



**Equity Analysis: 4<sup>th</sup> Bus Operations and Maintenance Base**

**Department of Diversity & Transit Equity**

**July 6, 2018**

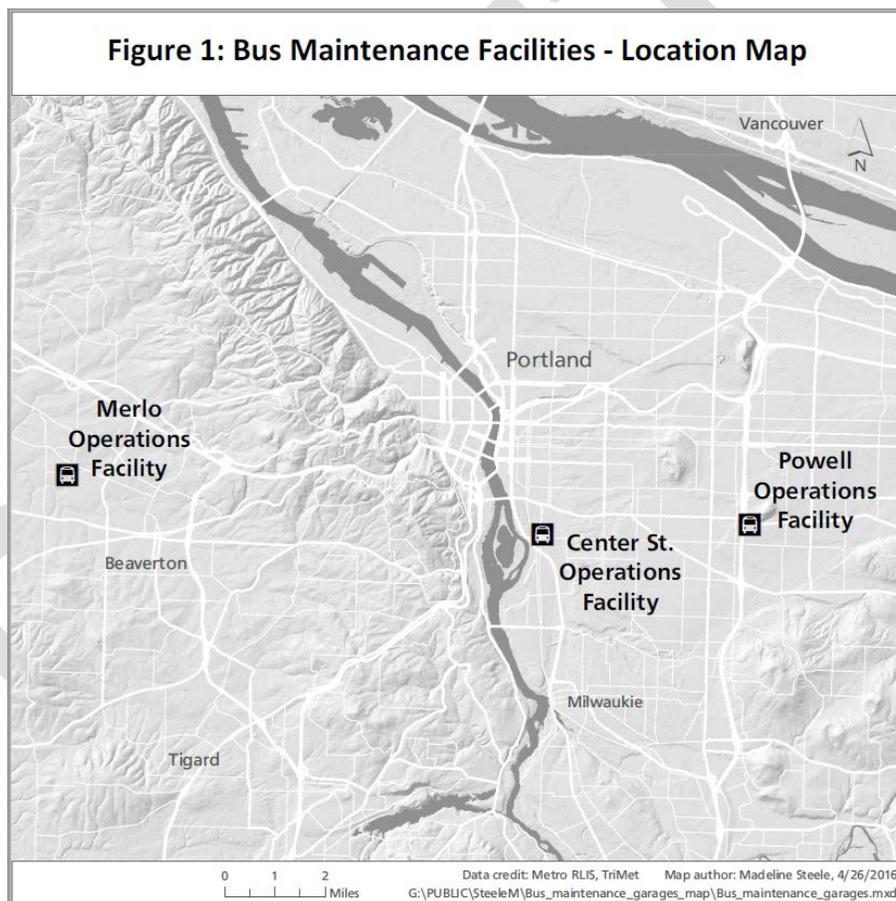


## Table of Contents

I. Background .....	1
II. Project Description.....	3
III. Title VI Compliance.....	4
IV. Site Selection Process.....	5
V. Site Alternatives Equity Analysis.....	7
VI. Community Outreach.....	11
VII. Conclusion.....	13
Appendix A: Site 1 – Deadhead Routes and Buses Traveling Over A One Week Period, October 2017 ..	A-1
Appendix B: Site 2 – Deadhead Routes and Buses Traveling Over A One Week Period, October 2017 ..	A-2
Appendix C: Site 3 – Deadhead Routes and Buses Traveling Over A One Week Period, October 2017 ..	A-3
Appendix D: Site 4 – Deadhead Routes and Buses Traveling Over A One Week Period, October 2017 ..	A-4
Appendix E: Photographs of Site 4.....	A-5
Appendix F: Map of Properties Receiving December 2017 Mailing .....	A-6
Appendix G: Translated Postcard.....	A-7
Appendix H: EJ Screen Memo .....	A-8

## I. Background

The Tri-County Metropolitan Transportation District of Oregon (TriMet) was chartered by the Oregon legislature, as a municipal corporation to provide public transportation in a 570 square-mile service area district covering most of Multnomah, Washington and Clackamas counties, comprising the greater Portland, Oregon metropolitan region. When TriMet began operation on Dec. 1, 1969, there was 175 buses operating over 36 routes<sup>1</sup>. Forty-nine years later, TriMet now operates 664 transit buses on 80 fixed-route lines, with 558 buses in service during peak weekday service<sup>2</sup>. TriMet's fixed route fleet operates out of three geographically distinct locations. Figure 1, Bus Maintenance Facilities - Location Map, shows the location of TriMet's bus facilities within the service district area.



TriMet has conducted a number of bus facilities development studies over the years, to prepare for future service requirements and fleet growth, including in 1998, 2000, 2004, and 2007. The conclusions of prior studies, updated with current (2017) information<sup>3</sup>, include:

<sup>1</sup> Making History: 45 Years of TriMet and Transit in the Portland Region

<sup>2</sup> TriMet Fall 2017 Bus Distribution Report

<sup>3</sup> 2016 TriMet Bus Fleet Management Plan

## Center Street

- The primary capacity constraint at the current Center Street facility is its yard (including the fuel/wash facility), not its garage. While the garage needs interior remodeling to modernize workflow, the overall number of bus bays can accommodate on the order of 100 more buses, assuming maximum staffing and production over all shifts and days.
- Employee parking at Center Street is not fully accommodated on-site and relies on on-street parking in the adjacent neighborhood for a portion of peak parking needs.

## Powell

The capacity constraints at the current Powell facility are:

- The current maintenance shop was originally sized and designed only for preventative maintenance and running repairs, not the full range of bus maintenance including major repairs and overhauls, retrofits/campaigns, etc., and is very under-sized for the number of buses domiciled at Powell.
- Capacity of the current bus yard was reduced by locating the eastside operating base for TriMet's LIFT paratransit operations there, in 2002. At the time, this was intended to be "temporary" but for various reasons would remain in operation at the Powell garage location for 15 years. The construction of a new LIFT facility began in late 2017 and was completed fall of 2018. The facility is located at the Powell Park & Ride directly across the freeway from the current facility.
- Off-site employee parking is not practical surrounding the Powell facility. During weekday peak periods, employee parking is currently full. A small amount of overflow parking has been arranged at a nearby church lot, but future expansion of the number of buses at Powell requires an increase in on-site employee parking.

## Merlo

- While the current Merlo facility has both shop and yard capacity to increase the number of buses, Merlo is geographically distant from the core of TriMet's service area. Redirecting current bus routes to the Merlo facility would substantially increase deadheading cost and create less service efficiency.
- During weekday peak periods, employee parking is currently full at the Merlo facility. Off-site employee parking is not practical surrounding the Merlo facility. Increasing the number of buses at Merlo requires an increase in on-site employee parking. Off-site employee parking is not practical.

Generally speaking, TriMet's earlier bus facilities development studies were "put on the shelf", due to economic downturns. While the overall long-term trend for the Portland metropolitan area is for substantial increases in population due to in-migration on top of natural growth, much of the 2000s was a "flat" time, beginning with the dot-com recession, followed by 9-11, and ending with the Great Recession. In the 2010s however, the region has resumed its long-term growth trend. In 2015, TriMet enacted a 2016 - 2025 period of annual increments of its transit district payroll tax, to fulfill transit service needs projected over this period by the Regional Transportation Plan and associated TriMet Service Enhancement Plans.

## II. Project Description

Due to future service expansions, a projected growth of the fixed-route and light rail vehicles as well as existing facilities nearing yard capacity, TriMet is in need of both a temporary, near-term solution starting in 2019 and a long-term, permanent solution by 2024. A TriMet internal steering committee, made up of key agency stakeholders, were tasked with identifying a 4<sup>th</sup> operations and maintenance base to meet these imminent demands. This required the selection of a site in early 2018.

To provide context for the need, Table 1 shows the maximum yard capacity, number of garage bays, number of buses domiciled, and additional yard capacity, for each facility. The Center Street and Powell facilities are currently used at nearly their current yard capacities, while the Merlo facility is currently used at about 61% of its yard capacity. The reason for this difference is domiciling as many buses as closely as possible to the routes that they serve, i.e., to minimize "deadheading" of buses (travelling out of service) to pull-out and pull-in to their assigned routes, for optimal service efficiency in terms of the ratio of bus revenue service hours to bus vehicle hours (operator pay hours).

**Table 1: Current Maintenance Facilities and Yard Capacities**

	<b>Garage Bays</b>	<b>Maximum Yard Capacity</b>	<b>December 2017 (40' &amp; 30' buses)</b>	<b>Additional Yard Capacity (40' buses)</b>
<b>Center Street</b>	42 (32 repair, 10 steam, tire & other)	290	281	9
<b>Powell</b>	15 (13 repair, 1 steam, & 1 tire)	240	236	4
<b>Merlo</b>	26 (17 repair & 9 body shop)	270	147 + 18 contingency	105
<b>Total...</b>	83	800	682	118

By fiscal year 2023, the bus fleet is projected to grow by 21 percent. These additional 135 buses will bring the total number of buses to 817, which will exceed the current bus yard capacity for all three garages combined. Table 2 below denotes the yard capacity as well as the growth of the yard after the Powell construction. As noted, the Powell expansion will help with the yard capacity constraints in the later years; however, TriMet will need a temporary space to domicile 60-80 buses during the Powell construction. Moreover, it becomes a strategic imperative to secure a more long-term solution as the agency looks ahead to the year 2024 and beyond.

<b>Table 2: Bus Maintenance Facilities Yard Capacity and Growth</b>			
	<b>Maximum</b>	<b>During Powell Construction</b>	<b>After Powell Construction Complete in 2024</b>
<b>Center Street</b>	290	290	290
<b>Powell</b>	240	180	328 (includes 60' articulated buses)
<b>Merlo</b>	270	270	270
<b>Total...</b>	800	710	858

### III. Title VI Compliance

TriMet has determined that the selection of a 4<sup>th</sup> operations and maintenance base falls under the provisions in Chapter III-13 of FTA Circular 4702.1B:

13. DETERMINATION OF SITE OR LOCATION OF FACILITIES. Title 49 CFR Section 21.9(b)(3) states, “In determining the site or location of facilities, a recipient or applicant may not make selections with the purpose or effect of excluding persons from, denying them the benefits of, or subjecting them to discrimination under any program to which this regulation applies, on the grounds of race, color, or national origin; or with the purpose or effect of defeating or substantially impairing the accomplishment of the objectives of the Act or this part.” Title 49 CFR part 21, Appendix C, Section (3)(iv) provides, “The location of projects requiring land acquisition and the displacement of persons from their residences and businesses may not be determined on the basis of race, color, or national origin.” For purposes of this requirement, “facilities” does not include bus shelters, as these are transit amenities and are covered in Chapter IV, nor does it include transit stations, power substations, etc., as those are evaluated during project development and the NEPA process. Facilities included in this provision include, but are not limited to, storage facilities, maintenance facilities, operations centers, etc.

Therefore, TriMet is required to conduct a Title VI equity analysis to ensure the location is selected without regard to race, color, or national origin. Per the guidance in the FTA Circular, this analysis must:

- Include outreach to persons potentially impacted by the siting of the facility;
- Compare impacts of various siting alternatives;
- Determine if cumulative adverse impacts might result due to the presence of other facilities with similar impacts in the area; and
- Occur before the selection of the preferred site.

If any disparate impacts or disproportionate burdens are identified through the analysis, the least discriminatory alternative must be implemented.

## IV. Site Selection Process

The selection of a 4<sup>th</sup> operations and maintenance base facility location must meet several important criteria, including acquisition and operating costs, availability, appropriate zoning, adequate size (12+ acres), geographic proximity to the service area, and access to major thoroughfares, including the I-5 freeway. TriMet's Geographic Information Systems department studied potential geographic locations by performing a deadhead analysis, which was an integral site selection criteria. This analysis sought to minimize the amount of system-wide non-revenue (deadhead) operating time, i.e., the travel to/from the bus garage to the route start/end. The total system-wide deadhead travel time was calculated for each candidate site to determine what reduction the new site would yield, if any.

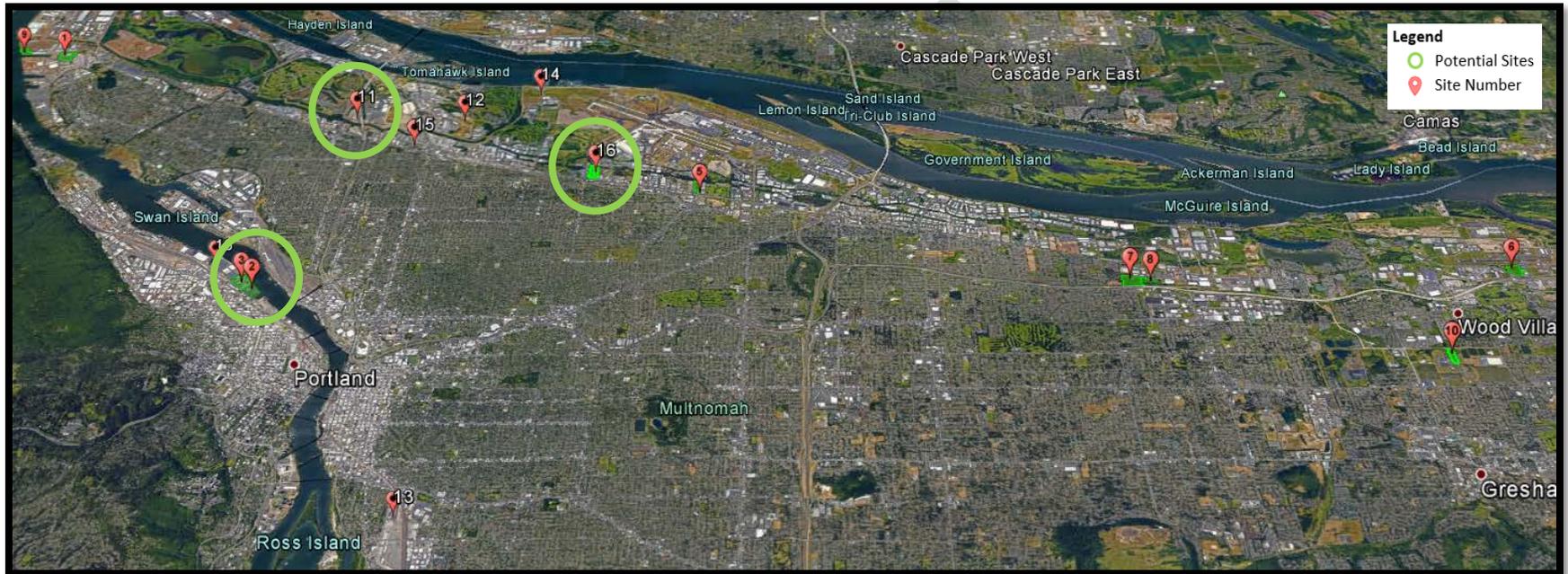
The model assumed that TriMet's bus service from the fall schedule (the week of October 1 – 7, 2017, a week with no holidays or service disruptions) would be representative of future bus service. The travel time to/from the route start/end was calculated based on the roadway speed limit (obtained from OpenStreetMap). Travel times were adjusted based on the time of day (25% longer during peak times and 10% during the midday). The modeled scenario can be thought of as a best-case scenario of the system-wide deadhead time if the 4<sup>th</sup> bus yard was located in that particular site. In addition to the sites available for sale, the analysis also evaluated all sites with the proper zoning (EG1, EG2, EX, IG1, IG2 or IH) and a lot size of at least 10 acres. Refer to Table 3 below for analysis ranking, size, and zoning results.

TriMet's Real Property group conducted the site search. Staff searched property listings for sites currently for sale, used computer search programs to find sites in the necessary geographic area that would meet the criteria and also visited several sites to determine their potential for this use. The search was extensive, and TriMet is confident it analyzed all locations that could meet the required criteria for the 4<sup>th</sup> base site. Other considerations were access to major thoroughfares (i.e., allowing for higher speed limits and reducing travel times) as well as potential impediments like railroads, or stoplights.

This process led to staff identifying seventeen sites (Figure 2) as potential locations for the Steering Committee to consider. After comparing these sites to the required selection criteria, TriMet selected 2400 NW Front Avenue (Site 2 on Fig. 2), 2700 NW Front Avenue (Site 3 on Fig. 2), 1501 North Schmeer Road (Site 11 on Fig. 2) and 4421 NE Columbia Boulevard (Site 16 on Fig. 2) for further analysis. All four sites fell into the *acceptable* location category and were formally endorsed by the Steering Committee in December 2017. Going forward this document will refer to these sites as:

<b>Site Number and Address</b>	<b>Zoning</b>	<b>Size</b>	<b>Deadhead Ranking</b>
<b>Site 1:</b> 1501 N Schmeer Road	Heavy Industrial	24 Acres	96.67%
<b>Site 2:</b> 2700 NW Front Avenue	Heavy Industrial	14.9 Acres	98.49%
<b>Site 3:</b> 2400 NW Front Avenue	Heavy Industrial	15.8 Acres	95.04%
<b>Site 4:</b> 4421 NE Columbia Blvd	General Industrial II	30 Acres	94.11%

Figure 2: Potential 4th Operations and Maintenance Base Sites



## V. Site Alternatives Equity Analysis

While the siting criteria was exclusively used to narrow the candidates down to four sites, TriMet analyzed area demographics to assess any potential disparate impacts based on race, color, or national origin. As shown in Table 4, Site 1 is located in a block group that is 40% minority, which is above TriMet’s minority district average of 28%<sup>4</sup>. Site 2 and Site 3 are in block groups that are slightly less populated than Site 1 and has the lowest concentration of minority population at 16%. The block group surrounding Site 4 has the smallest population, but the highest concentration of minorities at 48%.

**Table 4: Equity Impact Comparison for Potential Sites**

	<b>Site 1 (North Schmeer)</b>	<b>Site 2 (2700 Front Ave)</b>	<b>Site 3 (2400 Front Ave)</b>	<b>Site 4 (NE Columbia Blvd)</b>
<b>Minority Population</b> of surrounding Census Block Group <i>District avg: 28%</i>	Total Pop: 4,193 40% Minority Pop.	Total Pop: 3,246 16% Minority Pop.		Total Pop: 2,067 48% Minority Pop.
<b>Who</b> would be impacted by selecting this site?	35 commercial properties are within a ¼ mile from site	309 properties (136 residential and 173 commercial or industrial) are within a ¼ mile from both sites		349 properties (258 residential and 91 commercial) are within a ¼ mile from site
Will selecting this site require <b>displacement</b> of residents or businesses?	Yes (Moderate Impact)	Yes (High Impact)	No (Low Impact)	No (Low Impact)
List other <b>similar facilities</b> nearby. Includes storage, maintenance, operations, etc.	<ul style="list-style-type: none"> <li>- Portland International Raceway</li> <li>- Wilkins Trucking</li> <li>- Interstate Rentals</li> <li>- SafeGard Storage</li> <li>- Trillum Lumber</li> <li>- Harrah’s Truck Detail Company</li> <li>- Bob’s Metals Company</li> <li>- S &amp; H Landscape Supplies and Recycling Comp</li> <li>- Solum Industries</li> </ul>	<ul style="list-style-type: none"> <li>- BNSF Railway Company</li> <li>- Gunderson (GBX) Railcar Manufacturer</li> <li>- Shaver Marine Transportation Company</li> <li>- Vehrs Distributing Wine Wholesaler</li> <li>- Sulzer Pumping Solutions Company</li> <li>- Ager Tank &amp; Equipment Company</li> <li>- Lakeside Industries Asphalt Paving &amp; Construction Company</li> <li>- Georgia-Pacific Company</li> </ul>		<ul style="list-style-type: none"> <li>- Peterson Caterpillar Equipment Maintenance Site</li> <li>- Apollo Chemical &amp; Equipment Company</li> <li>- Portland Disposal &amp; Recycling Site</li> <li>- Betts Truck Parts &amp; Service</li> <li>- CESSCO Inc.</li> <li>- WW Trailers Inc.</li> <li>- Ferguson Plumbing Site</li> </ul>

<sup>4</sup> Source for all demographic information is the 2011-2015 American Community Survey

Three additional factors were compared for evaluating the relative equity impacts: 1) who would be impacted by each respective site selection; 2) whether either would require displacement of residents or businesses; and 3) any cumulative impacts from the presence of similar facilities in the area.

Based on the FTA's site alternatives equity analysis, the 4<sup>th</sup> base is expected to have minimal community impacts, whichever site is selected. A primary factor for this determination is all four sites would be located in areas that have local land use regulations. The regulations separate incompatible uses and apply objective standards to minimize or avoid any potential off-site impacts. As described in Table 4, Site 1 has commercial properties within a ¼ of a mile from the site. Whereas, Sites 2 through 4 has a mix of both commercial and residential properties. The impact would be minimal because all residential properties have multiple buffers of roadways and other rights-of-way, as well as elevation changes between them and each site. Moreover, all nearby commercial properties are located in similar zoning spaces.

To elaborate, Sites 1-3 are zoned as Heavy Industrial (IH) and Site 4 is zoned as General Industrial 1 (IG1). Both zones allow the proposed use (i.e., bus maintenance and operations base) to be established as a permitted use, subject to the "off-site impacts" regulations which provide objective regulations for noise, vibration, odor, and glare on the nearest residential, commercial and open space zones. The zoning designations were established to protect public health, safety, comfort, convenience and the general welfare and to protect the economic base of the City as well as the value of real estate, by regulating industrial development in each location. The IH zone provides areas where various industries may locate including those not desirable in other zones due to their objectionable impacts or appearance. The heavy industrial (IH) zoning district provides appropriate locations for intensive industrial uses including industrial service, manufacturing and production, research and development, warehousing and freight movement, railroad yards, waste-related and wholesale sales activities. Activities in the IH zone include those that involve the use of raw materials, require significant outdoor storage and generate heavy truck and/or rail traffic. Whereas, the IG1 zone provides areas where most industrial uses may locate, while other uses are restricted to prevent potential conflicts and to preserve land for industry. Because of these characteristics, IH and IG1-zoned property are carefully located to minimize impacts on established residential, commercial and light industrial areas. Thus, each site would present minimal impacts at each respective community.

Sites 1 and 2 would require displacement of existing tenants and/or business. From a Title VI standpoint, the selection of Site 1 would present a moderate impact and the selection of Site 2 would present an even higher impact. Sites 3 and 4 would not require displacement of commercial or residential properties. Thus, no impacts would be presented for these sites.

In terms of cumulative impacts, Site 1 is temporarily being utilized as a parking lot storage for an auto auction company. Site 1 is next to the Portland International Raceway and Delta Park/Vanport MAX Station to the west, the Columbia Slough to the south, and a retail plaza to the east. While this area has high minority populations (40 percent) for the TriMet District, the impacts of the site itself are expected to be moderate given the proxemics to residential properties, the intended use of the site, and the displacement of a business. Given these considerations, the selection of Site 1 does present a potential disparate impact.

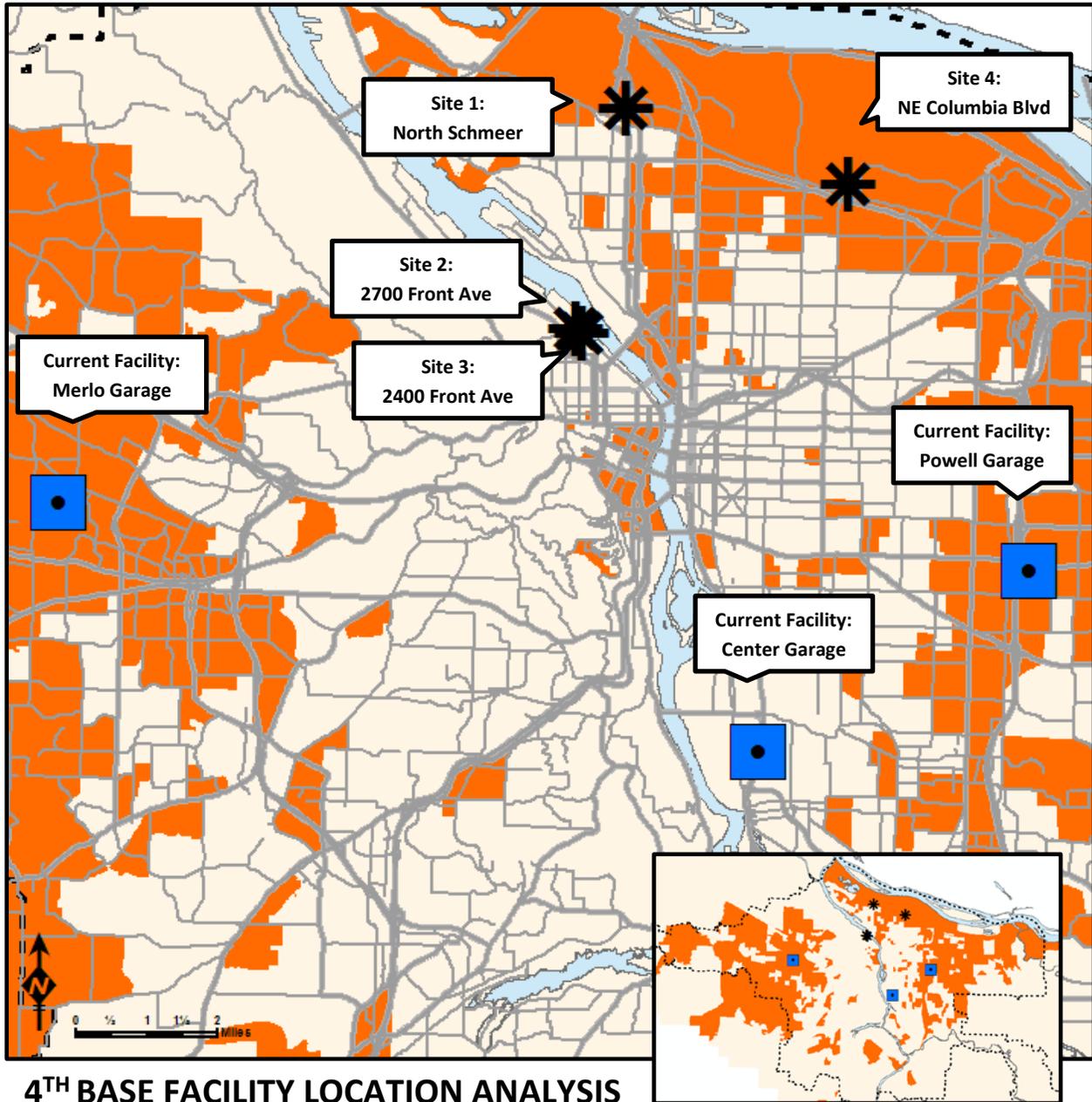
Site 2 has a facility occupied by a light fixture company with no immediate move or relocation strategy. Additionally, Site 2 abuts an industrial engineering and manufacturing firm, as well as several textile, carpet, construction, wine distribution and lumber companies. Site 3 is currently vacant with retail stores, a banking institution, an electric and supply company, and the Pacifica Tower Condos in close proximity to this lot. Both sites are within an area that has low minority populations (16 percent). Given these considerations, the selection of Site 3 does not present any disparate impacts. However, there are potential high impacts for selecting Site 2 given the displacement of the current occupant.

Site 4 is located on a lot occupied by Peterson Caterpillar. The near term plan for this company is to relocate to Hillsboro, Oregon once the construction of their new facility is completed. Site 4 is adjacent to several commercial and industrial properties as noted in Table 4. Although there are residential properties within a ¼ of mile of the property, there is a major arterial thoroughfare (US-30 Bypass – NE Lombard Street) as well as NE Columbia Boulevard that separates this site from nearby residences. Additionally, a berm runs parallel with NE 42<sup>nd</sup> Avenue and the Union Pacific railroad crossing that further separates this site from residential areas. While this area has high minority populations (48 percent), the impacts of the site are expected to be minimal given the aforementioned considerations.

The difference between each site is the expected traffic increases along each street segment due to the number of fixed route buses accessing each site. To inform these impacts, further analysis examined the deadhead routes for each potential bus yard and the number of buses that would use those routes. The maps shown in Appendix A through D provides an illustration of this assessment as well as a mapping of the model noted in Section 4 of this report. To reiterate, the algorithm utilized existing deadhead routes, a bus yard capacity of 208 buses for each potential site, and a spare ratio of 10 percent. This preliminary traffic analysis provided an evaluation tool aimed to reduce overall system-wide deadhead time by assigning existing routes to a new bus yard when optimal (i.e., save time for that route that are based out of existing garages and the number of buses reassigned would not exceed the yard capacity for each site). As noted, each site will pose local traffic concerns in their respective areas. To inform these concerns, a more in-depth traffic study will be performed once the agency moves forward with the selected site.

Thus, after careful consideration of all Title VI related impacts for each site, TriMet has selected Site 4 as the preferred location for the 4<sup>th</sup> maintenance and operations base. This site is the least discriminatory alternative and the selection of this site aligns with the Federal Transit Authority's Title VI guidance for selecting a site. Photographs of the selected site is shown in Appendix E.

Figure 3: Potential 4<sup>th</sup> Base Facility Sites and Minority Population



### 4<sup>TH</sup> BASE FACILITY LOCATION ANALYSIS

Site Alternatives and Minority Population

#### Minority Population by Block Group

- At or below district average
- Above district average

Sources: 2011-2015 American Community Survey, Metro RLIS

## VI. Community Outreach

Initial community outreach to all four sites included direct mailings to the potentially impacted communities, including all business and residential properties within a ¼ of a mile from each site (See Appendix F). The notice, invited recipients to call or email TriMet with questions or comments, was mailed to approximately 693 neighbors (57% residential and 43% commercial). Limited English Proficient populations were also considered in the initial community outreach efforts to ensure meaningful awareness and input. That is, postcards were translated in Spanish, Chinese, and Vietnamese given the large presence of these populations in these areas (See Appendix G for translated postcard).

- TriMet received seven responses from all sites combined.
  - Site 1 – comments included the intention of another business looking to purchase this site for off-site parking.
  - Site 2 – comments (direct mailings and a face-to-face meeting on January 24, 2018) included concerns of how buses will operate, traffic, the potential environmental impacts as well as any mitigation efforts. Information on planned roadway improvements were presented by a Portland Bureau of Transportation representative
  - Site 3 – TriMet did not receive any response to these mailings.
  - Site 4 – comments included concerns for traffic volumes and routes near 42<sup>nd</sup> Avenue.

After identifying Site 4 as the preferred site for the 4<sup>th</sup> maintenance and operations base, TriMet carried out numerous public engagement activities, spanning from March 2018 through June 2018. This section demonstrates that TriMet has and will continue to implement a public engagement program that provides impacted populations with meaningful public involvement opportunities. The following describes how TriMet engaged the potentially impacted community:

- Follow up postcards were mailed on May 16 to business and residential properties within a ½-mile radius around Columbia site announcing site selection, use, and public involvement process. Spanish translations mailings were included.
  - TriMet received three responses. Comments included concerns for increased traffic congestion and safety on 42<sup>nd</sup> Avenue, particularly near Holman Street.
- Meetings with community stakeholders to inform the potential change in use of the site and to identify community interests and concerns. Feedback includes:
  - *Concordia Neighborhood Association* – interest in Prescott/Alberta bus line (Line Z in the North/Central Service Enhancement Plan). Stakeholders mentioned this could be a gesture of goodwill and a mitigation for the impacts of a new bus yard.
  - *Cully Association of Neighbors* – concerns about traffic and air quality; interests in jobs and service coverage in the Prescott area.
  - *Living Cully* – interest in local jobs and electrification of the bus fleet.
  - *Our 42<sup>nd</sup> Avenue* – interest in community stabilization via economic development and land development; better bus stop amenities and pedestrian environment on 42<sup>nd</sup> Ave; new

energy efficiency initiatives; job creation and establish partnerships with existing workforce programs; increase DBE representation; and concern for air quality.

- *NAYA* – interest in more transit service and safety on Columbia Blvd.
- *Verde* – interest in local job/contract sourcing; green technology.
- *Hacienda* – interest in more service in underserved areas and small business opportunities.
- *Columbia Corridor Association* – interest in jobs and electric buses; concerns for traffic impacts and signal design/timing implications for truckers and school buses along Columbia Blvd.
- *Columbia Slough Watershed Council* – interest in habitat restoration and preservation.
- Portland Community College – interest to partner with TriMet to hold future hiring events at the PCC Metropolitan Workforce Training Center and mechanic apprenticeship programs for alternative fuels/electric buses.

Summary of TriMet responses to the aforementioned interests and concerns:

- Jobs – approximately 330 positions for Bus Operators, 30 positions for Journeyworkers, 15 positions for Service Workers, and 25 positions for Management, Training, and Other Support. TriMet will be hiring continually for the next several years and is planning recruitment activities in the vicinity of the Columbia site.
- Engineering and construction contracts – the cost of designing and building the facility is currently estimated around \$35 million, which could include dozens of full-time construction jobs. TriMet will continue its award-winning Disadvantaged Business Enterprise program to maximize contracting with firms owned by people of color and women.
- Roadway improvements – traffic studies are underway to determine what improvements TriMet will make to adjacent streets and sidewalks. It is likely that a traffic signal and bike/pedestrian crossing will be added at NE Columbia Boulevard and 42nd Avenue as well as sidewalks along our frontage.
- Columbia Slough habitat protection – the Columbia Slough flows along the north side of the site, where a 75-foot conservation zone will be protected. TriMet is committed to preserving and enhancing this important fish and wildlife habitat.
- Planned growth or land use effects – the proposed project is fully compatible with the short- and long-term zoning. TriMet has a comprehensive plan use of the site. By providing for more bus capacity in the region, this project will enable TriMet to support additional growth by mitigating traffic impacts throughout the region and providing affordable mobility for those with few other options.
- Air quality and traffic congestion – locating a garage in Northeast Portland -- where TriMet has some its most robust bus service -- allows buses to begin and end their routes closer to their home base. This minimizes the time buses spend in traffic between the garage and the start or end of their service route. Regionally, the proposed project will reduce air quality impacts. Riding transit significantly reduces emissions of both local pollutants and greenhouse gases compared to driving.

TriMet is beginning a broader transition to alternative fuels, but the timeline for replacing the entire bus fleet has not been determined and will take a number of years to replace the existing fleet as each bus reaches its useful life. To start, the new garage will domicile buses from the existing biodiesel-mix fleet, but the site design will allow for transition to alternative fuels as older buses are replaced.

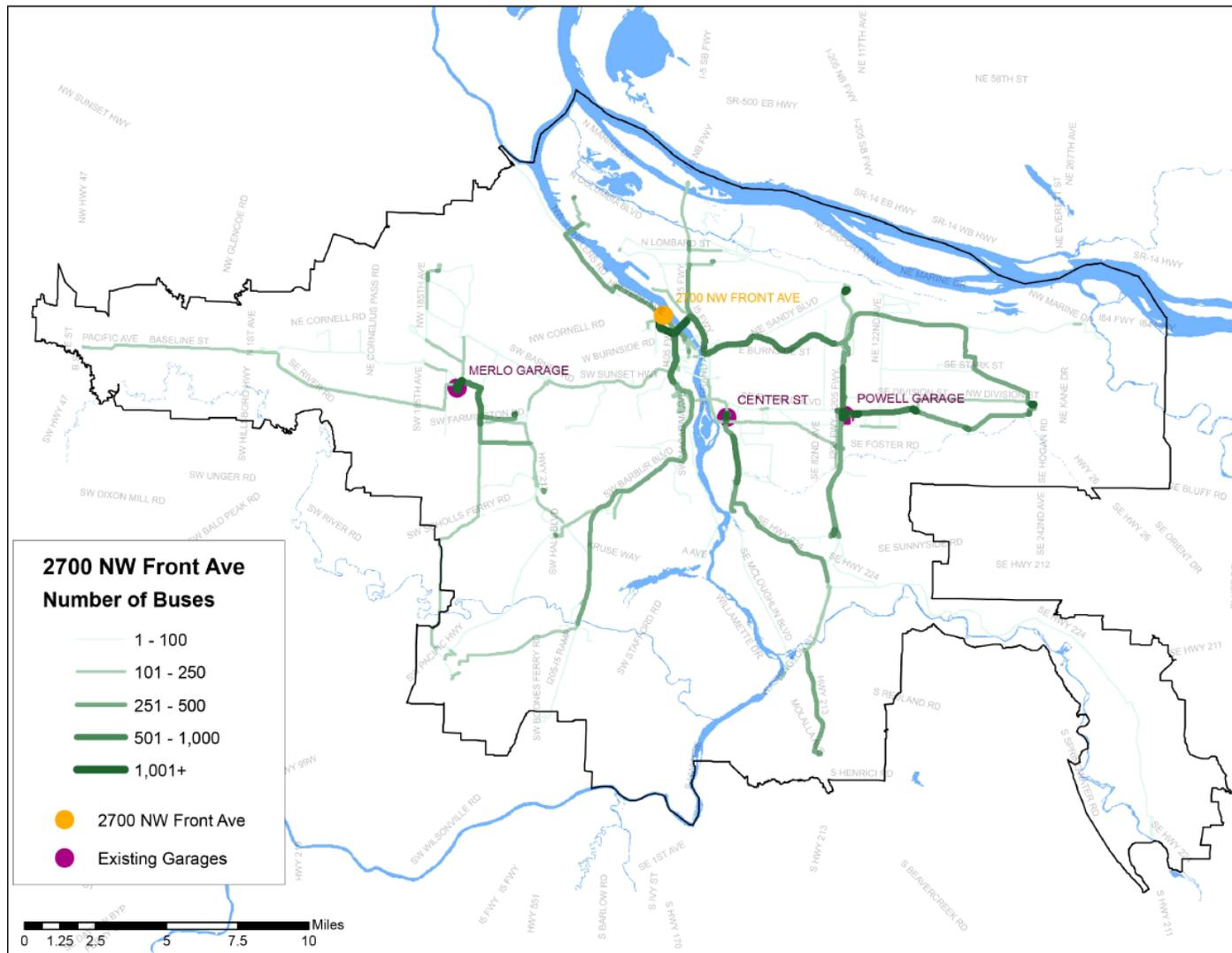
## VII. Conclusion

This equity analysis has aimed to guide TriMet on selecting a 4<sup>th</sup> base facility location that does not result in disparate impacts on the basis of race, color, or national origin. The process by which TriMet identified and narrowed down potential sites for the facility was based on acquisition and capital costs, availability, property size (12+ acres), geographic proximity to the service area, transportation access, traffic analysis, and the rough deadhead cost analysis. Given this, the assessment of potential equity impacts and robust community outreach efforts, constructing the new 4<sup>th</sup> maintenance and operations base at the NE Columbia Boulevard location is expected to have minimal impacts in comparison to the other three sites.

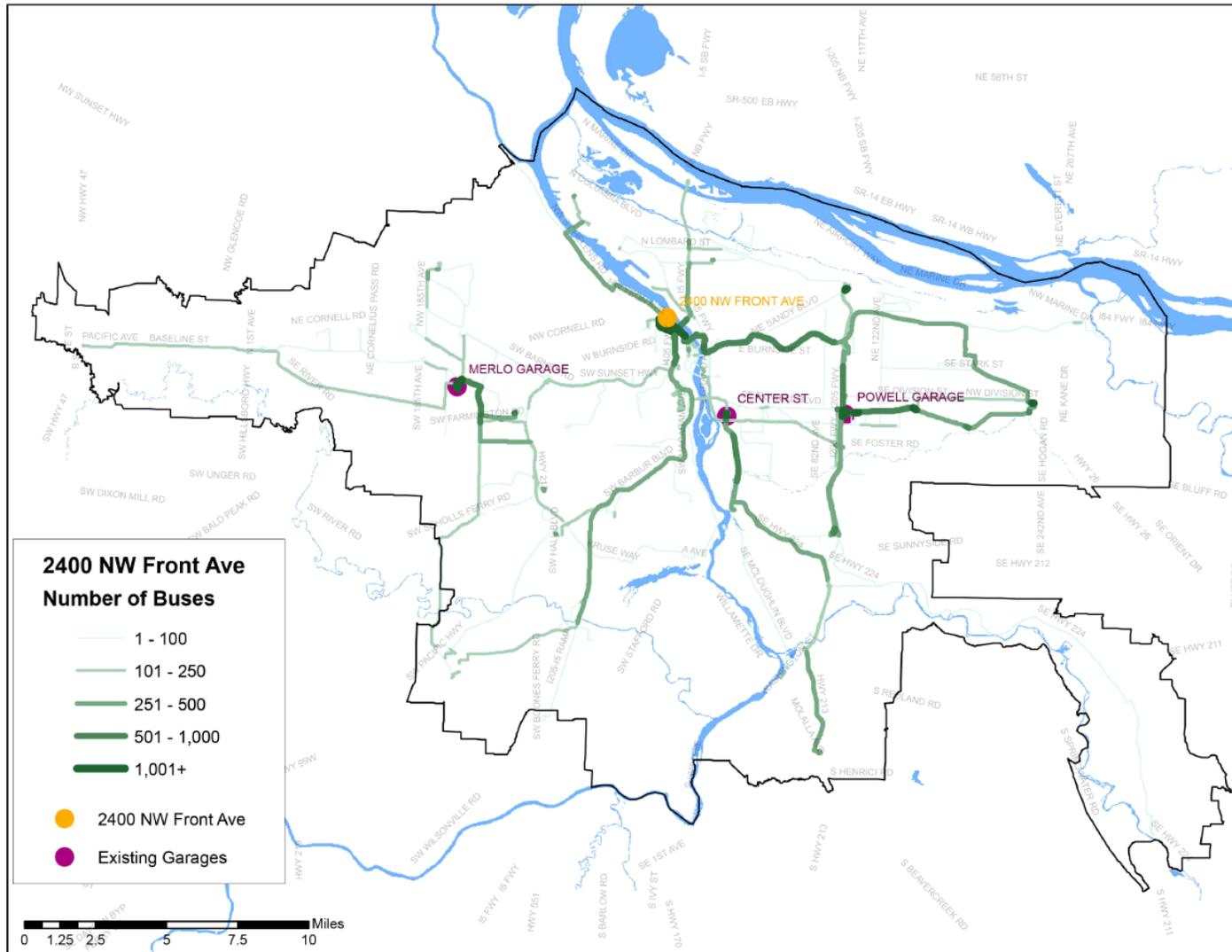
DRAFT



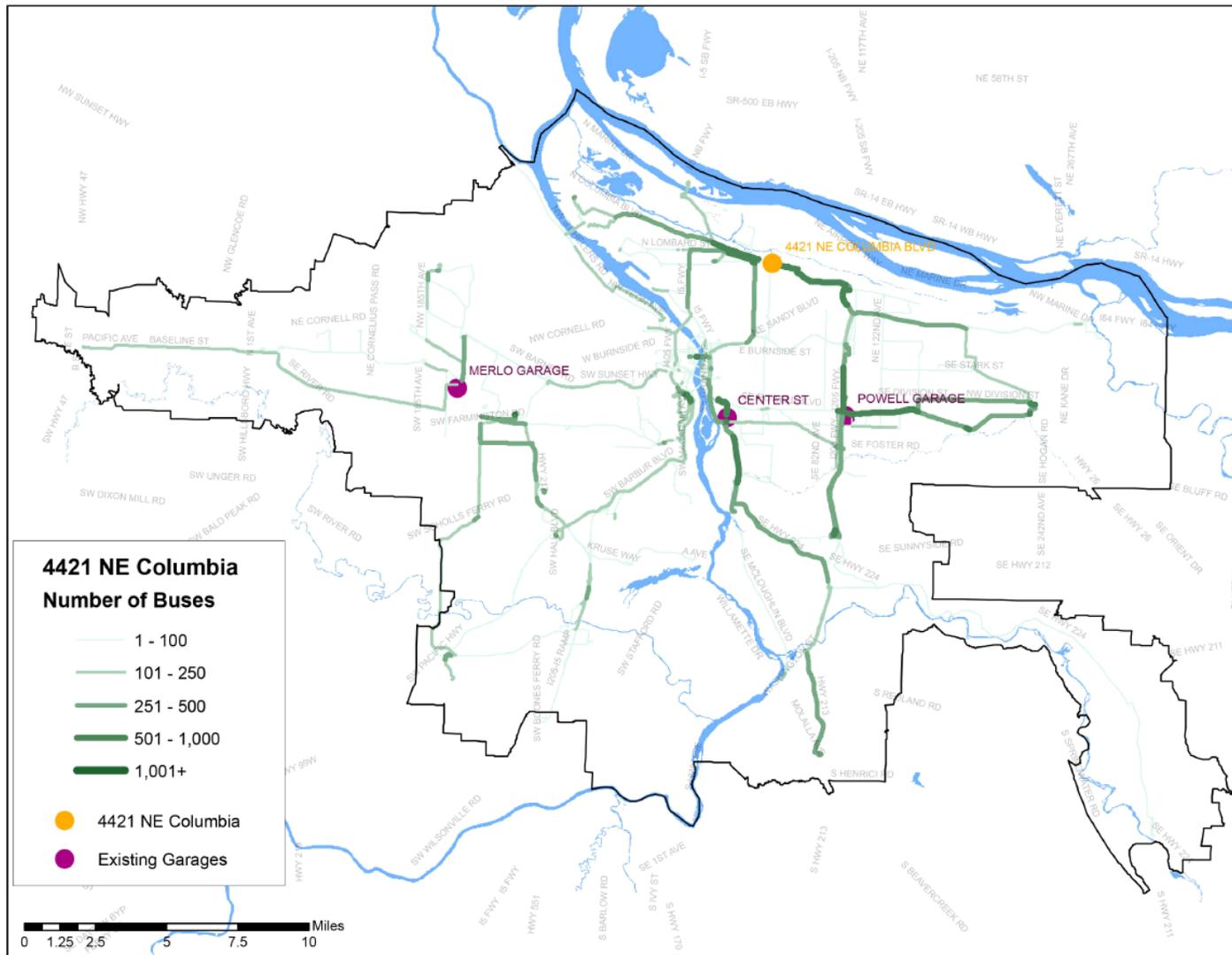
## Appendix B: Deadhead Routes and Buses Traveling Over A One Week Period, October 2017



## Appendix C: Deadhead Routes and Buses Traveling Over A One Week Period, October 2017



## Appendix D: Deadhead Routes and Buses Traveling Over A One Week Period, October 2017



## Appendix E: Photographs of Site 4





## Appendix G: Translated Postcard

# Notice



## Proposed site for a new bus garage

TriMet is continuing a 10-year expansion of transit throughout the Portland area that includes new bus lines and more frequent service. As our bus fleet grows, we have begun exploring several potential locations for a new bus garage. We would store and maintain vehicles here, as well as send buses out into service on various routes.

We plan to make a final decision and begin design in early 2018. Construction would start in 2018 or 2019 and we would begin using the facility as soon as it is complete.

We're considering building a new bus garage at **1501 N Schmeer Road**. If you have questions or feedback about this proposed location, contact Clay Thompson at [thomsoc@trimet.org](mailto:thomsoc@trimet.org) or call 503-962-6438.

Chúng tôi đang dự định xây một sân đậu xe buýt mới tại địa chỉ **1501 N Schmeer Road**. Nếu quý vị có thắc mắc hay đề nghị gì về địa điểm này, xin liên lạc với ông Clay Thompson bằng email [thomsoc@trimet.org](mailto:thomsoc@trimet.org) hoặc điện thoại số 503-962-6438.

我们正在考虑在**1501 N Schmeer** 路建一个新的公共汽车车库。如果您对该建议地点有任何疑问或反馈，请发送邮件 [thomsoc@trimet.org](mailto:thomsoc@trimet.org)，或拨打电话503-962-6438与 Clay Thompson联系。

170469 • 35 • 12/17



TRI MET

## Appendix H: Updated Postcard

# Notice



## Update on TriMet's search for a new operations base

For several months, TriMet has been searching for a new bus garage to accommodate our continuing 10-year expansion of transit throughout the Portland area. Our search considered multiple locations around the region and the property located at **4421 NE Columbia Blvd** has been selected as the best fit for this new facility.

We're working with the property owner on a purchase offer and will soon release a request for proposal for design of the new facility. Construction would start in 2019 and we would begin operating the facility as soon as it's complete.

We will be scheduling public meetings to present ideas and solicit feedback. If you have questions about this proposed location, contact Jason Williams at [WilliamJ@TriMet.org](mailto:WilliamJ@TriMet.org) or call 503-962-2150.

*Map on other side →*

4/18



# Appendix I: EJ Screen Memorandum



## Memo

**Date:** February 15, 2018  
**To:** Distribution  
**From:** Carl Green Jr, Title VI & Equity Programs Administrator  
**Subject:** 4<sup>th</sup> Base Property Selection and Other Considerations

Although not exclusively part of the FTA’s Title VI Site Alternatives Equity Analysis, TriMet utilized EPA’s Environmental Justice mapping and screening tool, titled EJSCREEN, to provide additional information for the Steering Committee to consider. This tool provides a nationally consistent dataset and approach for combining environmental and demographic indicators. The purpose of the tool is to provide a "screening-level" look, which is a useful first step in understanding or highlighting locations that may be candidates for further review. However, it is essential to assert that screening-level results: 1) do not, by themselves, determine the existence or absence of environmental justice concerns in a given location; 2) they do not provide a risk assessment; and 3) have other significant limitations.

The intent of presenting the results is to help determine whether cumulative adverse impacts might result due to the presence of other facilities with similar impacts in the area. This tool serves as a baseline for understanding the current environmental justice related impacts at each site. Therefore, the 4th base may potentially have a cumulative impact to the current state of each site.

Please feel free to contact me with any questions or comments, [greenc@trimet.org](mailto:greenc@trimet.org) or ex.5711.

**Table 1: EJSCREEN Environmental Justice Index Results and Existing Impacts for Each Location**

EJ Index Variables	Schmeer		Front		Columbia	
	%ile*	Existing Impact	%ile	Existing Impact	%ile	Existing Impact
Particulate Matter (PM 2.5)	53	MEDIUM	11	LOW	80	HIGH
NATA Diesel PM	38	MEDIUM	1	LOW	80	HIGH
NATA Air Toxics Cancer Risk	51	MEDIUM	4	LOW	79	HIGH
NATA Respiratory Hazard Index	34	MEDIUM	0	LOW	91	HIGH
Traffic Proximity and Volume	8	LOW	0	LOW	81	HIGH

\* %ile = Percentile compares each site, using a ¼ of a mile buffer, to the rest of the United States population

**Distribution:**

- Alan Lehto, Director Business Planning & Asset Management
- Sandy Bradley, Director Program Management, Capital Projects
- Nicholas Stewart, Manager Real Property, Capital Projects
- John Gardner, Director Diversity and Transit Equity
- Lance Erz, Director Real Property

Tri-County Metropolitan Transportation District of Oregon • 1800 SW First Avenue, Suite 300, Portland, Oregon 97201 • 503-238-RIDE • TTY 7-1-1 • trimet.org