NE Multnomah St.
1924’	NE Multnomah St. to NE Glisan St.
671’	NE Glisan St. to NE Davis St.
647’	NE Davis St. to Burnside
1333’	Burnside to SE Stark
267’	SE Stark to SE Washington St.
814’	SE Washington St. to SE Yamhill St.
2209’	SE Yamhill St. to SE Mill St.
1920’	SE Mill St. to SE Division St.
1236’	SE Division St. to SE Woodward St.
1458’	SE Woodward St. to SE Powell Blvd.
1950’	SE Powell Blvd. to SE Boise St.
665’	SE Boise St. to SE Holgate
1349’	SE Holgate to SE Raymond St.
1382’	SE Raymond St. to SE Foster Rd.
1218’	SE Foster Rd. to SE Woodstock Blvd.
1312’	SE Woodstock Blvd. to SE Duke St.
2635’	SE Duke St. to SE Flavel St.
1538’	SE Flavel St. to Springwater Corridor Trail ped activated light near Crystal Springs
2025'	Springwater Corridor Trail ped activated light near Crystal Springs to SE Lindy St.
710'	SE Lindy St. to SE Johnson Creek Blvd.

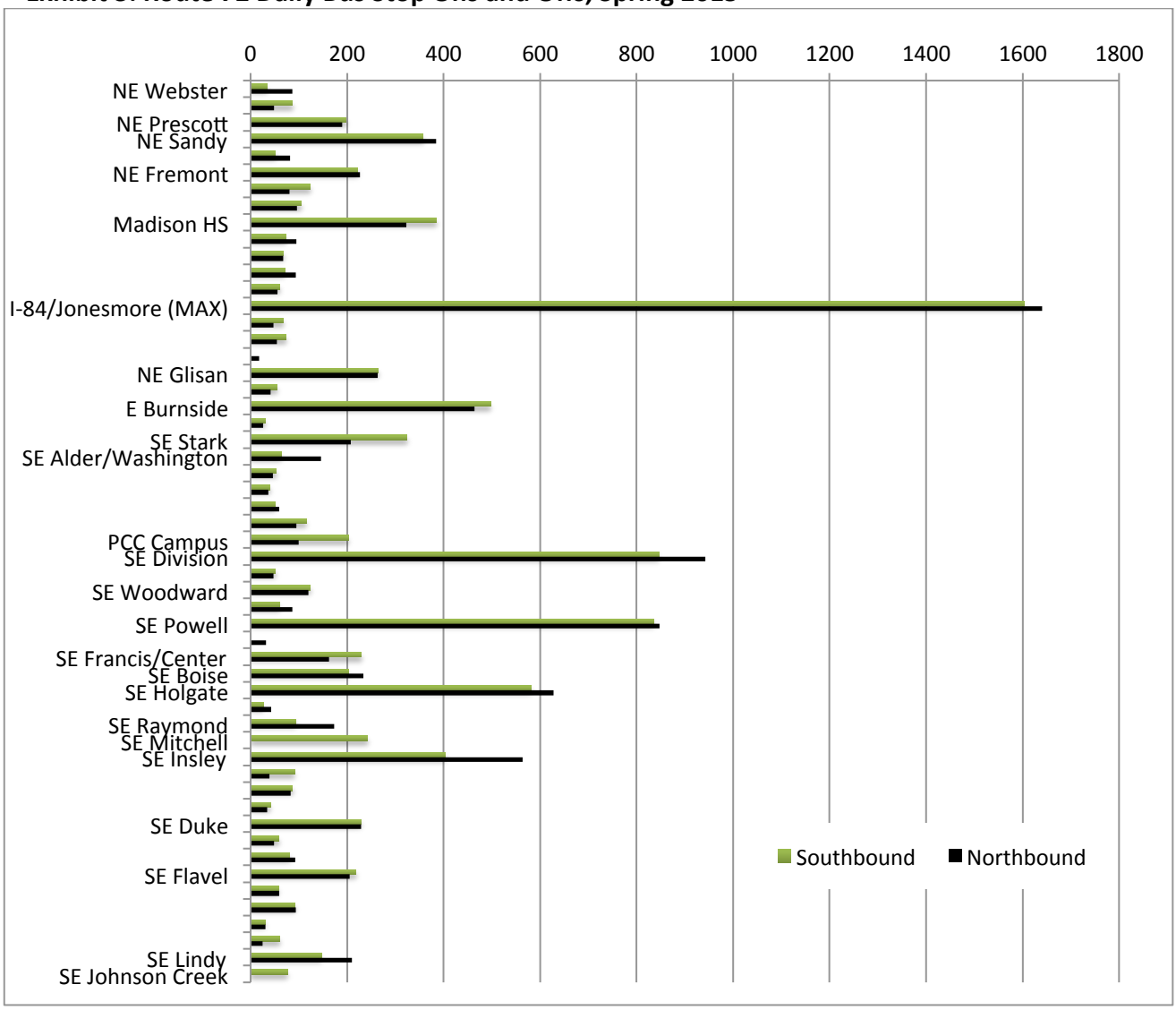
[2] Primary source: 82nd Avenue of Roses High Crash Corridor Safety Plan, City of Portland Office of Transportation, 2008

Transit

Route 72 is the major transit route along the corridor, though Route 19 travels along 82nd Avenue for a half mile between SE Duke Street and SE Flavel Street. Route 72 runs seven days a week. On weekdays, it runs very frequently (10 to 20-minute headways) from about 5AM to 1AM. Service is similar on weekends, but headways can reach closer to 30 minutes during the early and late hours.

Exhibit 3 shows daily bus stop activity along the corridor. The stops providing access to MAX at I-84 are clearly the most heavily used. Further south, the 1.5-mile segment between Division Street and Foster Road (Insley) is the second most heavily accessed area.

Exhibit 3: Route 72 Daily Bus Stop Ons and Offs, Spring 2015



Traffic Volumes

Exhibit 4: Average Annual Daily Traffic along 82nd Avenue, 2014 (both directions)

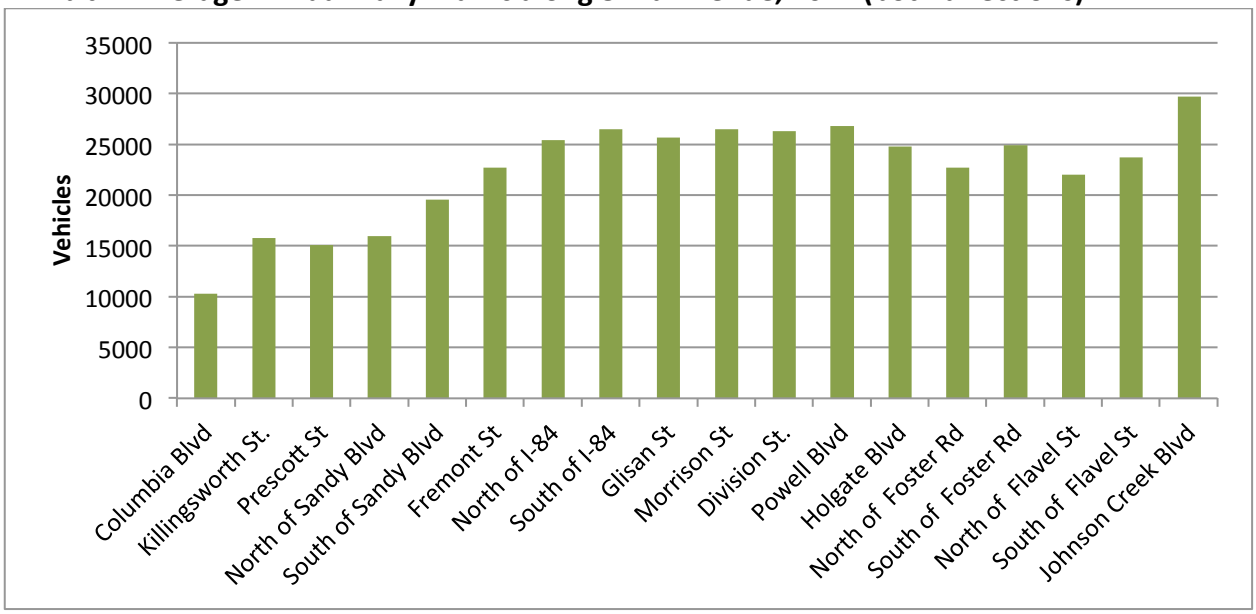
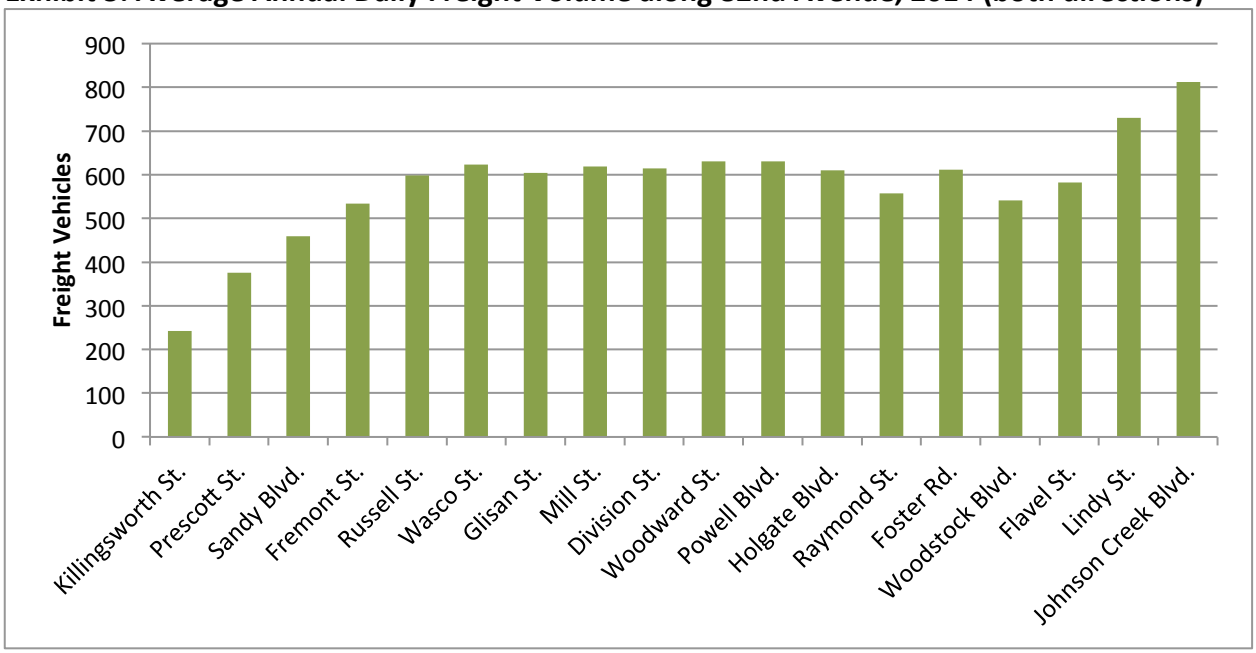


Exhibit 5: Average Annual Daily Freight Volume along 82nd Avenue, 2014 (both directions)



Average daily traffic volumes on 82nd Avenue are lowest north of Sandy Boulevard, with less than 20,000 vehicles per day. Traffic volumes are highest near Johnson Creek Boulevard, nearly reaching 30,000 vehicles per day.

Freight traffic volumes follow a similar pattern, with lower volumes north of Sandy Boulevard and the highest volumes near Johnson Creek Boulevard.

Traffic Crashes

Exhibit 6: Total Crashes along 82nd Avenue, 2010-2014

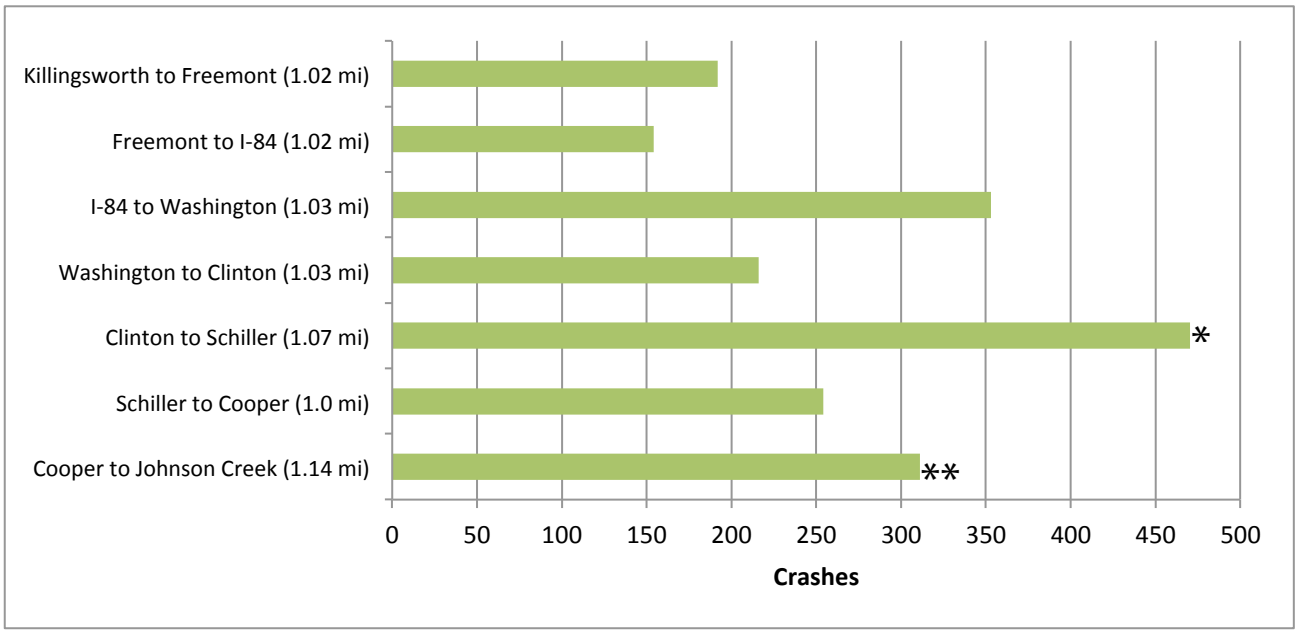
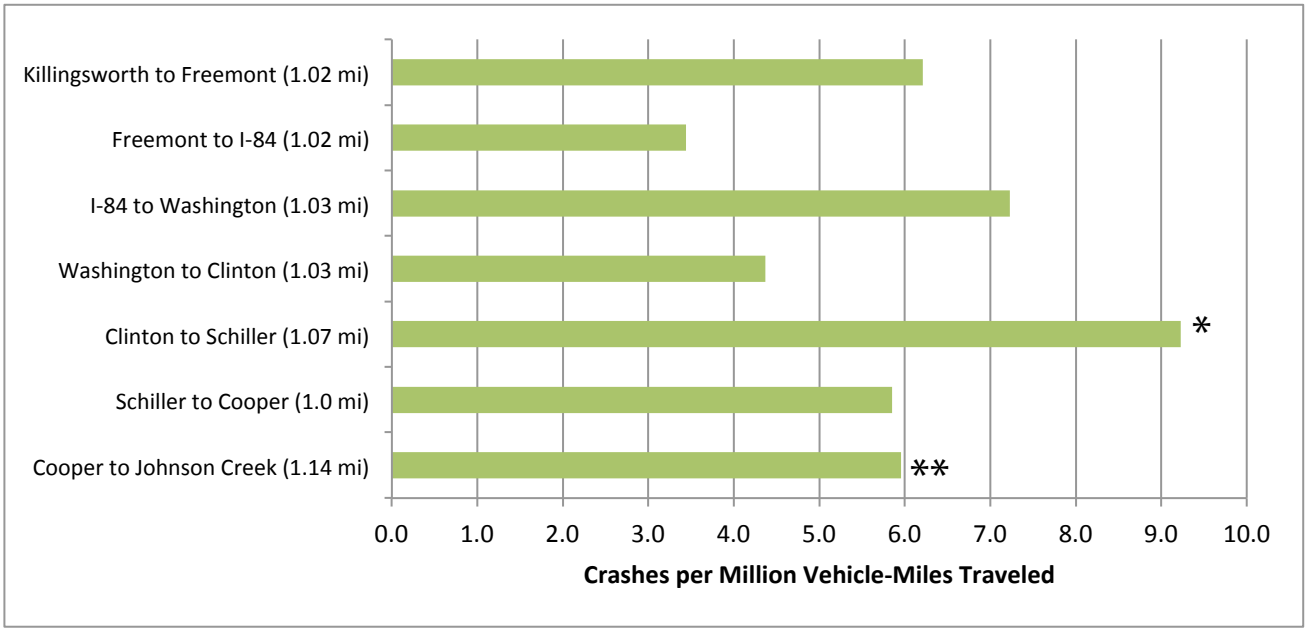


Exhibit 7: Rate of Crashes Compared to Volume of Traffic along 82nd Avenue, 2010-2014



* Safety improvements are planned at the intersections with Woodward Street and Powell Boulevard (see Exhibit 9).

** Safety improvements are planned south of Luther Street (see Exhibit 9).

Exhibit 8: Crashes on 82nd Avenue, 2010-2014*

82nd Avenue Cross Street	Crashes	82nd Avenue Cross Street	Crashes
SE Johnson Creek Boulevard	77	SE Ash St	10
SE Division St	57	SE Francis St	10
NE Glisan St	52	SE Duke St	10
NE Fremont St	48	**SE Boise St**	10
SE Woodstock Blvd	41	NE Multnomah St	10
SE Foster Rd	41	SE Gladstone St	9
SE Washington St	40	**SE Mitchell St**	9
SE Powell Blvd**	40	SE Lambert St	8
E Burnside St	38	SE Bush St	8
SE Flavel St	28	SE Glenwood St	7
NE Sandy Blvd	28	**SE Raymond St**	7
SE Holgate Blvd	25	NE Klickitat St	7
SE Stark St	25	SE Oak St	6
SE Rhine St	22	SE Raymond Ct	6
NE Prescott St	22	NE Milton St	6
SE Woodward St**	21	NE Siskiyou St	6
NE Tillamook St	18	SE Madison St	6
NE Wasco St	16	SE Tibbetts St	6
NE Killingsworth St	15	SE Cooper St	6
SE Lafayette St	15	SE Harney St	6
SE Clinton St	14	NE Russell St	6
SE Yamhill St	13	NE Pacific St	5
NE Jonesmore St	12	SE Ogden St	5
SE Center St	12	SE Insley St	5
SE Brooklyn St	12	SE Crystal Springs Blvd	5
NE Thompson St	12	SE Harrison St	5
SE Cora St	11	SE Malden St	5
SE Mill St	11		

* Only intersections experiencing 5 or more crashes during this period are reported.

** Intersections were identified as crash hot-spot locations with high mitigation benefit/cost ratios by ODOT's All Roads Transportation Safety (ARTS) program.

BOLD intersections are ranked in the top 10% of the Oregon Department of Transportation's (ODOT's) 2014 Safety Priority Index System (SPIS) sites. The SPIS is used to perform network screening on the state highway network and to identify and prioritize those sites that have promise as sites for potential safety improvements and merit further investigation. Only the sites with the highest rankings are investigated.

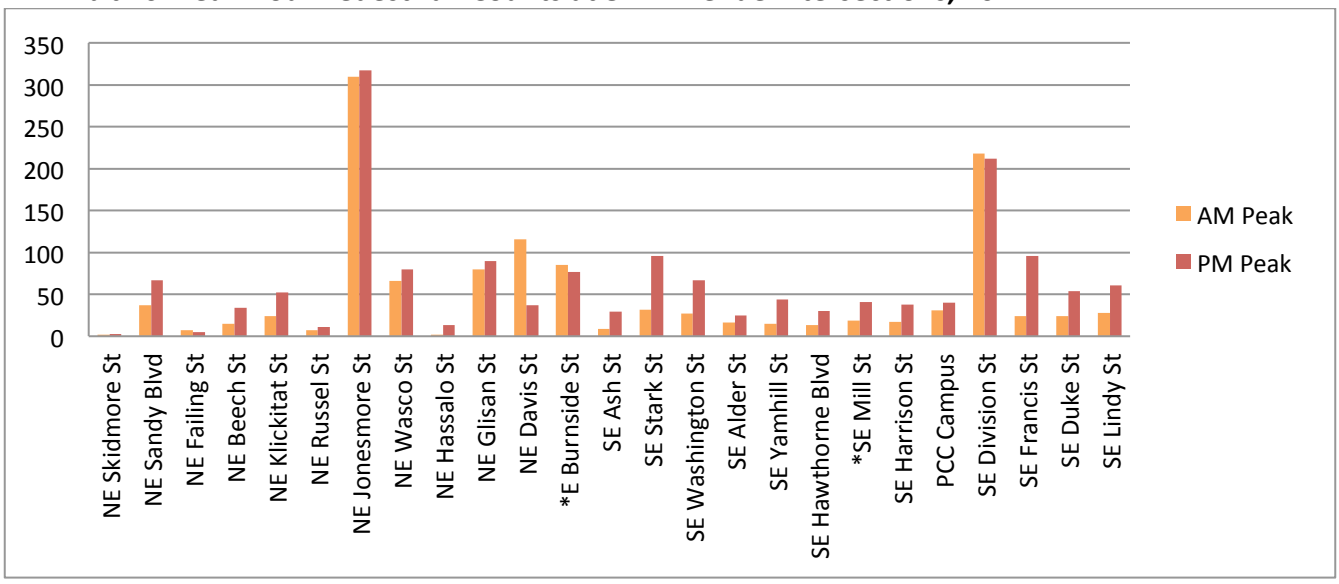
ODOT's All Roads Transportation Safety (ARTS) program is a collaborative effort between ODOT and local agencies to reduce fatal and serious injury crashes on all public roads using a data-driven and jurisdictionally blind process. Three safety improvement projects were recently identified along 82nd Avenue through the ARTS program. These projects are described below.

Exhibit 9: Proposed Safety Improvement Projects from the ODOT All Roads Transportation Safety Program

Locations	Problems	Proposed Solutions
82nd Avenue @ SE Woodward Street Intersection	53% rear end crashes, mostly on 82nd Ave. 11% ped-related crashes, high-severity Side street 8-inch signal heads and no backboards. Westbound left turn lane, but no eastbound left turn lane. No lighting at intersection.	Woodward eastbound will need widening for left turn lane. Full signal upgrade, including 4 poles, due to widening [$1,150,000] Possible bus pullout. Install lighting for all legs [included in signal upgrade] Signal conspicuity [$15,000]. Need to coordinate construction with TriMet Bus Rapid Transit (2018-2020 construction), identified as likely station location.
82nd Avenue @ SE Powell Boulevard Intersection	56% rear end, 24% turn, 13% sideswipe/overtaking crashes. Congestion. Access related crashes.	Install median treatment with roadway widening [$50,000x2]. Widen east leg 4 feet for 415 feet from crosswalk. Widen north leg 4 feet for 340 feet from crosswalk [$1,900,000].
82nd Avenue: SE Luther Street to SE Sunnybrook Boulevard	Stop signs and stop bars at SE 82nd Ave and SE Luther Rd, SE Cornwell St, SE Lamphier St, SE Sunnyside Dr. Change from protected-permissive lefts to protected lefts on 82nd and Overland.	Reflectorized backplates and supplemental signal heads at 82nd and SE Overland St, SE Lindy St, SE Johnson Creek Blvd, SE Otty Rd, SE King Rd, SE Boyer Rd, SE Causey Ave, SE Monterey Ave, SE Sunnyside Rd/SE Harmony Rd, SE Sunnybrook Blvd

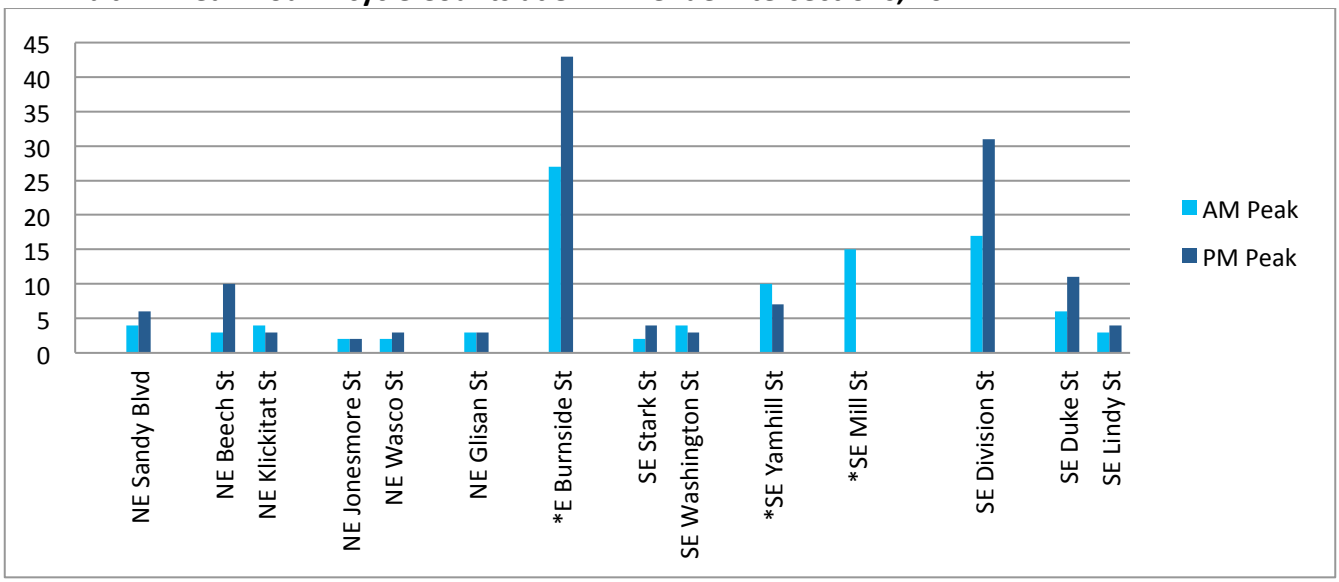
Pedestrian and Bicycle Volumes

Exhibit 10: Peak Hour Pedestrian Counts at 82nd Avenue Intersections, 2014



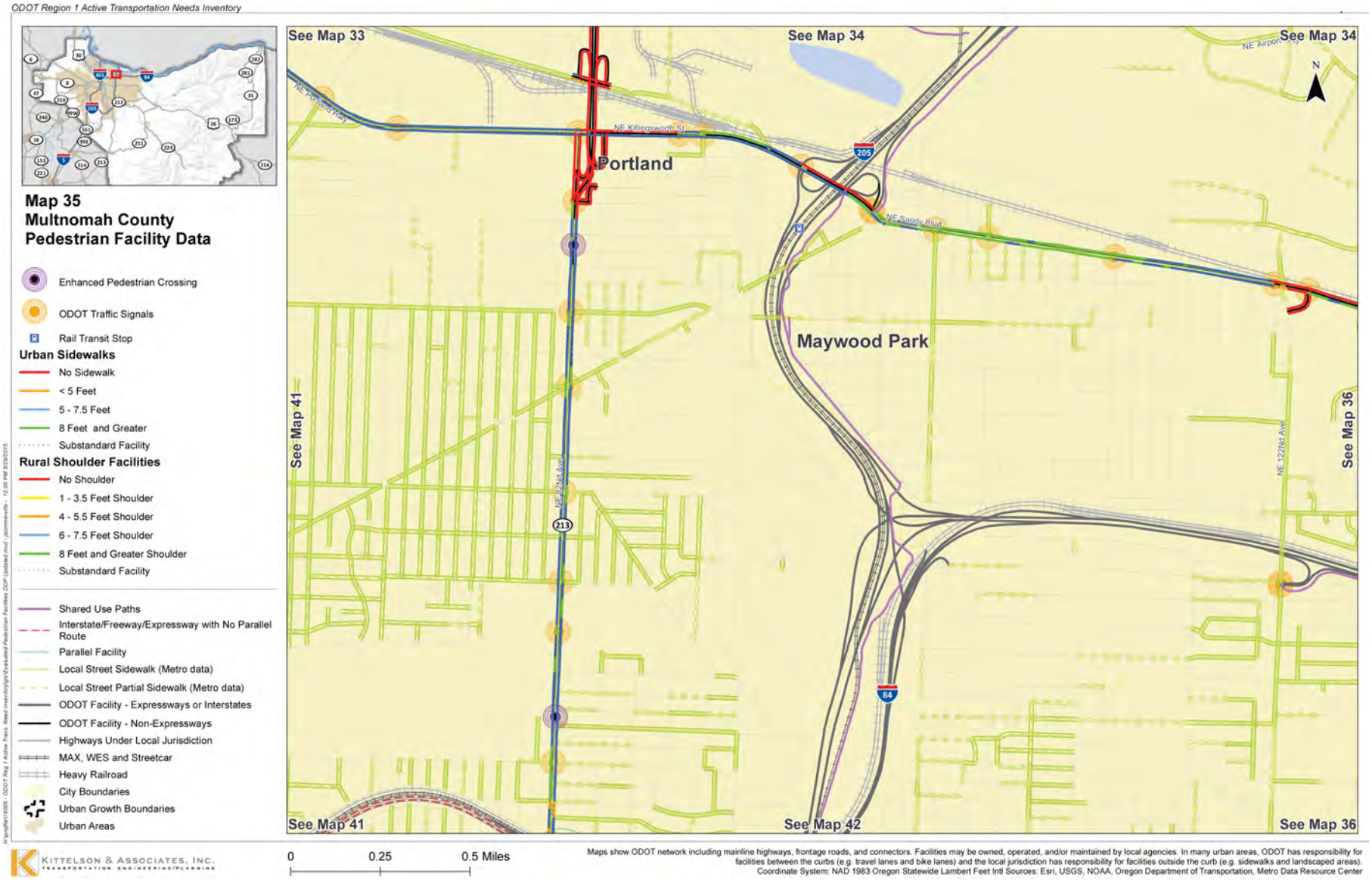
* = counts taken at vehicle peak hour, not necessarily pedestrian peak hour

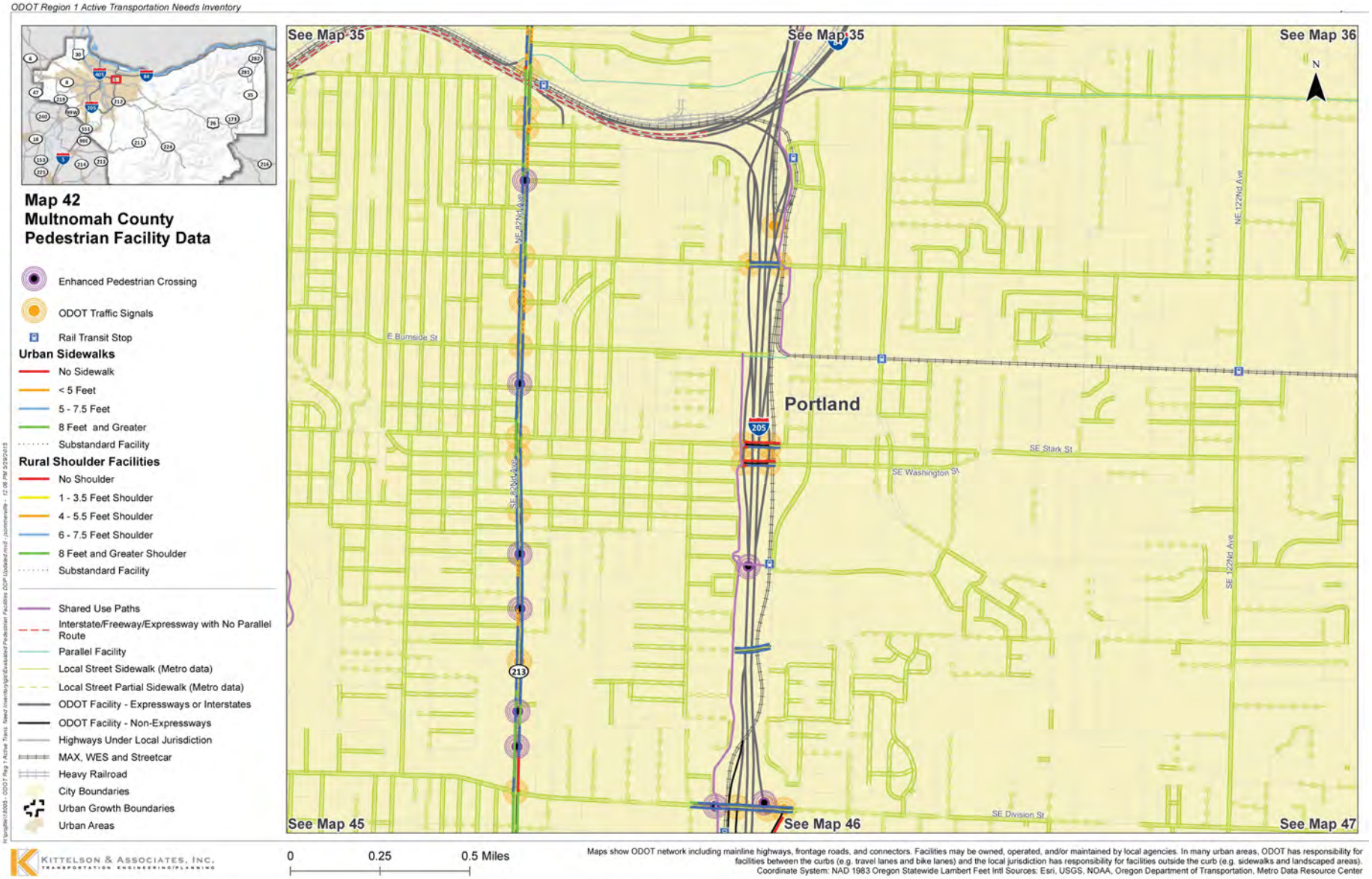
Exhibit 11: Peak Hour Bicycle Counts at 82nd Avenue Intersections, 2014



* = counts taken at vehicle peak hour, not necessarily bicycle peak hour

Pedestrian Facilities (Exhibits 12-19)




ODOT Region 1 Active Transportation Needs Inventory
Map 42
Multnomah County
Pedestrian Facility Data
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Rail Transit Stop
Urban Sidewalks
No Sidewalk
< 5 Feet
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8 Feet and Greater
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Urban Growth Boundaries
Urban Areas
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KITTELSON & ASSOCIATES, INC.
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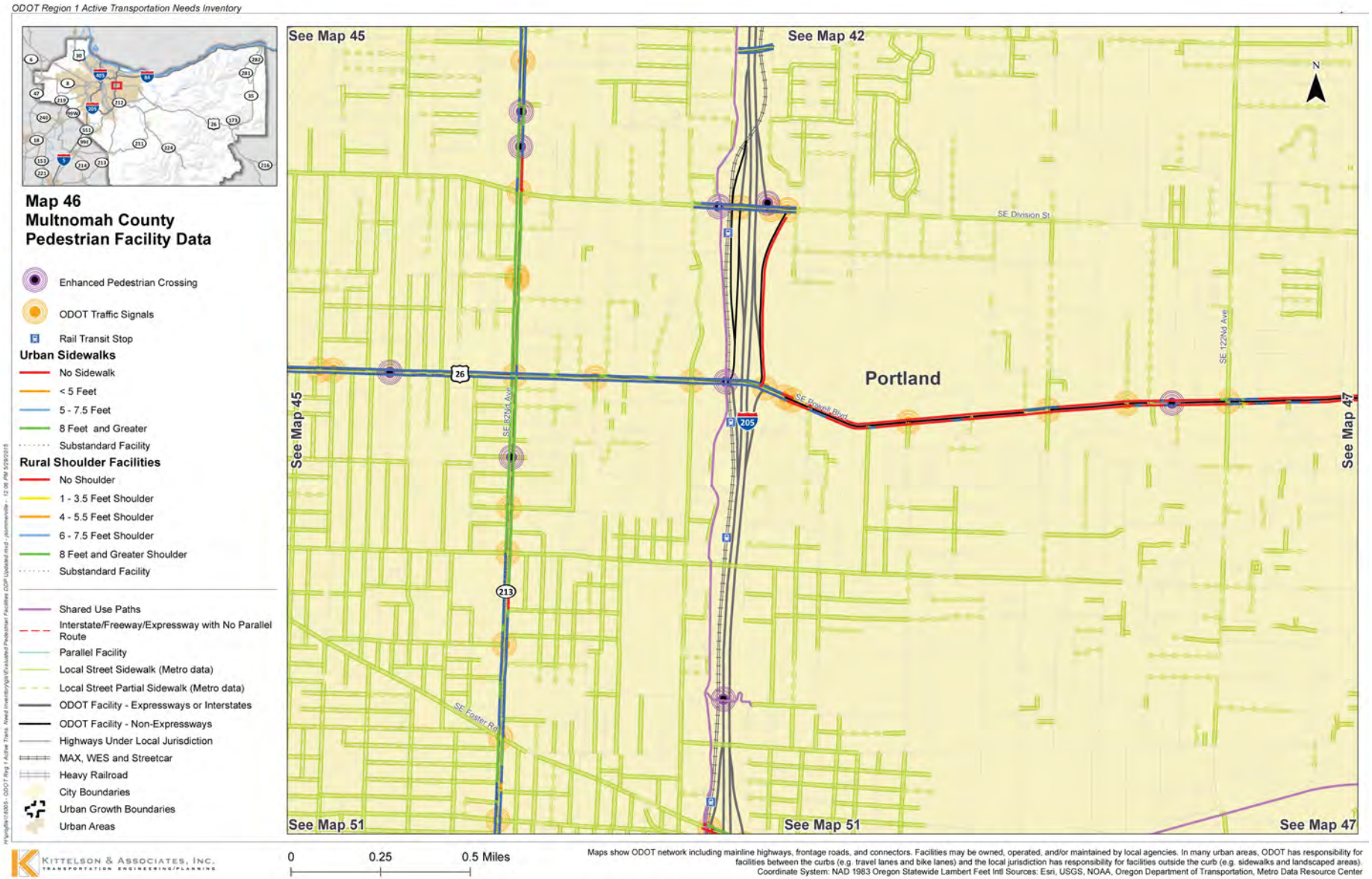
Maps show ODOT network including mainline highways, frontage roads, and connectors. Facilities may be owned, operated, and/or maintained by local agencies. In many urban areas, ODOT has responsibility for facilities between the curbs (e.g. travel lanes and bike lanes) and the local jurisdiction has responsibility for facilities outside the curb (e.g. sidewalks and landscaped areas).
Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl Sources: Esri, USGS, NOAA, Oregon Department of Transportation, Metro Data Resource Center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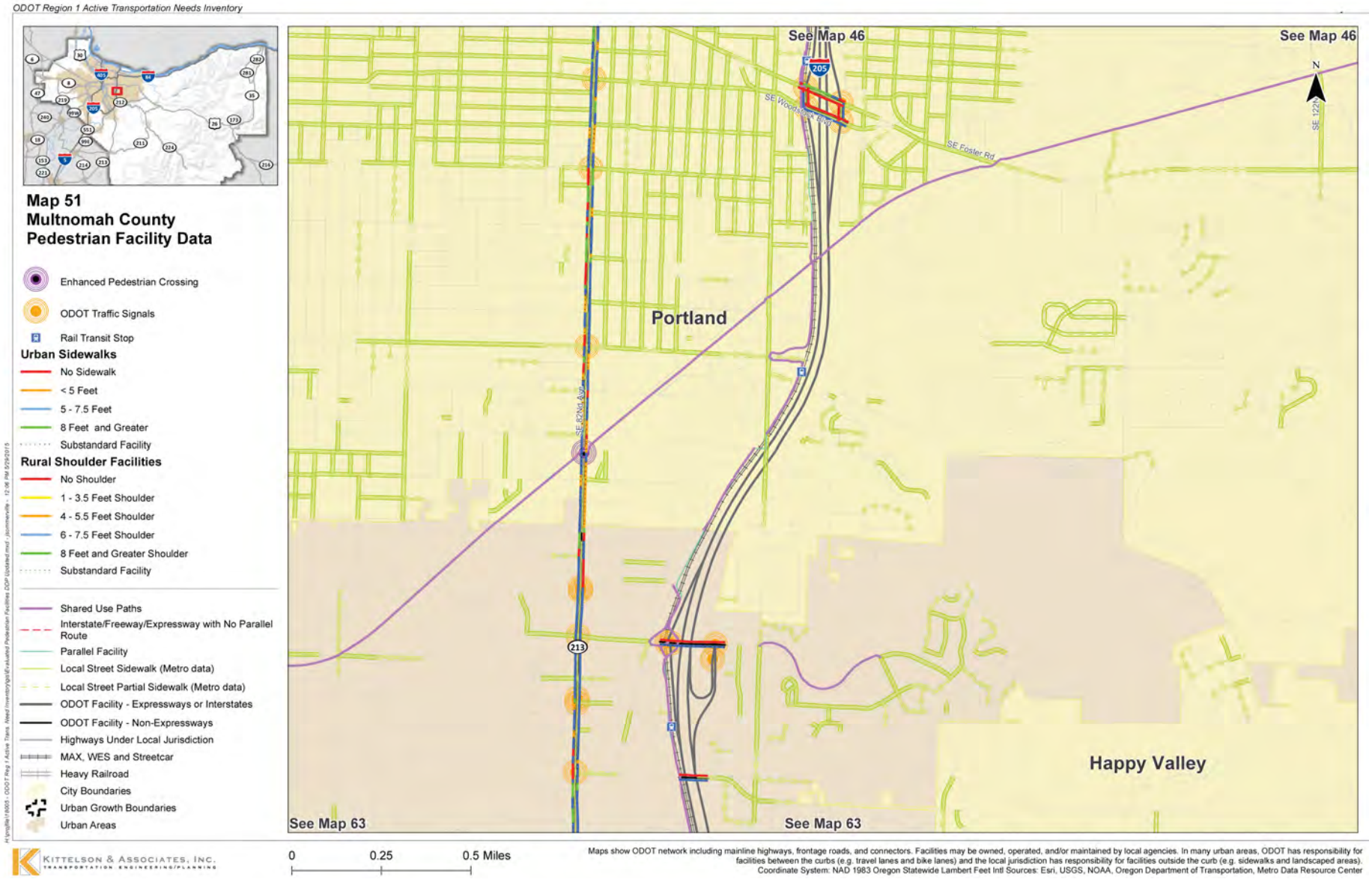
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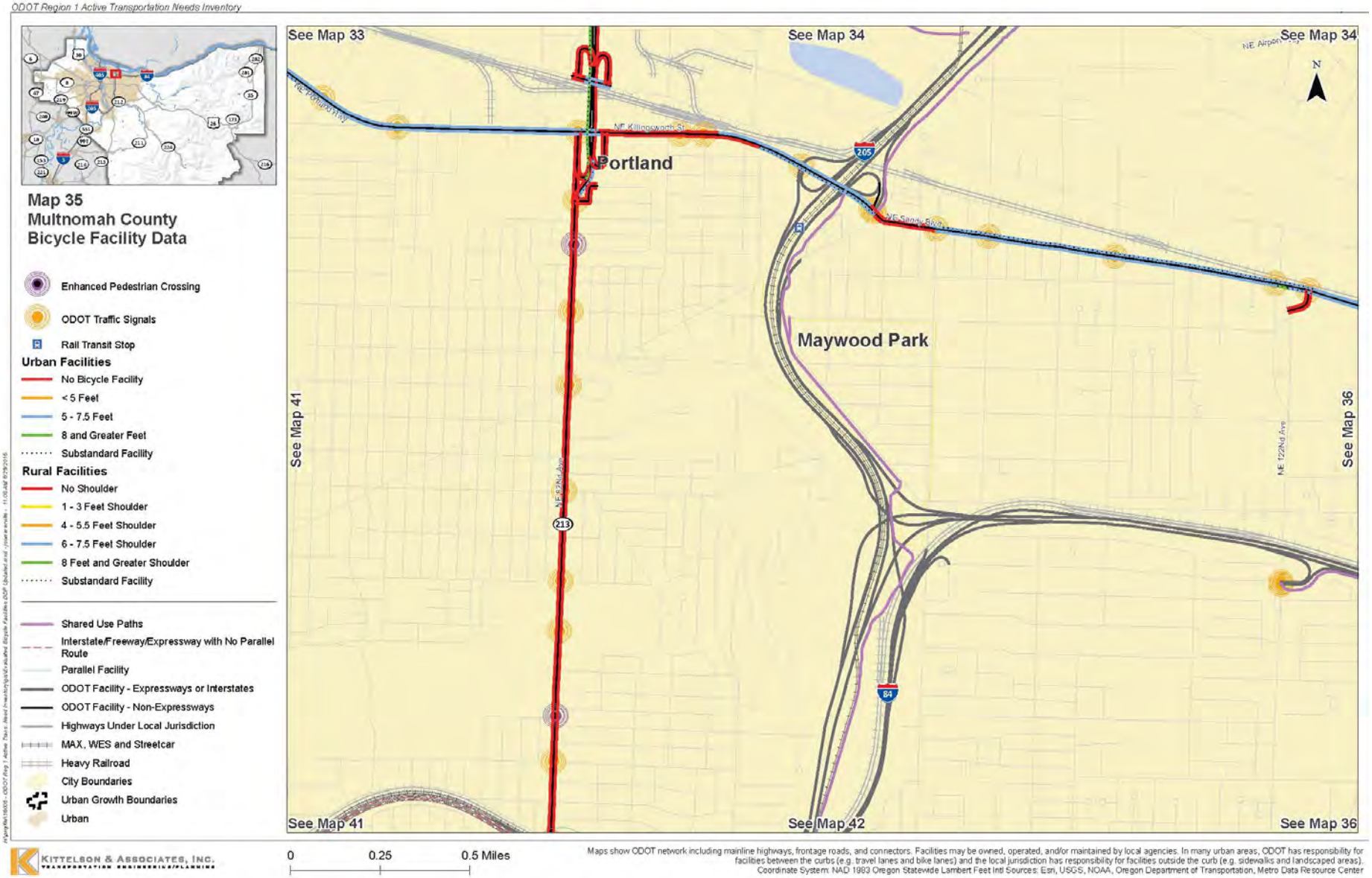
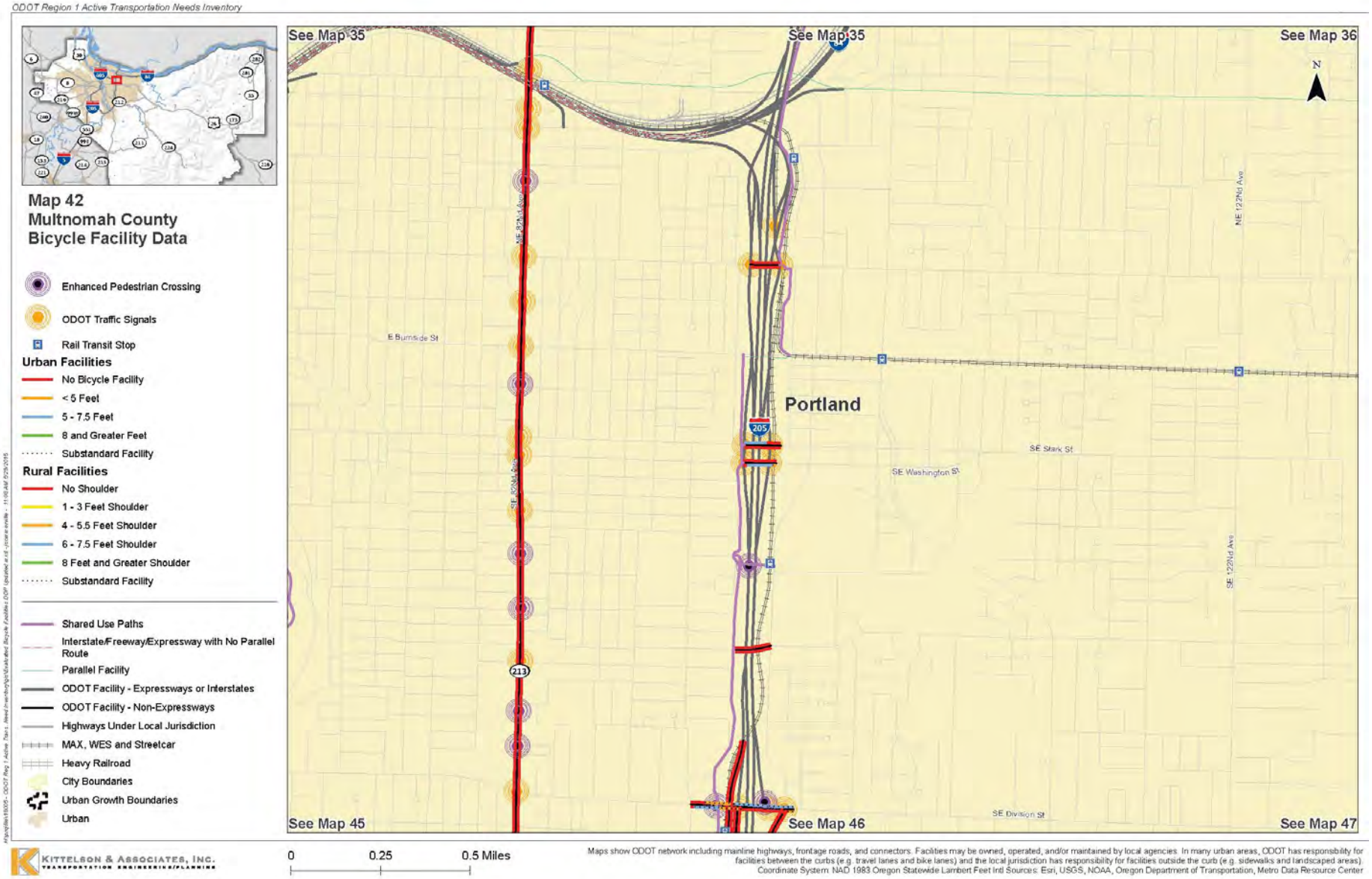
Bicycle Facilities

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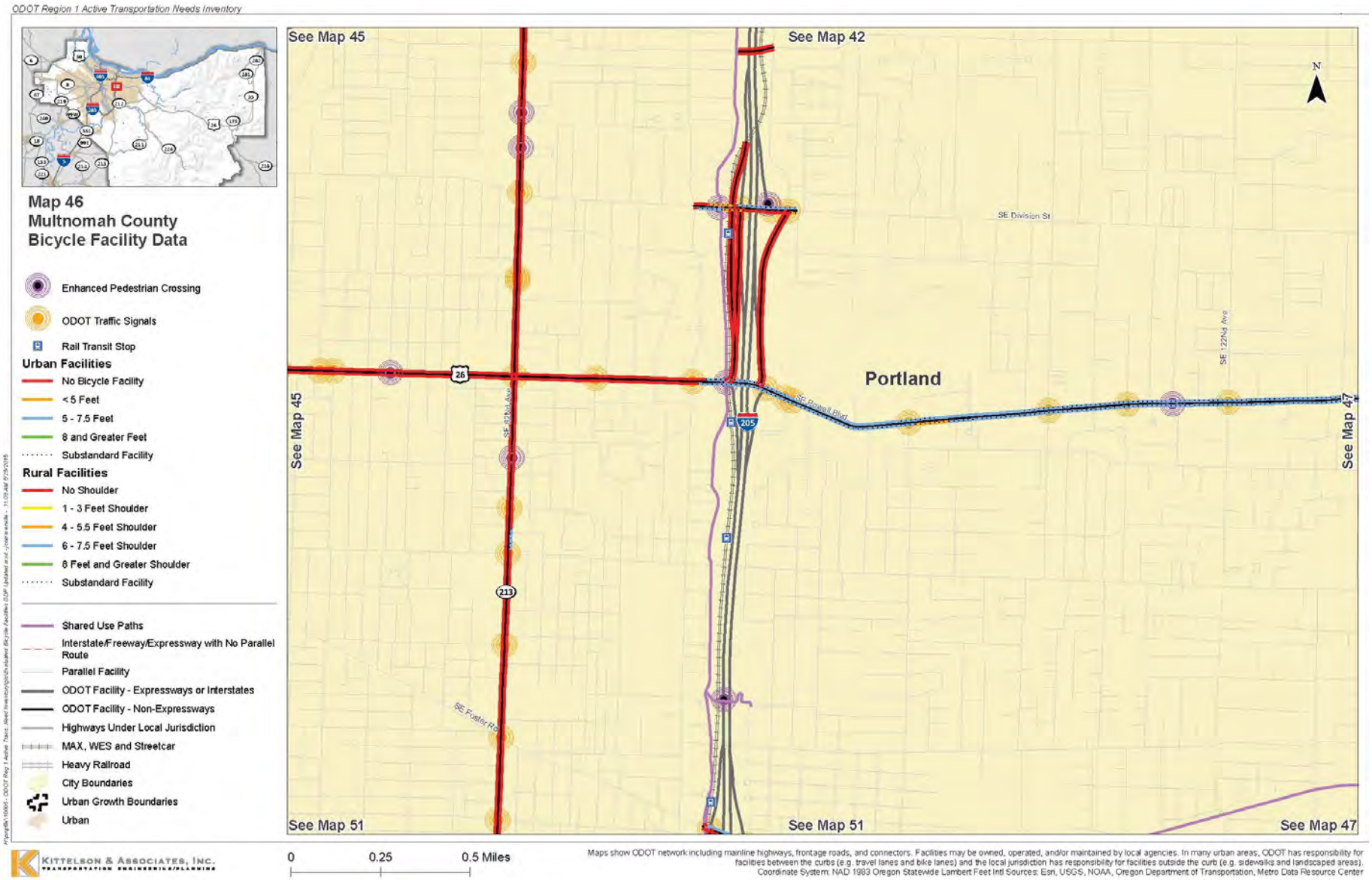
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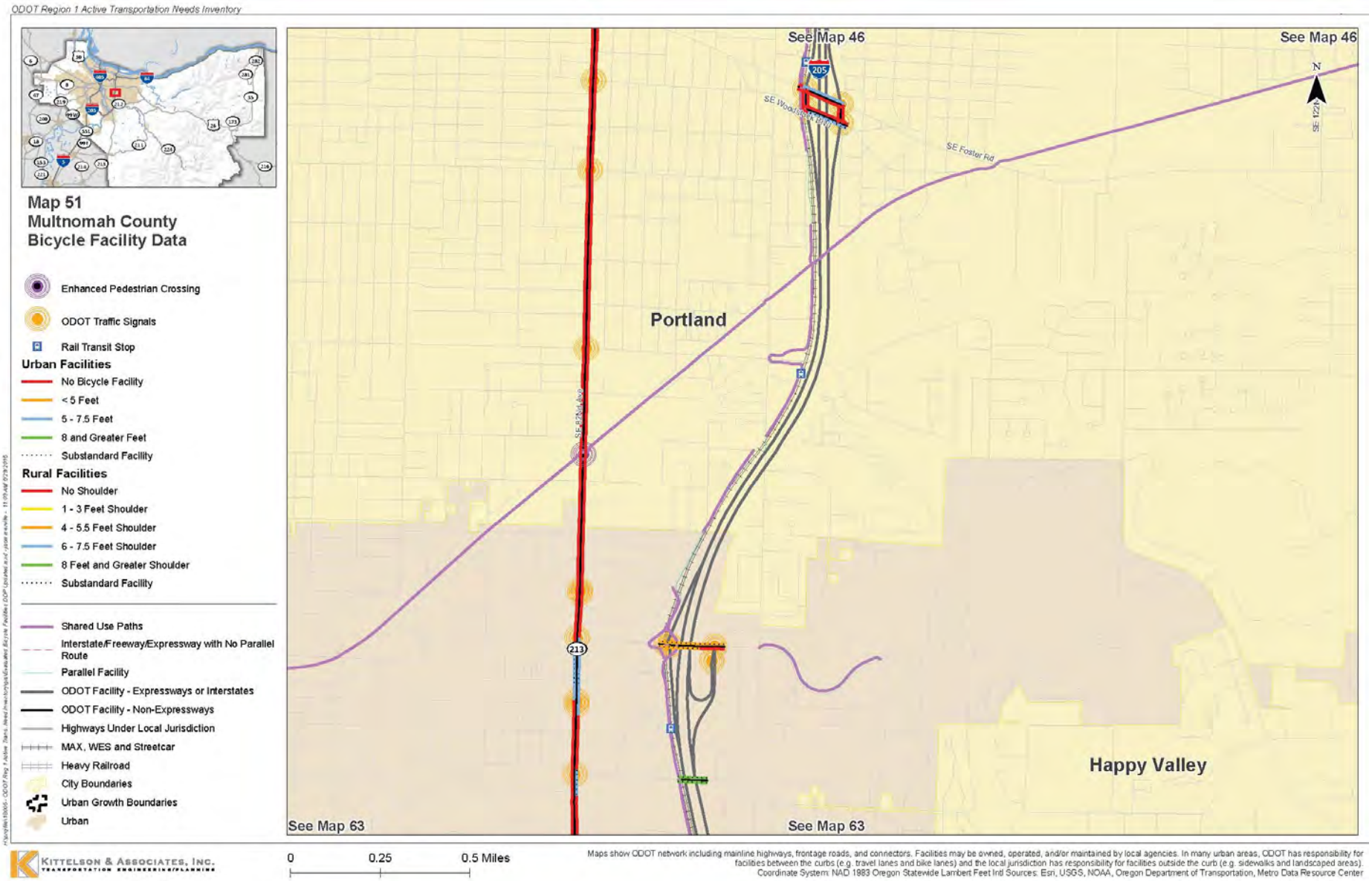
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0.25
0.5 Miles
Maps show ODOT network including mainline highways, frontage roads, and connectors. Facilities may be owned, operated, and/or maintained by local agencies. In many urban areas, ODOT has responsibility for facilities between the curbs (e.g. travel lanes and bike lanes) and the local jurisdiction has responsibility for facilities outside the curb (e.g. sidewalks and landscaped areas).
Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl Sources: Esri, USGS, NOAA, Oregon Department of Transportation, Metro Data Resource Center