Portland Metro Rideshare

Market Research and Implementation Plan

Task B: Market Analysis Technical Memorandum

July 2005

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Market Analysis

Whereas the baseline research described current ridesharing patterns to the region's largest employment areas (see Technical Memorandum A), this research is intended to show where the most promising future opportunities for carpooling and vanpooling may lie. In general, potential rideshare markets were identified by looking for relatively large trip origin "clusters" (i.e., locations) where a significant number of auto commuters have relatively poor transit access to a particular employment center. Poor transit access for these commuters could be due to: an absolute lack of transit service, infrequent service, or a high number or transfers (the specific method for measuring transit accessibility is described in next section).

This analysis focuses on clusters located 10 or miles from the center of each employment area. These are areas that are potentially the most promising for new carpool and vanpool services. For vanpools in particular, the time it takes to collect the participants often becomes longer than the trip unless the trip is of sufficient length.

As with the baseline research, this market analysis is intended to inform the development of a comprehensive regional ridesharing program (Task C of this project).

Methodology

This analysis evaluates the same 16 regional employment centers profiled in the baseline analysis (technical memorandum A). These areas account for the majority of employment in the Portland metropolitan area, and place a higher priority on the use of alternative travel modes.

The principal data sources used for the market analysis included:

- Census for Transportation Planning Package (CTPP), Part 3 (origin / destination), 2000.
- Metro Regional Travel Model

The approach to the market analysis is to compare commuter trips by mode to transit travel times for each of the market analysis areas. Places that have relatively poor transit service, produce a large concentration of trips, and are located over ten miles from the market area have better potential as a market for car-pool and van-pool services. Each of the attached maps depicts this information (all maps appear at the end of this memo).

The Census Transportation Planning Package (CTTP), Part 3 is the data source for the home ends (productions) of commuter trips by mode. The CTTP data are tables of commuter trips, by home and work locations, expanded to reflect the population. This data is available at the census tract level. The tables classify trips by mode, household size, and other variables.

These trip productions are plotted against "perceived transit travel time" for one-way work commute trips. This is a measure of travel cost obtained from Metro's travel demand models. Metro's models compute the cost of travel by transportation mode between traffic analysis zones (TAZs). There are three primary transit modes in the Metro model: bus, light rail transit (LRT), and LRT with bus access. Each of the three primary modes is subdivided into walk or drive access. Transit costs in the Metro model are sums of several cost categories: the time spent accessing the transit system, time waiting for a transit vehicle, time to make transfers, and the time spent in the vehicle.

Travelers are known to value these cost components differently. Walking time, waiting, and transferring are usually considered more onerous than time spent in the transit vehicle. To compute the weighted one-way transit travel time, the walk time is weighted to be 2.2 times as onerous as the in-vehicle travel time. The initial and transfer wait times have weights of 1.8 and 2.0, respectively. These weights are consistent with other mode choice models.

The "perceived" transit travel time is the minimum weighted transit travel time among the three walk-access-to-transit modes. The maps show the perceived one-way transit travel time from each employment focus area to all areas of the region where transit available.

It is important to note that the maps show trip productions by mode as dot densities. Thus, each dot does not necessarily represent the precise location of a commuter "cluster". These commuters can in fact be located anywhere within the census tract to which the data applies. Dots appearing in smaller, typically urbanized census tracts, are more likely to represent actual locations, whereas dots in large rural census tracts have less locational accuracy. For readability purposes, the census tract boundaries are not shown on the maps, but were reviewed as part of the analysis.

Employment Area Findings

This section describes the key findings for each of the employment areas. Maps of each of these areas appear at the end of this memo.

<u>Downtown / River District</u>

- Most work trips come from within 10 miles of downtown.

- North of downtown, the most promising markets may be in the US 30 corridor up to St. Helens, and also northeast of the I-205/SR 500 interchange in Vancouver.
- South of downtown, a "belt" of potential market areas extends from Sherwood in the west (the OR 99W corridor), to Wilsonville, and to Oregon City in the east.

Beaverton

- Most work trips come from west of the Willamette River. The majority of trips are located within 10 miles of Beaverton, although trip origins are also well-scattered throughout the west side of the region.
- One promising market is west of Beaverton in the cities of Cornelius, Forest Grove, and areas northwest of these cities closer to US 26.
- To the south, a potential market exists in Sherwood and areas further south, both east and west of OR 99W.

Clackamas

- Clackamas attracts a significant number of trips from both Vancouver and areas south of Estacada.
- To the north, one potential market area is the area northeast of the SR 14/I-205 interchange in Vancouver.
- A potential market exists in Beaverton to the west.
- To the south, the areas around Canby and Molalla may be a potential market.

Columbia Corridor

- A large number to trips originate in Vancouver, and a large number of these are within 10 miles.
- A potential market exists in Vancouver in the Salmon Creek area west of I-5.
- Beaverton is potential market. These commuters could also access the Columbia Corridor via light rail, although this may not be occurring due to too many intermediate stops and/or insufficient connections from the Park Rose station.
- To the south, potential markets are the Oregon City/West Linn/Gladstone area and also Estacada.

Gateway

- Most work trips to Gateway start from within 10 miles away, where transit access is generally good.
- No significant trip origin clusters exist beyond 10 miles of Gateway.

Gresham

- Almost all trips to Gresham start from within 10 miles of the employment area.
- No significant trip origin clusters exist beyond 10 miles of Gresham.

Hillsboro

- Most workers live within 10 miles of Hillsboro or in scattered locations north and west of the city.
- One potential market is the area northwest and adjacent to Forest Grove.
- Densities in areas further north and closer to US 26 are likely too low to promote carpooling and vanpooling.

Kruse Way

- Kruse Way is a small employment area, and almost all trips start from within 10 miles.
- No significant trip origin clusters exist beyond 10 miles of Kruse Way.

Lloyd District

- Like downtown Portland, the Lloyd district enjoys good regional transit service. Most work trips come from within 10 miles, and many of these are on transit.
- Beyond 10 miles from the district, no obvious commuter clusters emerge. Work trip origins to the district are relatively dispersed.

Oregon City

- Relatively few commuters travel to Oregon City from west of the Willamette River.
- To the north, one potential market is outer southeast Portland (north of Powell Blvd.) and Gresham.
- A large number of drive alone commuters come from a wide band south of Wilsonville, extending from approximately OR 99E, through Molalla, to Estacada. This area, however, may be too low density/rural in nature to be a promising market.

Rivergate

- Rivergate attracts a significant number of short distance transit users. Other commuters primarily come from Vancouver and northeast and southeast Portland.

- One potential market is the area northeast of the SR 14/I-205 interchange in Vancouver.
- Another potential market is in southeast Portland, south of Powell Blvd. and west of I-205.

SMART / Wilsonville

- Most work trips to Wilsonville are from within 10 miles or points further north.
- A potential market exists in Beaverton, although these commuters will benefit from new commuter rail service to Wilsonville in the future.
- Another potential market exists to the south in Salem.

Swan Island

- Trips to Swan Island are relatively scattered throughout the region, although most come from locations east of the Willamette River.
- One potential market is the area east of the SR 500/I-205 interchange in Vancouver.
- Another potential market is the Oregon City/Gladstone area.

Troutdale

- Troutdale is a small employment area, and almost all trips start from within 10 miles.
- No significant trip origin clusters exist beyond 10 miles of Troutdale.

Tualatin

- Tualatin attracts a significant number of work trips greater than 10 miles in distance.
- One potential market is in Hillsboro south of the LRT line. Unincorporated Washington County north of US 26 is also a potential market.
- Northeast and southeast Portland between I-84 and Powell Blvd. is also a potential market.
- Potential markets also exist in Newberg and Woodburn.

Washington Square

- The large majority of trips come from within 10 miles of the employment area.
- One potential market is the OR 99W corridor from Sherwood to Newberg.

Top Potential Future Markets

Table 1 shows the approximate size of the most promising potential carpool/vanpool markets. Importantly, these markets were identified based solely on the number of commuters to each employment area. No other factors were considered that would likely affect carpool/vanpool formation.

Table 1: Most Promising Carpool/Vanpool Markets

Employment Area	Potential Market Area	Commuters
Downtown Portland	US 30 to St. Helens	800
Downtown Portland	NE of I-205/SR 500	700
Downtown Portland	**Sherwood**	**1,000**
Downtown Portland	Wilsonville	500
Downtown Portland	Oregon City	900
Beaverton	**Cornelius/Forest Grove**	**1,300**
Beaverton	**Sherwood and south**	**1,000**
Clackamas	NE of I-205/SR 14	450
Clackamas	Beaverton	500
Clackamas	Canby	300
Clackamas	Molalla	250
Columbia Corridor	Salmon Creek	500
Columbia Corridor	Beaverton	750
Columbia Corridor	Oregon City/West Linn/Gladstone	500
Columbia Corridor	Estacada	250
Hillsboro	Forest Grove and NW	650
Oregon City	Outer SE Portland/Gresham	400
Oregon City	Molalla	200
Rivergate	NE of I-205/SR 14	700
Rivergate	Outer SE Portland	500
SMART/Wilsonville	Beaverton	850
SMART/Wilsonville	**Salem**	**1,000**
Swan Island	E of I-205/SR 500	300
Swan Island	Oregon City/Gladstone	250
Tualatin	**south Hillsboro**	**1,000**
Tualatin	Washington County (north of US 26)	400
Tualatin	Newberg	500
Tualatin	Woodburn	500
Tualatin	NE/SE Portland	650
Washington Square	Newberg	800

In addition to understanding the size of markets, other factors need consideration in developing a short list of prioritized markets. For example, places with higher parking prices encourage carpools and vanpool as these help to defray high parking costs. Other factors to consider include:

- Planned high occupancy vehicle (HOV) lanes. HOV lanes provide additional incentives for carpools/vanpool that could benefit adjacent markets.

- Preferential carpool/vanpool parking. Especially in places facing parking constraints, the presence of these policies will encourage carpools and vanpools.

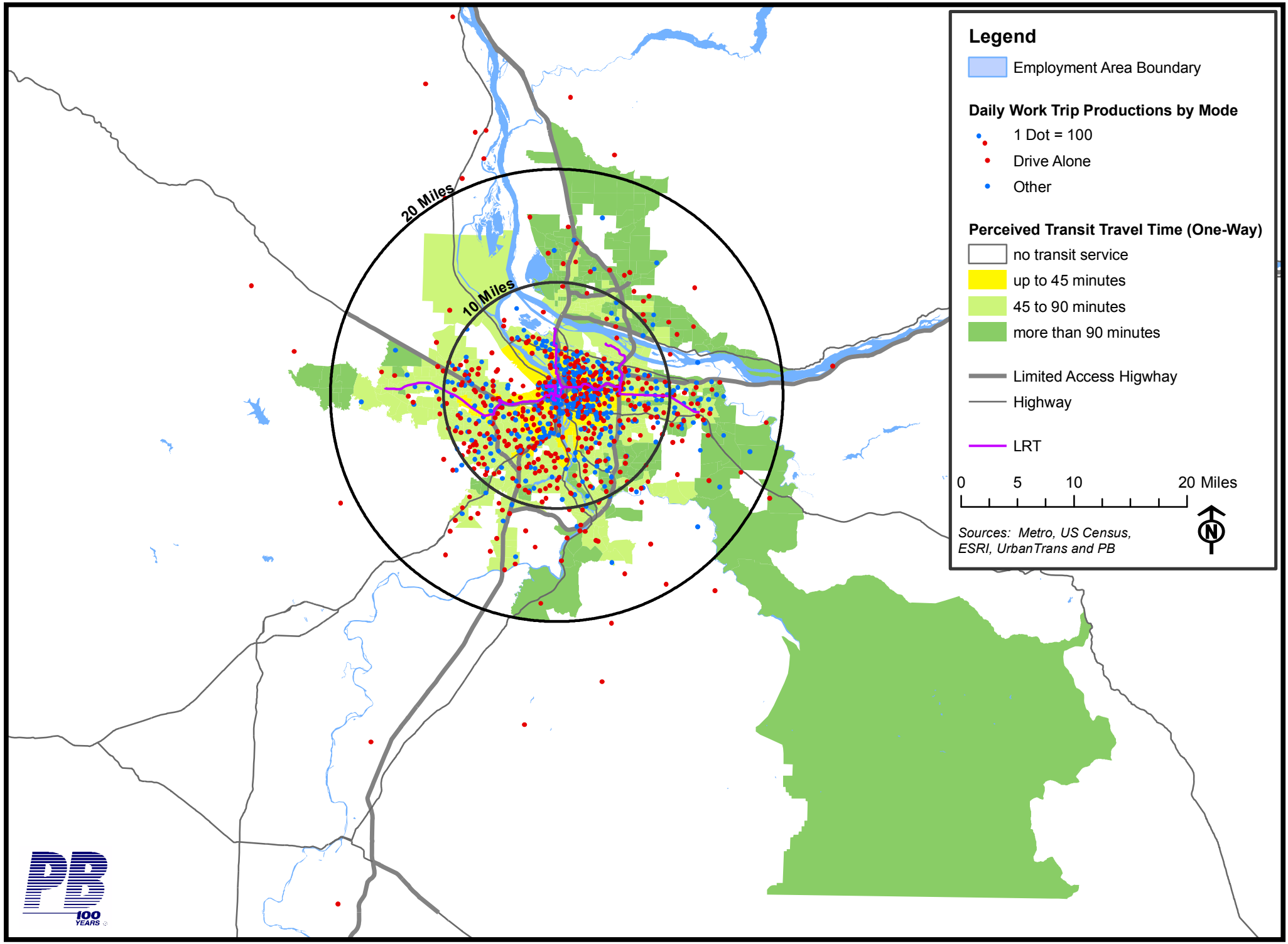
- Bridges. The rideshare potential from Vancouver to North Portland areas (e.g., Rivergate, Columbia Corridor) is not fully captured in the prioritized market list. Much of Vancouver falls within a 10 mile radius. However, the presence of only two bridges spanning the Columbia River in this area increases actual drive distances (i.e., out of direction travel).

- Employer characteristics. Market areas with workers that tend to stay on site and keep regular hours make for better carpool and vanpool opportunities.

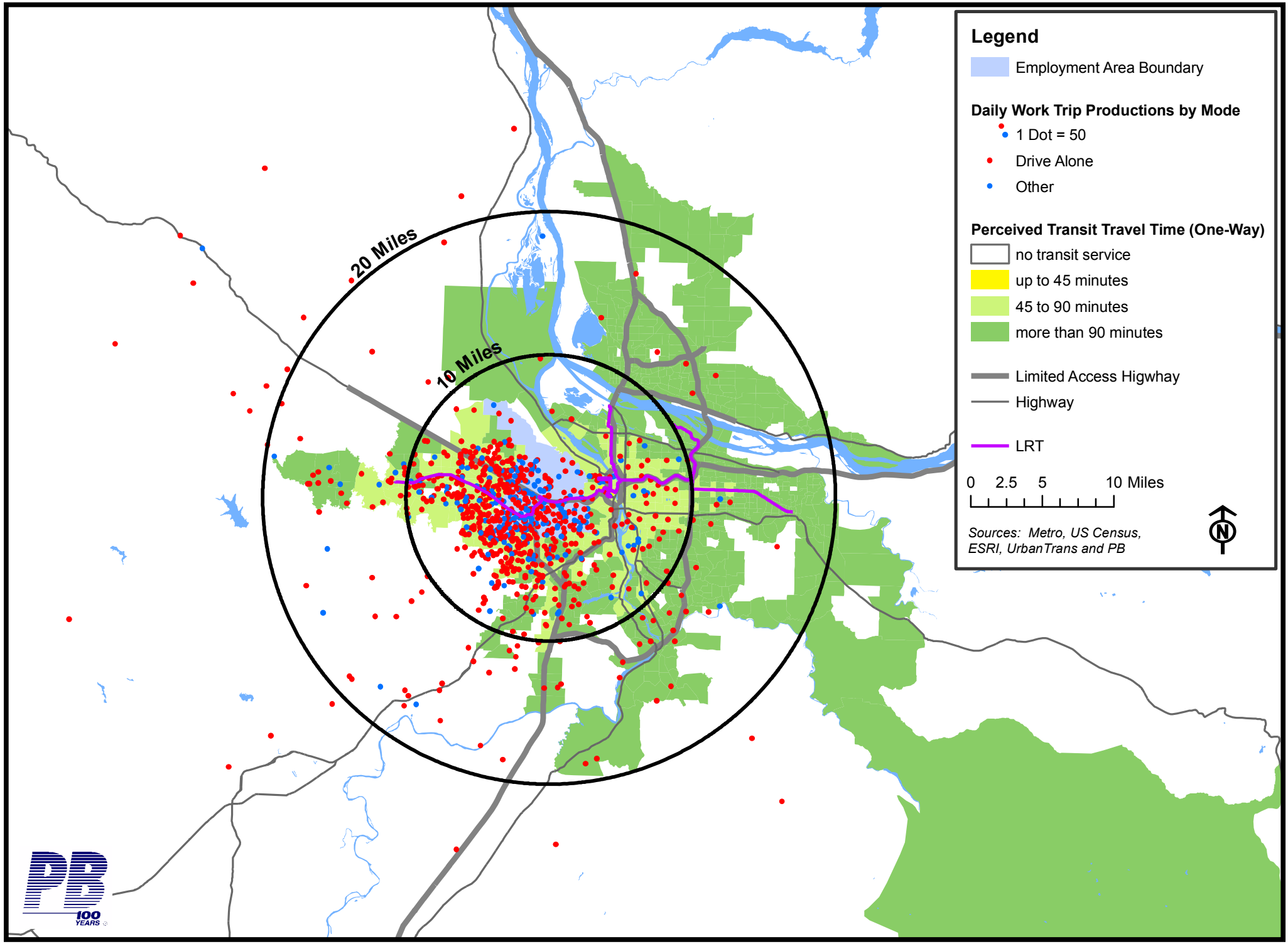
- Planned transit service. Encouraging carpools and vanpools to market areas such as Clackamas Town Center, which is slated to get new MAX service, may not be appropriate as these modes may compete with transit.

Further information from the CTPP Part 3 data can be used to develop more detailed profiles of commuters in various travel markets. These data include gender, income, auto ownership, and the diurnal distribution of trips. The data can answer import questions regarding who is making the trip. For instance: Do the travelers in the market have ready access to an automobile? Are these travelers wealthy? Are they male or female? Asking these questions can help to develop commuter profiles, similar to those developed in the Task A report, but targeted to specific markets. These profiles could also be compared to information included in the *Travel Behavior Barriers Report* to identify marketing strategies best suited to induce carpool and vanpool formation.

1. Downtown Portland/River District



2. Beaverton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Employment Area Boundary
Daily Work Trip Productions by Mode
1 Dot = 50
Drive Alone
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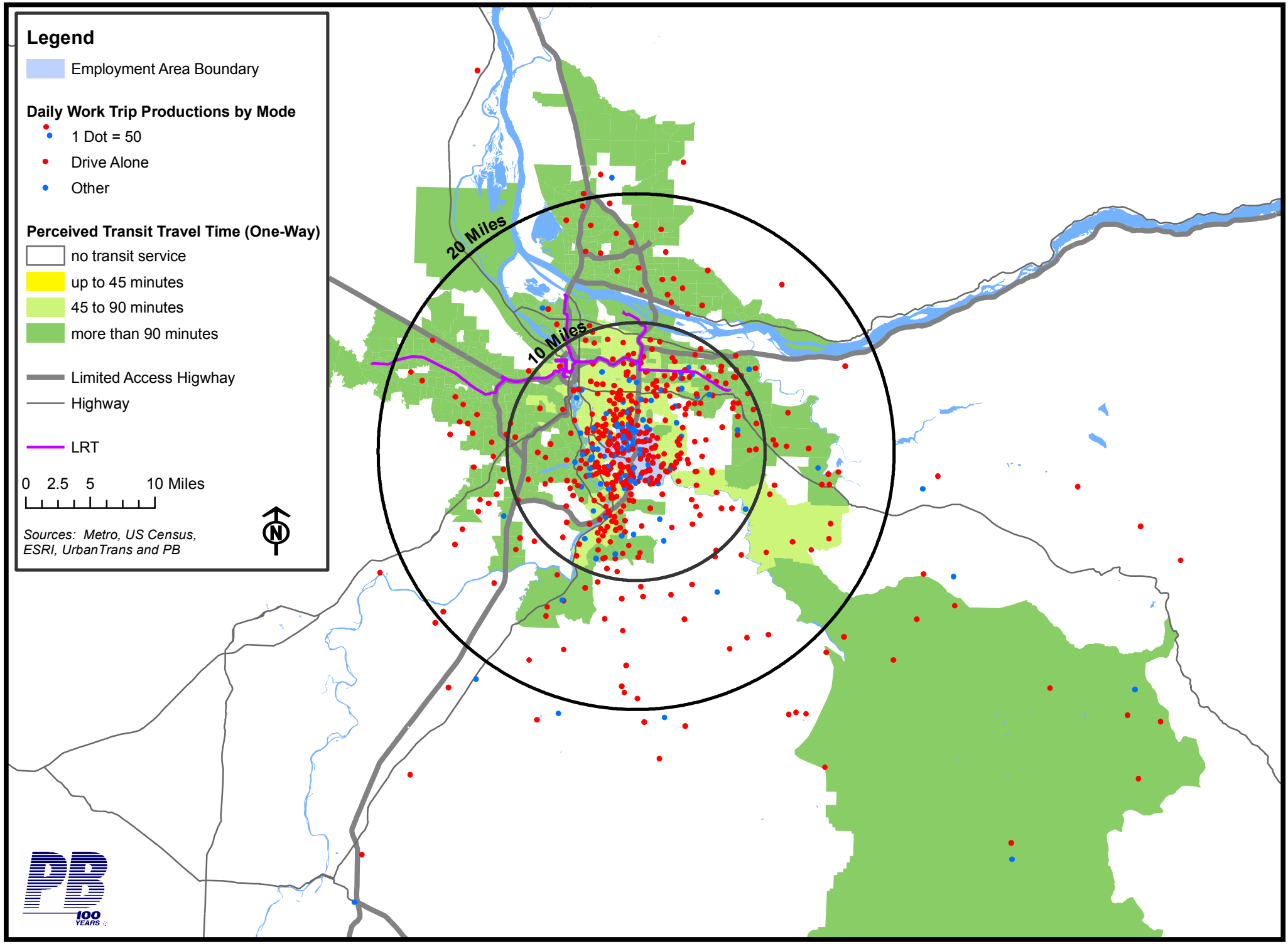
3. Clackamas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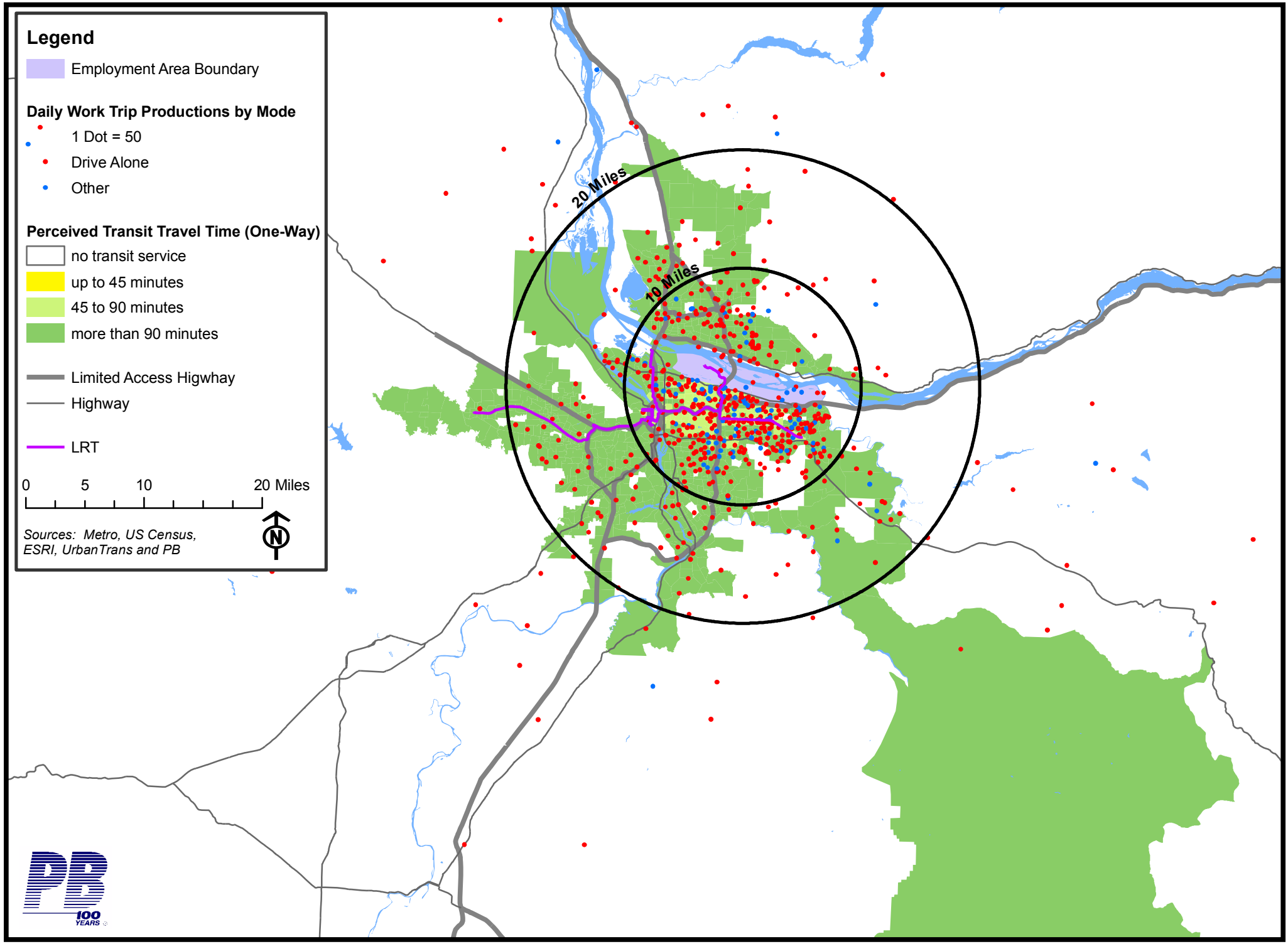
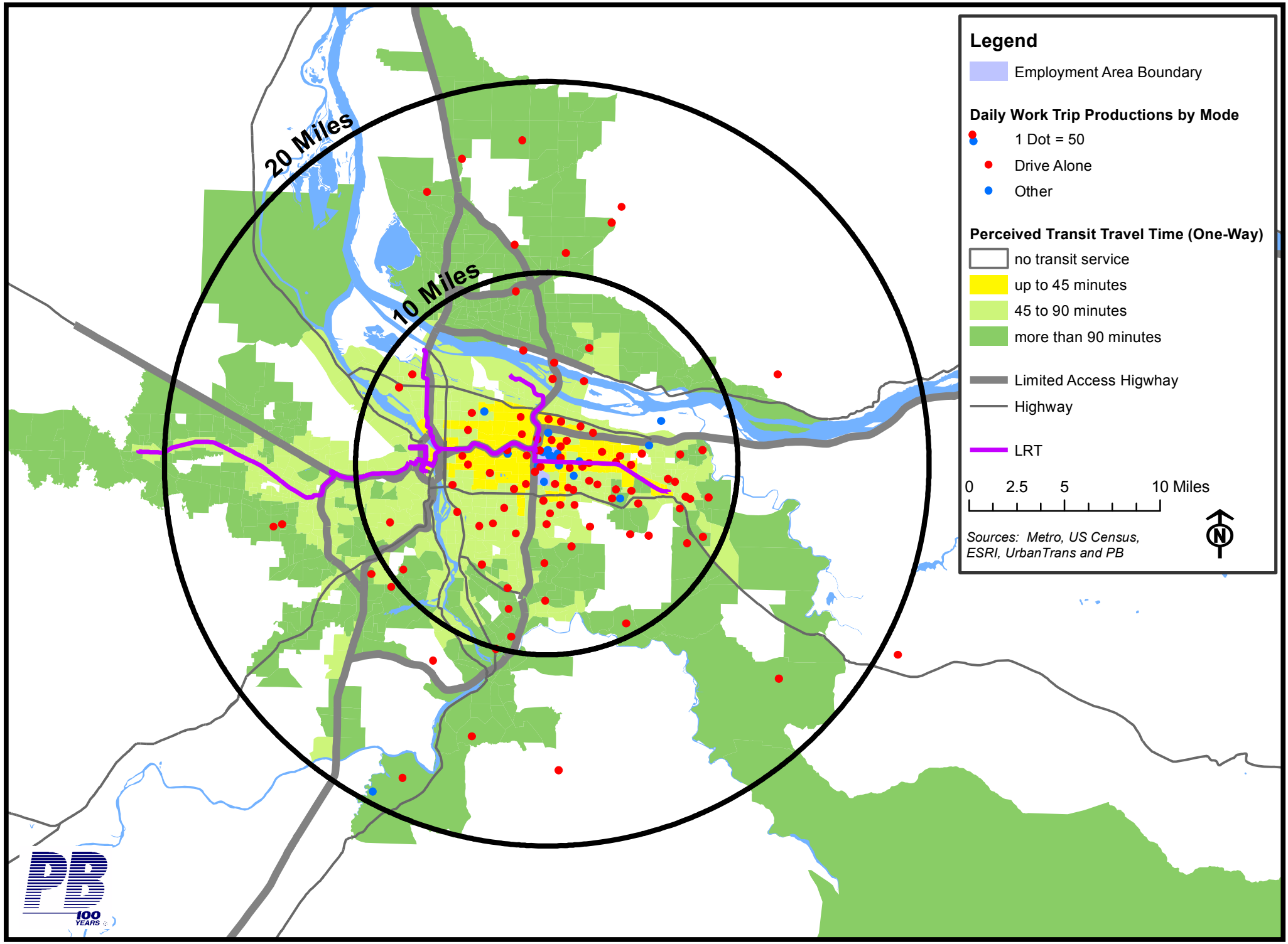
4. Columbia Corridor



5. Gateway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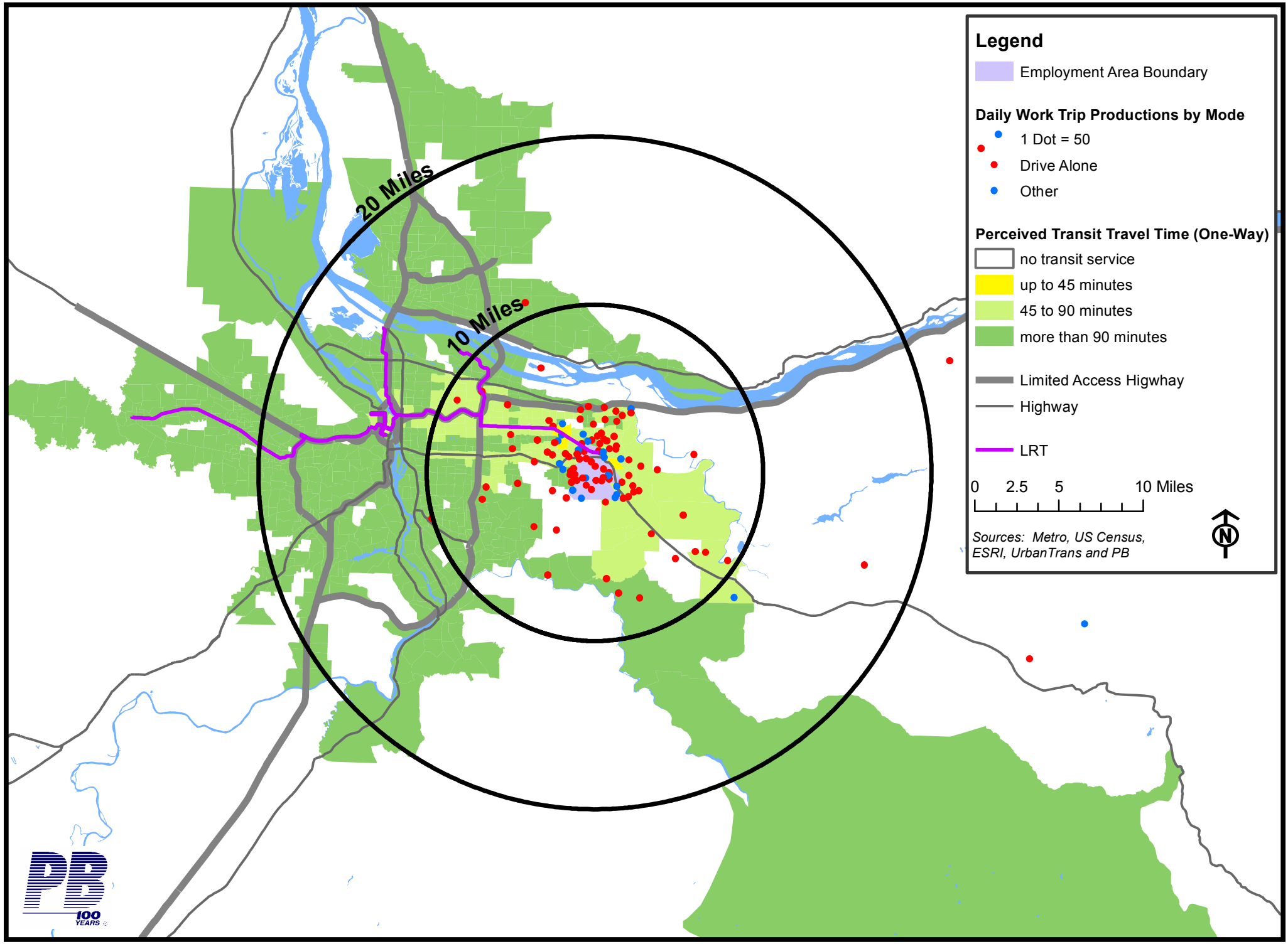
6. Gresham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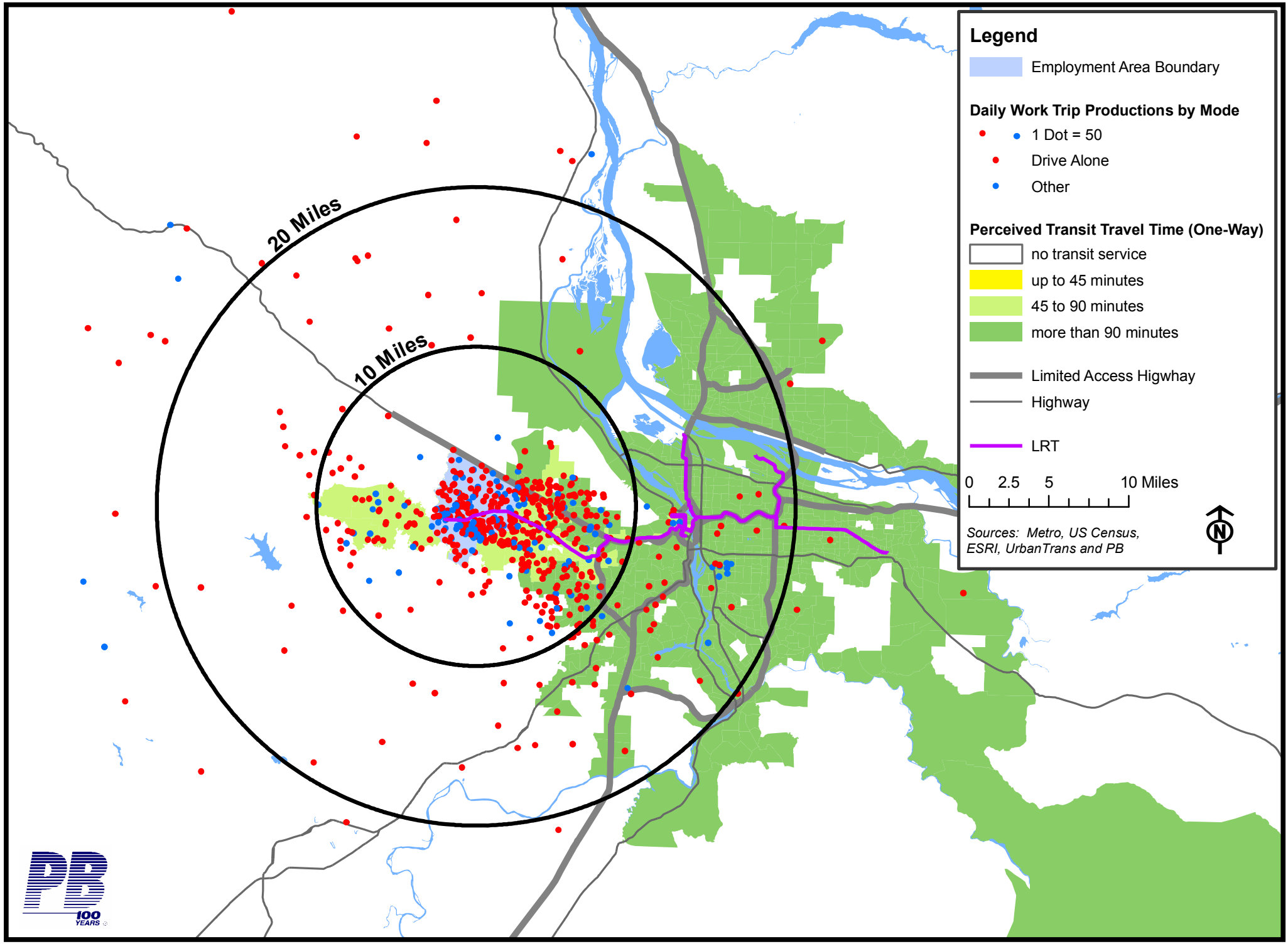
7. Hillsboro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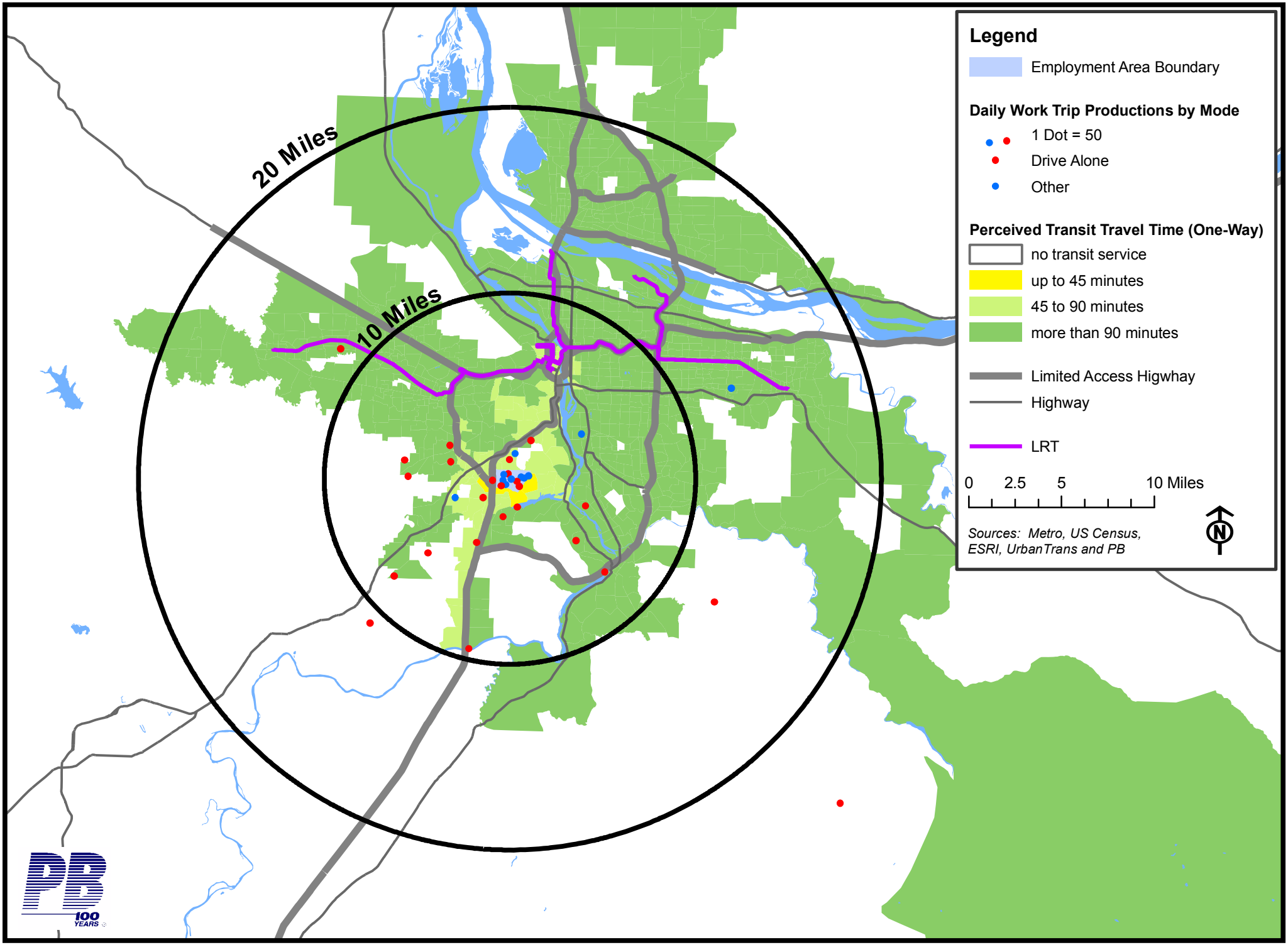
8. Kruse Way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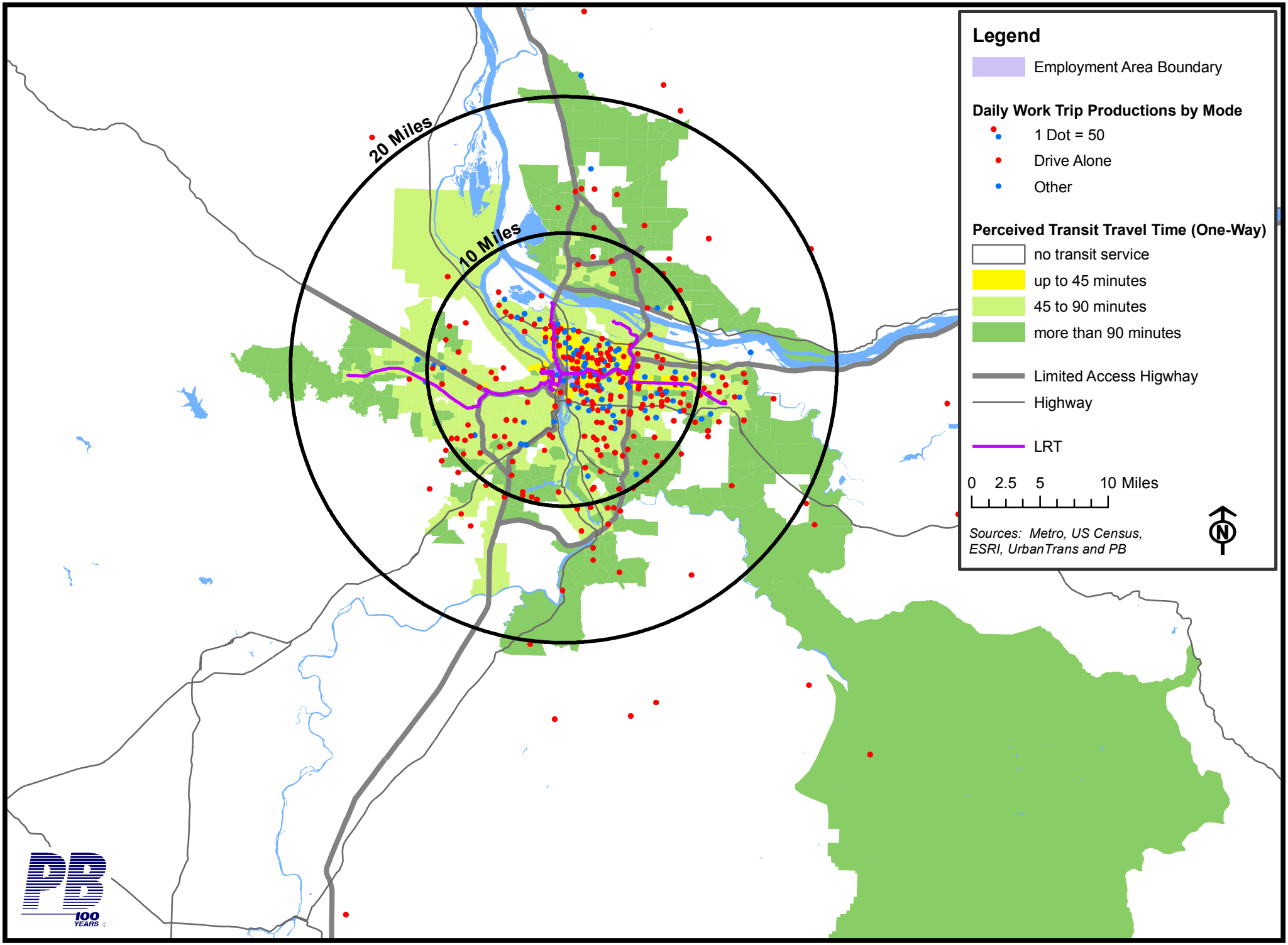
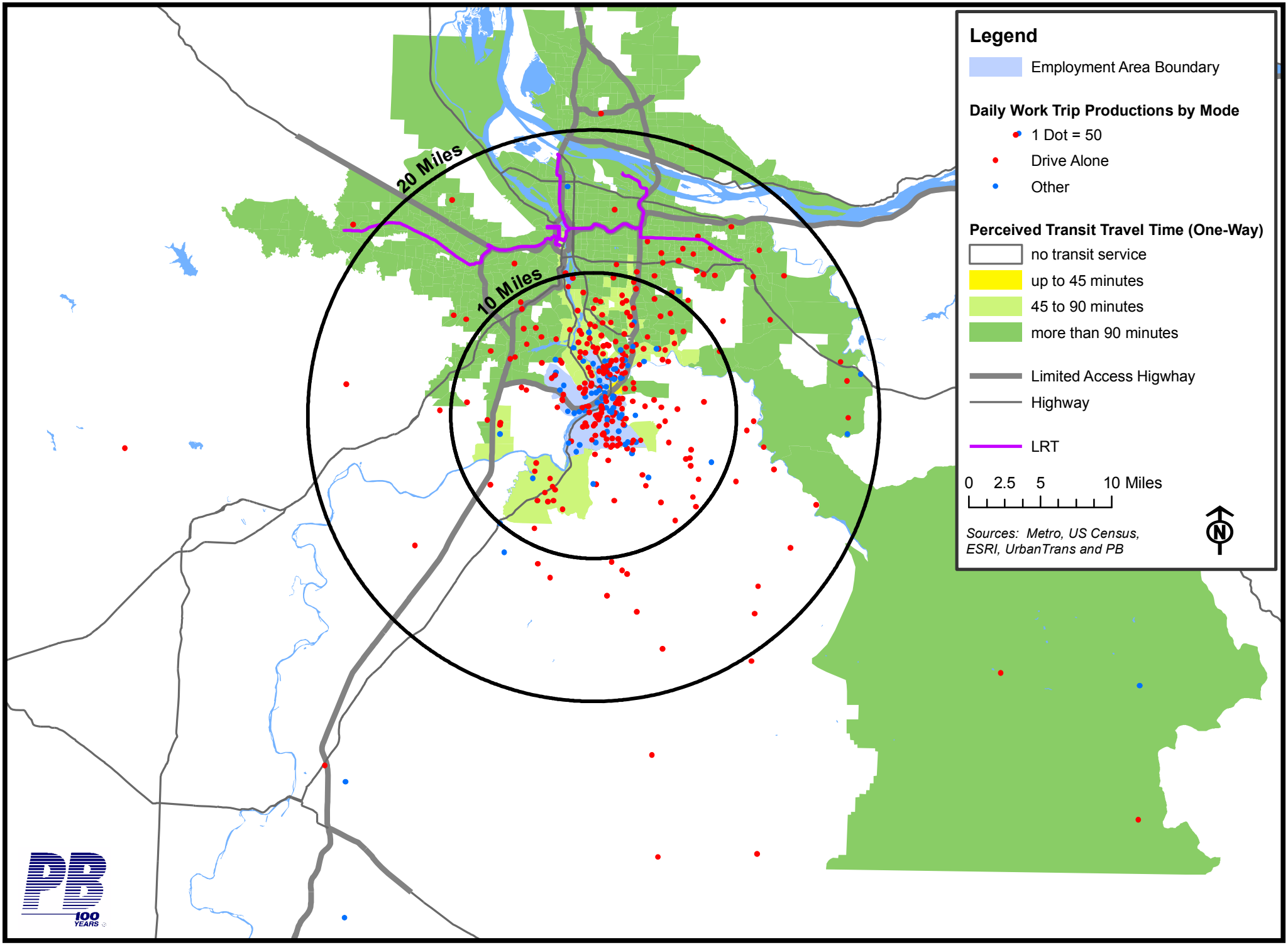
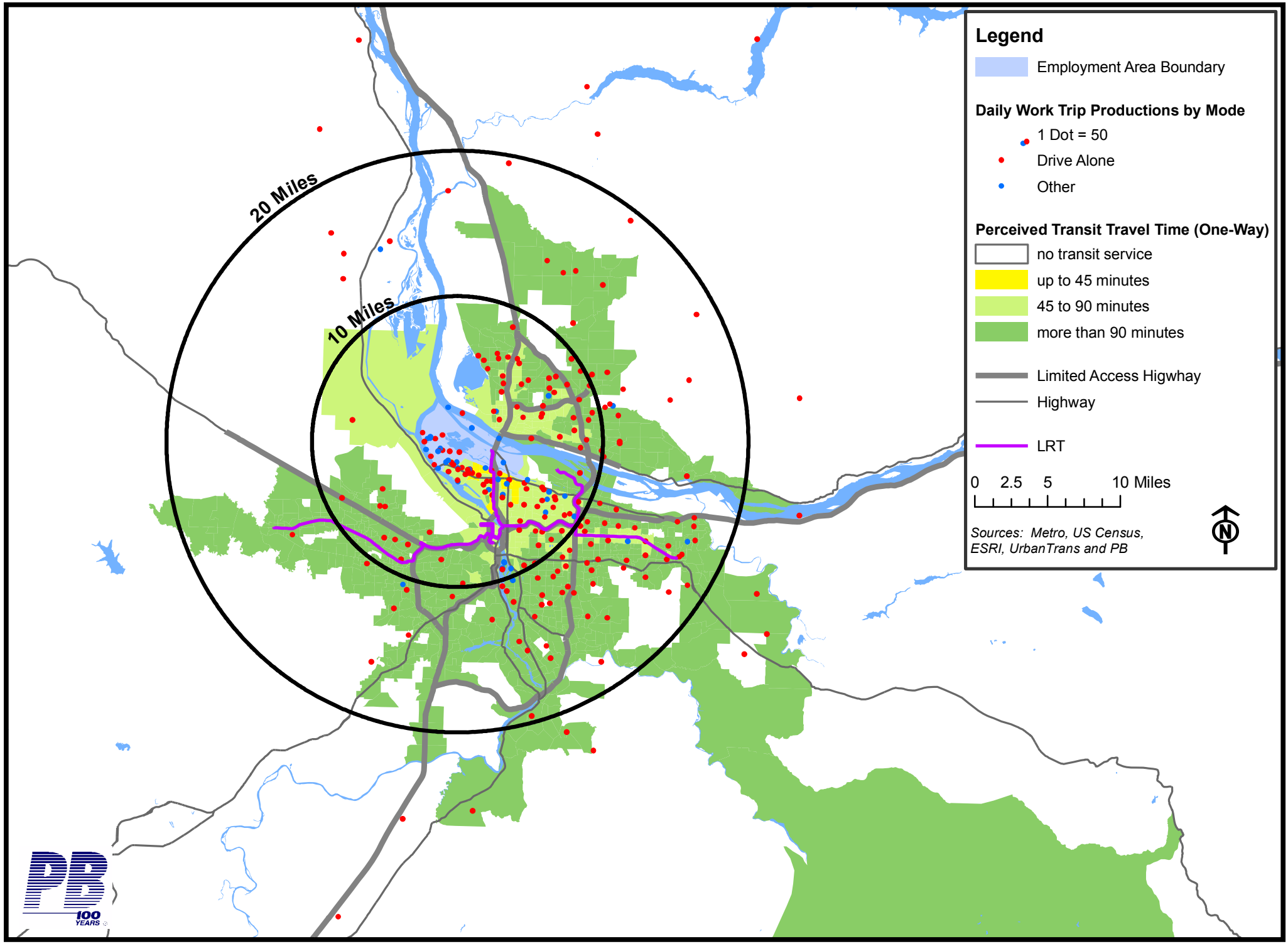


A. Oregon City



B. Rivergate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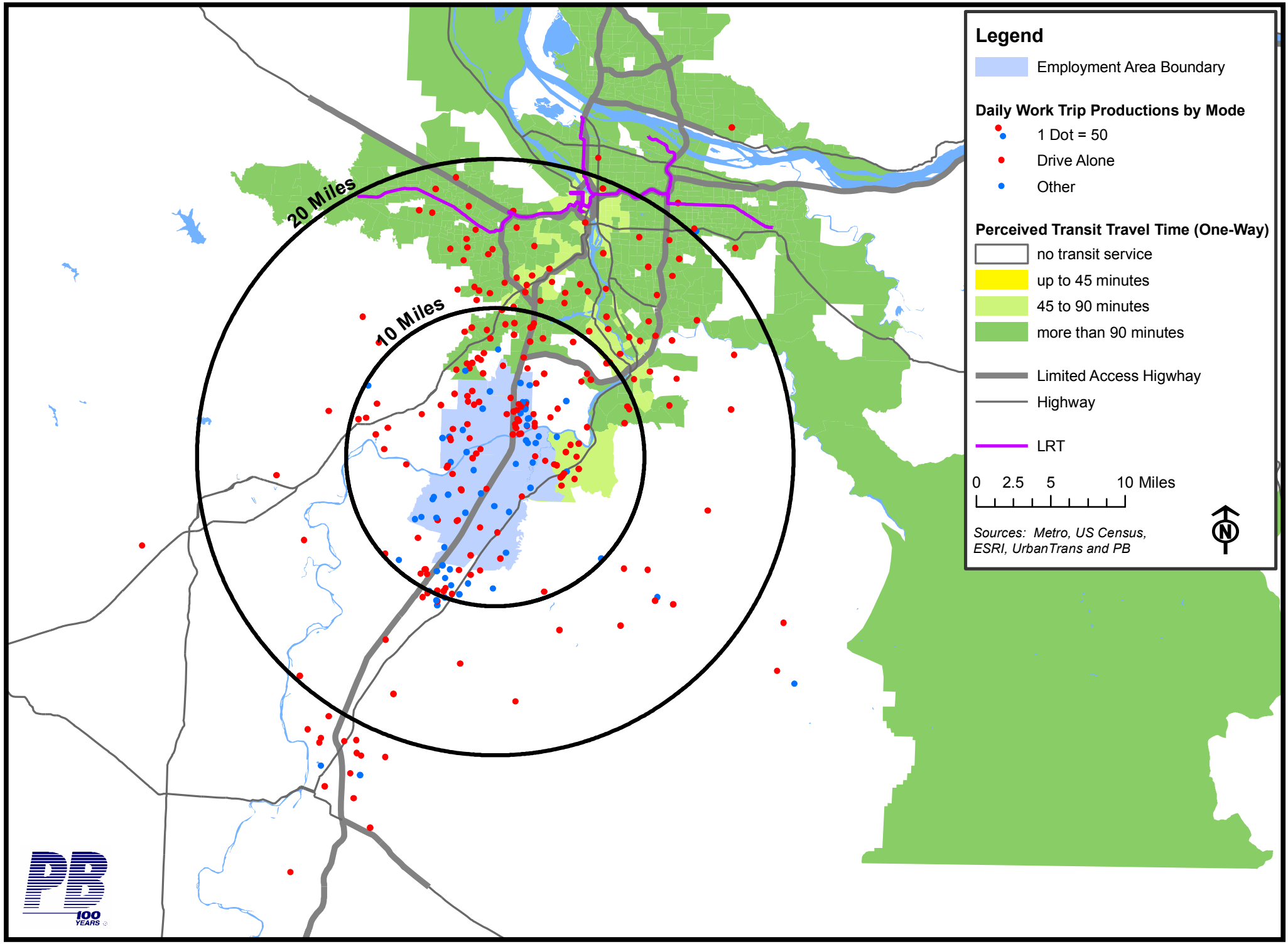
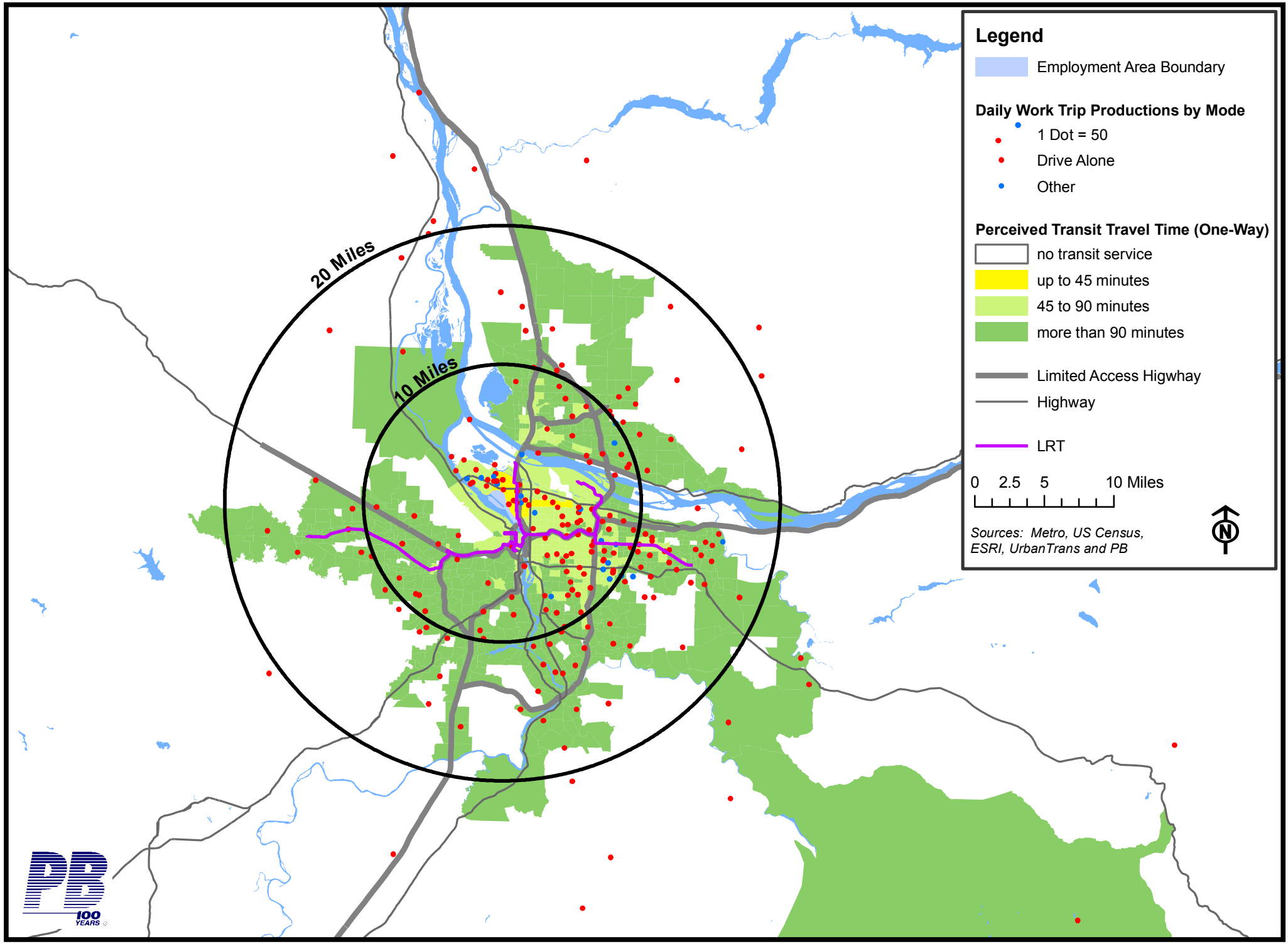


D. Swan Island



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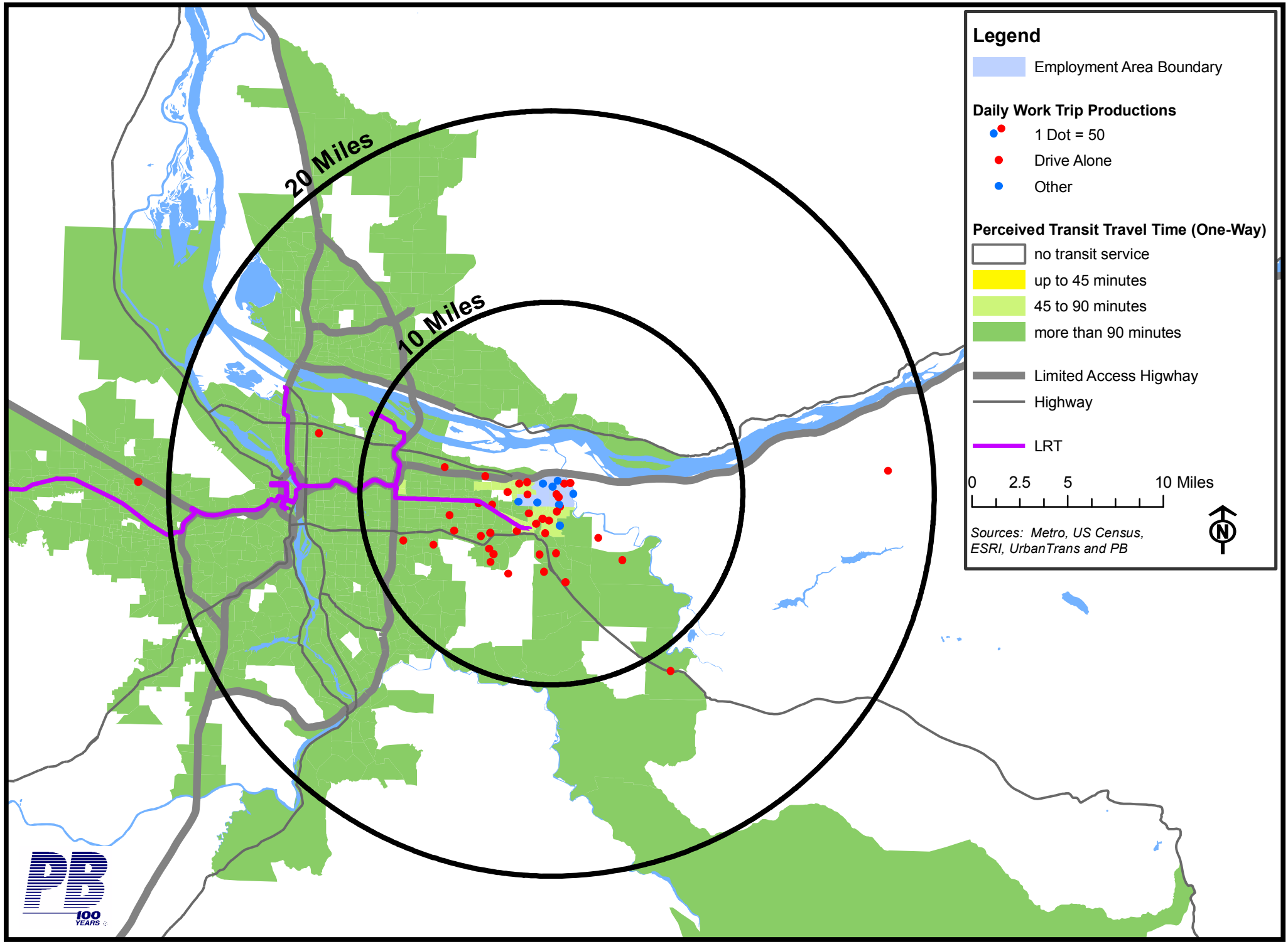
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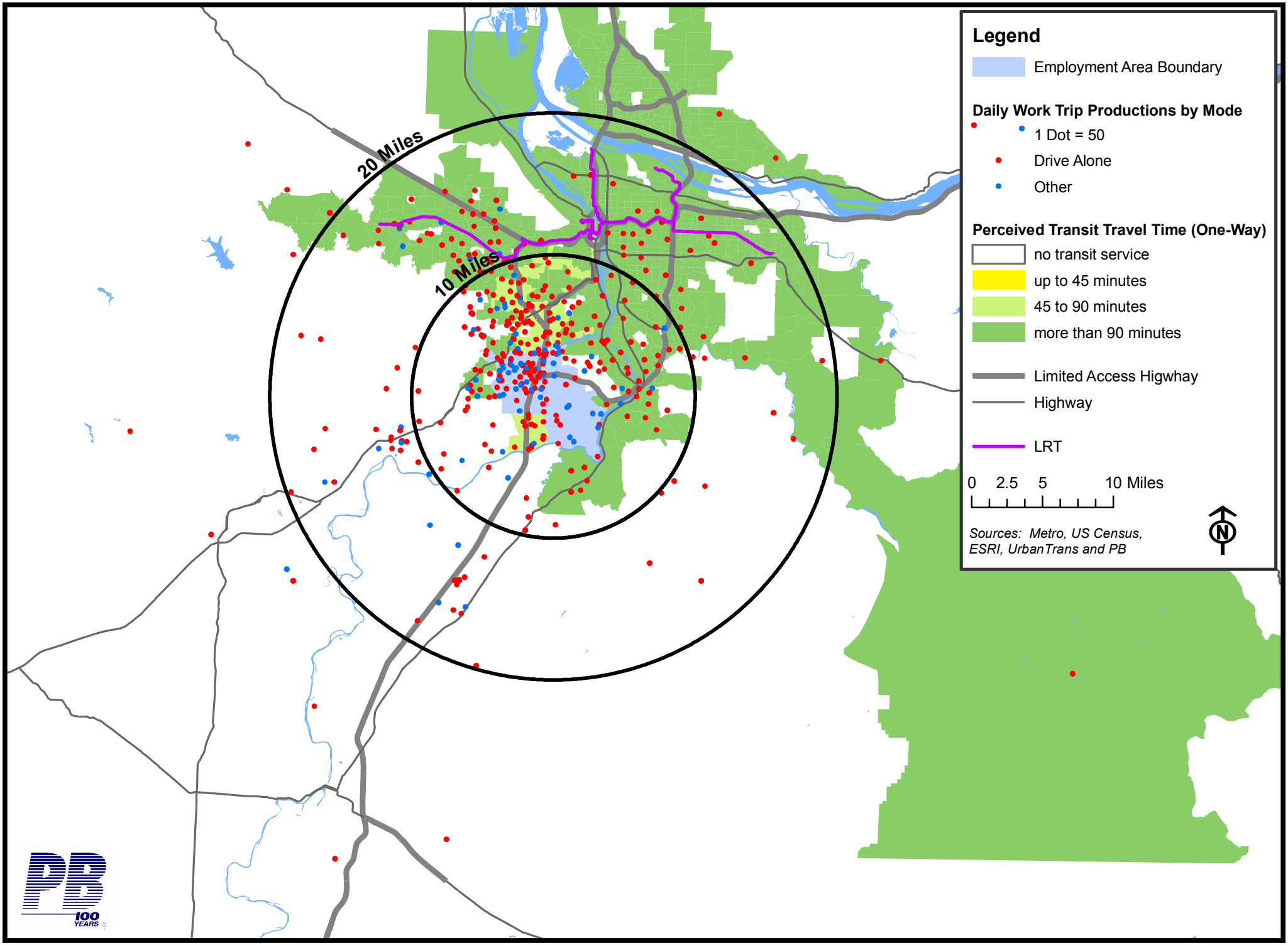
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