July Regional Technical Advisory Committee Packet

This packet of information is to support the upcoming regional technical advisory committee meetings planned for Tuesday July 21st in Kenmore, Wednesday July 22nd in Kent and Tuesday July 28th in Mercer Island.

At these meetings, our project team would like to talk with you about the types and locations of transit service you would like to see in your community in the future. We will be breaking into small groups, similar to the last regional TAC meetings, so that our staff can gain a good understanding of your city's transit interests.

The attached materials (including those coming on Monday) were prepared to help with this workshop and in responses to the inquiries received from TAC members, including those requested at the last meeting.

We recognize that we are providing you a lot of detailed and complex information. We are trying to present the material in as clear and simple a way as possible, but we know it will still take some time to digest. We will do our best to answer any questions you may have at the workshops or in follow up e-mails of phone calls as questions arise.

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King County Metro Long Range Plan
Regional Technical Advisory Committee

Agenda

July 21, 1:00-3:00PM
Kenmore City Hall
18120 68th Ave NE
Kenmore, WA 98028

Meeting Objectives:

- Review additional analysis of service emphases
- Collect feedback on what types of service should be provided where
- Report on out findings

1:00 – 1:10 p.m. **Planning process check-in -** Alicia

1:10 – 1:30 p.m. **Present additional Service Emphasis analysis** -Alicia/Stephen

- Major findings of Proximity analysis
    - Buffer maps and bar charts (19 maps and 5 charts)
    - Mode of Access maps and charts (3 maps and 1 chart)
- Major findings of Accessibility analysis
    - Jobs and population access maps and charts (6 maps and 4 charts)
    - Ratio of night trips to peak maps and charts (3 maps and 1 chart)
- Major findings of Ridership
    - Change in Transit Trips (3 maps and 4 charts)
    - Change in mode split (3 maps and 4 charts)
    - Screenline volumes (1 map and 2 charts)

1:30 – 2:40 p.m. **What types of service where workshop –** Everyone

- Facilitated break out to collect information about jurisdictional priorities and feedback
    - Collect prepared maps
    - Draw on network base maps (large maps of 3 concepts for each participant/group)
    - Guide participants in understanding what kind of service goes where and what kind of service is likely to have what kind of impact on proximity, accessibility and ridership

2:40 – 3:00 p.m. **Report Out -** Everyone

Next TAC meeting August 25

King County Metro Long Range Plan
Regional Technical Advisory Committee

Agenda

July 22, 1:00-3:00PM
Centennial Building
South Conference Room
400 West Gowe St
Kent, WA 98032

Meeting Objectives:

- Review additional analysis of service emphases
- Collect feedback on what types of service should be provided where
- Report on out findings

1:00 – 1:10 p.m. **Planning process check-in -** Alicia

1:10 – 1:30 p.m. **Present additional Service Emphasis analysis** -Alicia/Stephen

- Major findings of Proximity analysis
  - Buffer maps and bar charts (19 maps and 5 charts)
  - Mode of Access maps and charts (3 maps and 1 chart)
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  - Jobs and population access maps and charts (6 maps and 4 charts)
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2:40 – 3:00 p.m. **Report Out -** Everyone

Next TAC meeting August 25

King County Metro Long Range Plan
Regional Technical Advisory Committee

Agenda

July 28, 1:00-3:00PM
Mercer Island City Hall
9611 SE 36th St
Mercer Island, WA 98040

Meeting Objectives:

- Review additional analysis of service emphases
- Collect feedback on what types of service should be provided where
- Report on out findings

1:00 – 1:10 p.m. **Planning process check-in -** Alicia

1:10 – 1:30 p.m. **Present additional Service Emphasis analysis** -Alicia/Stephen

- Major findings of Proximity analysis
  - Buffer maps and bar charts (19 maps and 5 charts)
  - Mode of Access maps and charts (3 maps and 1 chart)
- Major findings of Accessibility analysis
  - Jobs and population access maps and charts (6 maps and 4 charts)
  - Ratio of night trips to peak maps and charts (3 maps and 1 chart)
- Major findings of Ridership
  - Change in Transit Trips (3 maps and 4 charts)
  - Change in mode split (3 maps and 4 charts)
  - Screenline volumes (1 map and 2 charts)

1:30 – 2:40 p.m. **What types of service where workshop –** Everyone

- Facilitated break out to collect information about jurisdictional priorities and feedback
  - Collect prepared maps
  - Draw on network base maps (large maps of 3 concepts for each participant/group)
  - Guide participants in understanding what kind of service goes where and what kind of service is likely to have what kind of impact on proximity, accessibility and ridership

2:40 – 3:00 p.m. **Report Out -** Everyone

Next TAC meeting August 25

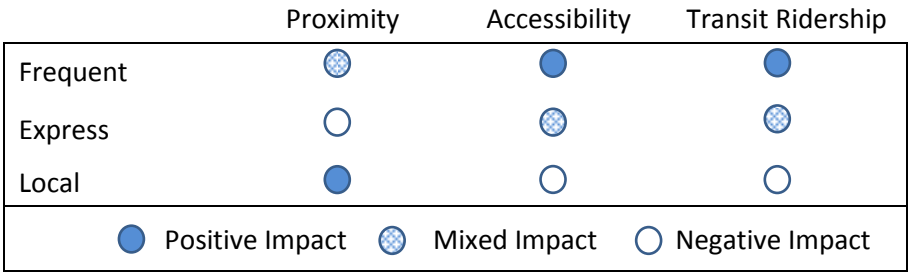
Review of High level impacts of service emphases:

At the June TAC meeting we reviewed some of the high level impacts of the different service emphases. Below is a review of different kinds of service we tested and the general impact of prioritizing a specific kind of service.

Kinds of Service*	Where best used	Design characteristics	Purpose/Result
Frequent: Every 10-15 min 20 hr/day	Long dense corridors, serves multiple trip types	• Mile route spacing • Grid orientation	Improve general **accessibility** and **ridership**
Express: Every 15-30 min 15 hr/day	Between centers of high transit demand	• Longer distance • Limited stops • Direct connections • Higher speed corridors	Improve point to point **accessibility** and **ridership** for high demand centers
Local: Every 30-60 min 18 hr/day	Lower density or hard to serve neighborhoods	• ½ mile route spacing • Direct connections	Improve **proximity** to transit

*See Concept Development Framework pg. 22 for more information on kinds of service

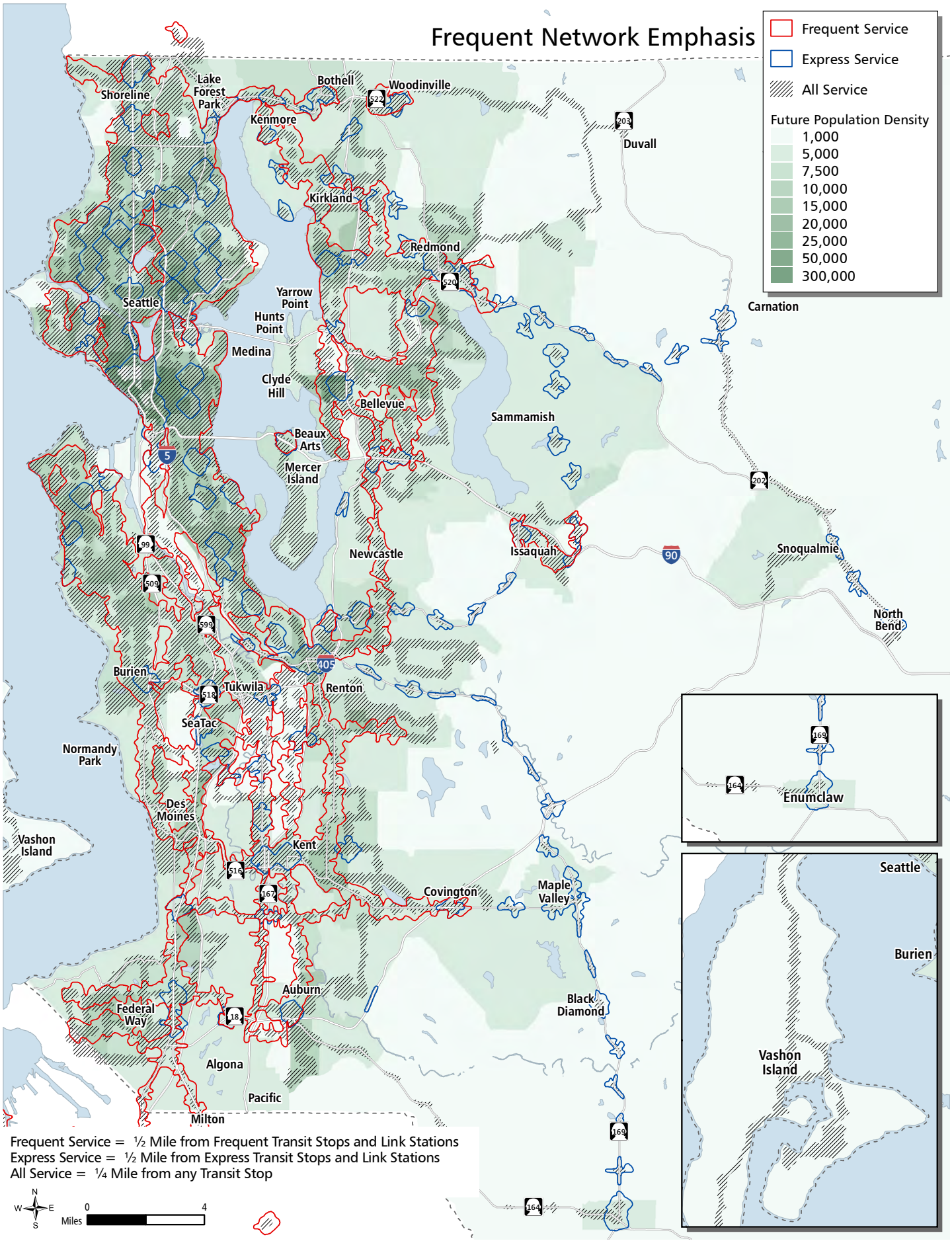
Summary of Impacts



At the highest level the analysis shows that we can generally expect the kinds of impact shown above on the three key factors of proximity, accessibility and ridership. The table below illustrates the impacts we saw on in our analysis of the different service emphases. The bolded numbers were the best performers. The negative numbers show the difference between the best performer and the performance of the given service emphasis. For example, in the local service emphasis approximately 2 million people in 2040 would be within a ¼ mile of transit while in the express network there would be 390,000 fewer people within a ¼ mile of transit, or 20% fewer than in the local emphasis.

	Emphasis ranges examined	**Proximity** Pop	**Proximity** Emp	**Accessibility** Pop with access to 30k jobs in 30 min	**Transit Ridership** (Daily)
Frequent	25% to 70%	-260,000 (13%)	-180,000 (11%)	**1,200,000**	**1,000,000**
Express	5% to 50%	-390,000 (20%)	-198,000 (12%)	-130,000 (11%)	-100,000 (10%)
Local	25% to 60%	**2,000,000**	**1,600,000**	-260,000 (22%)	-250,000 (25%)

Proximity Analysis


Frequent Network Emphasis
Frequent Service
Express Service
All Service
Future Population Density
1,000
5,000
7,500
10,000
15,000
20,000
25,000
50,000
300,000
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Carnation
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Sammamish
Beaux Arts
Mercer Island
Newcastle
Issaquah
Snoqualmie
North Bend
Burien
Tukwila
Renton
SeaTac
Normandy Park
Des Moines
Vashon Island
Kent
Covington
Maple Valley
Auburn
Black Diamond
Federal Way
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Vashon Island
Frequent Service = ½ Mile from Frequent Transit Stops and Link Stations
Express Service = ½ Mile from Express Transit Stops and Link Stations
All Service = ¼ Mile from any Transit Stop
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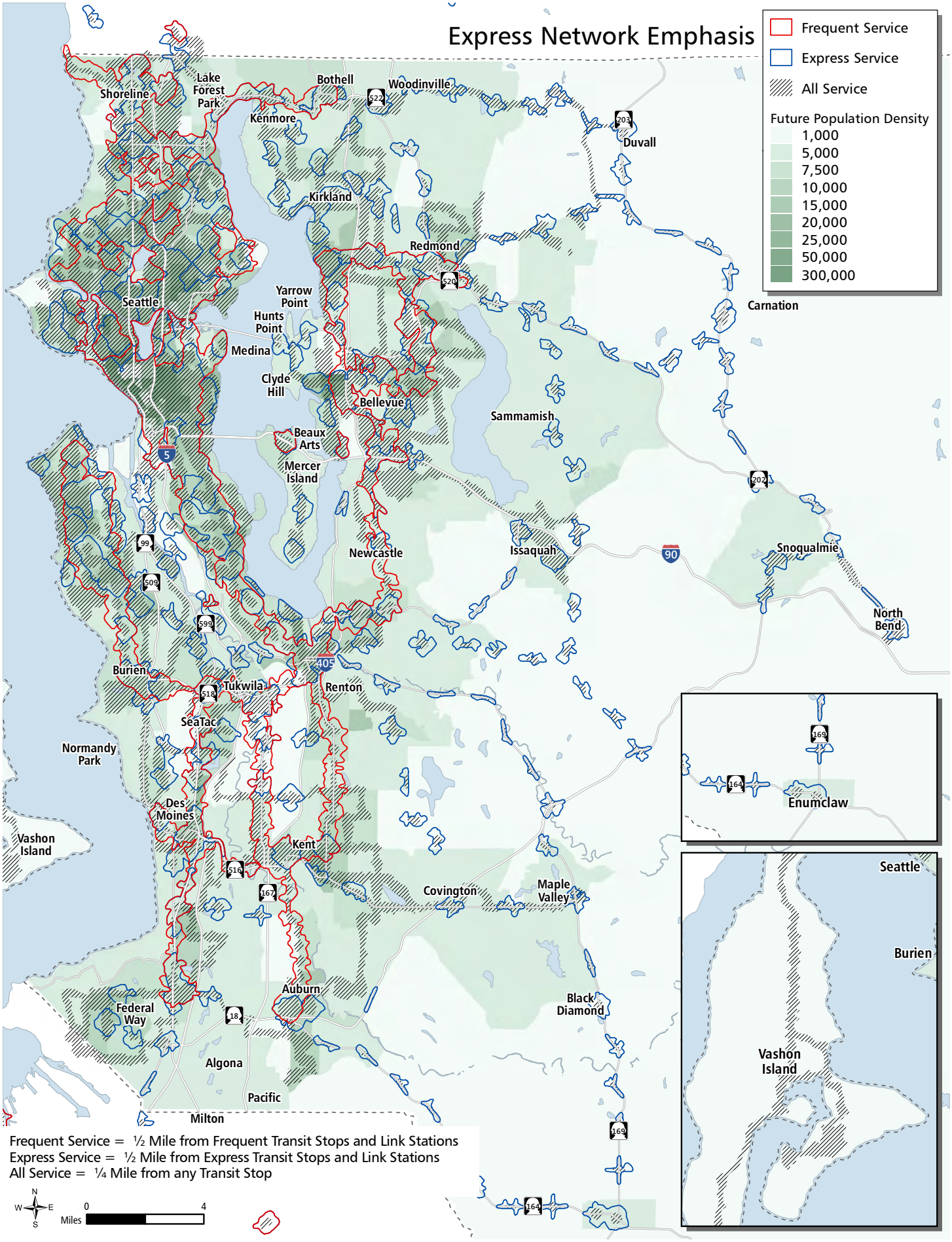
Miles


Express Network Emphasis
Frequent Service
Express Service
All Service
Future Population Density
1,000
5,000
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15,000
20,000
25,000
50,000
300,000
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
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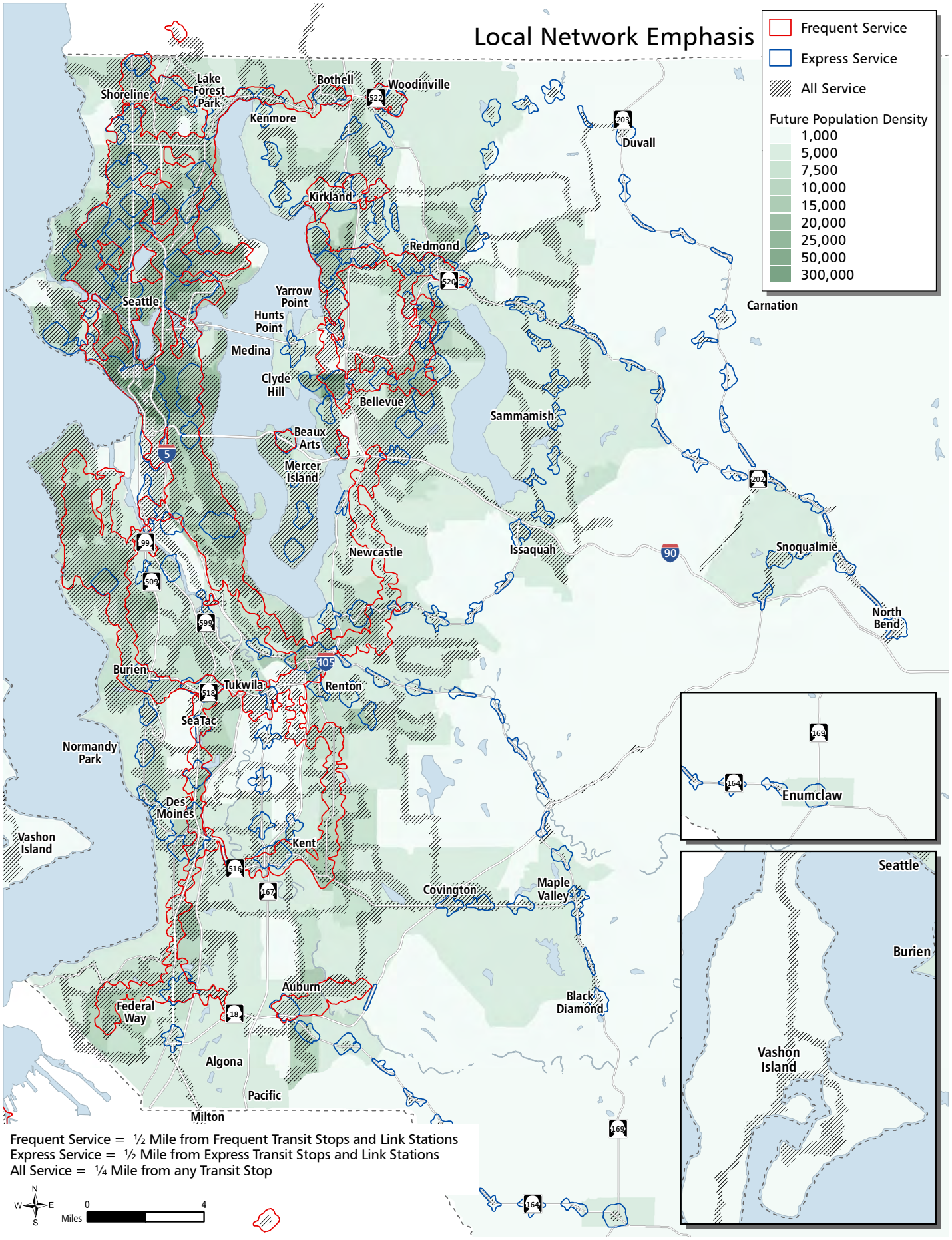
Local Network Emphasis
Frequent Service
Express Service
All Service
Future Population Density
1,000
5,000
7,500
10,000
15,000
20,000
25,000
50,000
300,000
Shoreline
Lake Forest Park
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Bothell
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Renton
SeaTac
Normandy Park
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Vashon Island
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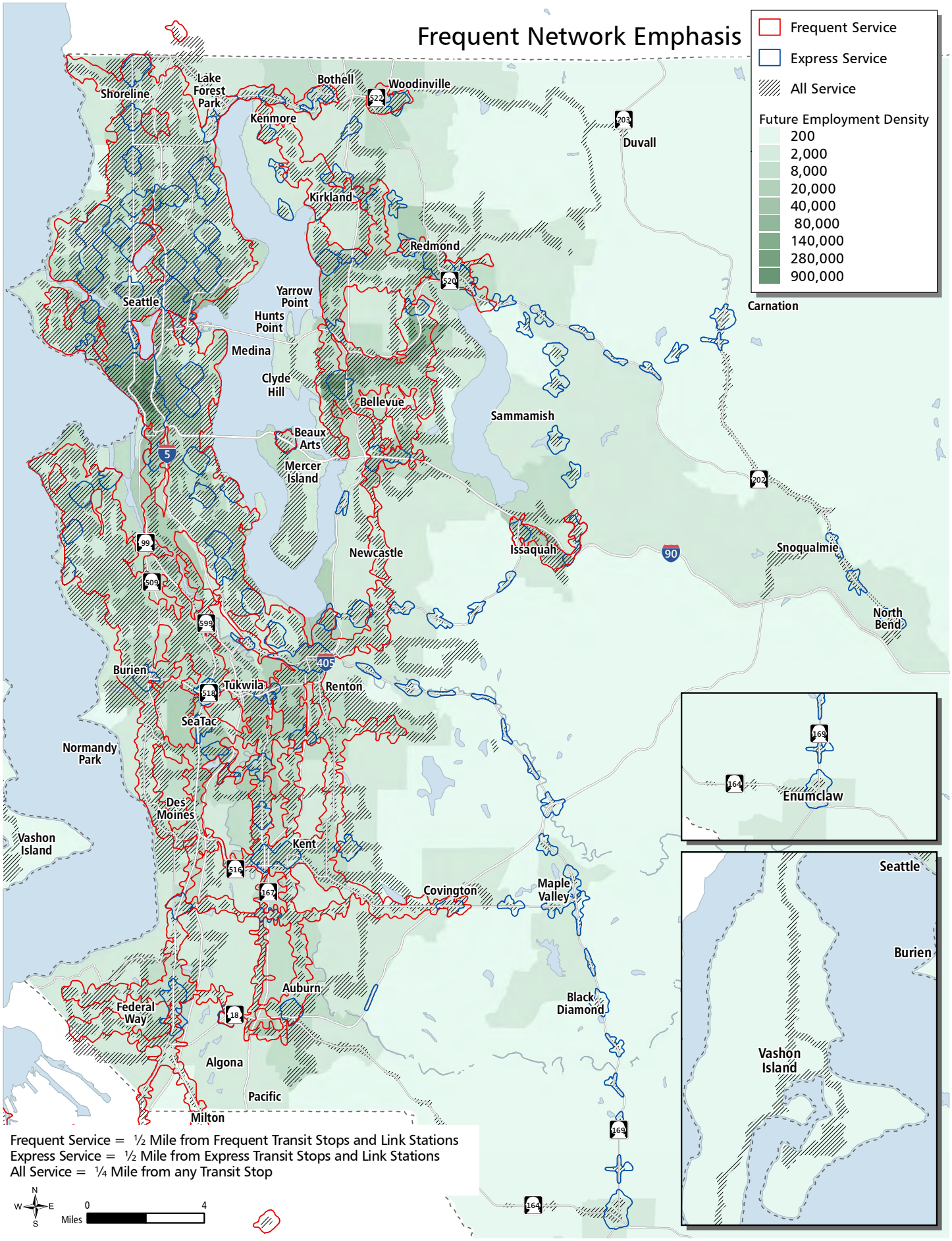
Frequent Network Emphasis
Frequent Service
Express Service
All Service
Future Employment Density
200
2,000
8,000
20,000
40,000
80,000
140,000
280,000
900,000
Shoreline
Lake Forest Park
Bothell
Woodinville
Kenmore
Duvall
Kirkland
Redmond
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Yarrow Point
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Clyde Hill
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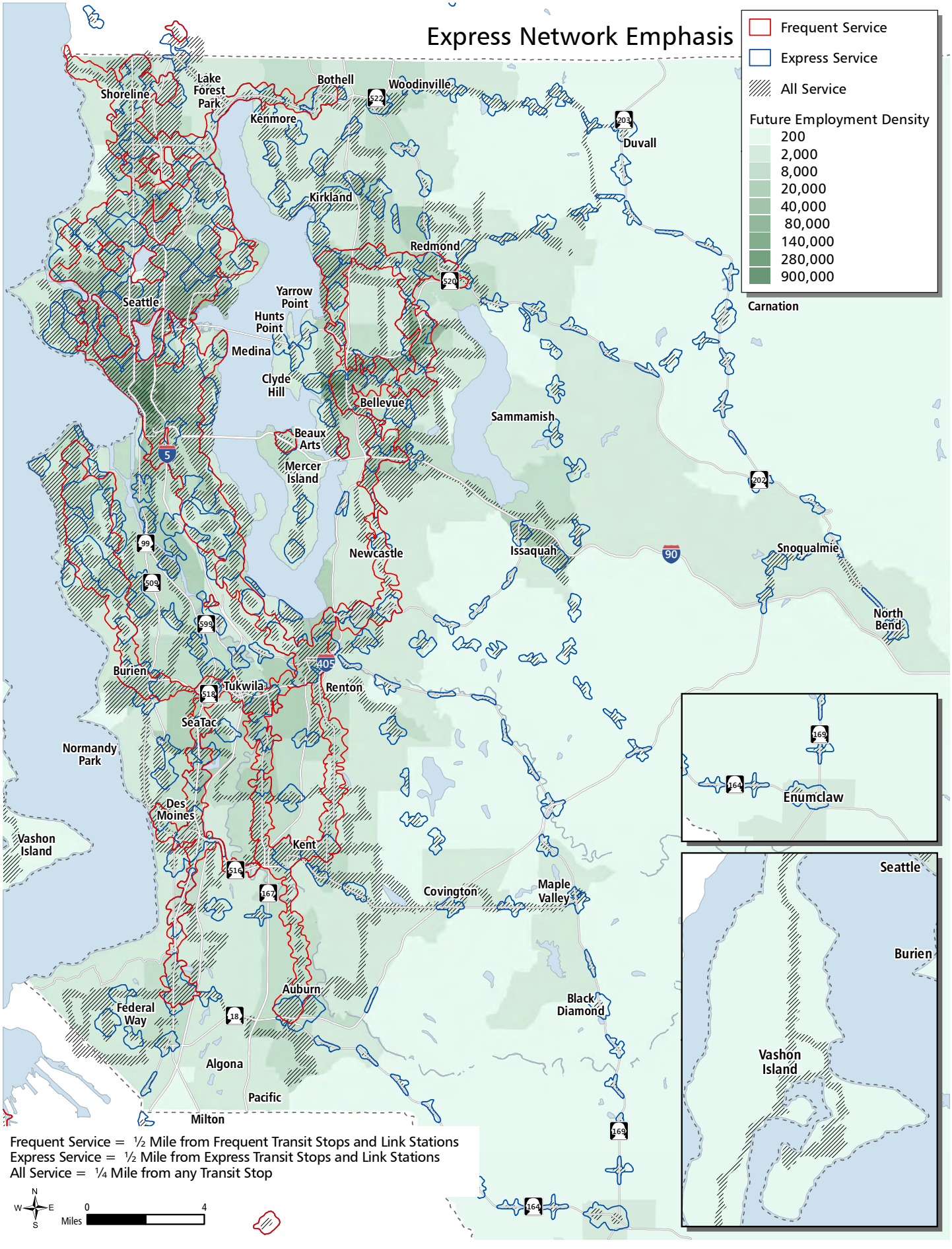
Express Network Emphasis
Frequent Service
Express Service
All Service
Future Employment Density
200
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Shoreline
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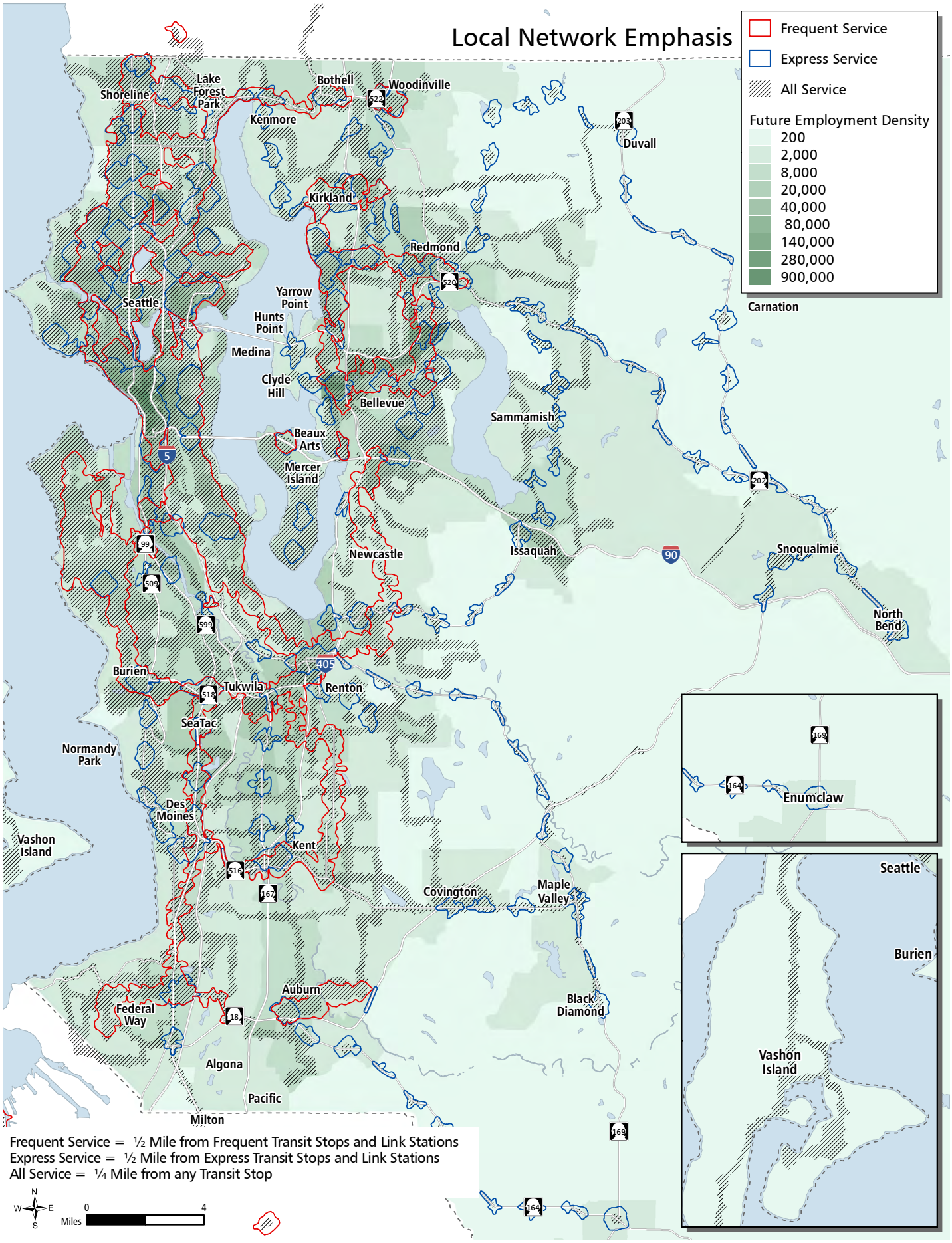
Local Network Emphasis
Frequent Service
Express Service
All Service
Future Employment Density
200
2,000
8,000
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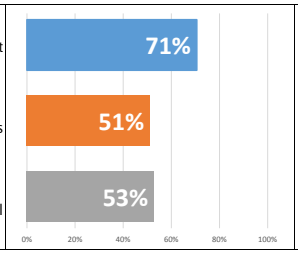
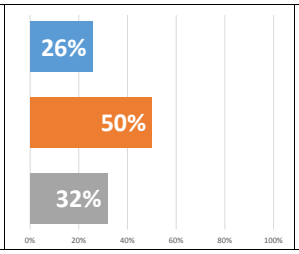
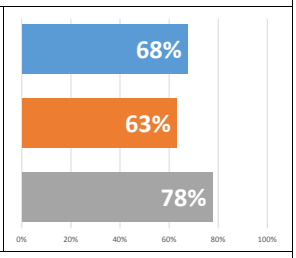
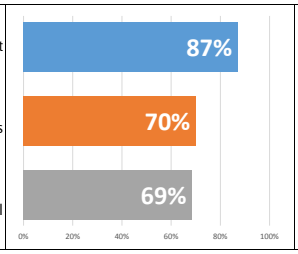
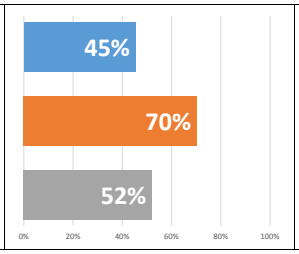
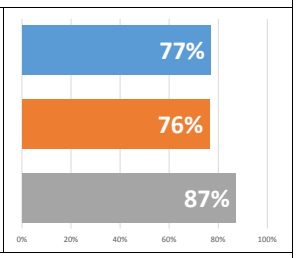
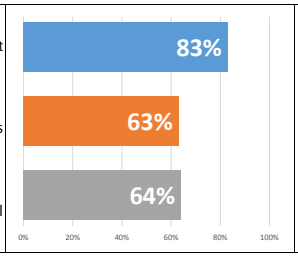
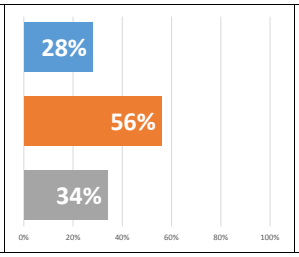
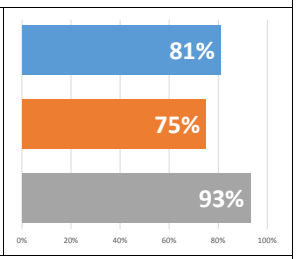
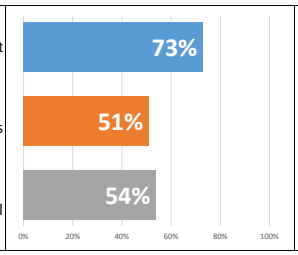
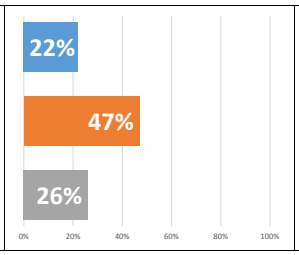
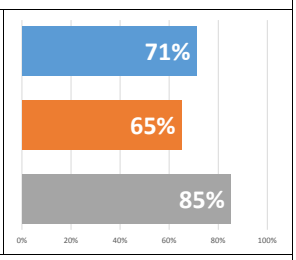
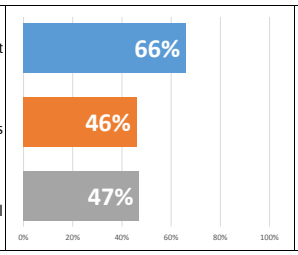
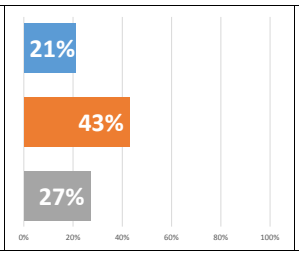
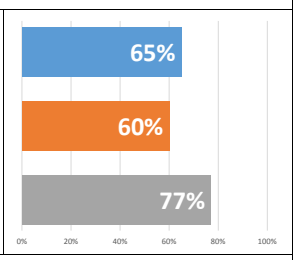
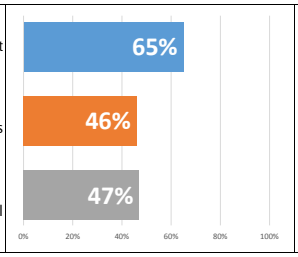
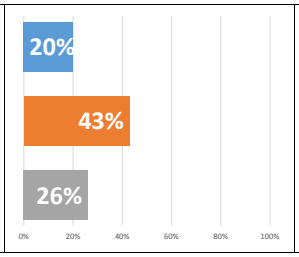
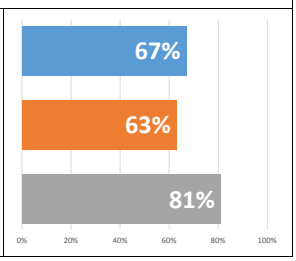
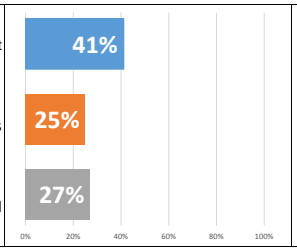
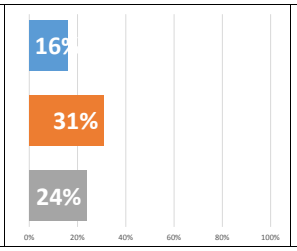
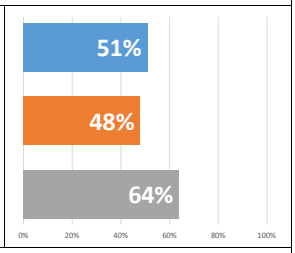
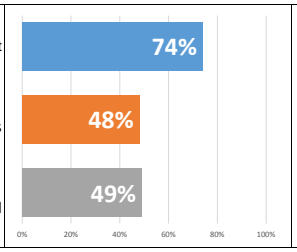
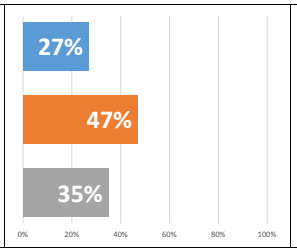
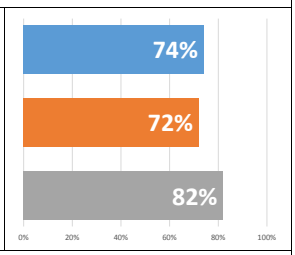
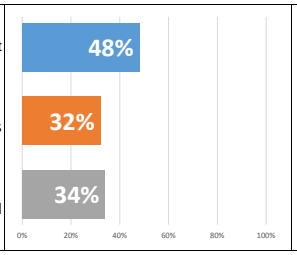
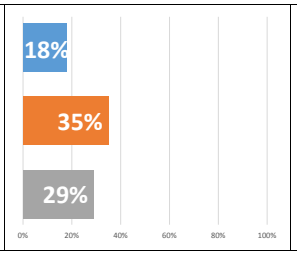
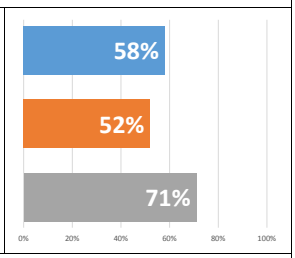
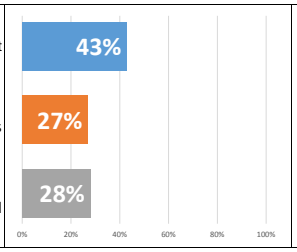
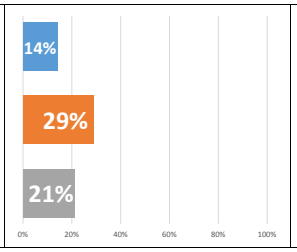
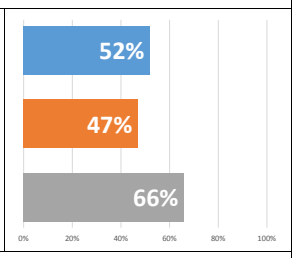
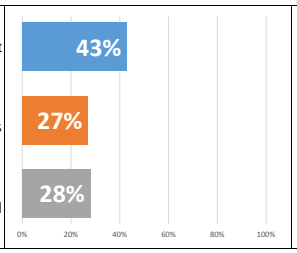
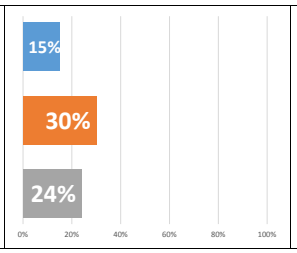
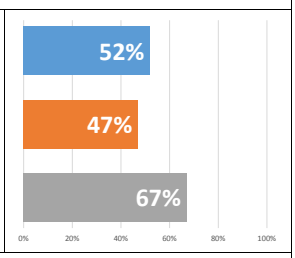
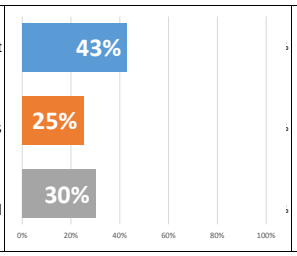
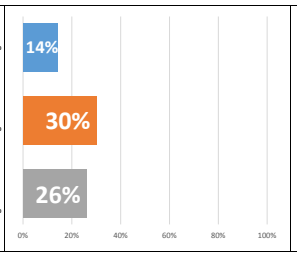
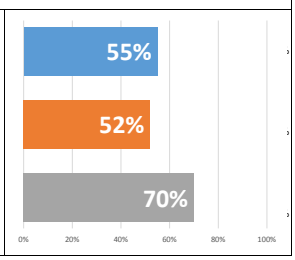
Countywide

DEMOGRAPHIC	Service Every 15 Minutes or Better	Service with Limited Stops	All Service
Total Population			
Total Employment			
Low Income			
Minority			
Persons with Disabilities			
Age - 65 and Over			

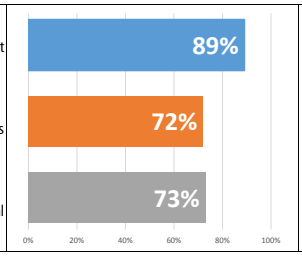
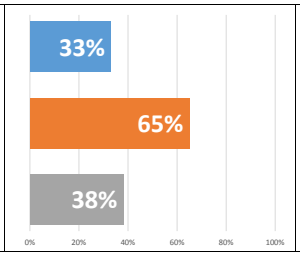
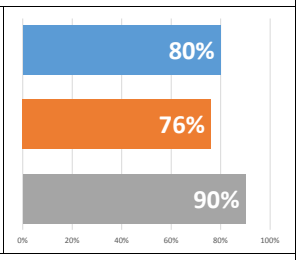
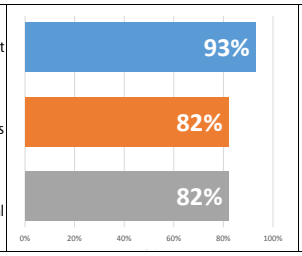
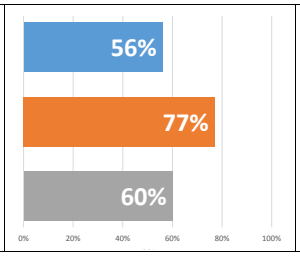
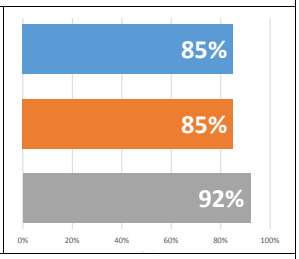
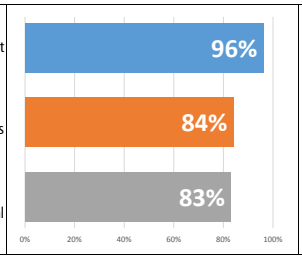
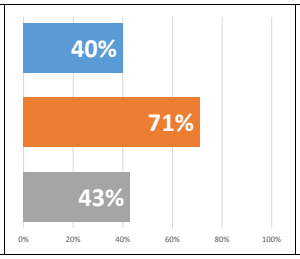
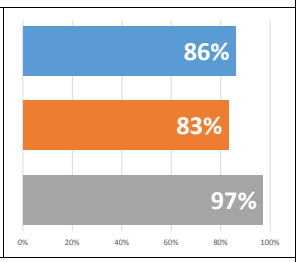
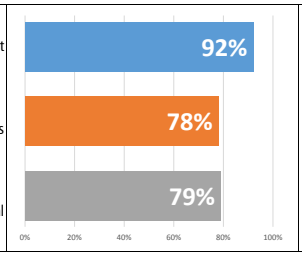
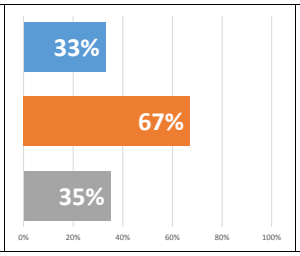
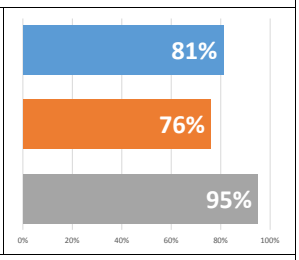
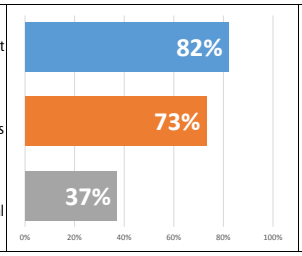
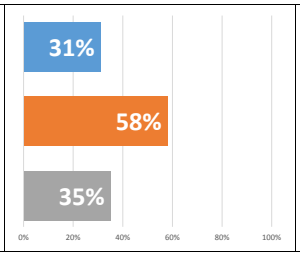
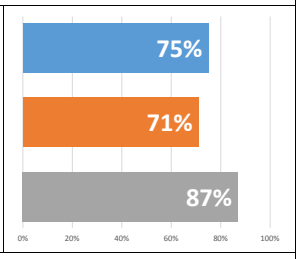
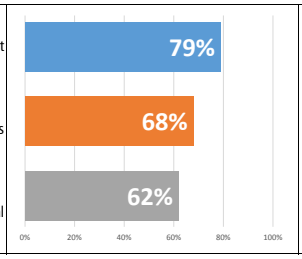
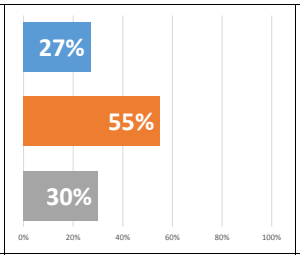
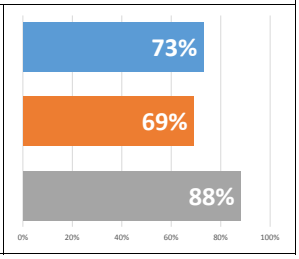
Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop

Northeast

DEMOGRAPHIC	Service Every 15 Minutes or Better	Service with Limited Stops	All Service
Total Population			
Total Employment			
Low Income			
Minority			
Persons with Disabilities			
Age - 65 and Over			

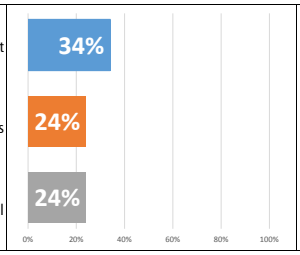
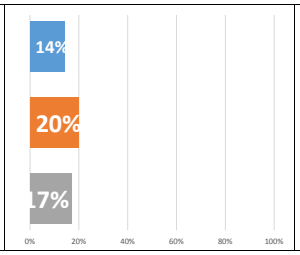
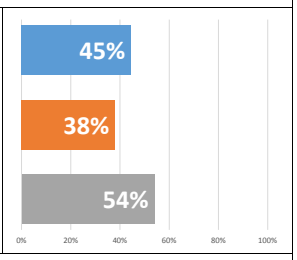
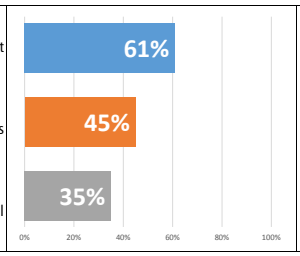
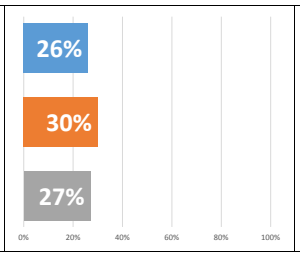
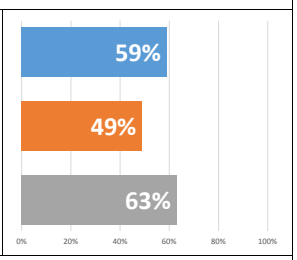
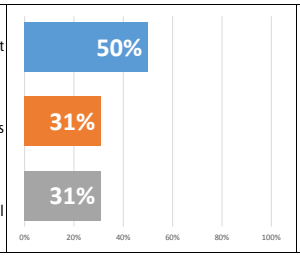
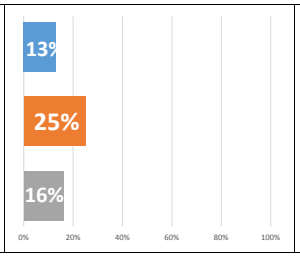
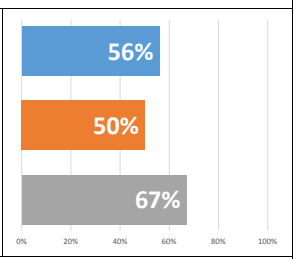
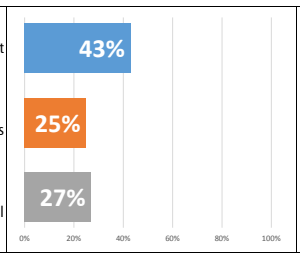
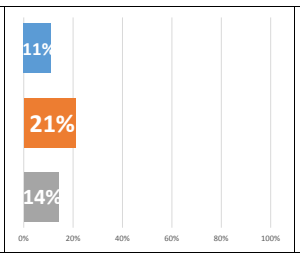
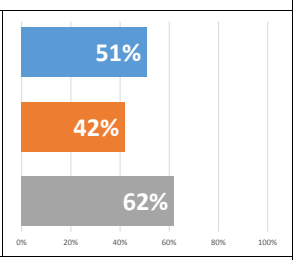
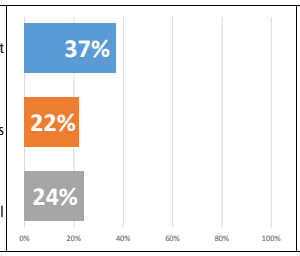
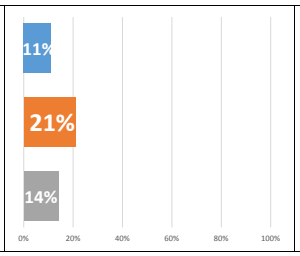
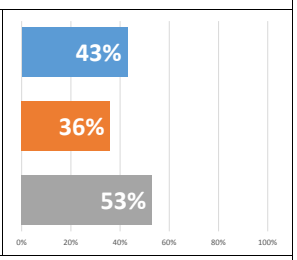
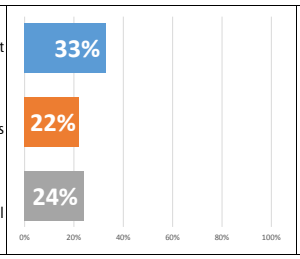
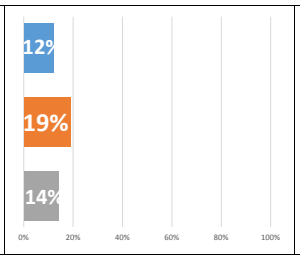
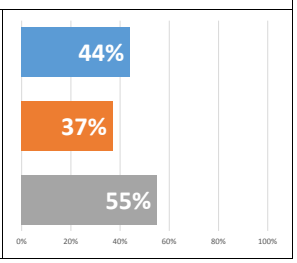
Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop

Northwest

DEMOGRAPHIC	Service Every 15 Minutes or Better	Service with Limited Stops	All Service
Total Population			
Total Employment			
Low Income			
Minority			
Persons with Disabilities			
Age - 65 and Over			

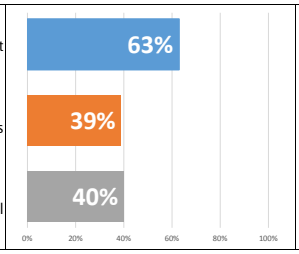
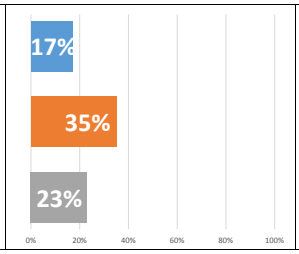
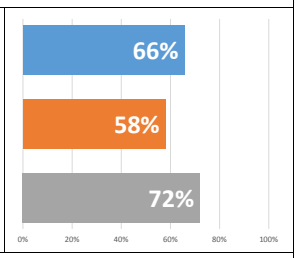
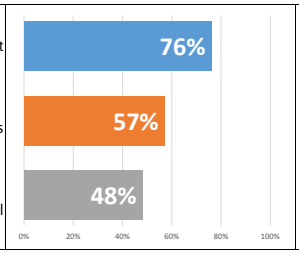
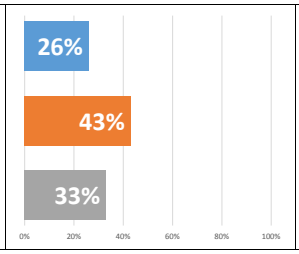
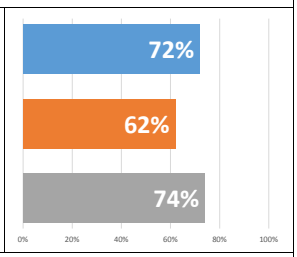
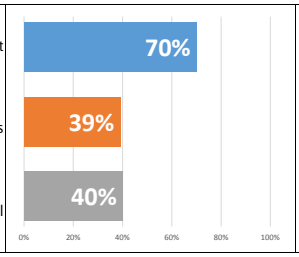
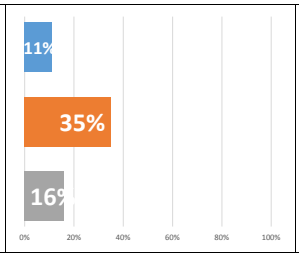
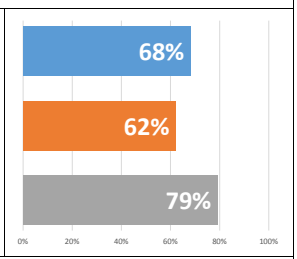
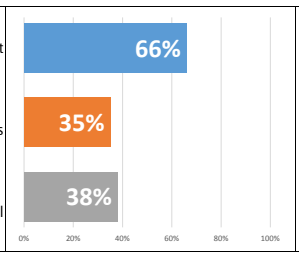
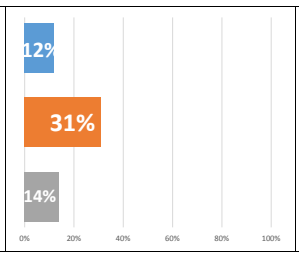
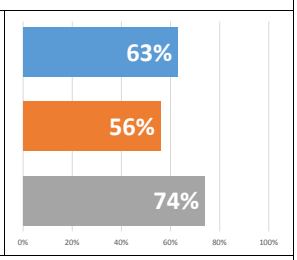
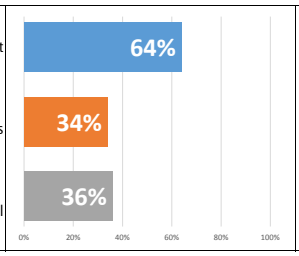
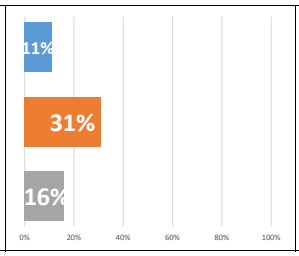
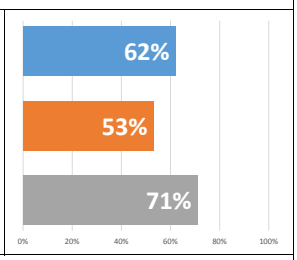
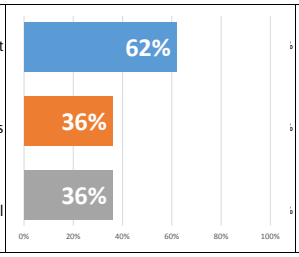
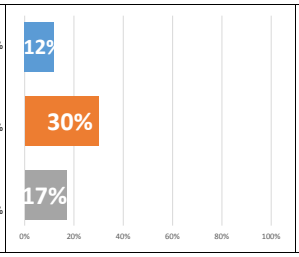
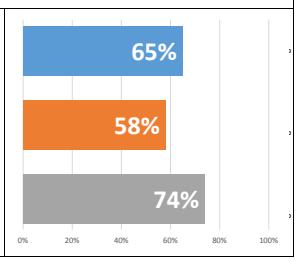
Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop

Southeast

DEMOGRAPHIC	Service Every 15 Minutes or Better	Service with Limited Stops	All Service
Total Population			
Total Employment			
Low Income			
Minority			
Persons with Disabilities			
Age - 65 and Over			

Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop

Southwest

DEMOGRAPHIC	Service Every 15 Minutes or Better	Service with Limited Stops	All Service
Total Population			
Total Employment			
Low Income			
Minority			
Persons with Disabilities			
Age - 65 and Over			

Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop

MEMORANDUM

Date: July 13, 2015

To: King County Metro Transit

From: Chris Breiland and Aaron Gooze, Fehr & Peers

Subject: Ridership Modeling Process for King County Metro Transit Long Range Public Transportation Plan

SE14-0371

This memorandum briefly describes the computerized ridership modeling process that Fehr & Peers developed for the Long Range Public Transportation Plan (LRPTP). The primary purpose of the modeling process was to compare the performance of three conceptual service networks using an adopted set of metrics. The main feature of the model is its ability to calculate transit travel times based upon factors such as the roadway network, projected congestion, and anticipated travel speeds. Because the layout and service distribution of the three conceptual service networks differed and the base factors generally remained the same, the model calculated different ridership, jobs accessibility, and travel times for each conceptual network.

Components and Use of the Ridership Model

The LRPTP model is based upon Sound Transit's ridership model for the Puget Sound Region, which has been accepted by the Federal Transit Administration for use in regional transit planning. The Sound Transit model serves as a good foundation of the LRPTP ridership forecasting for the following reasons:

- It is based on regional (Puget Sound Regional Council) land use and transportation network assumptions
- It is the same tool that is being used for Sound Transit Long Range Plan update and ST3 system planning
- It produces the most accurate ridership results compared to other available tools

The LRPTP model is known as a "pivot" model. Pivot models work by adjusting existing transit ridership data up or down based upon known relationships between ridership and key factors that influence people's choice of mode. For the LRPTP model, this existing data is increased proportionate to the amount of projected growth in 2040. In addition to the factors that influence mode choice, the LRPTP model includes assumptions about future land use distributions as well as the use, size and distribution of park-and-ride facilities. Factors and assumptions in the model include, but are not limited to:

- Future land uses: Utilizes PSRC estimates for distribution of households and jobs in 2040[1]
- Transit fares: Assumed to follow inflation
- Level of roadway congestion: Based on PSRC estimates for peak and off-peak travel times and congestion
- Tolls: System-wide tolling on all limited-access freeways assumed
- Park-and-ride facilities: All existing King County Metro and Sound Transit park-and-ride facilities were assumed, as well as those funded by ST2
- Parking costs: Assumed 1.5% annual growth rate in parking costs
- Transit (bus or train) travel times: Vary based upon service type, due to roadways utilized and density of stops
- Number of transfers: Assumes impacts to ridership for trips that include transfers
- Transfer wait times: Based upon the headways for the service family; assumes impacts to ridership for trips that have longer transfer wait times
- Transit wait times: Based on frequency of service, with shorter wait times for more frequent service
- Roadway network: Includes all improvements assumed in the Transportation 2040 constrained plan.

When using the model to compare the three conceptual service networks, most of the above listed factors and assumptions remained the same. However, in order to understand the impacts of capital improvements, some changes to these factors and assumptions were made for the Frequent and Express service emphases. These changes include:

- Frequent Service Emphasis network: The capital improvements included for the Frequent Service Emphasis focus on improving the speed and reliability of the transit system, primarily on routes with frequent, all-day service. The majority of the capital improvements focus on transit priority treatments such as transit signal priority, queue jump lanes and/or BAT/Transit lanes. Two additional major access improvements, a new crossing of the Ship Canal near 15th Avenue NW and a new transit tunnel through Downtown Seattle, were also included.
- Express Service Emphasis network: The capital improvements identified for the Express Service Emphasis focus on improving access to and from the regional HOV lane system and on a major expansion of the park-and-ride system. Direct access ramp projects were included on I-405 (largely based on the I-405 Corridor Program Master Plan) as well as

[1] The PSRC estimates for distribution of households and jobs in 2040 are based upon a forecasting process conducted with jurisdictional support. King County Metro is aware that many cities are in the process of updating their comprehensive plans, which could result in a shift in the location of future growth. The model utilizes traffic analysis zones (TAZs) to predict travel demand and travel patterns. TAZs are often large and cover areas that contain many parcels. Therefore, if a jurisdiction's updated comprehensive plan identifies future growth in the same TAZ (even if it is not the same parcels) as the PSRC estimates, that growth is accurately captured in the model. In developing the draft preliminary service concept, Metro will work with jurisdictional staff to identify the appropriate corridors for future transit service which will more accurately reflect future development patterns.

limited locations on the SODO Busway, West Seattle Freeway. I-5 and SR 167. The number of park-and-ride stalls at government-owned facilities was assumed to double from just over 20,500 today to approximately 41,000. For modeling purposes only, these new parking spaces are assumed to be located at existing park-and-ride lots that have high utilization (greater than 70%) and at the new facilities proposed by Sound Transit as part of the Link extension projects.

The model will be run with the capital changes turned "on" and "off" in order to help assess the impacts of these capital improvements. When turned "on", the capital improvements resulted in higher ridership for each of the two service networks. Increased parking capacity resulted in a ridership increase by providing space for additional riders to access the transit network. The roadway improvements equate to faster transit travel speeds, which increases the appeal of transit over driving and drawing more riders. Additionally, because transit travel speeds increased, riders could travel farther within 30 minutes, thereby increasing their access to more jobs.

Travel Demand

Countywide travel demand is a significant aspect of the model. Travel demand represents the collective desire for people to move throughout the county by any mode. Travel demand is determined by the size, density and location of different types of land uses. Residential land uses are "origins" and land uses that represent employment are "destinations". Employment land uses "pull" or attract travelers from residential areas. The strength of the destination's pull results from a combination of its location relative to the origin and the number and density of jobs. The travel demand is calculated from each origin to each destination, thereby creating the total travel demand for the county. For modeling purposes, origins and destinations are calculated by traffic analysis zones (TAZs). The TAZs vary in size, future population and employment, and densities[2]. There are 545 TAZs in King County and a total of 953 TAZs in the LRPTP model.

The factors and assumptions within the model influence how people travel, including the route taken and their mode choice. Modification of any of the factors or assumptions will result in different travel patterns to varying degrees, based upon the extent and type of modification. The model also predicts if a trip includes multiple modes, such as a drive to a park-and-ride with a transfer to a bus.

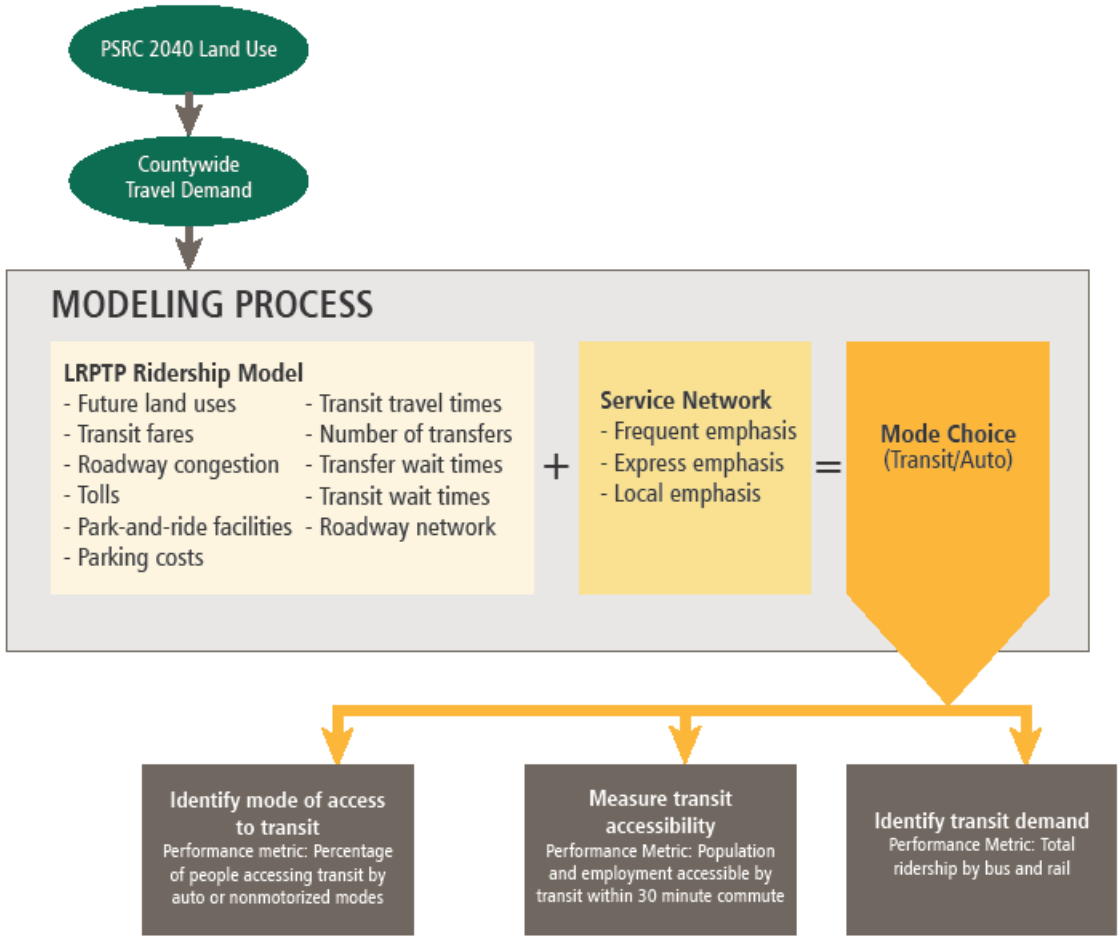
Because the land use assumptions are consistent for all three service network concepts, the initial countywide travel demand is the same for all of them. The mix of transit service types that make up the different concepts, as well as any capital improvements, result in different *transit*

[2] Although the TAZs vary in size, the densities within each one is calculated in the same way. For both population and employment, the density is calculated per square mile of the individual TAZ. (Density of a TAZ = Population or employment of TAZ/Area of TAZ (in square miles). Therefore, a TAZ that has 1,000 households in 10 square miles has the same density as a TAZ with 2,000 households in 20 square miles.

demands, which is subsequently reflected in the results of performance metrics including ridership, accessibility to jobs, and mode split. These results will help King County Metro develop the draft and final preliminary concept, with the intent of creating a network that best meets the countywide travel demand.

Flowchart

The flowchart below summarizes the ridership modeling process:



Concept Development Framework

This matrix details the assumptions and operational inputs utilized for development of the three service network concepts (Frequent, Express and Local). They include an increase in the existing operating hours by approximately 65 percent. This framework was used to help define service types for ensuring that the three service network concepts have the same total hours allocated and should not be construed as an indication of how all types of service will be provided in the future. As we develop the final concept, it is anticipated that we will refine the, service spans and speeds within the service type as needed.

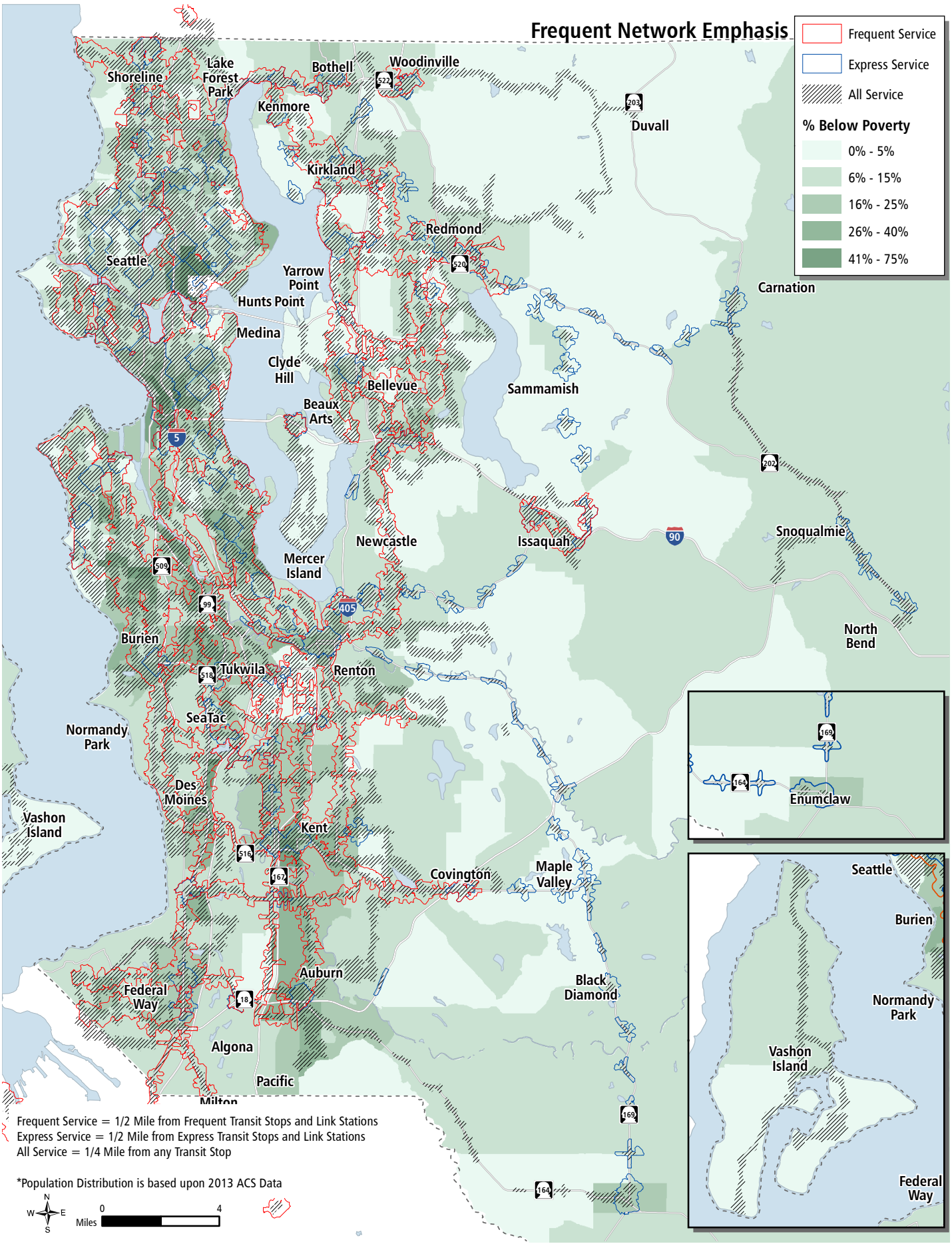
	Concepts		
Service Type	Frequent	Express	Local
Frequent	70%	25%	25%
Local	25%	25%	60%
Express	5%	50%	15%
Total	100%	100%	100%

	Headway			Operation Inputs			Concepts			Existing
							Daily Revenue Hours[2]			Hours
Service Type	Peak	Off-Peak	Night	Speed	Service Hours	Average Daily Trips per Route	Frequent	Express	Local	Existing[3]
Frequent	10	10	15	16	20	208	9085	3245	3245	4323
Local	30	30	60	12	18	60	3245	3245	7787	2652
Express[1]	15	30	30	22	15	84	1688	7528	2986	1896
							14017	14017	14017	8871

[1] Express service assumes two-way service all day with a small percentage of hours assumed as peak-direction express service. Revenue hours of peak-direction express include the deadhead mileage. ST Express hours (a total of 1039) were incorporated into each concept to demonstrate a fully integrated transit network. ST and KCM will identify service providers for various corridors through the on-going integration process.

[2] Daily revenue hours are assumed for weekdays only.

[3] Existing frequent and express services do not all meet future standards such as service headways and span of service


Frequent Network Emphasis
Frequent Service
Express Service
All Service
% Below Poverty
0% - 5%
6% - 15%
16% - 25%
26% - 40%
41% - 75%
Shoreline
Lake Forest Park
Bothell
Woodinville
Kenmore
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Beaux Arts
Sammamish
Carnation
Newcastle
Issaquah
Snoqualmie
Mercer Island
North Bend
Burien
Tukwila
Renton
SeaTac
Normandy Park
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Kent
Covington
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Black Diamond
Algona
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Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop
*Population Distribution is based upon 2013 ACS Data
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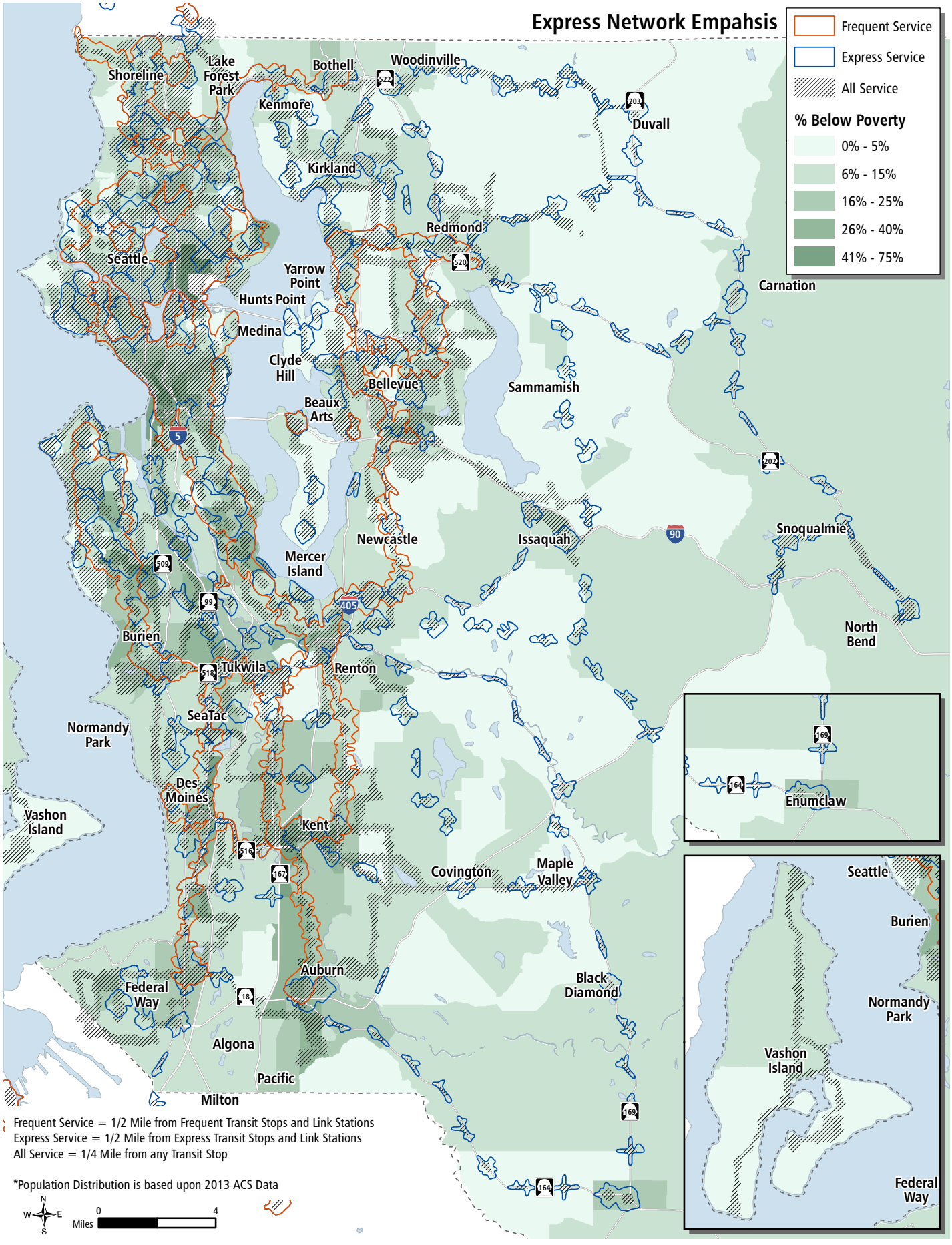
Express Network Empahsis
Frequent Service
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All Service
% Below Poverty
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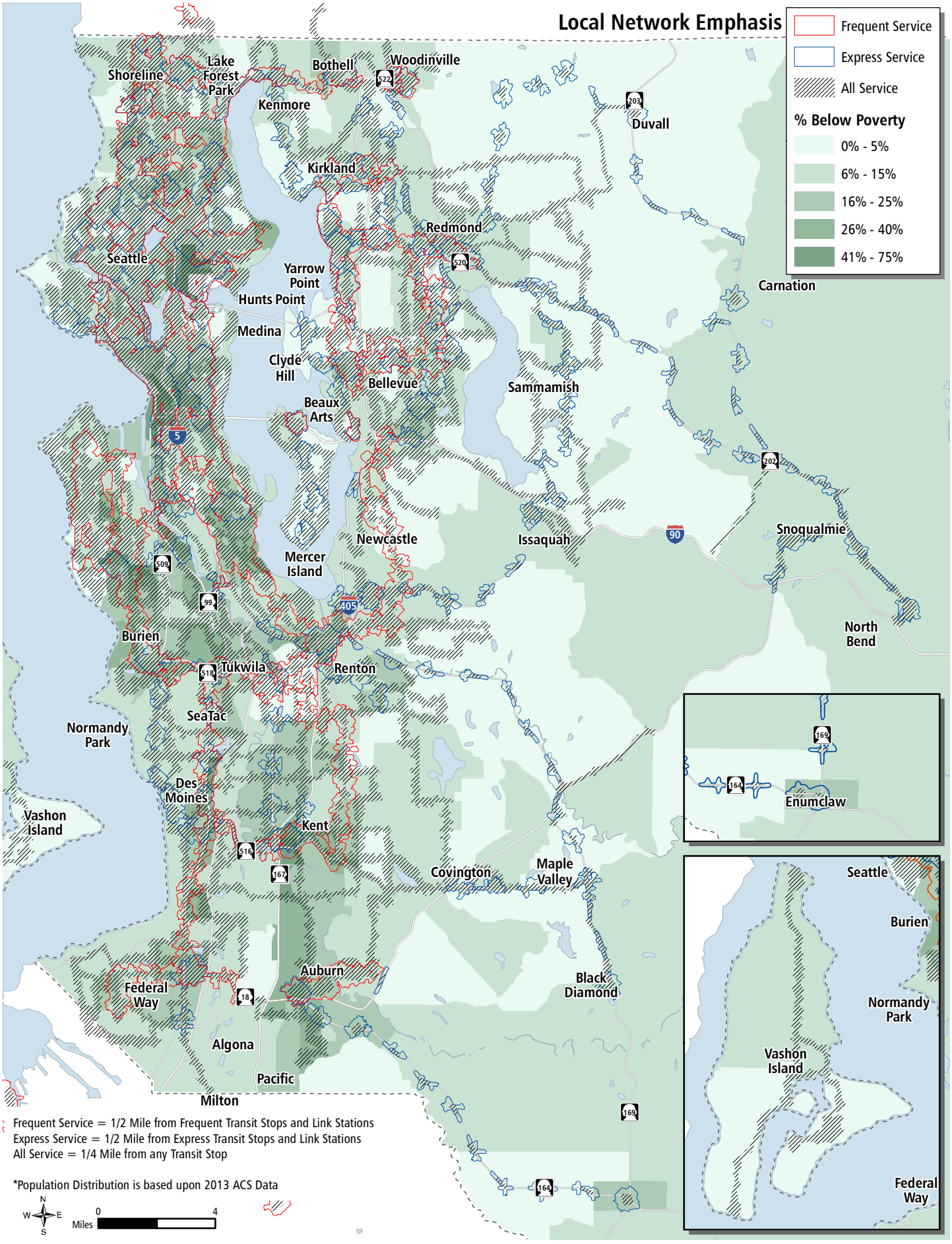
Local Network Emphasis
Frequent Service
Express Service
All Service
% Below Poverty
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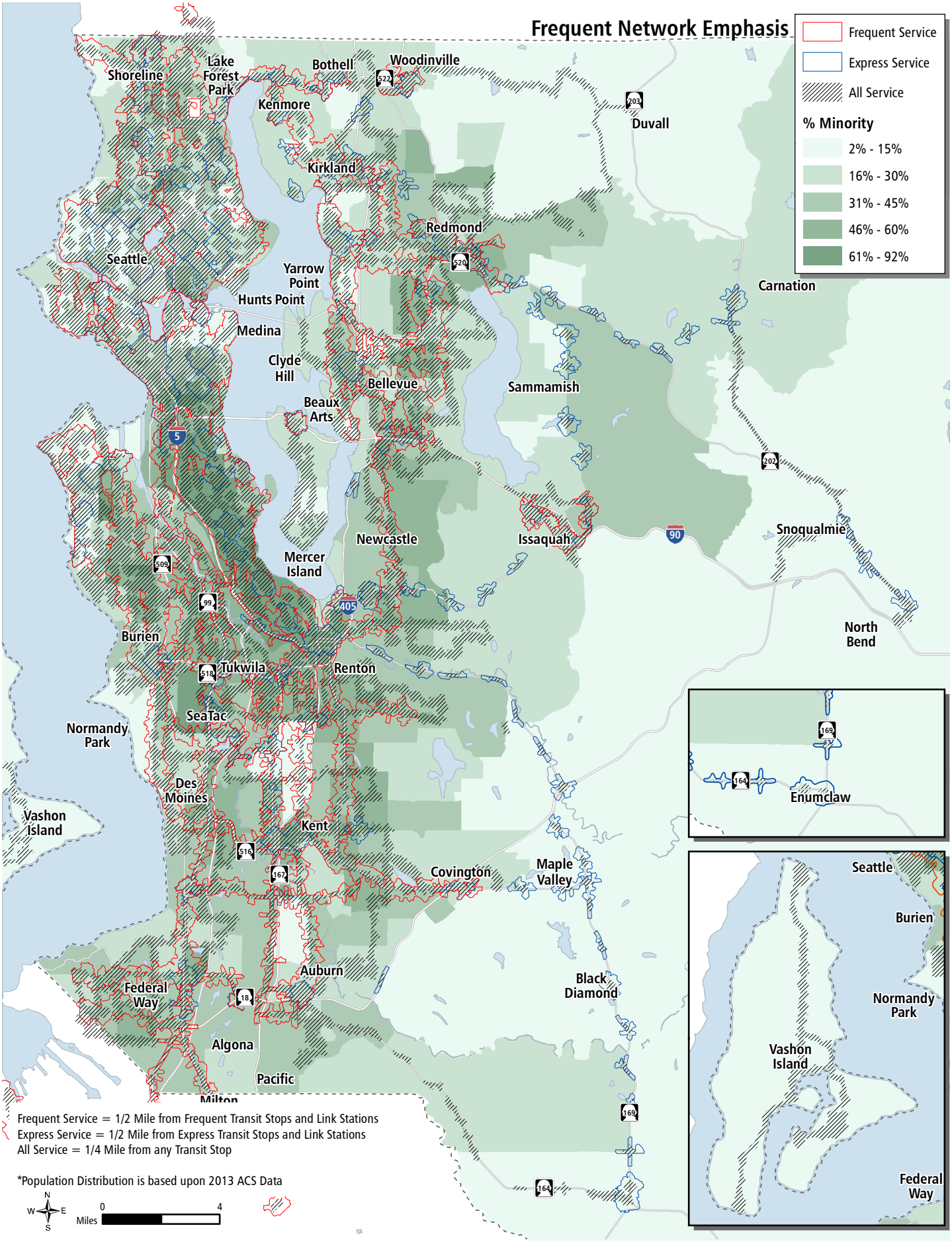
Frequent Network Emphasis
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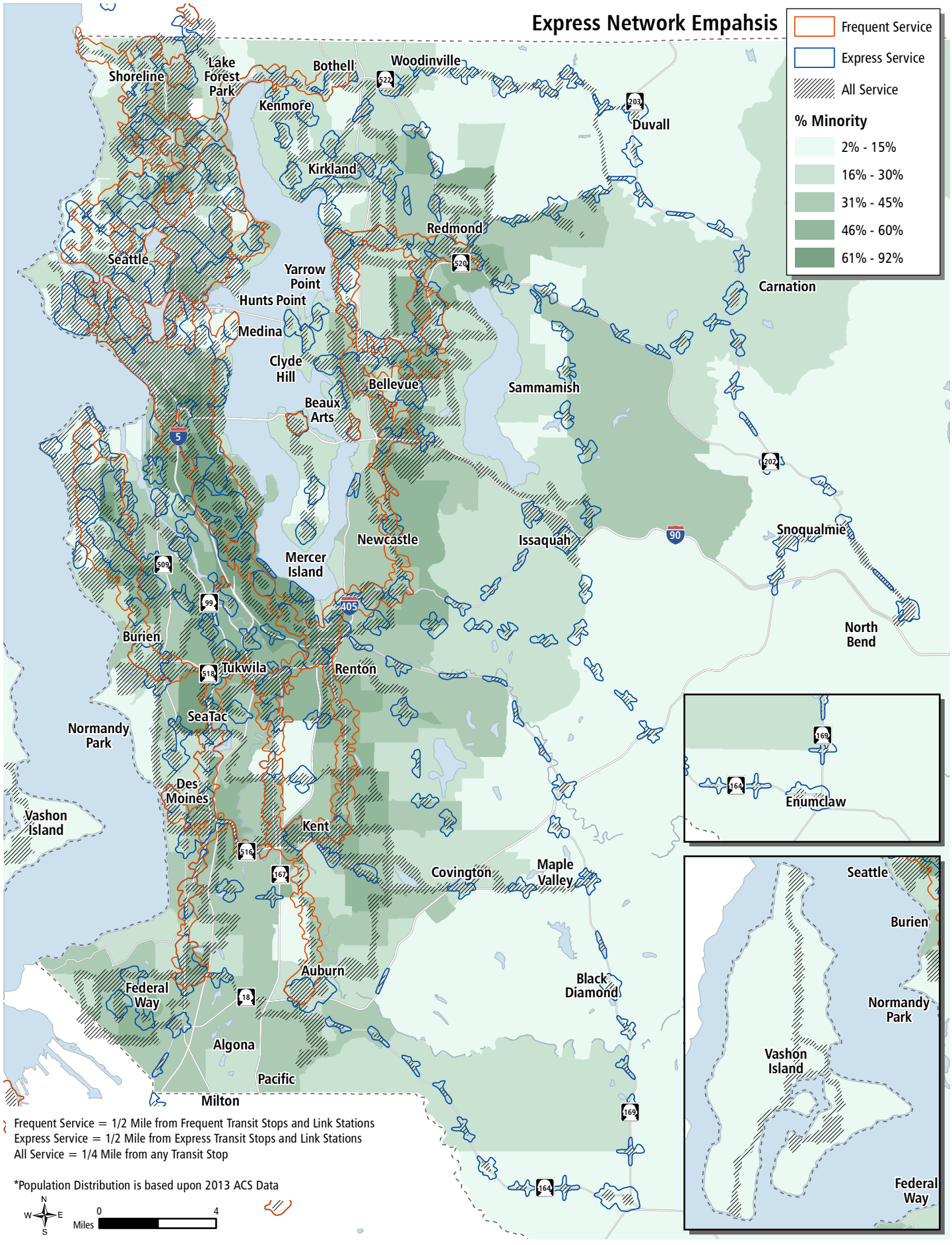
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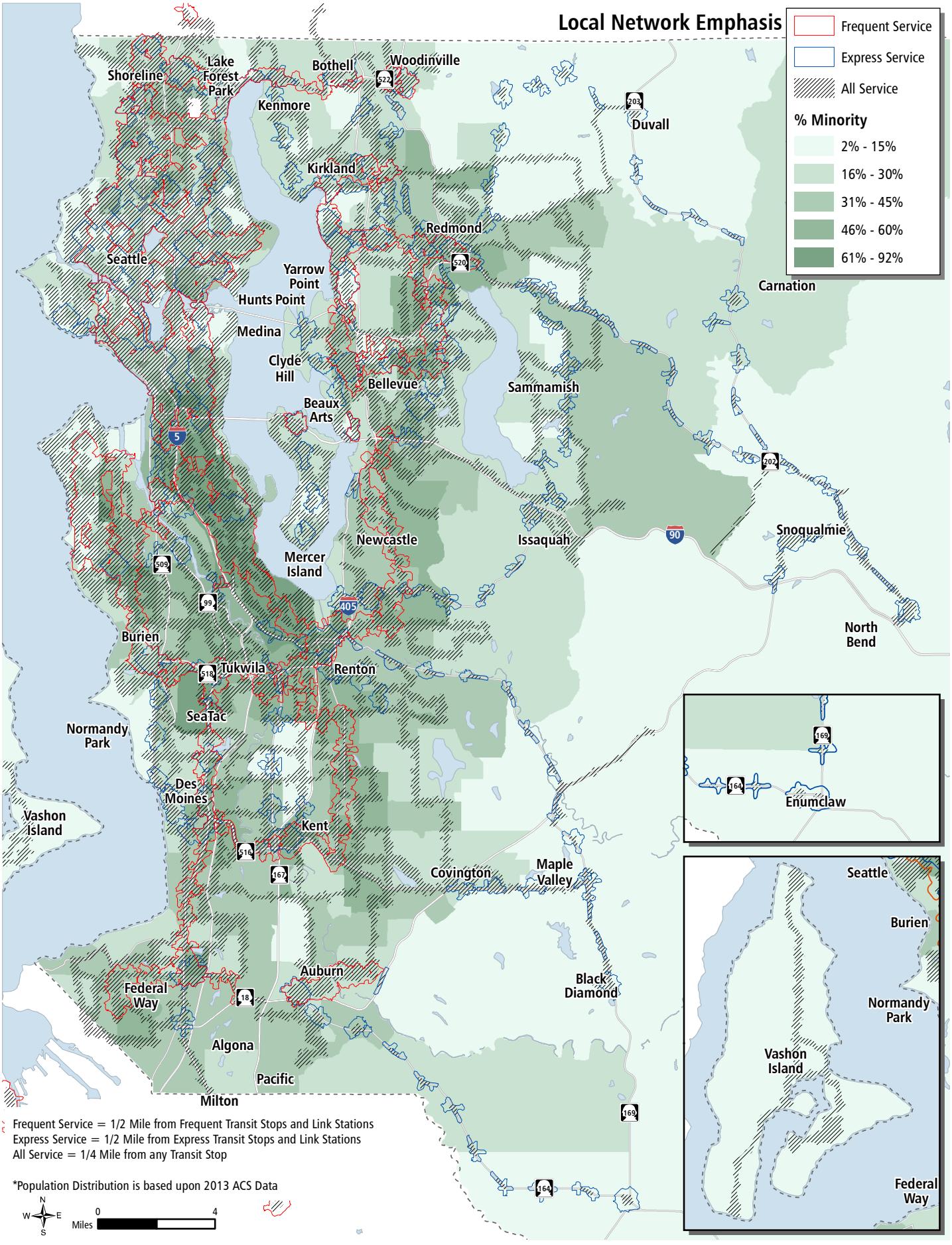
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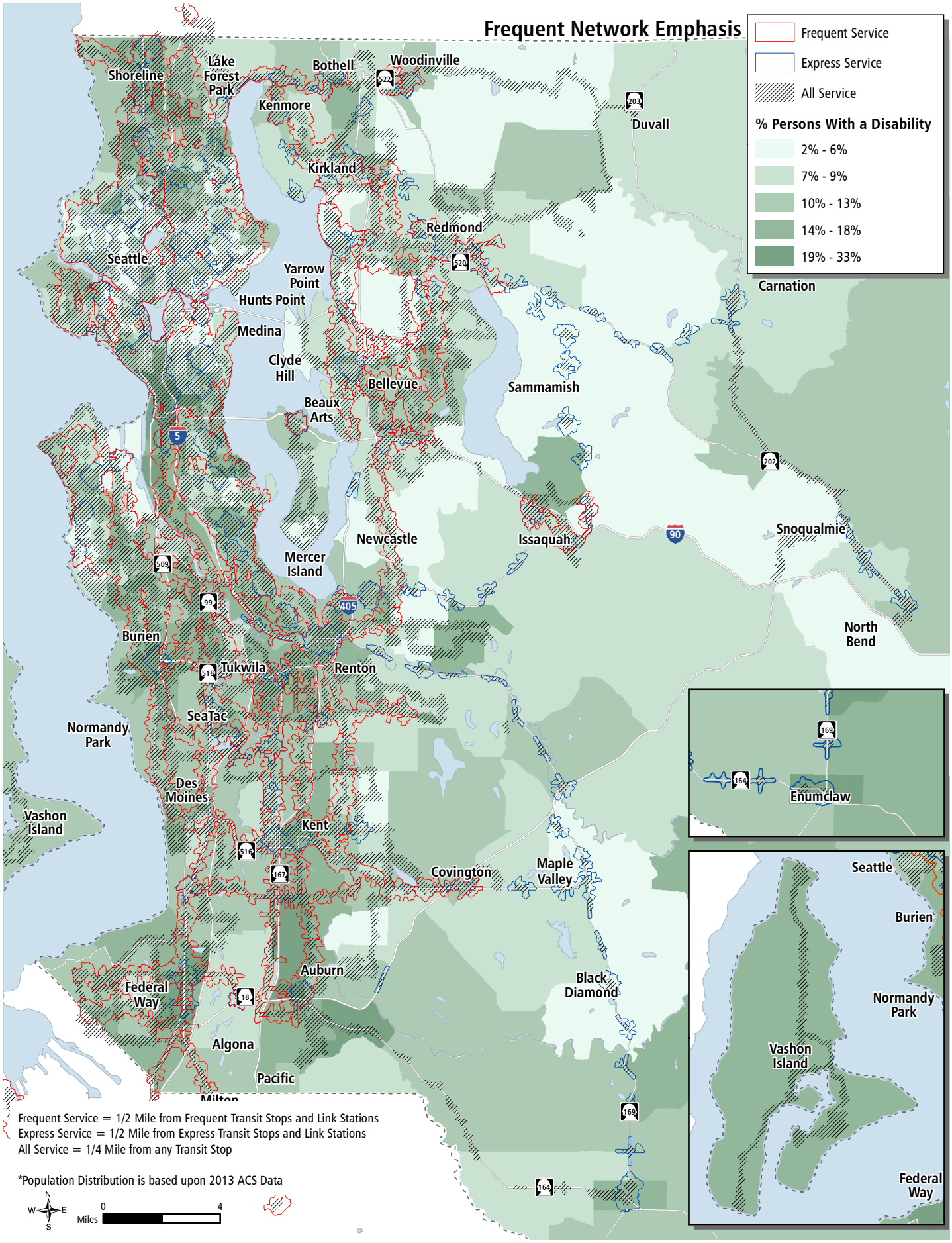
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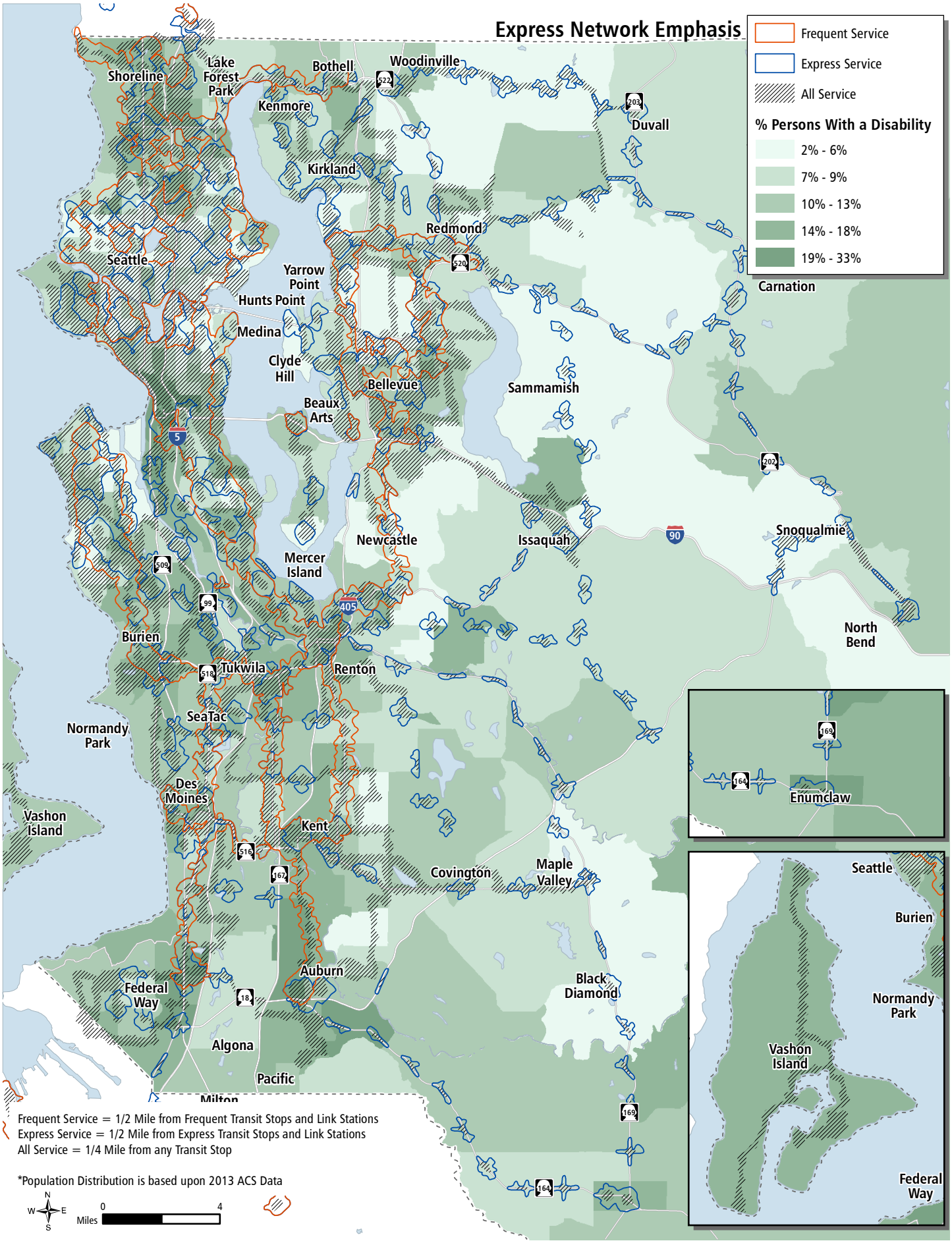
Express Network Emphasis
Frequent Service
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% Persons With a Disability
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7% - 9%
10% - 13%
14% - 18%
19% - 33%
Shoreline
Lake Forest Park
Bothell
Woodinville
Kenmore
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Beaux Arts
Carnation
Sammamish
Newcastle
Issaquah
Snoqualmie
Mercer Island
North Bend
Burien
Tukwila
Renton
SeaTac
Normandy Park
Des Moines
Vashon Island
Kent
Covington
Maple Valley
Enumclaw
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Frequent Service = 1/2 Mile from Frequent Transit Stops and Link Stations
Express Service = 1/2 Mile from Express Transit Stops and Link Stations
All Service = 1/4 Mile from any Transit Stop
*Population Distribution is based upon 2013 ACS Data
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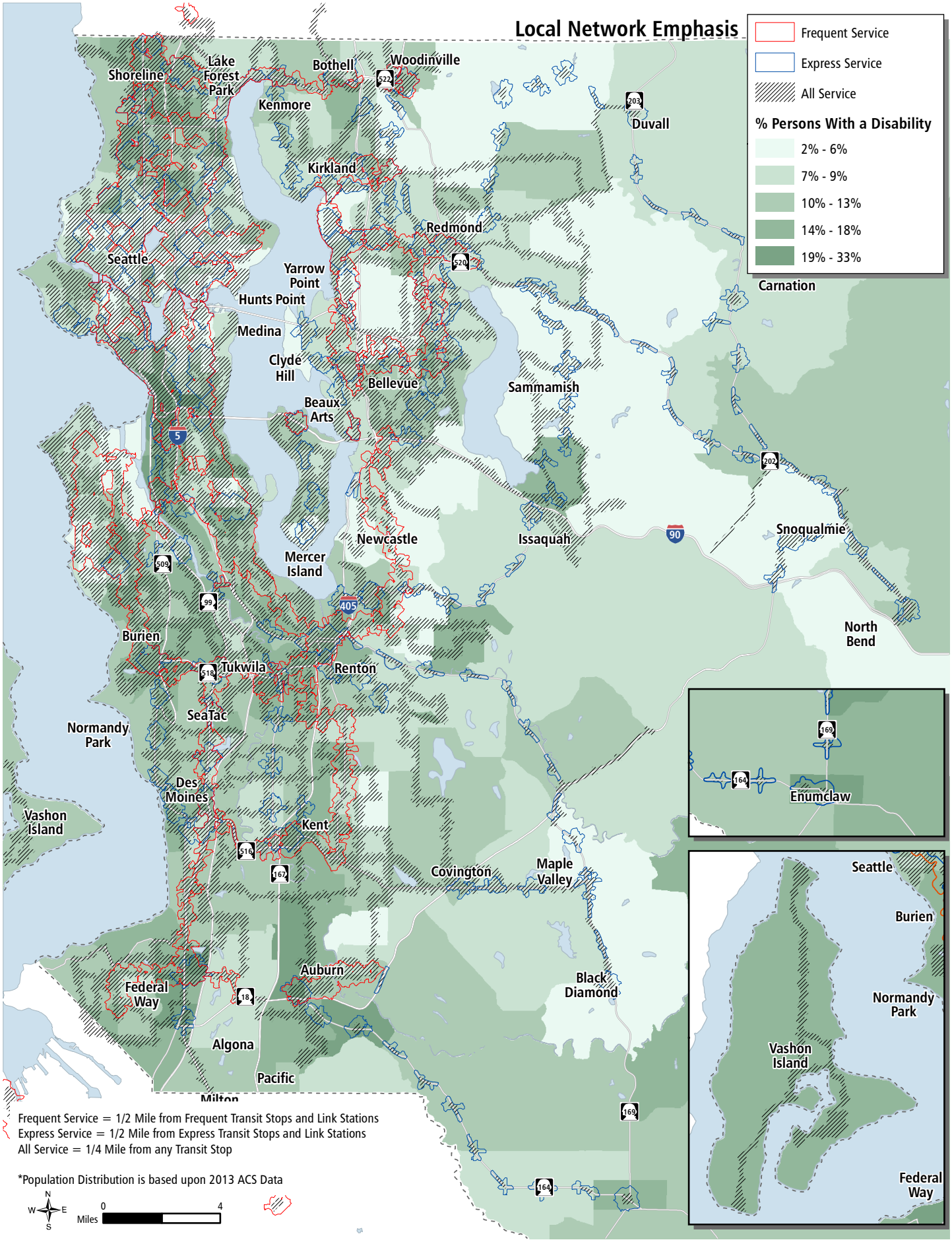
Local Network Emphasis
Frequent Service
Express Service
All Service
% Persons With a Disability
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Algona
Pacific
Milton
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Express Service = 1/2 Mile from Express Transit Stops and Link Stations
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*Population Distribution is based upon 2013 ACS Data
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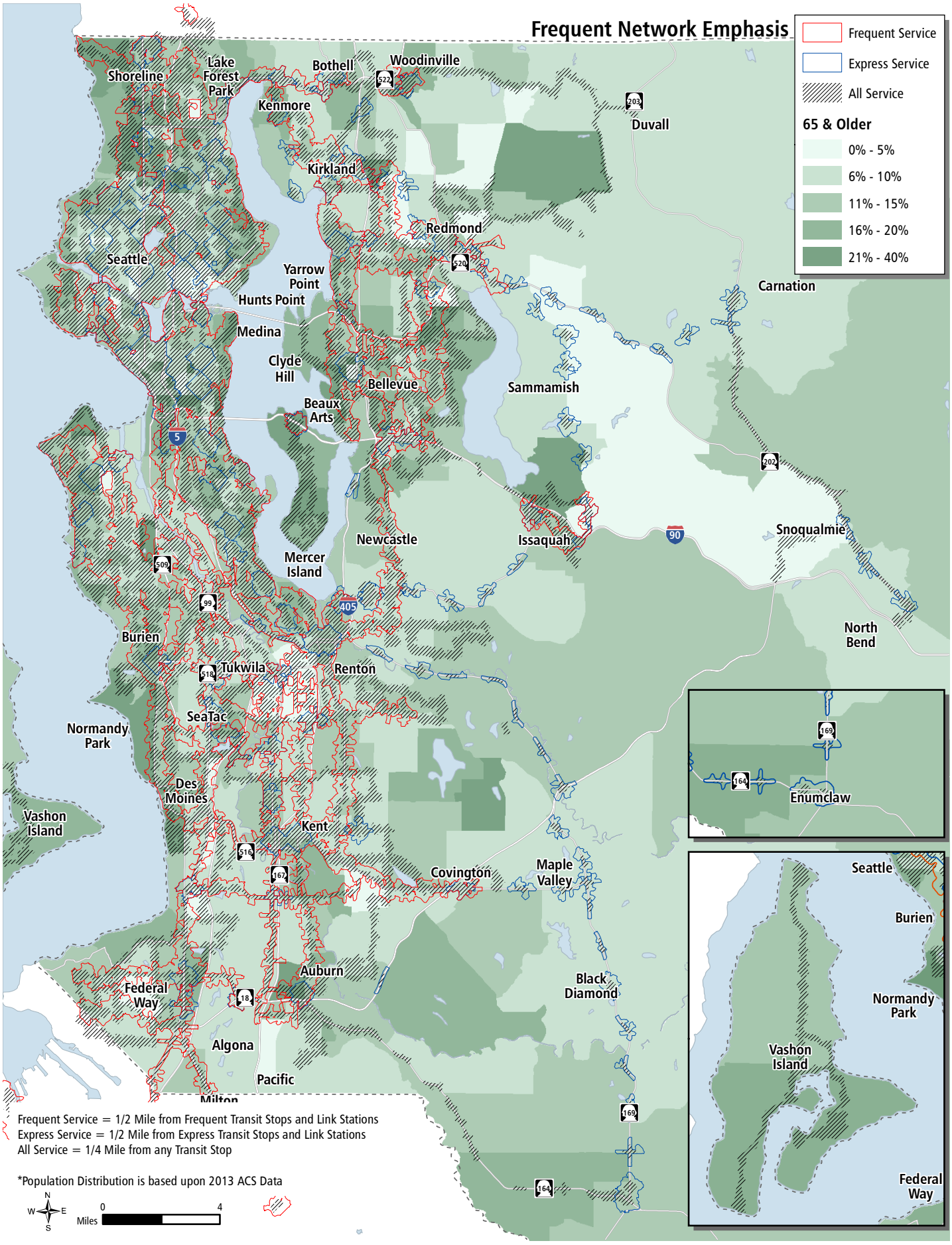
Frequent Network Emphasis
Frequent Service
Express Service
All Service
65 & Older
0% - 5%
6% - 10%
11% - 15%
16% - 20%
21% - 40%
Shoreline
Lake Forest Park
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Woodinville
Kenmore
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
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Clyde Hill
Bellevue
Beaux Arts
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Mercer Island
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*Population Distribution is based upon 2013 ACS Data
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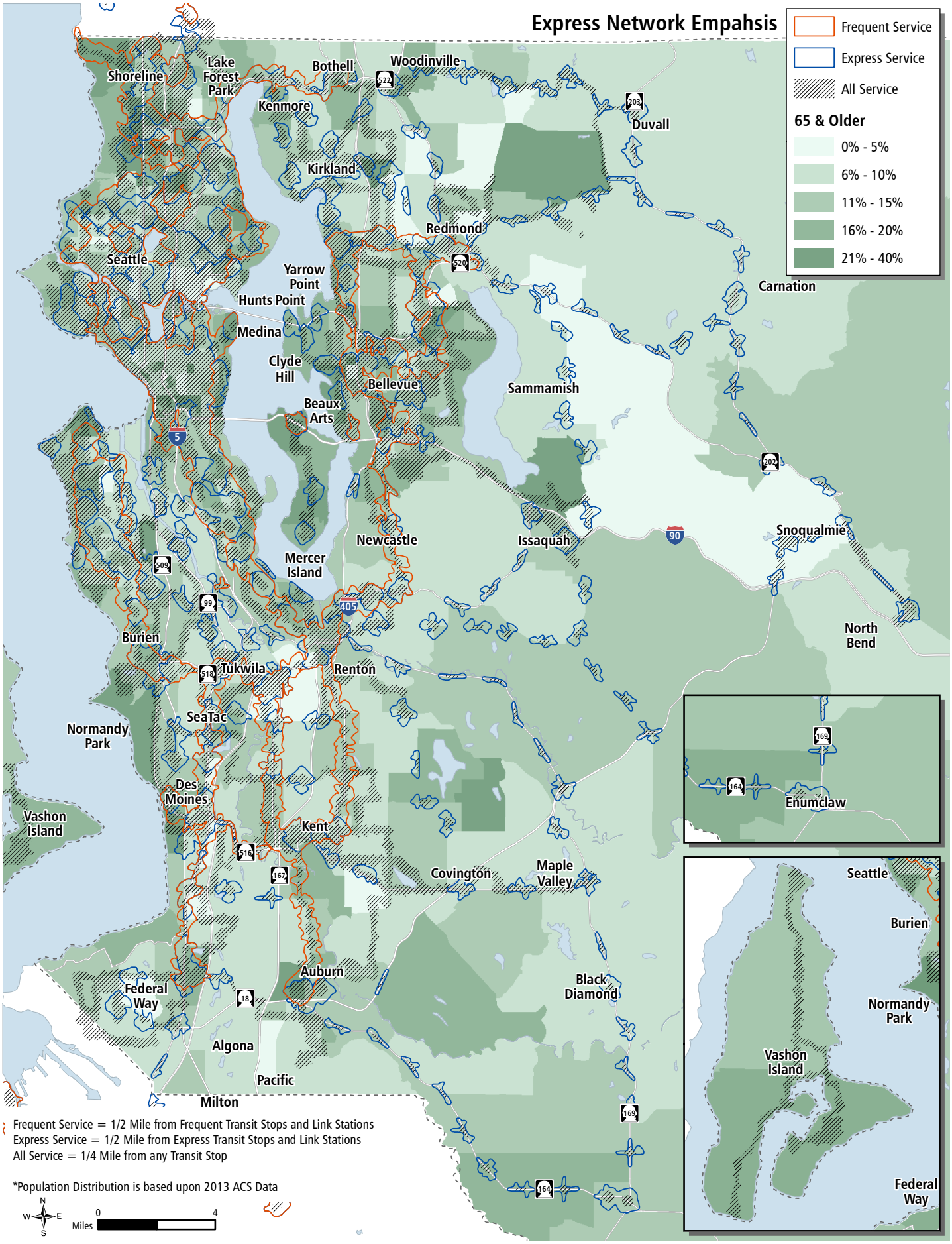
Express Network Empahsis
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Express Service
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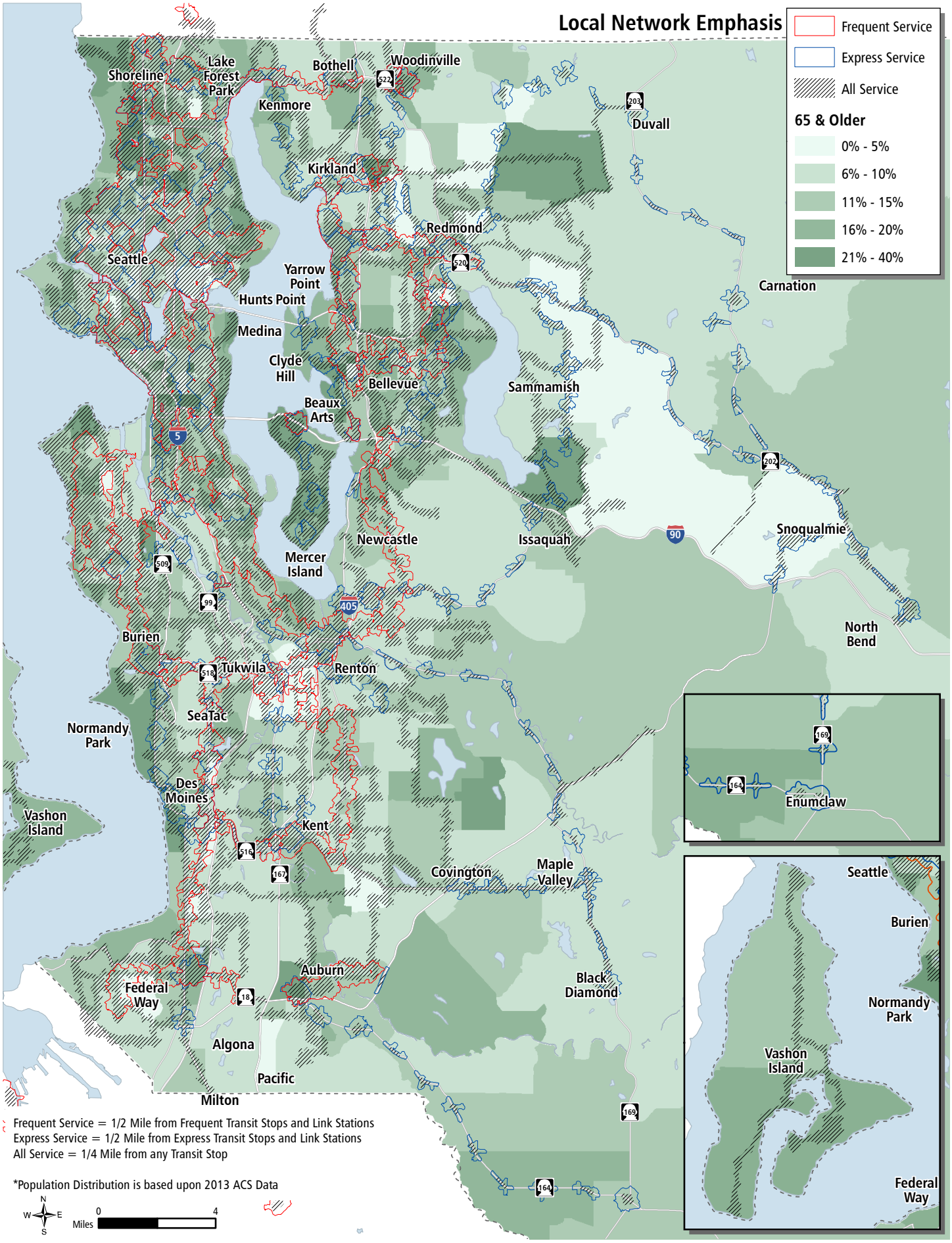
Local Network Emphasis
Frequent Service
Express Service
All Service
65 & Older
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Shoreline
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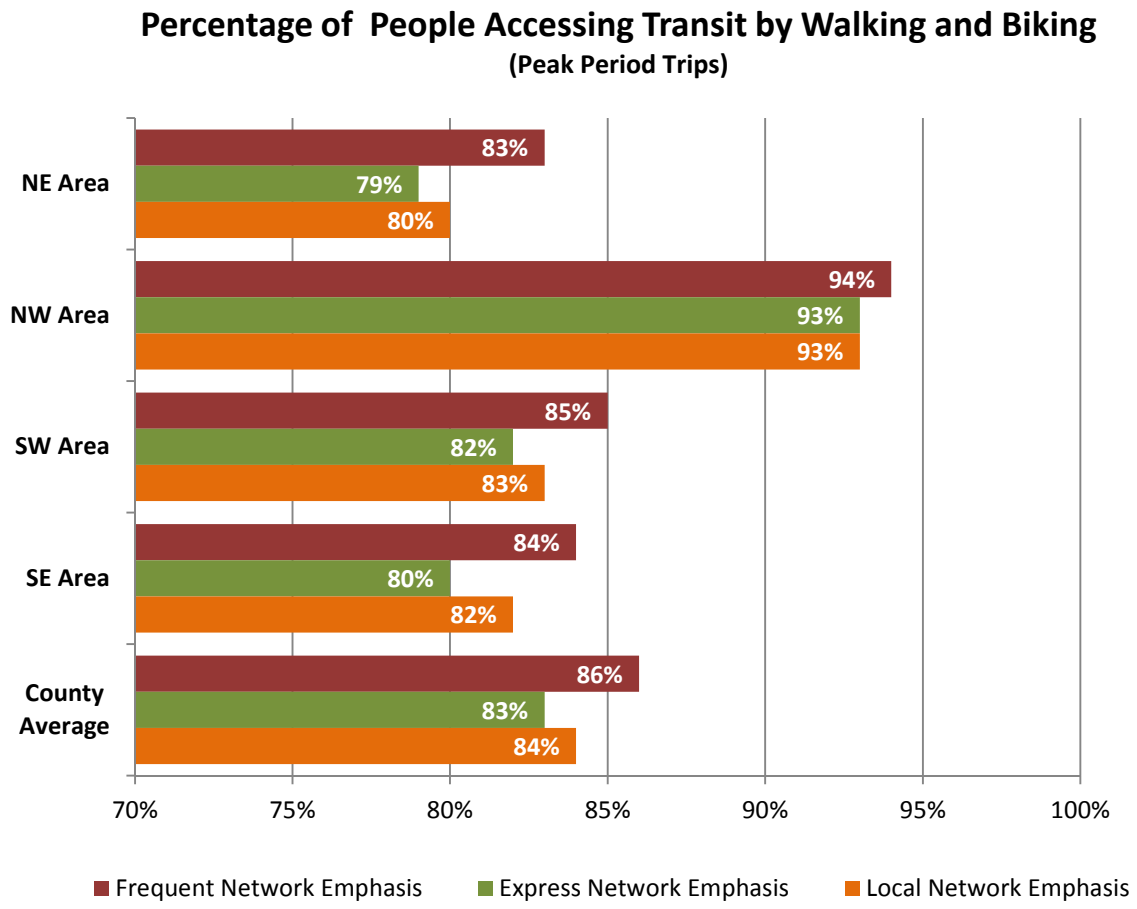
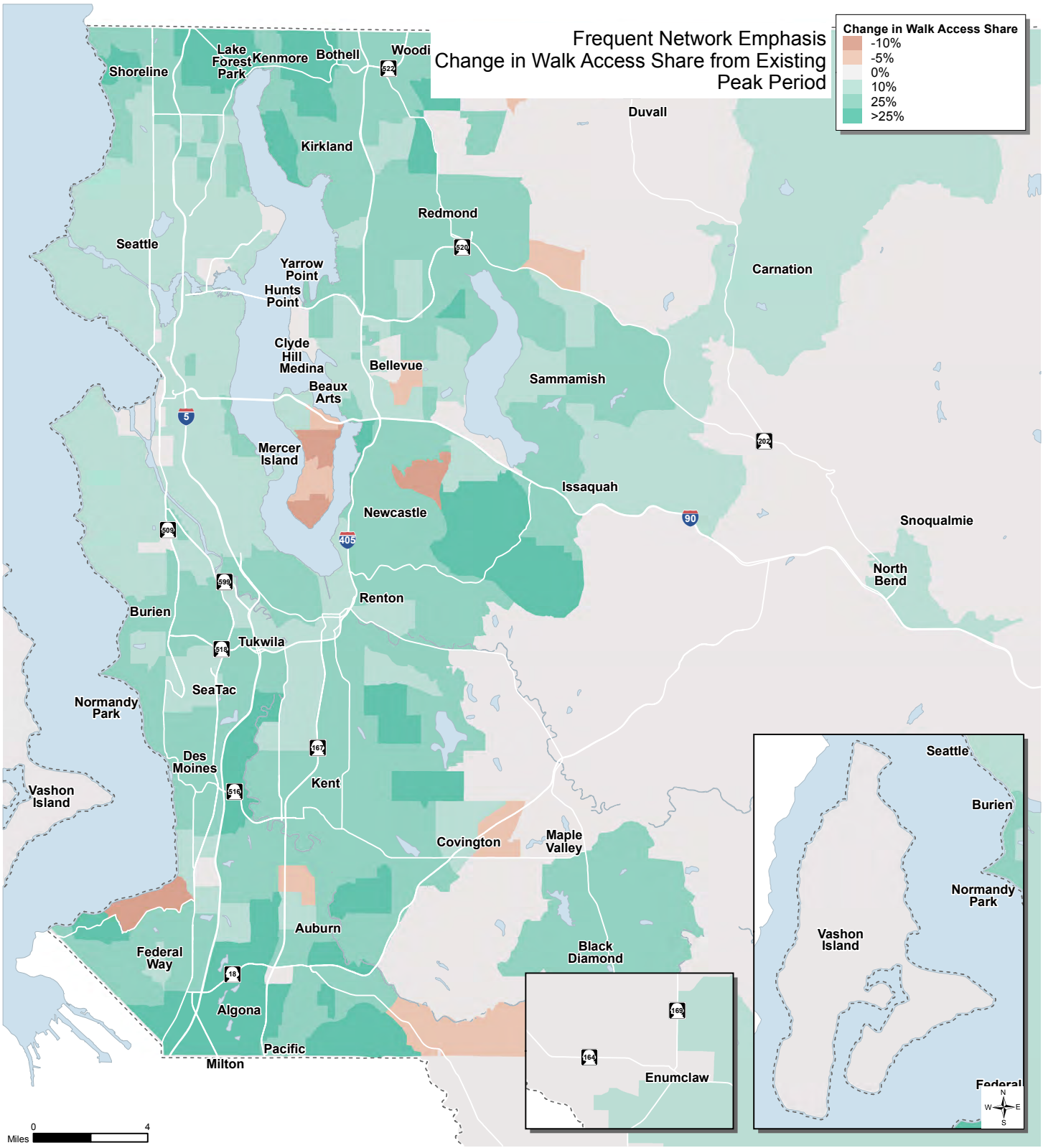
Walking Access to Transit Comparison



Methodology Notes

- Based on travel model estimate of walk/bike versus auto access to transit for each network emphasis in the future
- All networks assume existing park & ride facilities and additional Link Light Rail parking facilities where specified in future plans
- Express Network Emphasis additionally assumes capital investment of 21,000 additional park & ride spaces


Frequent Network Emphasis
Change in Walk Access Share from Existing
Peak Period
Change in Walk Access Share
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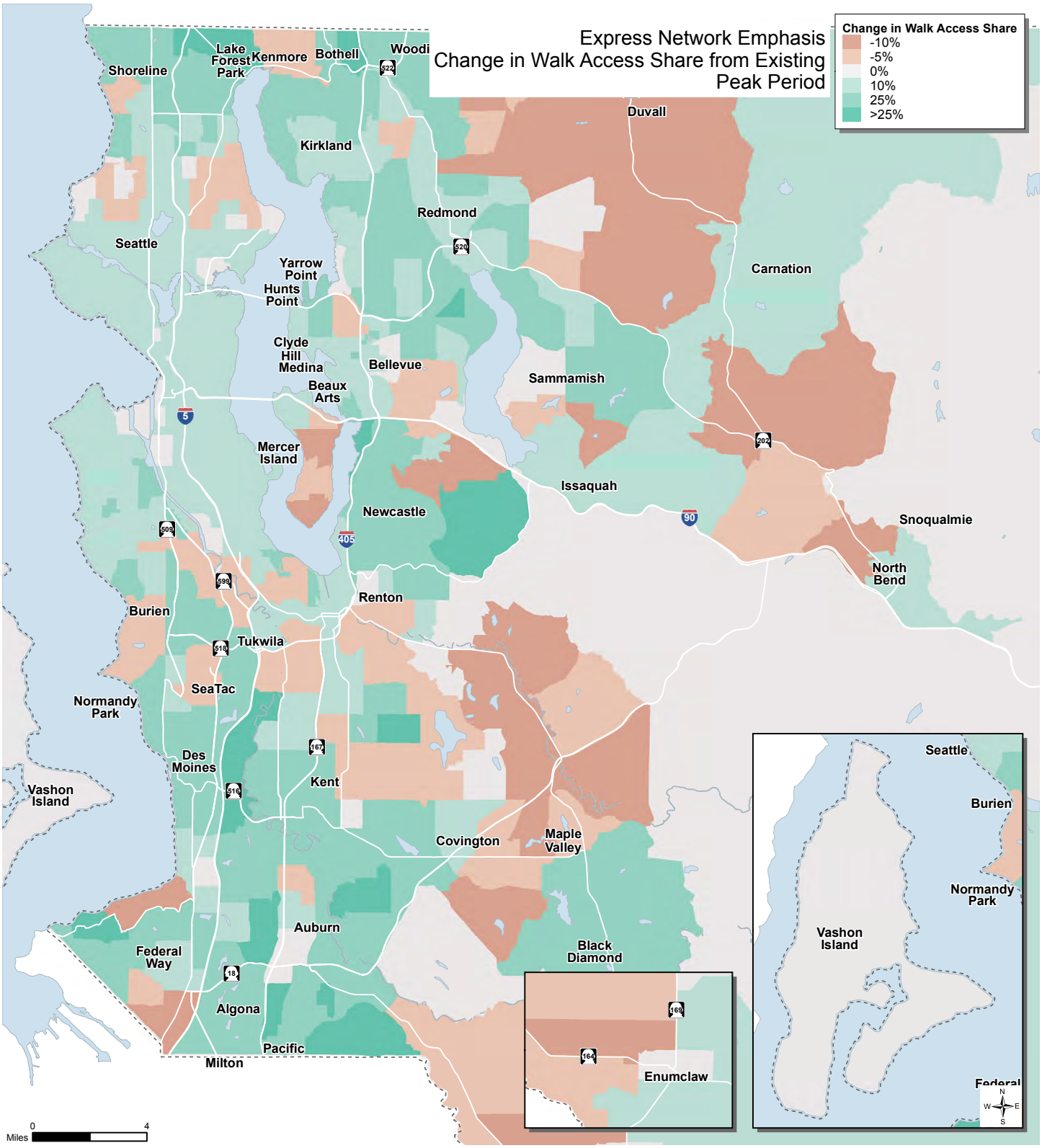
Express Network Emphasis
Change in Walk Access Share from Existing Peak Period
Change in Walk Access Share
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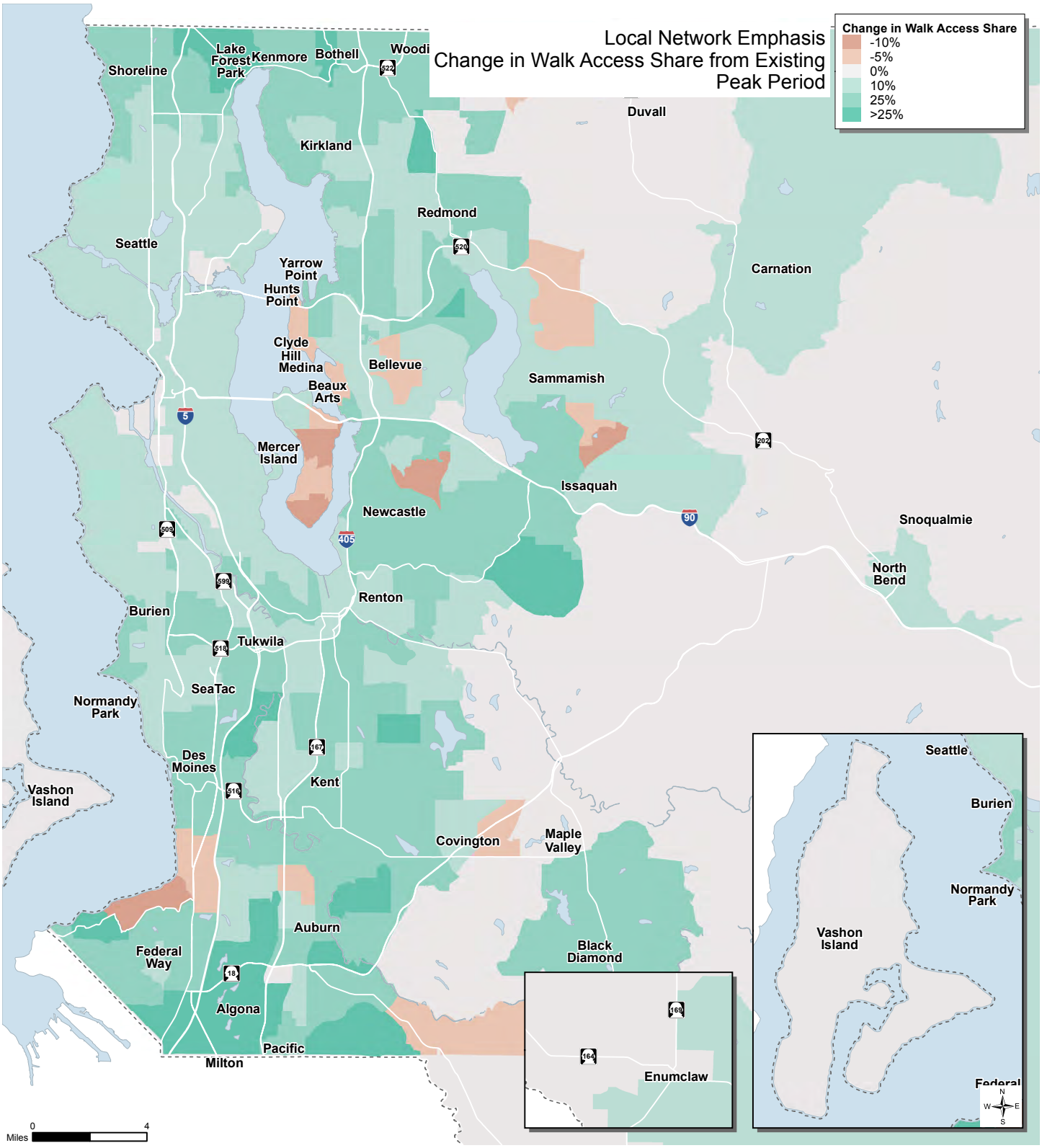
Local Network Emphasis
Change in Walk Access Share from Existing Peak Period
Change in Walk Access Share
-10%
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Shoreline
Lake Forest Park
Kenmore
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Average Jobs Accessible in 30 minutes via Future Transit Networks

	Peak Period			Midday		
Quadrant	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
NE Area	42,000	35,000	32,000	40,000	27,000	28,000
NW Area	207,000	210,000	186,000	201,000	166,000	175,000
SW Area	20,000	17,000	16,000	16,000	15,000	13,000
SE Area	14,000	15,000	13,000	13,000	12,000	10,000
Countywide Avg.	91,000	88,000	79,000	87,000	70,000	73,000

Average Population Accessible in 30 minutes via Future Transit Networks

	Peak Period			Midday		
Quadrant	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
NE Area	28,000	24,000	23,000	27,000	20,000	21,000
NW Area	162,000	154,000	145,000	159,000	123,000	133,000
SW Area	26,000	22,000	24,000	24,000	20,000	22,000
SE Area	22,000	20,000	20,000	20,000	18,000	18,000
Countywide Avg.	72,000	67,000	64,000	70,000	54,000	59,000

Methodology Notes

- Based on latest PSRC land-use forecasts of population and employment for 2040
- Values are based on an average of the jobs or population reachable from each TAZ within 30 minutes via the future transit networks and are weighted by population of each TAZ to determine Quadrant, RGC and University-area averages
- Travel times include walk, wait and transfer times averaged over the peak and midday period

Percent of Population with at least 30,000 jobs accessible within 30 minutes

	Peak Period			Midday		
Quadrant	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
NE Area	28%	26%	26%	25%	22%	21%
NW Area	77%	77%	76%	75%	64%	71%
SW Area	19%	15%	15%	16%	11%	8%
SE Area	14%	13%	11%	12%	10%	7%
Countywide Avg.	*45%*	*43%*	*43%*	*43%*	*36%*	*37%*

Percent of Population with at least 30,000 people within 30 minutes

	Peak Period			Midday		
Quadrant	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
NE Area	28%	23%	25%	27%	23%	22%
NW Area	88%	88%	88%	88%	84%	85%
SW Area	33%	24%	28%	29%	23%	23%
SE Area	28%	21%	22%	26%	19%	17%
Countywide Avg.	*54%*	*49%*	*51%*	*52%*	*48%*	*48%*

Methodology Notes

- Determines if a TAZ has at least 30,000 jobs or people accessible within 30 minutes and includes that TAZ in the total population that has at least 30,000 jobs or people within 30 minutes of transit

Regional Growth Center - Average Jobs Accessible in 30 minutes via Future Transit Networks

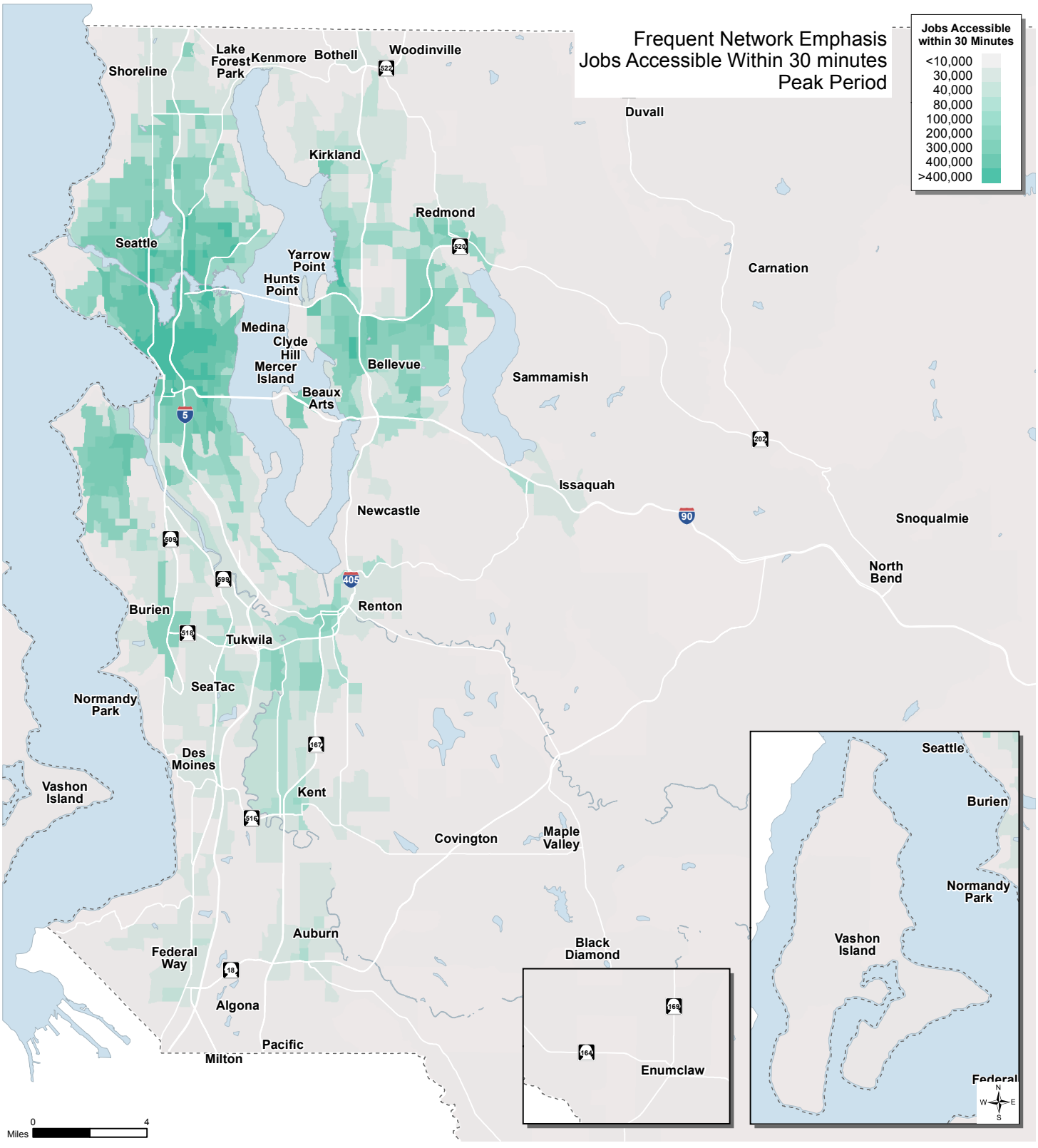
	Peak Period			Midday		
RGC	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
Auburn	42,000	43,000	45,000	39,000	37,000	21,000
Bellevue	309,000	300,000	228,000	286,000	167,000	190,000
Burien	148,000	23,000	62,000	37,000	20,000	23,000
Federal Way	39,000	48,000	41,000	39,000	22,000	36,000
Kent	65,000	50,000	53,000	63,000	43,000	30,000
Kirkland Totem Lake	29,000	15,000	33,000	23,000	16,000	29,000
Redmond Downtown	184,000	175,000	165,000	183,000	173,000	143,000
Redmond-Overlake	216,000	167,000	170,000	198,000	167,000	167,000
Renton	96,000	158,000	82,000	68,000	82,000	57,000
SeaTac	44,000	41,000	39,000	41,000	38,000	39,000
Seattle Downtown	483,000	550,000	480,000	479,000	456,000	442,000
Seattle First Hill/Capitol Hill	450,000	467,000	432,000	439,000	417,000	403,000
Seattle Northgate	174,000	150,000	180,000	195,000	146,000	194,000
Seattle South Lake Union	452,000	518,000	409,000	459,000	431,000	375,000
Seattle University Community	424,000	377,000	376,000	410,000	313,000	323,000
Seattle Uptown	405,000	485,000	434,000	447,000	379,000	393,000
Tukwila	77,000	55,000	42,000	69,000	55,000	35,000

Regional Growth Center - Average Population Within 30 minutes

	Peak Period			Midday		
RGC	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
Auburn	47,000	44,000	45,000	28,000	37,000	26,000
Bellevue	148,000	151,000	93,000	152,000	71,000	86,000
Burien	72,000	38,000	82,000	59,000	34,000	45,000
Federal Way	45,000	56,000	49,000	45,000	32,000	52,000
Kent	61,000	60,000	49,000	59,000	46,000	39,000
Kirkland Totem Lake	28,000	14,000	38,000	30,000	15,000	35,000
Redmond Downtown	90,000	98,000	82,000	90,000	80,000	62,000
Redmond-Overlake	103,000	83,000	72,000	98,000	79,000	73,000
Renton	89,000	106,000	67,000	69,000	59,000	49,000
SeaTac	24,000	27,000	23,000	24,000	24,000	25,000
Seattle Downtown	338,000	392,000	308,000	339,000	297,000	288,000
Seattle First Hill/Capitol Hill	279,000	292,000	266,000	269,000	239,000	243,000
Seattle Northgate	219,000	158,000	220,000	226,000	150,000	225,000
Seattle South Lake Union	310,000	307,000	214,000	310,000	248,000	215,000
Seattle University Community	344,000	284,000	320,000	324,000	220,000	249,000
Seattle Uptown	247,000	313,000	260,000	277,000	209,000	241,000
Tukwila	44,000	21,000	20,000	28,000	23,000	14,000

Colleges or Universities - Average Population Within 30 minutes during the Peak Period

	Peak Period			Midday		
College or University	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
Art Institute of Seattle	256,000	284,000	201,000	252,000	210,000	179,000
Bastyr University	2,000	2,000	2,000	2,000	2,000	2,000
Bellevue College	27,000	27,000	18,000	21,000	15,000	20,000
Bellevue College-North Campus	27,000	27,000	18,000	21,000	15,000	20,000
Cascadia College	9,000	19,000	10,000	4,000	4,000	12,000
Cornish College of the Arts	309,000	338,000	278,000	314,000	252,000	271,000
Digipen Institute of Technology	1,000	9,000	10,000	-	-	4,000
Green River College	5,000	7,000	5,000	7,000	5,000	7,000
Green River College Enumclaw Campus	9,000	9,000	9,000	9,000	9,000	9,000
Green River College Kent Campus	95,000	60,000	66,000	87,000	40,000	39,000
Highline College	25,000	44,000	20,000	22,000	31,000	15,000
Lake Washington Institute of Technology	33,000	23,000	30,000	24,000	25,000	25,000
Lake Washington Institute of Technology	36,000	35,000	40,000	23,000	21,000	18,000
Lake Washington Tech College-Duvall	11,000	11,000	11,000	11,000	11,000	11,000
North Seattle College	21,000	58,000	65,000	23,000	32,000	23,000
Northwest University	27,000	57,000	55,000	28,000	43,000	42,000
Renton Technical College	42,000	51,000	48,000	57,000	40,000	41,000
Seattle Central College	322,000	341,000	275,000	316,000	304,000	285,000
Seattle Pacific University	84,000	125,000	96,000	86,000	59,000	103,000
Seattle University	203,000	244,000	203,000	204,000	219,000	178,000
Shoreline Community College	7,000	56,000	27,000	7,000	45,000	27,000
South Seattle College	13,000	20,000	29,000	13,000	2,000	2,000
South Seattle College Georgetown	6,000	49,000	30,000	17,000	6,000	11,000
University of Washington	263,000	154,000	201,000	237,000	147,000	97,000
University of Washington-Bothell	9,000	19,000	10,000	4,000	4,000	12,000


Frequent Network Emphasis
Jobs Accessible Within 30 minutes
Peak Period
Jobs Accessible within 30 Minutes
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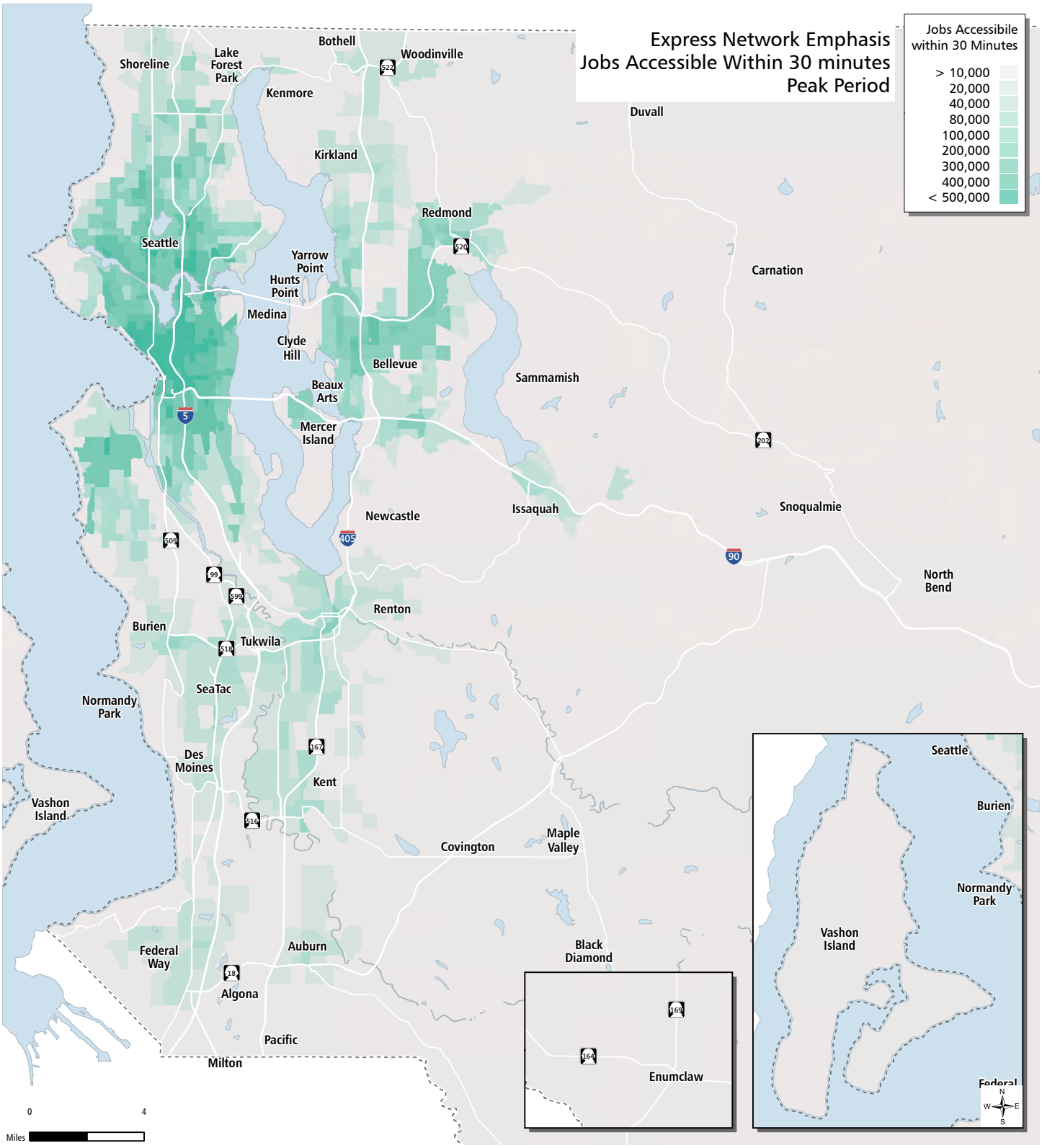
Express Network Emphasis
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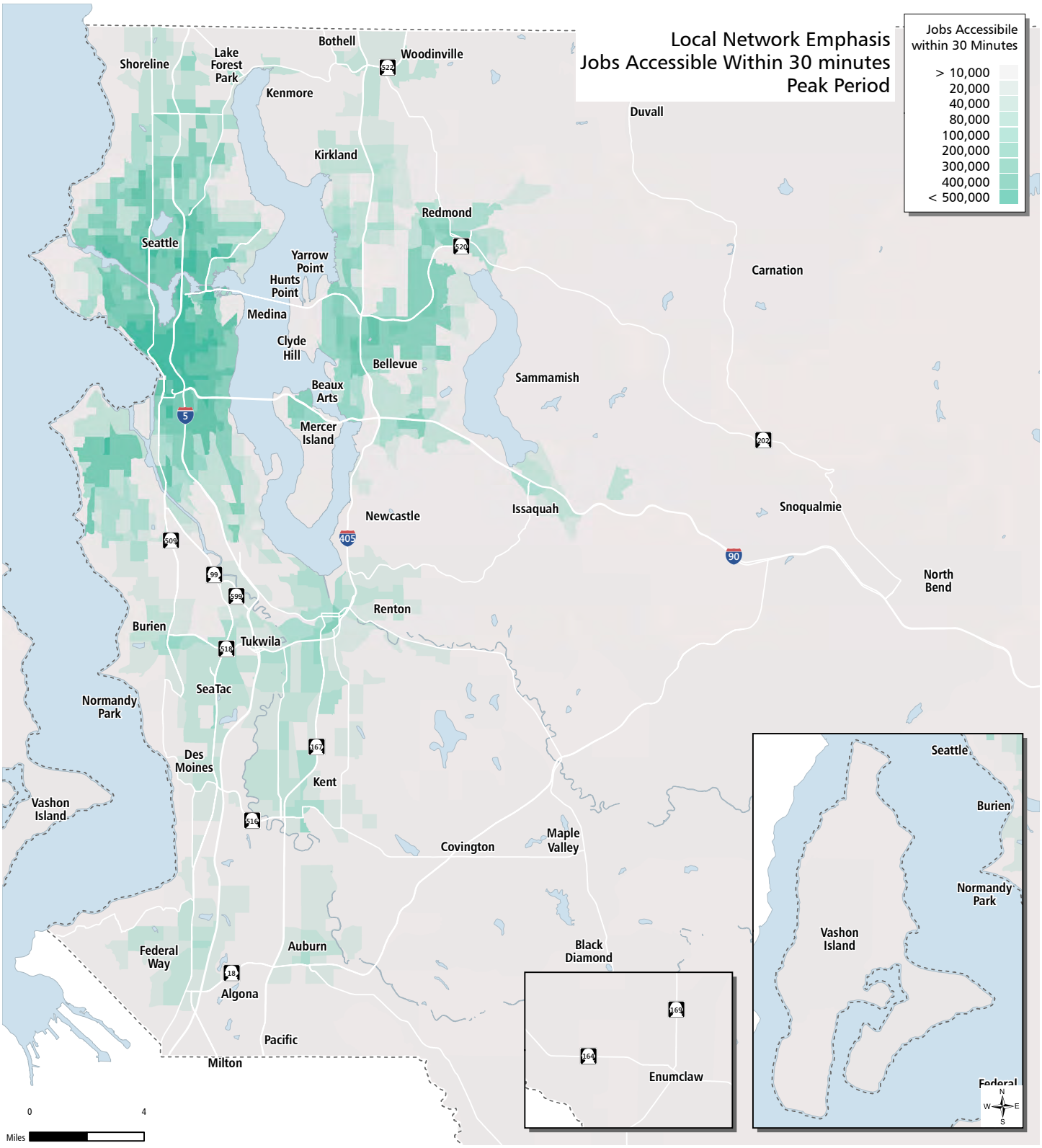
Local Network Emphasis
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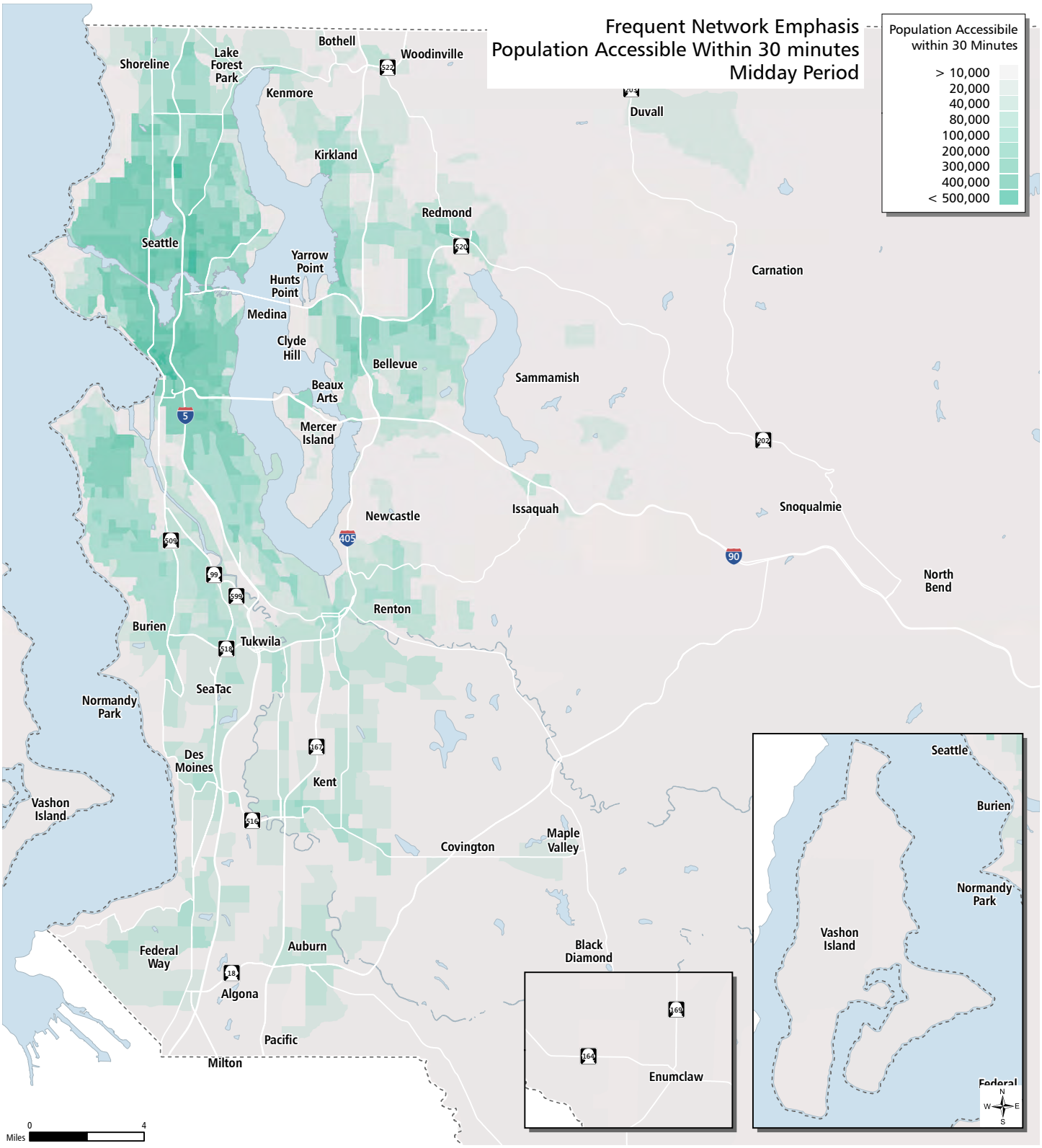
Frequent Network Emphasis
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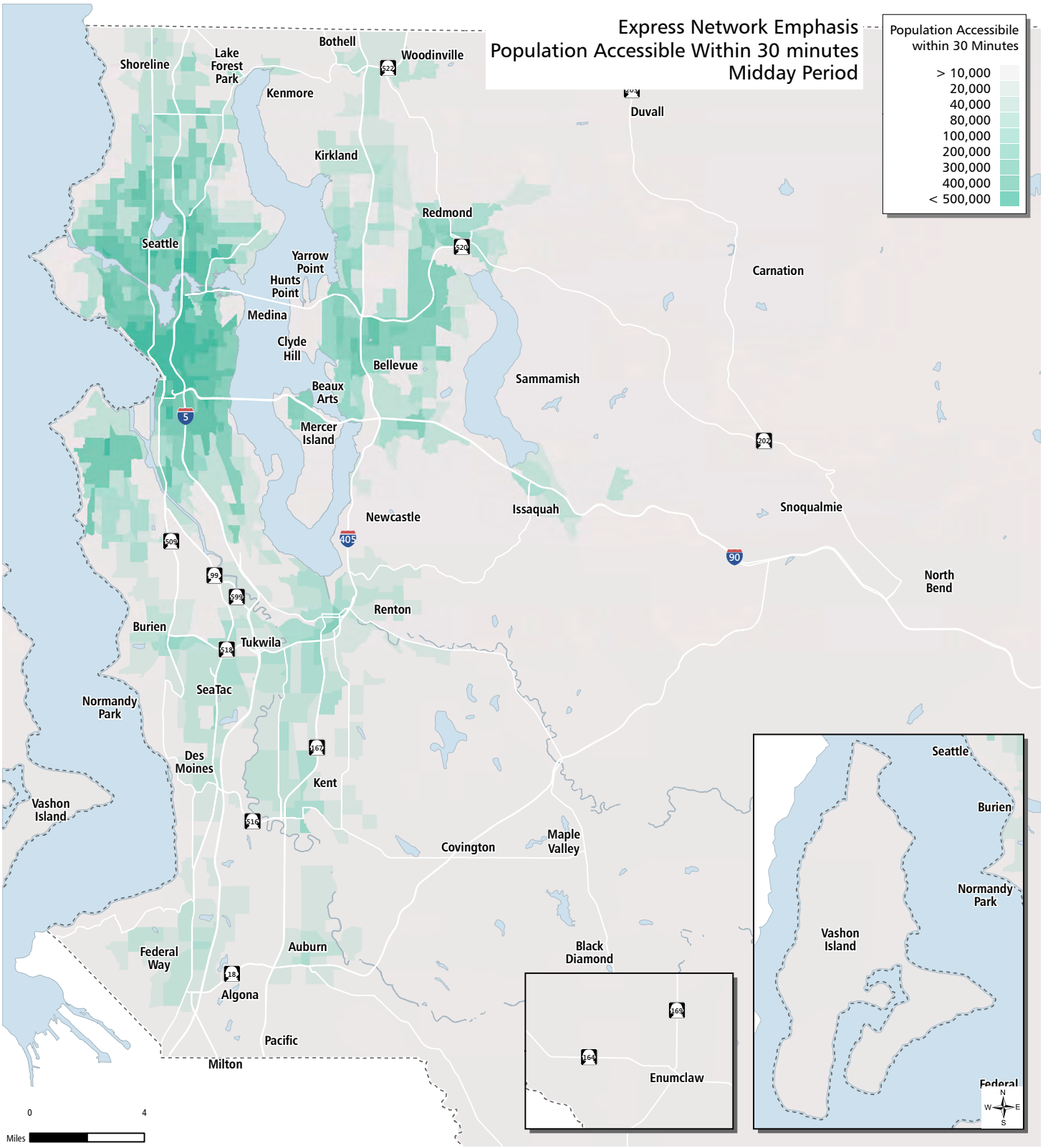
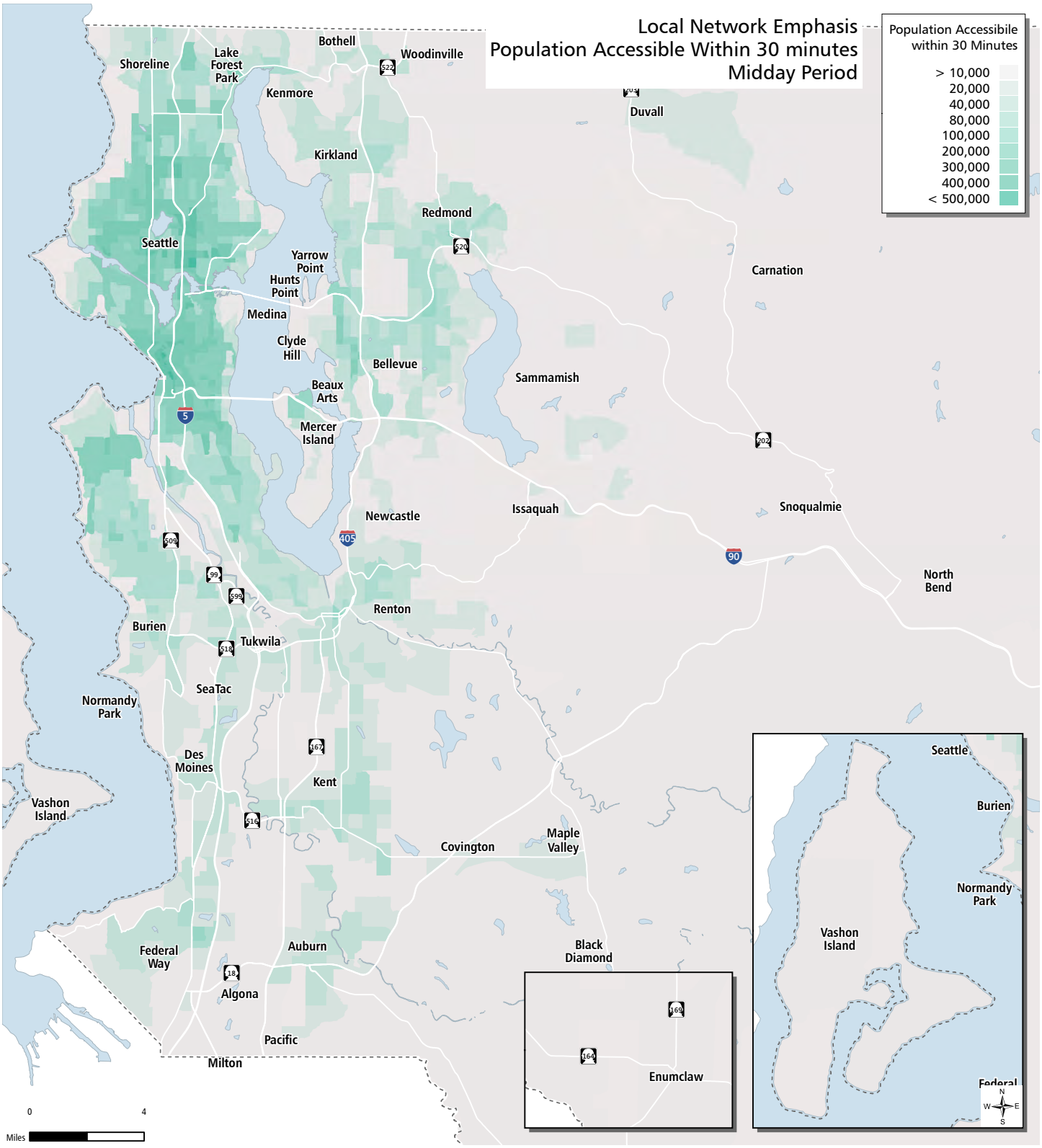
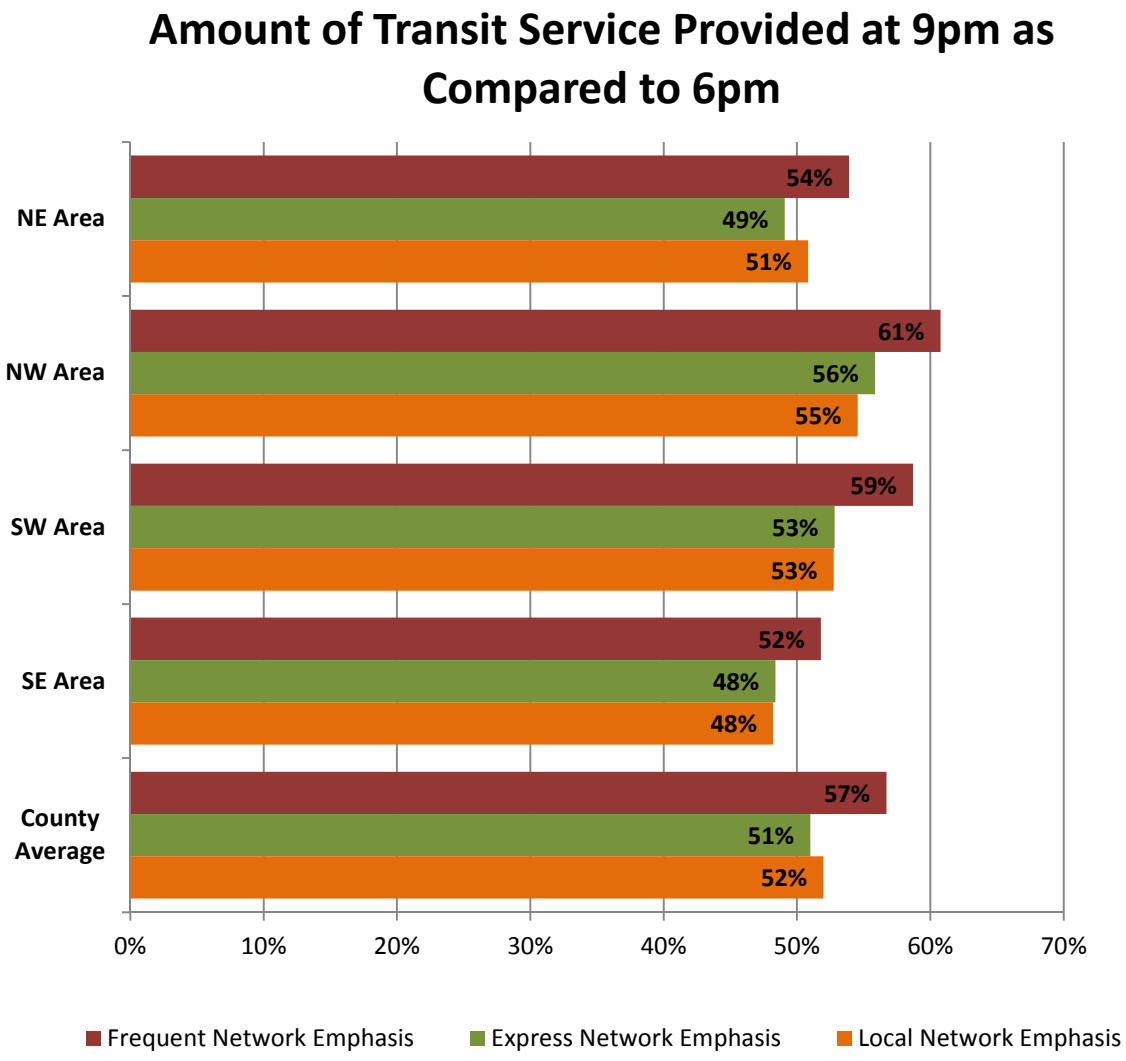
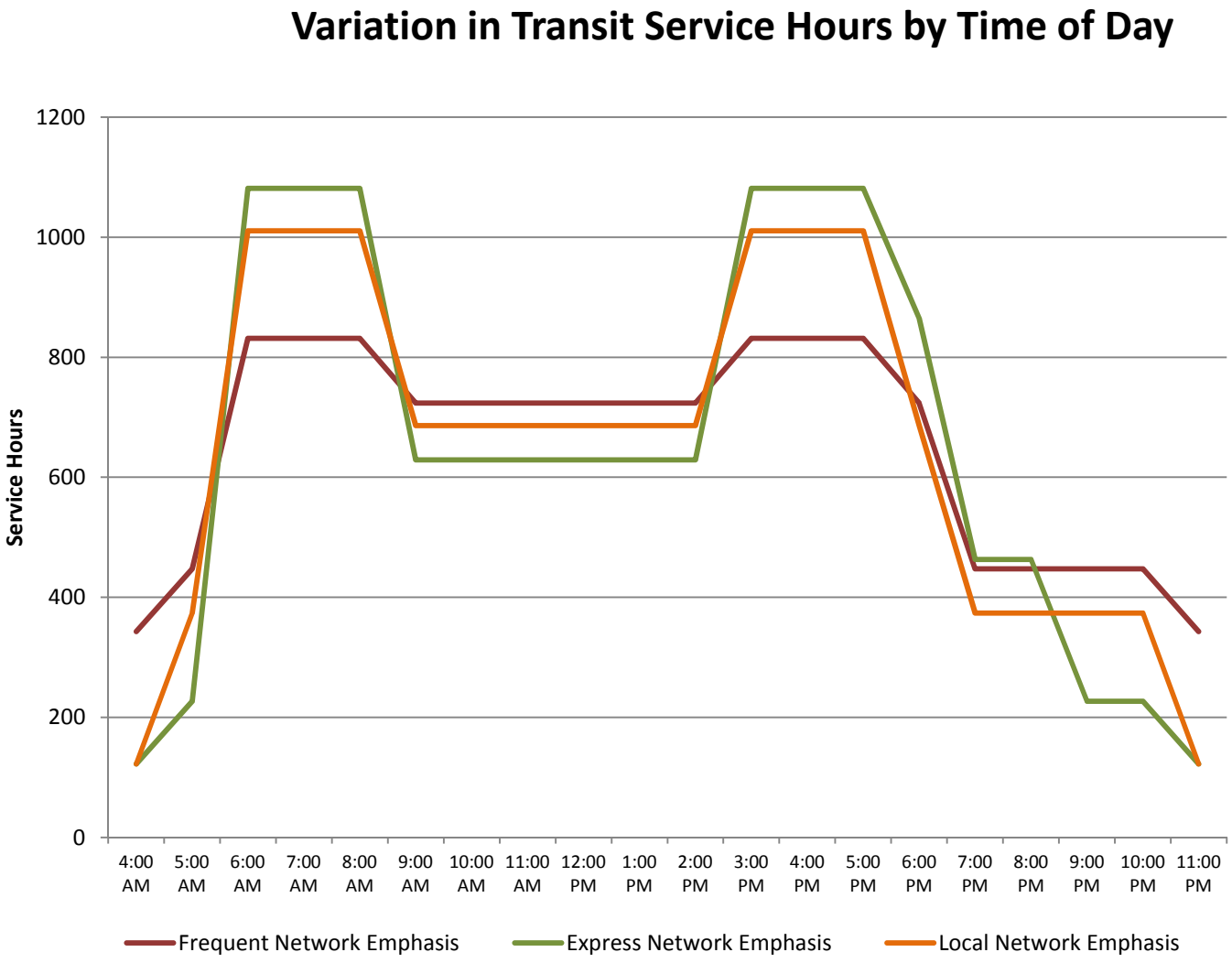

Express Network Emphasis
Population Accessible Within 30 minutes
Midday Period
Population Accessibile within 30 Minutes
> 10,000
20,000
40,000
80,000
100,000
200,000
300,000
400,000
< 500,000
Bothell
Woodinville
Shoreline
Lake Forest Park
Kenmore
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Carnation
Sammamish
Beaux Arts
Mercer Island
Newcastle
Issaquah
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Kent
Vashon Island
Covington
Maple Valley
Federal Way
Auburn
Black Diamond
Algona
Pacific
Milton
Enumclaw
0
4
Miles
Seattle
Burien
Normandy Park
Vashon Island
Federal

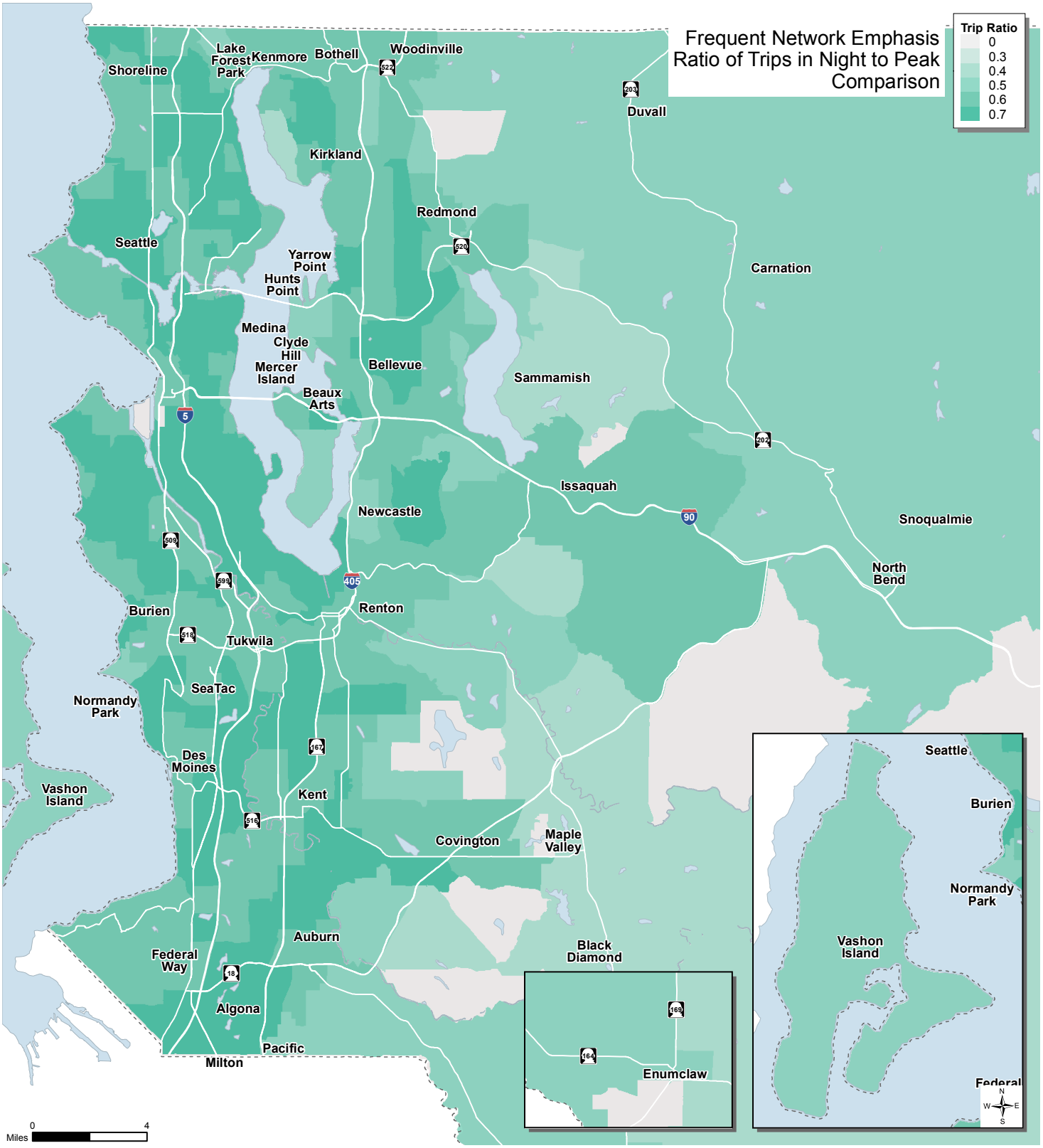

Local Network Emphasis
Population Accessible Within 30 minutes
Midday Period
Population Accessibile within 30 Minutes
> 10,000
20,000
40,000
80,000
100,000
200,000
300,000
400,000
< 500,000
Bothell
Woodinville
Shoreline
Lake Forest Park
Kenmore
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Carnation
Sammamish
Beaux Arts
Mercer Island
Newcastle
Issaquah
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Kent
Vashon Island
Covington
Maple Valley
Federal Way
Auburn
Black Diamond
Algona
Pacific
Milton
Enumclaw
0
4
Miles
Seattle
Burien
Normandy Park
Vashon Island
Federal

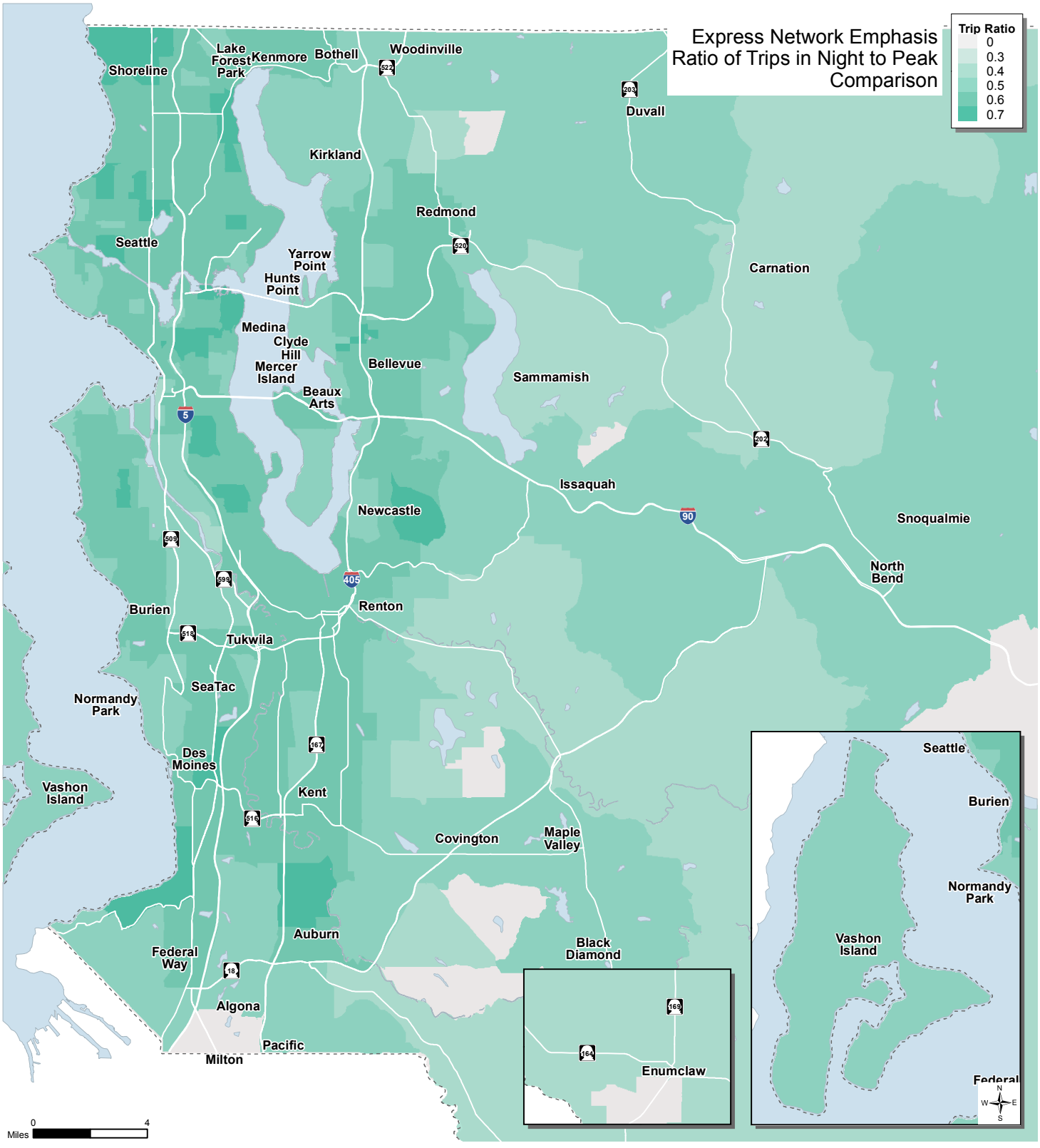


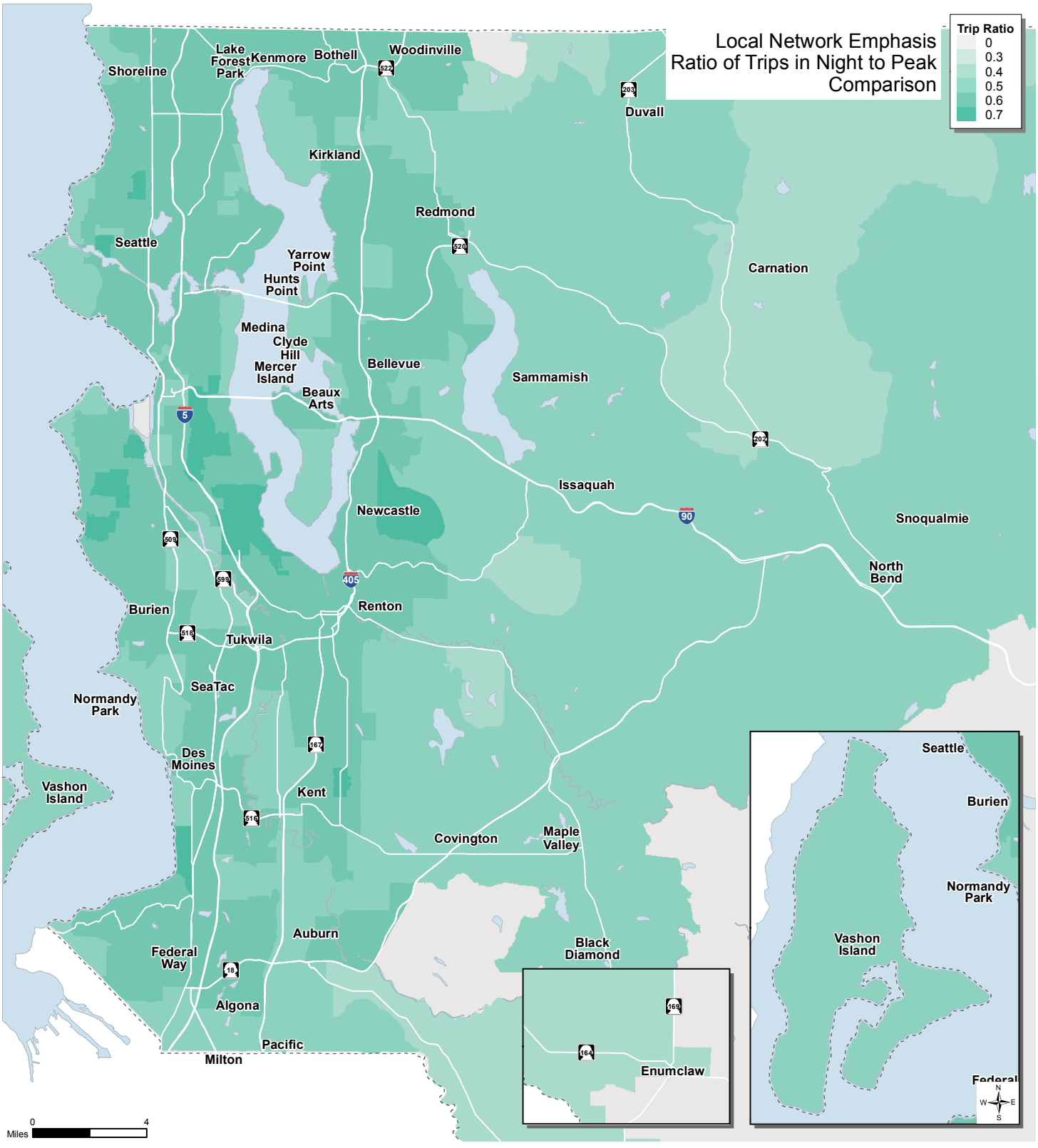
Methodology Notes

- Based on quadrant level average of the amount of transit service provided at each TAZ at 6pm and at 9pm


Variation in Transit Service Hours by Time of Day
Service Hours
1200
1000
800
600
400
200
0
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Frequent Network Emphasis
Express Network Emphasis
Local Network Emphasis


Frequent Network Emphasis
Ratio of Trips in Night to Peak
Comparison
Trip Ratio
0
0.3
0.4
0.5
0.6
0.7
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Mercer Island
Beaux Arts
Bellevue
Sammamish
Carnation
Issaquah
Newcastle
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Vashon Island
Kent
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Miles
0
4


Express Network Emphasis
Ratio of Trips in Night to Peak
Comparison
Trip Ratio
0
0.3
0.4
0.5
0.6
0.7
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Mercer Island
Bellevue
Beaux Arts
Sammamish
Carnation
Issaquah
Newcastle
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Vashon Island
Kent
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Normandy Park
Vashon Island
Federal
0
4
Miles
N
W
E
S


Local Network Emphasis
Ratio of Trips in Night to Peak
Comparison
Trip Ratio
0
0.3
0.4
0.5
0.6
0.7
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Medina
Clyde Hill
Mercer Island
Bellevue
Beaux Arts
Sammamish
Carnation
Issaquah
Newcastle
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Vashon Island
Kent
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Normandy Park
Vashon Island
Federal
0
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Miles
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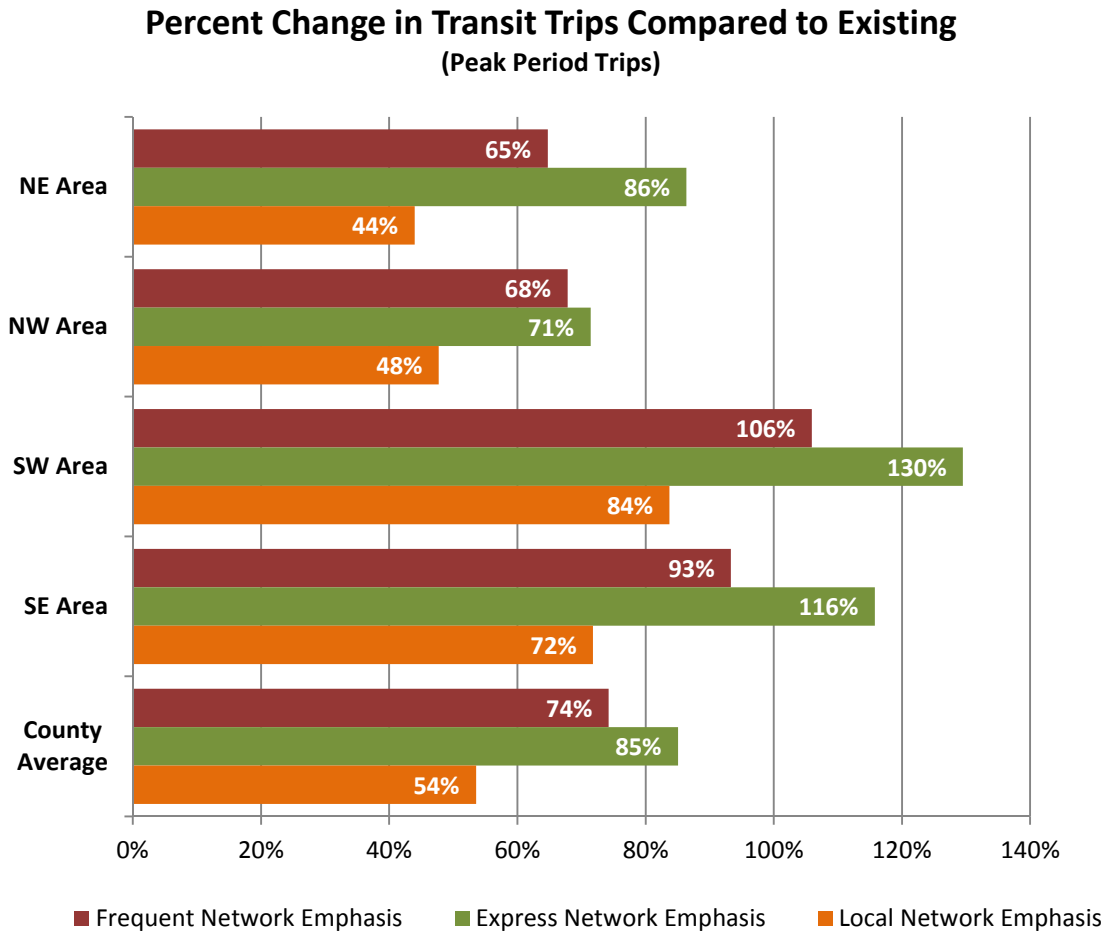
Transit Ridership

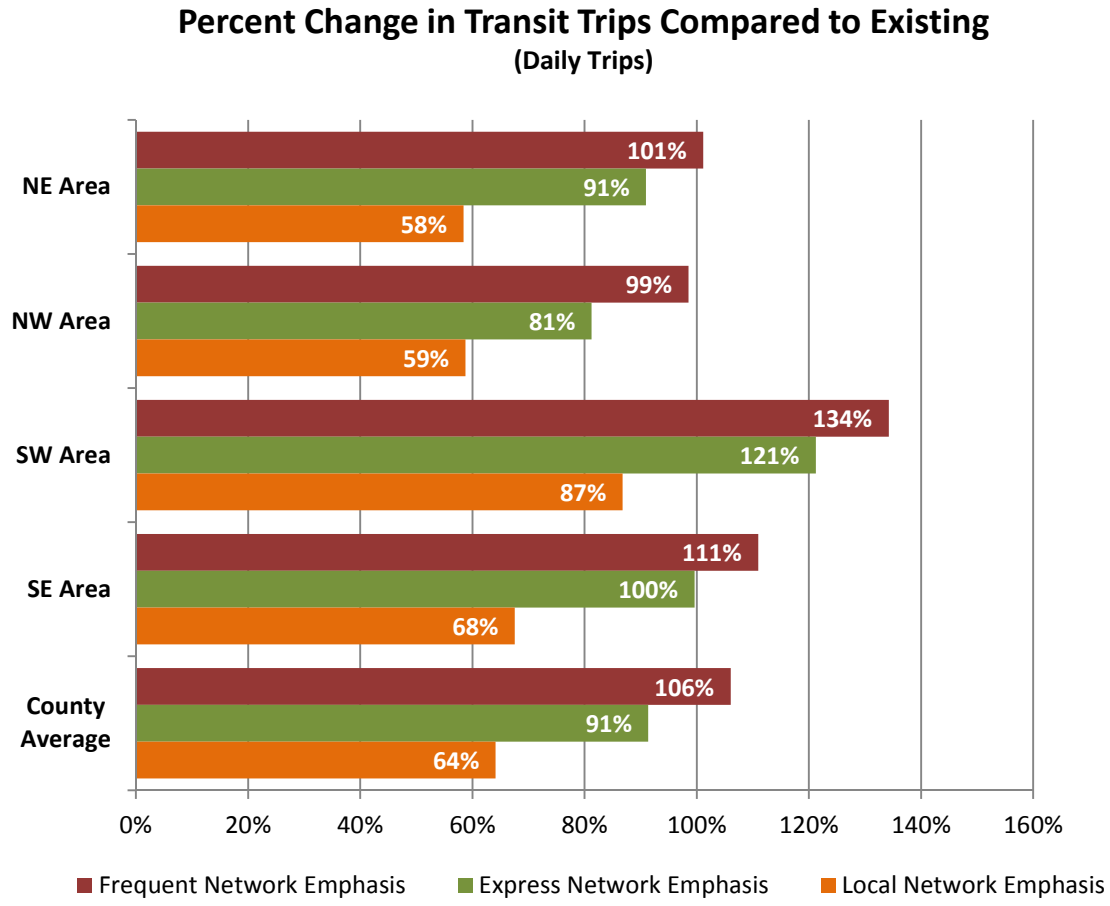
Peak Transit Trips				
	Existing	Frequent 2040	Express 2040	Local 2040
NE Area	35,000	57,000	65,000	50,000
NW Area	103,000	173,000	176,000	152,000
SW Area	27,000	55,000	62,000	49,000
SE Area	15,000	28,000	32,000	25,000
County Total	157,000	273,000	290,000	240,000



Methodology Notes

- Values are based on model forecasts of peak period transit trips for each network emphasis and are compared to existing model estimates of peak period transit trips

Daily Transit Trips				
	Existing	Frequent 2040	Express 2040	Local 2040
NE Area	109,000	219,000	208,000	172,000
NW Area	272,000	539,000	492,000	431,000
SW Area	90,000	211,000	200,000	169,000
SE Area	50,000	107,000	101,000	85,000
County Total	446,000	918,000	853,000	731,000

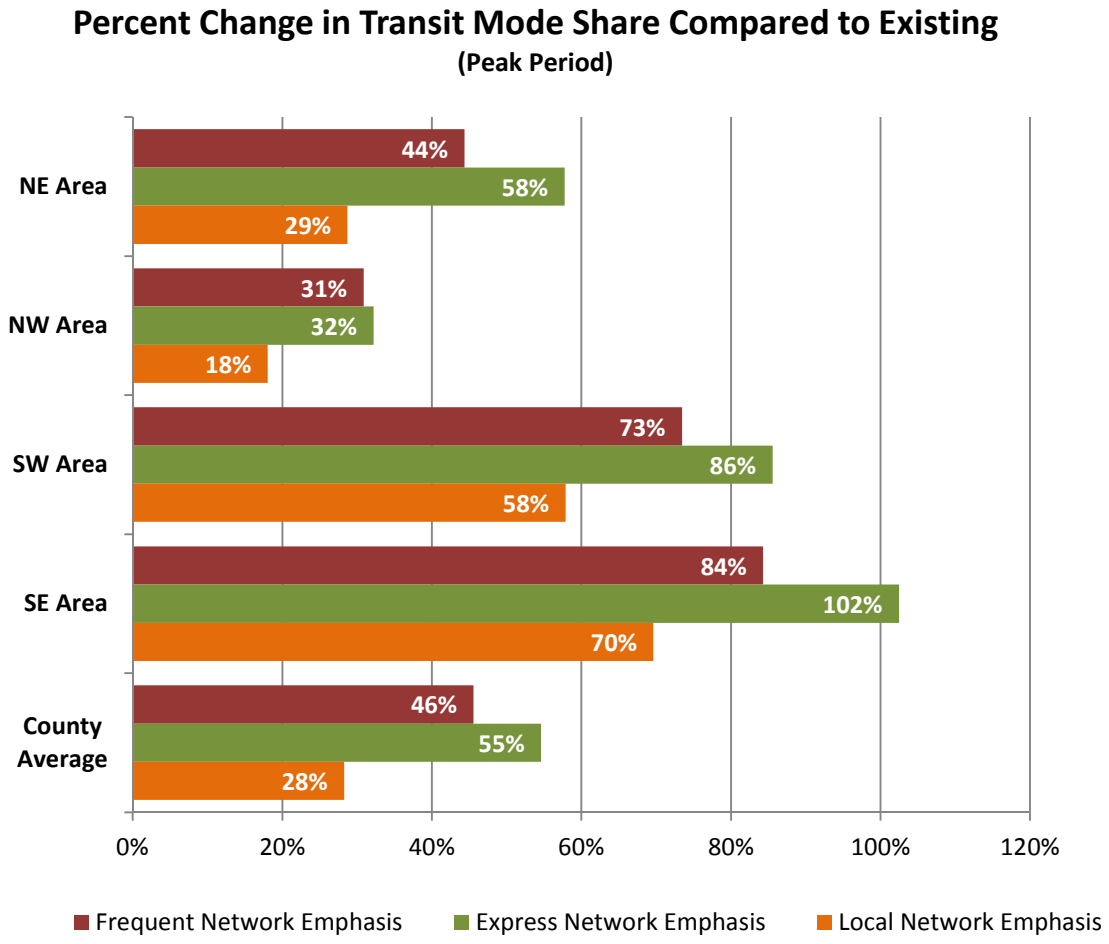


Methodology Notes

- Values are based on model forecasts of daily transit trips for each network emphasis and are compared to existing model estimates of daily transit trips

Transit Mode Share

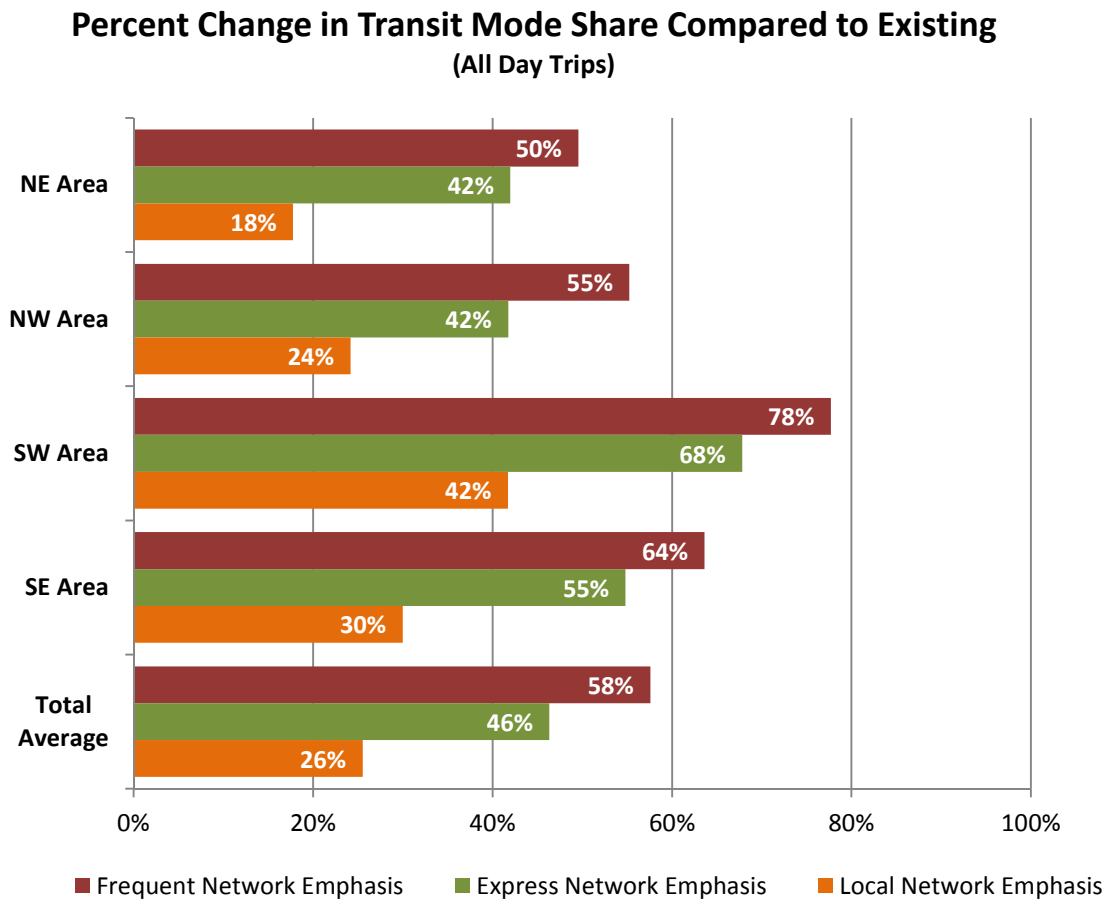
Peak Transit Mode Share				
	Existing	Frequent 2040	Express 2040	Local 2040
NE Area	14%	20%	21%	17%
NW Area	25%	33%	33%	29%
SW Area	12%	21%	22%	19%
SE Area	10%	18%	20%	17%
County Average	*14%*	*21%*	*22%*	*19%*



Methodology Notes

- Values are based on model forecasts of the share of total peak period trips that are taken by transit for each network emphasis and are compared to existing model estimates of transit mode share

Daily Transit Mode Share				
	Existing	Frequent 2040	Express 2040	Local 2040
NE Area	5%	7%	7%	6%
NW Area	10%	15%	14%	12%
SW Area	5%	9%	9%	7%
SE Area	4%	6%	5%	5%
County Average	7%	11%	10%	9%



Methodology Notes

- Values are based on model forecasts of the share of total daily trips that are taken by transit for each network emphasis and are compared to existing model estimates of transit mode share

Regional Growth Center –Changes in Transit Mode Share

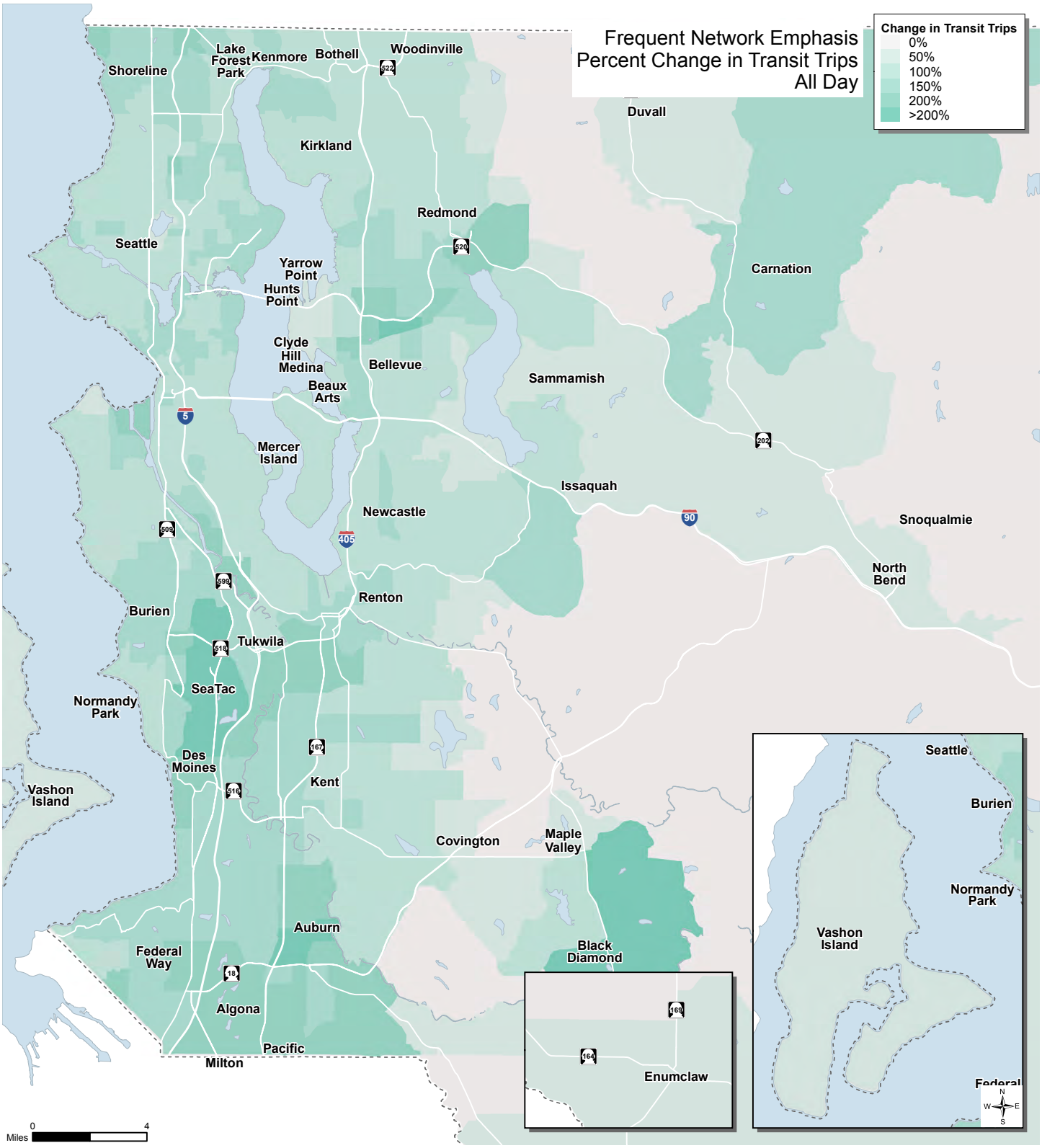
	Existing Conditions		Percent Change in Peak Period Transit Mode Share			Percent Change in Daily Transit Mode Share		
RGC	**Peak Transit Mode Share**	**Daily Transit Mode Share**	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
Auburn	14%	5%	118%	135%	113%	84%	78%	61%
Bellevue	25%	12%	28%	27%	11%	27%	17%	8%
Burien	17%	8%	53%	86%	39%	51%	57%	25%
Federal Way	11%	6%	125%	143%	113%	80%	71%	53%
Kent	18%	8%	58%	77%	44%	69%	59%	36%
Kirkland Totem Lake	11%	6%	26%	24%	6%	45%	25%	13%
Redmond Downtown	17%	7%	9%	3%	-5%	28%	8%	1%
Redmond-Overlake	16%	7%	34%	36%	16%	45%	29%	11%
Renton	13%	6%	23%	42%	15%	37%	37%	16%
SeaTac	14%	7%	99%	112%	78%	92%	87%	54%
Seattle Downtown	30%	11%	27%	26%	16%	28%	17%	6%
Seattle First Hill/Capitol Hill	24%	11%	46%	47%	33%	51%	38%	25%
Seattle Northgate	27%	11%	44%	43%	29%	70%	53%	37%
Seattle South Lake Union	35%	14%	16%	17%	2%	28%	17%	0%
Seattle University Community	29%	13%	36%	35%	22%	65%	48%	33%
Seattle Uptown	34%	14%	12%	13%	2%	33%	23%	11%
Tukwila	10%	7%	40%	25%	13%	22%	14%	0%

*Transit mode share is based on trips originating from the RGC and is calculated from existing and forecast model data

Regional Growth Center – Changes in Transit Trips

	Existing Conditions		Percent Change in Peak Period Transit Trips			Percent Change in Daily Transit Trips		
RGC	**Peak Transit Trips**	**Daily Transit Trips**	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
Auburn	800	2,600	219%	247%	210%	179%	169%	143%
Bellevue	3,200	11,100	119%	118%	89%	137%	109%	86%
Burien	2,200	6,700	78%	124%	59%	121%	131%	81%
Federal Way	1,200	5,200	189%	217%	172%	151%	137%	111%
Kent	1,100	2,900	82%	109%	64%	110%	98%	67%
Kirkland Totem Lake	2,800	8,200	58%	55%	32%	87%	60%	45%
Redmond Downtown	1,800	5,300	62%	52%	39%	91%	60%	49%
Redmond-Overlake	2,700	8,500	90%	86%	61%	119%	93%	65%
Renton	1,500	4,100	87%	119%	74%	135%	134%	87%
SeaTac	2,100	6,200	162%	200%	131%	240%	230%	169%
Seattle Downtown	4,200	19,700	99%	99%	81%	101%	82%	63%
Seattle First Hill/Capitol Hill	10,100	28,600	84%	85%	65%	102%	83%	64%
Seattle Northgate	3,700	9,900	79%	76%	56%	119%	94%	73%
Seattle South Lake Union	5,700	16,600	87%	90%	60%	122%	102%	69%
Seattle University Community	5,800	19,400	60%	59%	40%	98%	76%	57%
Seattle Uptown	5,700	13,800	72%	74%	55%	93%	77%	57%
Tukwila	1,200	4,300	221%	201%	195%	169%	137%	113%

*Transit trip totals are based on trips originating from the RGC and are calculated from existing and forecast model data


Frequent Network Emphasis
Percent Change in Transit Trips
All Day
Change in Transit Trips
0%
50%
100%
150%
200%
>200%
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Carnation
Clyde Hill
Medina
Bellevue
Beaux Arts
Sammamish
Mercer Island
Issaquah
Newcastle
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Kent
Vashon Island
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Normandy Park
Vashon Island
Federal
0
4
Miles
N
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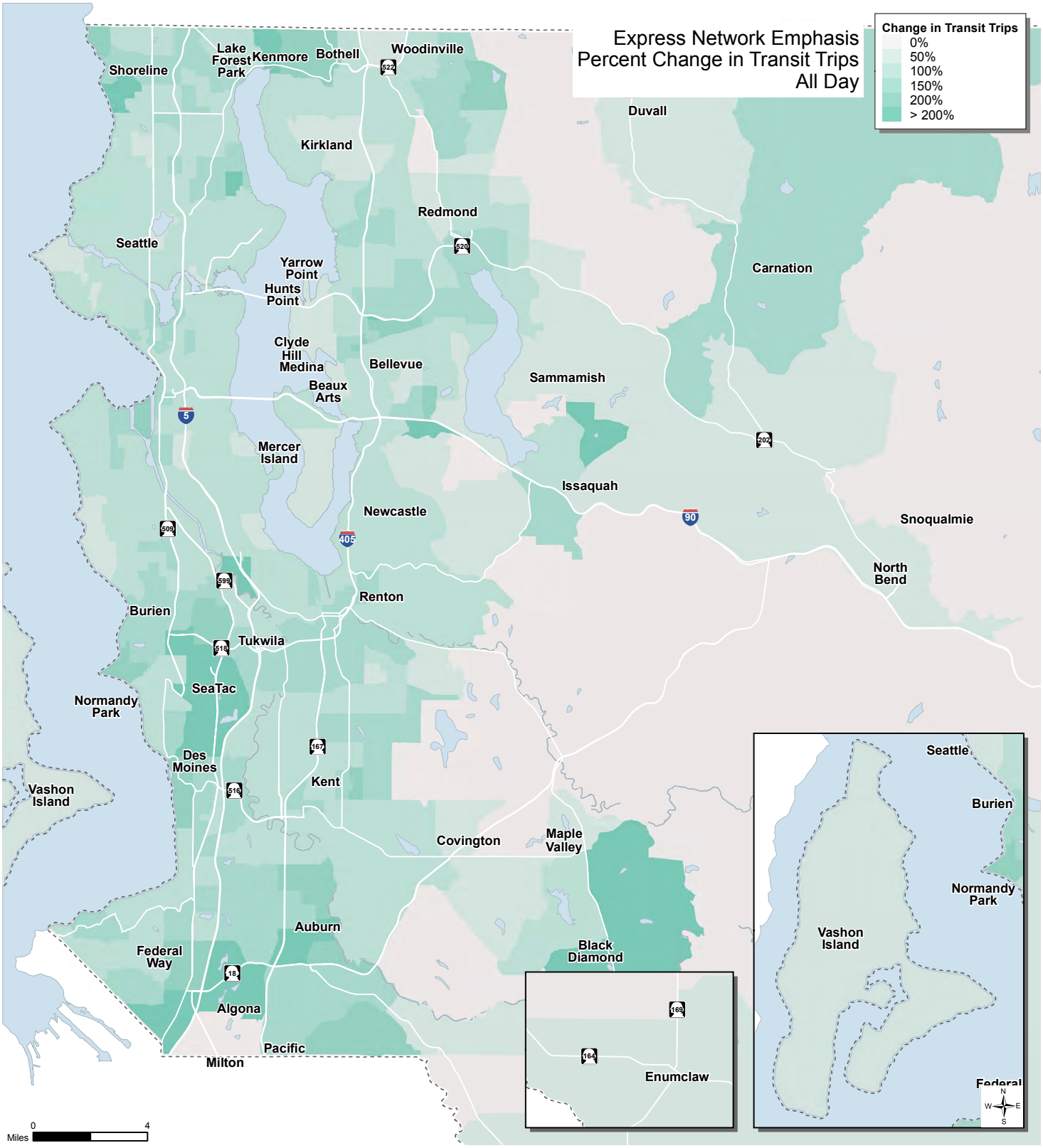
Express Network Emphasis
Percent Change in Transit Trips
All Day
Change in Transit Trips
0%
50%
100%
150%
200%
> 200%
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Carnation
Clyde Hill
Medina
Bellevue
Beaux Arts
Sammamish
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North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Kent
Vashon Island
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Normandy Park
Vashon Island
Federal
0
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Miles
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W
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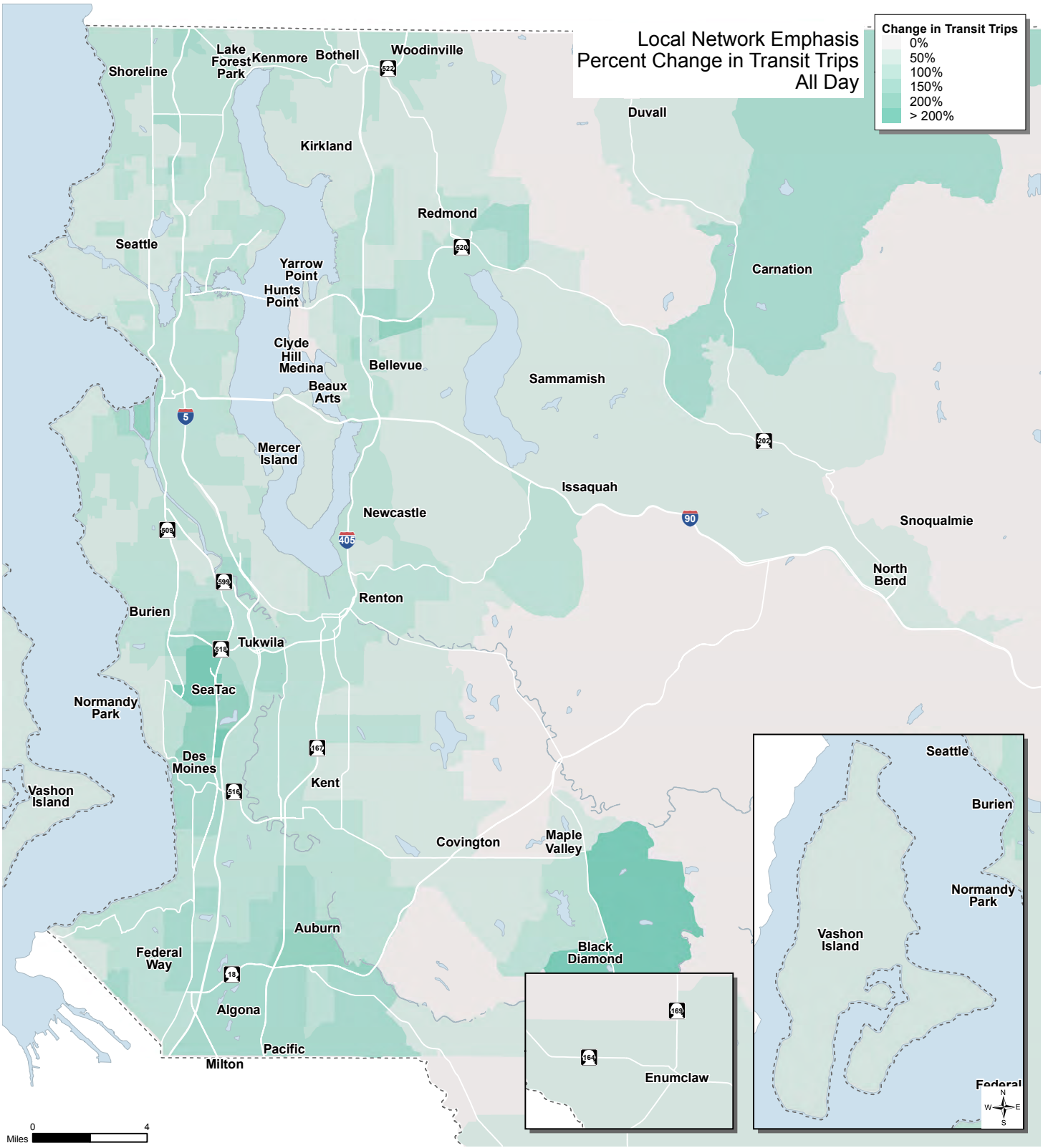
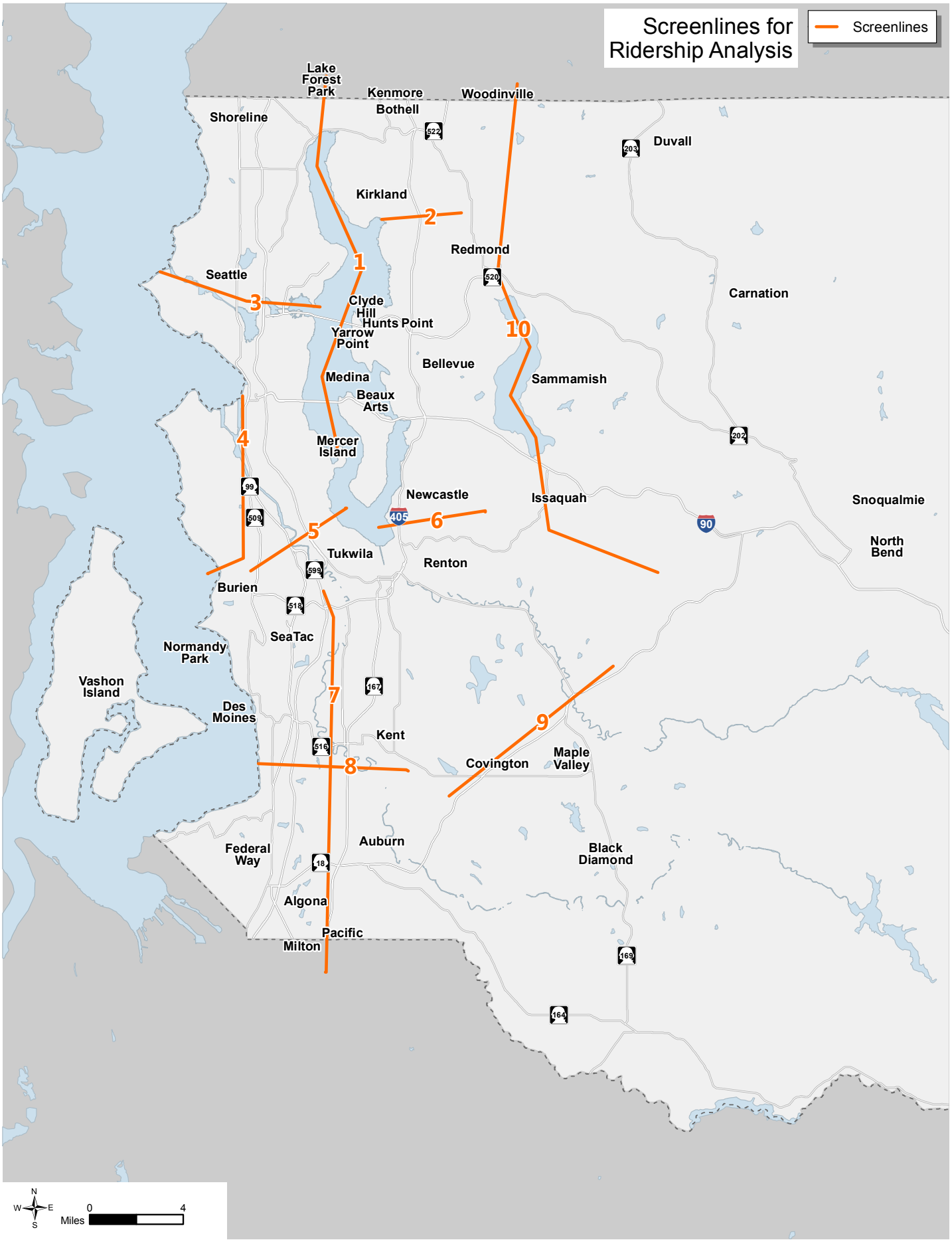

Local Network Emphasis
Percent Change in Transit Trips
All Day
Change in Transit Trips
0%
50%
100%
150%
200%
> 200%
Shoreline
Lake Forest Park
Kenmore
Bothell
Woodinville
Duvall
Kirkland
Redmond
Seattle
Yarrow Point
Hunts Point
Carnation
Clyde Hill
Medina
Bellevue
Beaux Arts
Sammamish
Mercer Island
Issaquah
Newcastle
Snoqualmie
North Bend
Renton
Burien
Tukwila
SeaTac
Normandy Park
Des Moines
Kent
Vashon Island
Covington
Maple Valley
Auburn
Federal Way
Black Diamond
Algona
Pacific
Milton
Enumclaw
Seattle
Burien
Normandy Park
Vashon Island
Federal
0
4
Miles

Transit Trip Volumes Across Screenline

	Peak Period Trips Across Screenline			Daily Trips Across Screenline		
Screenline ID	**Frequent 2040**	**Express 2040**	**Local 2040**	**Frequent 2040**	**Express 2040**	**Local 2040**
1	25,000	25,000	24,000	76,000	74,000	73,000
2	3,000	3,000	3,000	9,000	9,000	9,000
3	65,000	64,000	62,000	219,000	216,000	211,000
4	14,000	15,000	14,000	52,000	54,000	51,000
5	44,000	47,000	43,000	160,000	166,000	155,000
6	3,000	3,000	2,000	7,000	7,000	7,000
7	5,000	5,000	5,000	19,000	18,000	18,000
8	30,000	30,000	29,000	84,000	82,000	83,000
9	1,000	1,000	1,000	3,000	3,000	3,000
10	6,000	7,000	6,000	16,000	16,000	16,000

Methodology Notes

- Reference the included map to identify locations of the screenlines
- Values are based on model forecasts of total peak and daily transit trips between origins and destinations across screenlines
- Due to limitations in the capabilities in model evaluation for the future networks, differences between network emphases are not as significant as the differences between total ridership values


Screenlines for Ridership Analysis
Screenlines
Lake Forest Park
Kenmore
Bothell
Woodinville
Shoreline
Duvall
Kirkland
Redmond
Seattle
Carnation
Clyde Hill
Hunts Point
Yarrow Point
Bellevue
Sammamish
Medina
Beaux Arts
Mercer Island
Newcastle
Issaquah
Snoqualmie
North Bend
Tukwila
Renton
Burien
SeaTac
Normandy Park
Vashon Island
Des Moines
Kent
Covington
Maple Valley
Federal Way
Auburn
Black Diamond
Algona
Pacific
Milton
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4
5
6
7
8
9
10
N
W
E
S
0
4
Miles

Example Trip Diagrams

NE QUADRANT

LEGEND

Frequent Route | Express Route | Local Route | Link Light Rail | Sounder Commuter Train

EXAMPLE TRIPS

*Includes transfer

Frequent Service Emphasis

SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond

Redmond Transit Center to Seattle Center

SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

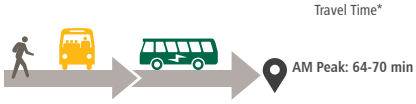
Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond

Redmond Transit Center to Seattle Center

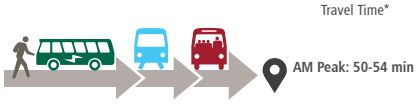
Express Service Emphasis

SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond



Redmond Transit Center to Seattle Center



SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond

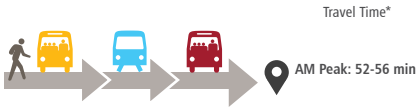
Redmond Transit Center to Seattle Center

Local Service Emphasis

SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond

Redmond Transit Center to Seattle Center



SE 40th St/86th Ave SE, Mercer Island to SE 16th St/148th Ave SE, Bellevue

Hwy 202/Snoqualmie Parkway, Snoqualmie to NE 40th St/156th Ave NE, Redmond

Redmond Transit Center to Seattle Center

NW QUADRANT

EXAMPLE TRIPS

LEGEND

Frequent Route | Express Route | Local Route | Link Light Rail | Sounder Commuter Train

*Includes transfer

Frequent Service Emphasis

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle

Travel Time*

AM Peak: 25-28 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

AM Peak: 33-36 min

University District to Totem Lake

Travel Time*

AM Peak: 53-57 min

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle

Travel Time*

Midday: 25-28 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

Midday: 33-36 min

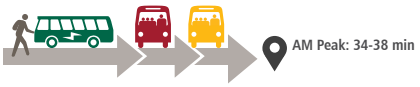
University District to Totem Lake

Travel Time*

Midday: 58-62 min

Express Service Emphasis

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle



Travel Time*

AM Peak: 34-38 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

AM Peak: 28-31 min

University District to Totem Lake

Travel Time*

AM Peak: 53-57 min

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle

Travel Time*

Midday: 40-44 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

Midday: 33-37 min

University District to Totem Lake

Travel Time*

Midday: 58-62 min

Local Service Emphasis

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle

Travel Time*

AM Peak: 28-32 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

AM Peak: 35-38 min

University District to Totem Lake

Travel Time*

AM Peak: 53-57 min

N 130th St/Greenwood Ave N, Seattle to NW 64th St/8th Ave NW, Seattle

Travel Time*

Midday: 34-38 min

NE 125th St/Lake City Way, Seattle to Fremont Ave N/N 34th St, Seattle

Travel Time*

Midday: 35-38 min

University District to Totem Lake

Travel Time*

Midday: 58-62 min

SE QUADRANT

EXAMPLE TRIPS

LEGEND

Frequent Route | Express Route | Local Route | Link Light Rail | Sounder Commuter Train

*Includes transfer

Frequent Service Emphasis

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

AM Peak: 40-44 min

Auburn City Hall to Renton Transit Center

Travel Time*

AM Peak: 58-62 min

Kent East Hill to Seattle CBD

Travel Time*

AM Peak: 68-74 min

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

Midday: 40-44 min

Auburn City Hall to Renton Transit Center

Travel Time*

Midday: 62-66 min

Kent East Hill to Seattle CBD

Travel Time*

Midday: 72-76 min

Express Service Emphasis

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

AM Peak: 40-44 min

Auburn City Hall to Renton Transit Center

Travel Time

AM Peak: 40-44 min

Kent East Hill to Seattle CBD

Travel Time*

AM Peak: 60-65 min

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

Midday: 52-56 min

Auburn City Hall to Renton Transit Center

Travel Time

Midday: 48-52 min

Kent East Hill to Seattle CBD

Travel Time*

Midday: 65-69 min

Local Service Emphasis

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

AM Peak: 48-52 min

Auburn City Hall to Renton Transit Center

Travel Time

AM Peak: 40-44 min

Kent East Hill to Seattle CBD

Travel Time*

AM Peak: 70-76 min

Ambaum Blvd SW/SW 130th St, Burien to 46th Ave S/S 144th St, Tukwila

Travel Time*

Midday: 52-56 min

Auburn City Hall to Renton Transit Center

Travel Time

Midday: 48-52 min

Kent East Hill to Seattle CBD

Travel Time*

Midday: 74-79 min

SW QUADRANT

EXAMPLE TRIPS

LEGEND

Frequent Route | Express Route | Local Route | Link Light Rail | Sounder Commuter Train

*Includes transfer

Frequent Service Emphasis

Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington

SR 516/SR 169, Maple Valley to Green River Community College

Black Diamond to Bellevue Transit Center

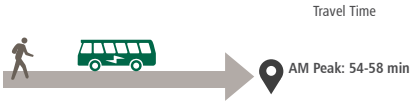
Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington

SR 516/SR 169, Maple Valley to Green River Community College

Black Diamond to Bellevue Transit Center

Express Service Emphasis

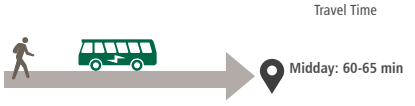
Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington



SR 516/SR 169, Maple Valley to Green River Community College

Black Diamond to Bellevue Transit Center

Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington



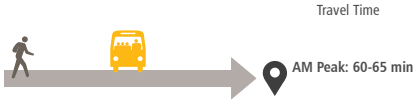
SR 516/SR 169, Maple Valley to Green River Community College

Black Diamond to Bellevue Transit Center

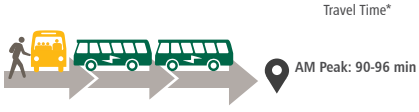
Local Service Emphasis

Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington

SR 516/SR 169, Maple Valley to Green River Community College

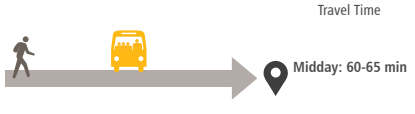


Black Diamond to Bellevue Transit Center

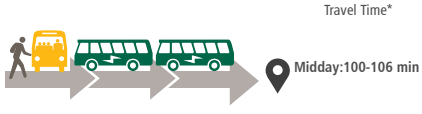


Gossard St/Griffin Ave, Enumclaw to SE Wax Rd/SE 272nd St, Covington

SR 516/SR 169, Maple Valley to Green River Community College



Black Diamond to Bellevue Transit Center



Frequent Network Emphasis

	Northgate	University Community	South Lake Union	Uptown Queen Anne	First Hill/Capitol Hill	Seattle CBD	Tukwila	Federal Way	Totem Lake	SeaTac	Burien	Auburn	Bellevue	Kent Downtown	Redmond-Overlake	Redmond Downtown	Renton	Issaquah
Northgate		16	34	36	24	26	66	100	61	65	76	86	43	78	52	46	57	76
University Community	16		23	27	15	17	57	90	53	56	67	73	35	65	43	37	48	66
South Lake Union	33	23		15	19	14	48	89	65	54	58	73	43	65	56	50	53	67
Uptown Queen Anne	35	26	14		19	14	55	92	65	57	65	68	42	60	56	49	48	68
First Hill/Capitol Hill	24	15	19	21		13	52	85	55	52	62	68	36	60	47	41	47	62
Seattle CBD	26	17	14	14	13		43	80	55	46	53	63	34	55	47	41	42	57
Tukwila	68	58	50	55	52	46		57	72	22	28	64	59	54	79	74	36	85
Federal Way	100	91	90	95	84	79	58		100	46	78	55	97	65	100	100	73	85
Totem Lake	63	54	70	69	60	60	81	100		88	99	99	39	88	55	44	48	77
SeaTac	65	56	54	56	51	46	23	45	75		42	54	63	45	80	77	40	85
Burien	75	65	55	61	60	51	28	76	91	40		85	75	71	96	92	53	85
Auburn	100	98	97	99	94	84	61	53	100	51	83		79	49	100	100	63	85
Bellevue	39	31	43	43	35	34	58	98	36	62	82	79		62	30	26	28	44
Kent Downtown	96	83	82	84	79	72	52	66	87	45	70	50	60		93	91	45	85
Redmond-Overlake	55	45	56	57	49	48	81	100	54	81	98	98	31	93		24	52	54
Redmond Downtown	44	36	49	48	39	40	75	100	45	76	90	94	26	87	23		47	55
Renton	63	53	51	50	48	42	36	74	46	40	58	58	33	44	53	50		59
Issaquah	76	64	65	65	61	55	85	85	70	85	85	85	46	85	49	54	57	

*Travel times are averages for the peak period and include walk time, average wait time and transfer time. Origin and destination points are based on TAZ centroid within each RGC. While the minimum time between each point may be less, the average takes into account the frequency of service.

Express Network Emphasis

	Northgate	University Community	South Lake Union	Uptown Queen Anne	First Hill/Capitol Hill	Seattle CBD	Tukwila	Federal Way	Totem Lake	SeaTac	Burien	Auburn	Bellevue	Kent Downtown	Redmond-Overlake	Redmond Downtown	Renton	Issaquah
Northgate		17	34	36	25	27	68	95	69	56	70	86	44	75	55	50	54	76
University Community	17		23	26	15	17	58	84	55	46	60	73	34	65	45	40	44	66
South Lake Union	34	23		14	18	12	53	79	70	42	56	70	29	55	46	43	37	72
Uptown Queen Anne	38	28	15		20	14	55	79	74	43	57	73	34	59	51	48	39	70
First Hill/Capitol Hill	25	15	16	18		14	53	79	69	42	56	68	37	66	49	44	44	68
Seattle CBD	27	17	11	14	13		41	67	70	29	44	63	33	55	46	43	32	60
Tukwila	66	56	51	53	52	41		62	100	27	43	75	49	55	68	65	40	83
Federal Way	95	82	79	82	78	66	61		100	45	72	60	76	60	96	95	65	85
Totem Lake	74	55	75	80	80	79	97	100		86	99	100	62	94	62	46	76	80
SeaTac	53	43	38	40	39	28	27	44	94		37	61	38	41	56	53	28	85
Burien	69	59	53	55	55	46	44	77	100	44		87	55	59	74	71	49	85
Auburn	100	99	91	95	93	79	80	58	100	64	90		74	49	94	85	42	85
Bellevue	43	33	28	33	37	33	49	75	60	38	55	72		45	30	26	29	43
Kent Downtown	81	71	66	69	68	57	56	63	99	40	64	49	49		67	64	32	76
Redmond-Overlake	55	45	47	51	49	47	69	97	60	57	75	93	31	65		24	49	65
Redmond Downtown	49	39	41	45	44	42	63	91	46	52	69	81	26	59	23		43	60
Renton	55	45	41	43	45	32	37	66	78	33	43	47	28	25	46	43		60
Issaquah	68	58	55	59	63	61	78	85	70	64	83	84	42	73	56	43	53	

*Travel times are averages for the peak period and include walk time, average wait time and transfer time. Origin and destination points are based on TAZ centroid within each RGC. While the minimum time between each point may be less, the average takes into account the frequency of service.

Local Network Emphasis

	Northgate	University Community	South Lake Union	Uptown Queen Anne	First Hill/Capitol Hill	Seattle CBD	Tukwila	Federal Way	Totem Lake	SeaTac	Burien	Auburn	Bellevue	Kent Downtown	Redmond-Overlake	Redmond Downtown	Renton	Issaquah
Northgate		17	41	41	25	27	64	91	74	66	78	85	50	77	64	52	63	76
University Community	17		32	31	15	17	53	81	55	56	68	73	37	65	54	43	53	66
South Lake Union	41	31		19	26	20	60	84	81	63	69	78	47	70	61	45	54	72
Uptown Queen Anne	40	30	18		25	17	52	81	79	59	66	73	46	65	58	46	53	70
First Hill/Capitol Hill	25	15	25	25		14	52	79	67	53	65	68	40	60	52	40	51	68
Seattle CBD	27	17	20	19	13		43	72	66	48	54	63	34	55	47	33	43	60
Tukwila	64	54	60	57	50	43		57	98	22	33	66	57	60	77	73	29	83
Federal Way	87	75	82	78	72	65	55		100	46	76	54	86	70	99	97	64	85
Totem Lake	70	56	74	77	64	63	93	100		100	100	100	52	91	67	49	71	80
SeaTac	65	55	61	59	52	46	21	46	100		41	62	64	49	82	74	36	85
Burien	77	67	71	68	63	54	34	78	100	42		87	73	79	94	86	45	85
Auburn	95	83	90	85	79	72	59	51	100	61	79		68	54	86	82	42	85
Bellevue	50	37	47	48	40	35	55	91	57	66	76	73		54	30	26	34	43
Kent Downtown	83	72	79	78	73	67	53	69	90	48	73	53	52		68	65	38	76
Redmond-Overlake	63	53	60	61	53	48	74	100	65	81	97	96	31	75		24	56	65
Redmond Downtown	47	37	45	50	42	37	69	96	49	74	82	90	26	70	23		50	60
Renton	64	54	60	58	51	44	28	72	73	41	46	47	33	46	53	50		60
Issaquah	82	70	77	79	71	63	83	85	84	85	85	85	43	81	64	61	61	

*Travel times are averages for the peak period and include walk time, average wait time and transfer time. Origin and destination points are based on TAZ centroid within each RGC. While the minimum time between each point may be less, the average takes into account the frequency of service.

Efficiency Measures

	Frequent	Express	Coverage
Operating Cost / Boarding	$ 3.40	$ 3.70	$ 4.70
Boardings / Hour	46	42	32
BTU / passenger-mile	3010	3240	4010
GHG emissions / passenger mile (pounds of CO2e / mile)	0.42	0.45	0.58

Assumed Operating Cost per Hour	
Frequent Service	$ 163.00
Express Service	$ 161.00
Local Service	$ 142.00