

-  Existing P&R Lot
-  Existing Ferry Terminal
-  Existing Ferry Route
-  Proposed Light Rail Route
-  Proposed Commuter Rail Route



Study Area for the SR 167 Corridor

Puget Sound Park-and-Ride System Update

the SR 167 corridor. The I-405 corridor was the only corridor currently showing sufficient coverage.

These estimates represent ideal demand conditions, unconstrained by lot placement, facility access, or transit service. All of these conditions strongly influence park-and-ride facility use⁴. These existing year “unconstrained” estimates were the first step of the methodology developed for future demand forecasting. Year 2000 counts at King County park-and-ride lots showed 85% usage overall, with all corridors showing some unused capacity except for the I-90 corridor, currently at 106% usage. Distribution of demand within the corridors results in facility overcrowding at locations in all corridors.



Existing observed demand and estimated year 2000 unconstrained demand are presented by corridor and lot in Table 5.1.

License plate surveys were available for most of King County’s permanent park-and-ride lots. GIS-based plots showing the assumed residential origins of lot patrons were provided in *King County Park & Ride Demand Estimation Study, Final Report*, Parsons Brinckerhoff, December 2000. These plots can provide useful data regarding existing lot usage and substitution patterns. Park-and-ride lot patrons have been observed using lot substitution along a given corridor, particularly along the I-90 corridor. Lot patrons will often drive past one, two, or three lots in order to use another lot that may be more convenient in some way, be it because the lot is not full, has more frequent bus service or shorter transit trips, or some other reason. Many patrons drive from Issaquah and beyond to the South Bellevue and Mercer Island lots, bypassing Issaquah and Eastgate.

Future Forecasts

Using the previously-described methodology, inputs, and assumptions, year 2010 and 2020 forecasts were developed for the identified coverage-area lots for each transit corridor. These forecasts were based upon the base year demand estimates, and then grown at both the rate of population growth and the rate of ridership growth to provide a range of possible future demand.

2010

A future need of between 2050-3400 stalls in addition to the estimated year 2000 need was identified for the County overall, with between approximately 800-1250 for the I-5 (South) corridor, 50-500 for the I-405 corridor, 900-1250 for the I-90 corridor, and 300 to 400 for the SR 167 corridor for the year 2010. The I-5 (North) corridor showed sufficient coverage for the year 2010. Demand analysis results are presented by corridor and lot in Table 5.1.

⁴ Ibid.

Table 5.1

| Parking Demand for King County | | | | | |
|--|---------------------|-------------------------|------------------|----------------------|---------------------|
| Park & Ride Facility | Lot Capacity | Base Year Demand | | Future Demand | |
| | | Observed | Estimated | 2010 | 2020 |
| I-5 North Lots | | | | | |
| Aurora Village TC | 200 | 180 | 560 | 410 to 470 | 440 to 560 |
| Shoreline | 400 | 308 | | | |
| N Jackson Park | 68 | 54 | 780 | 640 to 720 | 680 to 870 |
| 5th Ave/NE 133rd Street | 46 | 12 | | | |
| Northgate | 499 | 494 | 890 | 750 to 840 | 790 to 1000 |
| N Seattle | 141 | 154 | | | |
| Northgate TC | 296 | 296 | | | |
| NE 65th Street/Greenlake | 471 | 485 | 750 | 600 to 670 | 630 to 800 |
| TOTAL | 2121 | 1984 | 2980 | 2400 to 2700 | 2540 to 3230 |
| Note: Initial demand expected to moderate when LRT is added to network, due to lower frequencies and longer trip times as compared to existing express bus service. However, long-term (2030 and beyond) growth in parking demand is expected. | | | | | |
| I-5 South Lots | | | | | |
| SW Spokane | 55 | 30 | 320 | 340 | 350 to 420 |
| Airport/Spokane | 25 | 23 | | | |
| Georgetown CR Station | N/A | N/A | 320 | 590 to 640 | 690 to 830 |
| Olson/Myers | 562 | 112 | | | |
| Boeing Access LR/CR Station | N/A | N/A | 430 | 650 to 710 | 760 to 910 |
| Tukwila | 307 | 321 | 470 | 520 to 570 | 560 to 660 |
| Tukwila CR Station | N/A | N/A | | | |
| Burien | 403 | 368 | 300 | 380 | 410 to 490 |
| Normandy Park LR Station | N/A | N/A | 620 | 800 to 880 | 930 to 1110 |
| Kent/Des Moines | 384 | 369 | 630 | 560 to 610 | 620 to 750 |
| Star Lake | 549 | 526 | 540 | 590 to 650 | 650 to 780 |
| Federal Way | 894 | 1024 | 630 | 660 to 720 | 730 to 870 |
| Twin Lakes (Feb '01) | 600 | N/A | 660 | 630 to 690 | 710 to 850 |
| South Federal Way | 520 | 573 | | | |
| TOTAL | 4299 | 3345 | 4920 | 5720 to 6190 | 6410 to 7670 |
| I-405 Lots | | | | | |
| Northshore | 376 | 125 | 560 | 560 to 620 | 700 to 850 |
| Kenmore | 432 | 389 | | | |
| Bothell | 230 | 209 | 620 | 640 to 710 | 770 to 940 |
| Woodinville | 459 | 266 | | | |
| Brickyard | 247 | 237 | 520 | 520 to 580 | 650 to 790 |
| Kingsgate | 502 | 467 | | | |
| NE 116th | 24 | 5 | | | |
| SR 908/Kirkland Way | 20 | 13 | 480 | 480 to 530 | 610 to 740 |
| Houghton | 450 | 288 | | | |
| Redmond | 344 | 258 | 520 | 520 to 580 | 650 to 790 |
| Bear Creek | 334 | 180 | | | |
| Northup | 32 | 16 | 530 | 530 to 590 | 670 to 820 |
| Evergreen Point | 51 | 47 | | | |
| S Kirkland | 603 | 525 | | | |
| NE 40th/Overlake TC (Sep '01) | 235 | N/A | 510 | 520 to 570 | 650 to 790 |
| Overlake | 150 | 83 | | | |
| Wilburton | 190 | 196 | 490 | 490 to 540 | 610 to 750 |
| Newport Hills | 292 | 187 | | | |
| Renton Highlands | 146 | 80 | | | |
| TOTAL | 5117 | 3571 | 4230 | 4260 to 4720 | 5310 to 6470 |

Table 5.1 (cont.)

| Parking Demand for King County | | | | | |
|---------------------------------------|---------------------|-------------------------|------------------|-------------------------|-------------------------|
| Park & Ride Facility | Lot Capacity | Base Year Demand | | Future Demand | |
| | | Observed | Estimated | 2010 | 2020 |
| I-90 Lots | | | | | |
| Mercer Island | 257 | 257 | 490 | 590 | 660 to 750 |
| South Bellevue | 524 | 582 | 470 | 600 to 850 | 690 to 1020 |
| Eastgate | 724 | 673 | 600 | 760 | 820 |
| Lakemont | N/A | N/A | 520 | 660 | 730 to 820 |
| Issaquah | 394 | 405 | 520 | 670 | 800 |
| Issaquah Highlands | N/A | N/A | 380 | 510 | 640 |
| Preston | 53 | 33 | 90 | 130 to 190 | 170 to 230 |
| North Bend | N/A | N/A | 140 | 210 | 270 |
| Snoqualmie Pass | N/A | N/A | 0 | 0 | 0 |
| TOTAL | 1952 | 1950 | 3210 | 4130 to 4440 | 4780 to 5350 |
| SR 167 Lots | | | | | |
| S Renton | 370 | 370 | 540 | 680 | 830 to 950 |
| Renton TC (Spring '01) | 150 | N/A | | | |
| Tukwila CR Station | Proxy | Proxy | | | |
| Kent TC | 729 | 510 | 620 | 680 to 730 | 840 to 960 |
| Kent CR Station | Proxy | Proxy | | | |
| Lake Meridian | 170 | 48 | 420 | 270 | 320 to 370 |
| Auburn | 367 | 326 | 370 | 700 to 750 | 860 to 980 |
| Auburn CR Station | Proxy | Proxy | | | |
| SR 18/Peasley Canyon Road | 54 | 39 | | | |
| SR 18/Auburn-Black Diamond | 26 | 8 | 480 | 410 | 490 to 560 |
| TOTAL | 1866 | 1301 | 2430 | 2740 to 2840 | 3340 to 3820 |
| COUNTY TOTAL | 15,355 | 12,150 | 17,770 | 19,250 to 20,890 | 22,380 to 26,540 |

Notes:

These are corridor-level estimates and forecasts and do not represent site-specific implementation recommendations.

Assumed annual growth rate for I-5 King County: 1.005 - 1.022

Source: Parsons Brinckerhoff

2020

A future need of between 3100-5650 stalls in addition to the estimated year 2010 need was identified for the County overall, with approximately 250 for the I-5 (North) corridor, 700-1500 for the I-5 (South) corridor, 1000-1750 for the I-405 corridor, 650-900 for the I-90 corridor, and 600 to 1000 for the SR 167 corridor for the year 2020. Demand analysis results are also presented by corridor and lot in Table 5.1.

RECOMMENDED PROGRAMMING & COST ESTIMATES

With the exception of the Southwest Snohomish area, King County shows the highest demand for park-and-ride facilities in the four-county area. While the I-5 South and I-405 corridors witness the highest existing and future demand, they are relatively well served by the facilities outlined in the existing 6-year program, and show only moderate additional need toward the end of the planning horizon. Sound Transit and King County have programmed large capital projects in the I-5 South corridor, meeting the projected needs through the 2016-2020 time period.

The 6-year program of projects for the I-5 North corridor meets demand through 2020, resulting in no new need in the MTP 2030 Horizon. The I-90 corridor demonstrates strong and consistent growth in demand, requiring approximately an additional 1,000 space in each programming period. In the SR-167 corridor, a large capital investment program by Sound Transit accommodates growth through the end of the 2016-2020 planning period, with an additional need of only 600-1000 spaces in the MTP 2030 Horizon.

Calculated need for new park-and-ride stalls in King County is presented in Table 5.2. The finalized project programming recommendations are presented along with cost estimates in Table 5.3 and Figure 5.7.

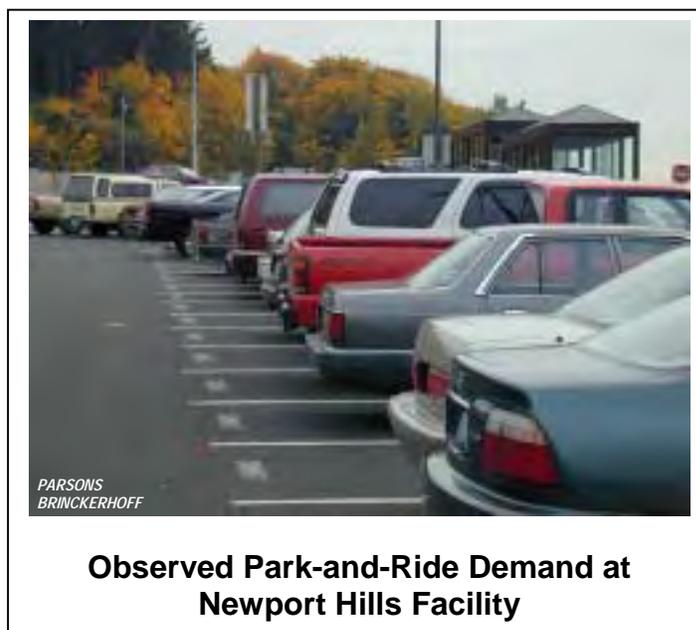


Table 5.2

| Identified King County Park-and-Ride Capacity Needs | | | | | |
|--|--|---|--|---|------------------------------|
| Transit Corridor | Programming Period | | | | Total (2000-2030) |
| | Short-Term (Existing 2000 Need) | Mid-Range (2000 Need Unmet by 6-Yr. Program) | Long-Range (Additional 2010 Need) | MTP Horizon (Additional 2020 Need) | |
| I-5 (North) | 1,550 | 1,200 | -500 | -100 | 950 |
| I-5 (South) | 2,350 | -1,650 | -400 | 900 | 2,850 |
| I-405 | 600 | 600 | 300 | 1,650 | 2,550 |
| I-90 | 2,100 | 1,100 | 1,300 | 950 | 4,350 |
| SR 167 | 1,300 | -700 | -250 | 700 | 1,750 |
| TOTALS | 7,900 | 550 | 450 | 4,100 | 12,450 |

Notes:

Numbers rounded to the nearest 50.

Short-term stall numbers represent estimated year 2000 need.

Mid-Range stall numbers represent the estimated year 2000 need minus existing 6-year programming.

Long-Range and MTP Horizon stall numbers represent forecasted needs in addition to the previous planning period, i.e., in addition to Mid-Range and Long-Range, respectively.

The Total column represents total forecasted need between 2000-2030. It therefore excludes numbers in the Mid-Range column.

Negative numbers represent current programming in excess of forecasted need for that planning period.

Source: Parsons Brinckerhoff

Table 5.3

King County Proposed Project Program

| Map # | Stalls | Corridor | Location | Facility Type | ROW Cost Area | Estimated Construction Cost | Estimated ROW Cost | Estimated Total Cost |
|---|--------------|-----------|------------------------------|---------------|---------------|---------------------------------|---------------------|----------------------|
| <i>Short-Term 2000-2006</i> | | | | | | | | |
| KC2 | 600 | I-5 South | Pacific Hwy/272nd | Surface | South | N/A | N/A | \$15,200,000 |
| KC3 | 1,200 | I-5 South | Federal Way Transit Center | Surface | South | N/A | N/A | \$39,000,000 |
| KC4 | 650 | I-5 South | S. 200th | Surface | South | N/A | N/A | N/A** |
| KC5 | 650 | I-5 South | Park and Ride | Surface | South | N/A | N/A | N/A** |
| KC6 | 300 | I-5 South | Boeing Access Station | Surface | South | N/A | N/A | N/A** |
| KC7 | 580 | SR 167 | Auburn Station | Surface | South | N/A | N/A | \$20,717,000 |
| KC8 | 810 | SR 167 | Kent Station | Surface | South | N/A | N/A | \$20,258,000 |
| KC9 | 800 | SR 167 | Tukwila Station | Surface | South | N/A | N/A | \$16,358,000 |
| KC10 | 400 | I-5 North | Northgate Transit Center | Surface | North | N/A | N/A | N/A** |
| KC11 | 750 | I-90 | Eastgate | Structure | East | N/A | N/A | \$14,625,000 |
| KC12 | 250 | I-90 | Mercer Island Transit Center | Surface | East | N/A | N/A | \$15,203,000 |
| KC14 | 600 | I-5 North | Northgate Vicinity | Structure | North | \$9,000,000 | \$10,500,000 | \$19,500,000 |
| KC16 | 500 | I-90 | Issaquah Highlands* | Structure | East | \$7,500,000 | \$0 | \$7,500,000 |
| Total | 8,090 | | | | | \$16,500,000 | \$10,500,000 | \$168,361,000 |
| | | | | | | Short-Term Sub-Totals | | |
| *subset of I-405 corridor | | | | | | | | |
| **cost estimates available for area only not specific park-and-ride locations | | | | | | | | |
| ITS - Freeway Only | | | | | | | | |
| I-405 \$1,007,000 | | | | | | | | |
| I-90 \$465,000 | | | | | | | | |
| TOTAL | | | | | | | | \$1,472,000 |
| ITS - With Arterial Messaging | | | | | | | | |
| I-405 \$2,290,000 | | | | | | | | |
| I-90 \$1,014,000 | | | | | | | | |
| TOTAL | | | | | | | | \$3,304,000 |
| CCTV | | | | | | | | |
| I-405 \$1,192,200 | | | | | | | | |
| I-90 \$444,000 | | | | | | | | |
| TOTAL | | | | | | | | \$1,636,200 |
| | | | | | | Short-Term ITS Sub-Total | | \$4,940,200 |
| Short-Term Totals with Preferred ITS Components | | | | | | \$16,500,000 | \$10,500,000 | \$173,301,200 |

Table 5.3 (cont.)

King County Proposed Project Program

| Map # | Stalls | Corridor | Location | Facility Type | ROW Cost Area | Estimated Construction Cost | Estimated ROW Cost | Estimated Total Cost |
|--------------------------------------|--------------|----------|---------------------------------|---------------|-----------------------------|-----------------------------|--------------------|---|
| <i>Mid-Range 2007-2015</i> | | | | | | | | |
| KC15 | 150 | I-90 | North Bend | Surface | Rural | \$1,500,000 | \$1,200,000 | \$2,700,000 |
| KC17A | 500 | I-90 | Eastgate/Issaquah | Structure | East | \$7,500,000 | \$6,400,000 | \$13,900,000 |
| KC17B | 600 | I-405 | Kirkland/Kingsgate/Brickyard ** | Structure | East | \$9,000,000 | \$0 | \$9,000,000 |
| Total | 1,250 | | | | Mid-Range Sub-Totals | \$18,000,000 | \$7,600,000 | \$25,600,000 |
| | | | | | | | | * Issaquah Highlands ROW provided by developer |
| | | | | | | | | ** County ROW |
| ITS - Freeway Only | | | | | | | | |
| | | | | | | | | \$352,800 |
| | | | | | | | | \$339,000 |
| | | | | | | | | \$691,800 |
| ITS - With Arterial Messaging | | | | | | | | |
| | | | | | | | | \$792,400 |
| | | | | | | | | \$705,000 |
| | | | | | | | | \$1,497,400 |
| CCTV | | | | | | | | |
| | | | | | | | | \$537,600 |
| | | | | | | | | \$350,600 |
| | | | | | | | | \$888,200 |
| | | | | | | | | Mid-Range ITS Sub-Total |
| | | | | | | | | \$2,385,600 |
| | | | | | | | | Mid-Range Totals with Preferred ITS Components |
| | | | | | | | | \$18,000,000 |
| | | | | | | | | \$7,600,000 |
| | | | | | | | | \$27,985,600 |

Table 5.3 (cont.)

King County Proposed Project Program

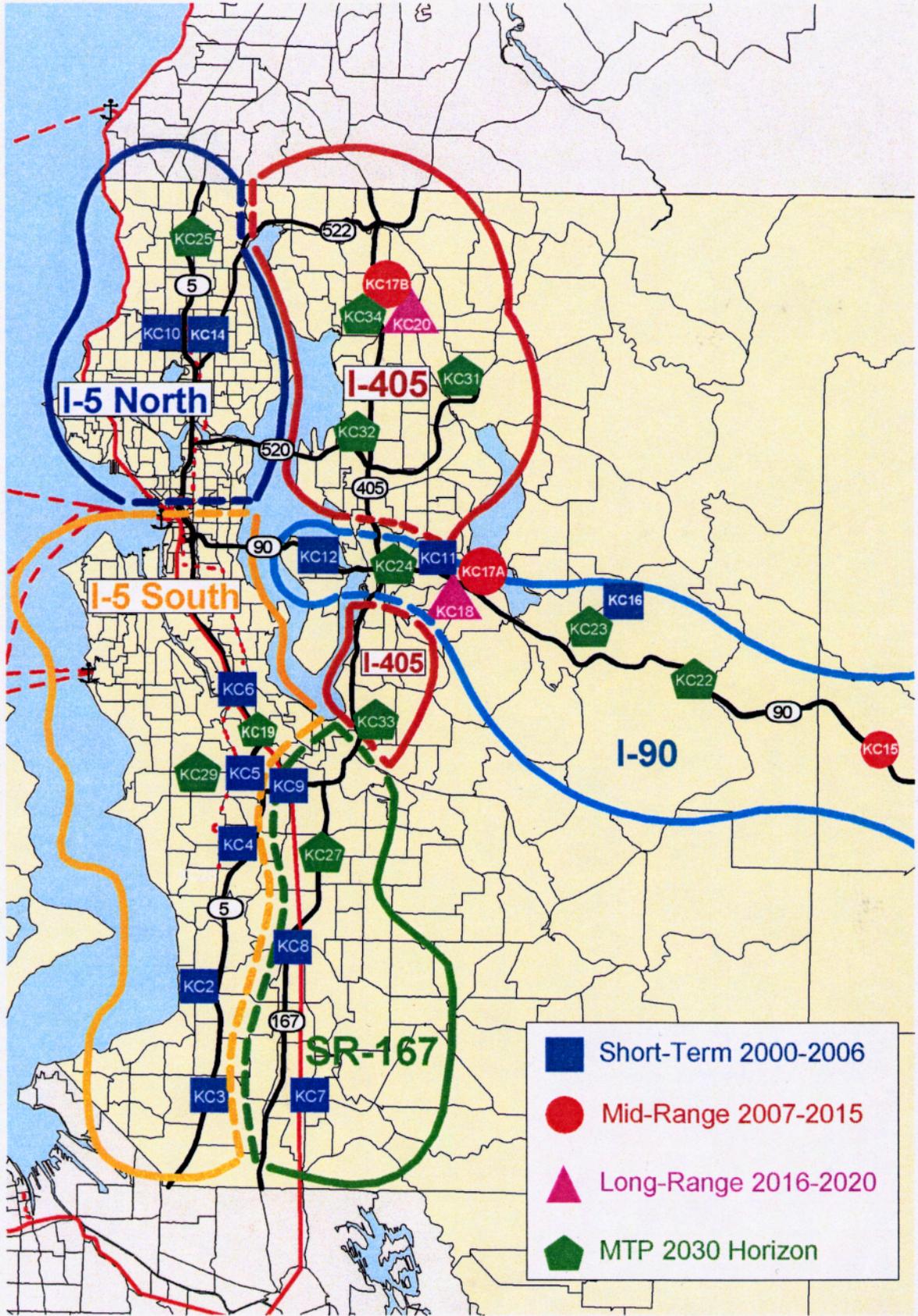
| Map # | Stalls | Corridor | Location | Facility Type | ROW Cost Area | Estimated Construction Cost | Estimated ROW Cost | Estimated Total Cost |
|-----------------------------|--------------|--------------|---|---------------|---------------------------|-----------------------------|----------------------|----------------------|
| <i>Long-Range 2016-2020</i> | | | | | | | | |
| KC18 | 1,300 | I-90 | I-90 Eastgate/Issaquah | Structure | East | \$19,500,000 | \$16,640,000 | \$36,140,000 |
| KC20 | 300 | I-405 | Kirkland/Kingsgate/Brickyard | Surface | East | \$3,000,000 | \$7,680,000 | \$10,680,000 |
| Total | 1,600 | | | | Long-Range Totals | \$22,500,000 | \$24,320,000 | \$46,820,000 |
| <i>MTP 2030 Horizon</i> | | | | | | | | |
| KC22 | 200 | I-90 | Preston | Surface | Rural | \$2,000,000 | \$1,600,000 | \$3,600,000 |
| KC23 | 450 | I-90 | Sammamish Plateau/Issaquah Highlands | Surface | East | \$4,500,000 | \$11,520,000 | \$16,020,000 |
| KC24 | 300 | I-90 | Eastgate/S. Bellevue/Mercer Island | Structure | East | \$4,500,000 | \$3,840,000 | \$8,340,000 |
| KC25 | 550 | I-5 North | Between Northgate and County Line (coordinate with South Snohomish facilities) | Structure | North | \$8,250,000 | \$9,625,000 | \$17,875,000 |
| KC27 | 700 | SR 167 | Kent Station* | Structure | South | \$10,500,000 | \$4,550,000 | \$15,050,000 |
| KC19 | 550 | I-5 S/SR 509 | SR 509, S of Boeing Field/South Industrial Complex | Structure | South | \$8,250,000 | \$3,575,000 | \$11,825,000 |
| KC29 | 350 | I-5 S/SR 509 | SeaTac/Tukwila/Burien | Structure | South | \$5,250,000 | \$2,275,000 | \$7,525,000 |
| KC31 | 300 | SR 520* | Redmond | Surface | East | \$3,000,000 | \$7,680,000 | \$10,680,000 |
| KC32 | 650 | SR 520* | S. Kirkland | Structure | East | \$9,750,000 | \$8,320,000 | \$18,070,000 |
| KC33 | 400 | I-405 | Kennydale | Surface | East | \$4,000,000 | \$10,240,000 | \$14,240,000 |
| KC34 | 300 | I-405 | Kirkland/Kingsgate/Brickyard | Surface | East | \$3,000,000 | \$7,680,000 | \$10,680,000 |
| Total | 4,750 | | | | MTP Horizon Totals | \$63,000,000 | \$70,905,000 | \$133,905,000 |
| | | | | | KING COUNTY TOTALS | \$120,000,000 | \$113,325,000 | \$382,011,800 |

*subset of I-405 corridor

NOTES

1. Program plans are organized by county. The lead agency for a project will be determined at the time of implementation.
2. This program plan identifies the general location, time period, and type of park-and-ride facilities needed. Exact size, location, timing, and type of facility to be determined by local agencies and public process at the time of implementation.
3. Forecasts represent unconstrained transit corridor demand.
4. Cost estimates are in year 2000 dollars.
5. All costs are preliminary planning level capital estimates intended to serve as placeholders. They do not include operations or maintenance costs.
6. Funds have been programmed for lots in the short-term category only. No commitment has been made or is implied regarding funding or the ability to fund further projects.
7. Map numbers may not be sequential.

Source: Parsons Brinckerhoff



- N
- Existing Ferry Terminal
- Existing Ferry Route
- Proposed Light Rail Route
- Proposed Commuter Rail Route

- Short-Term 2000-2006
- Mid-Range 2007-2015
- ▲ Long-Range 2016-2020
- ⬠ MTP 2030 Horizon



King County Proposed Project Program

Puget Sound Park-and-Ride System Update

FIGURE 5.7

METHODOLOGICAL ASSUMPTIONS SPECIFIC TO KING COUNTY

The methodology utilized for the King County analysis closely followed the methodology outlined in Section III of this report. Adjustments in methodology which pertain only to King County are presented below.

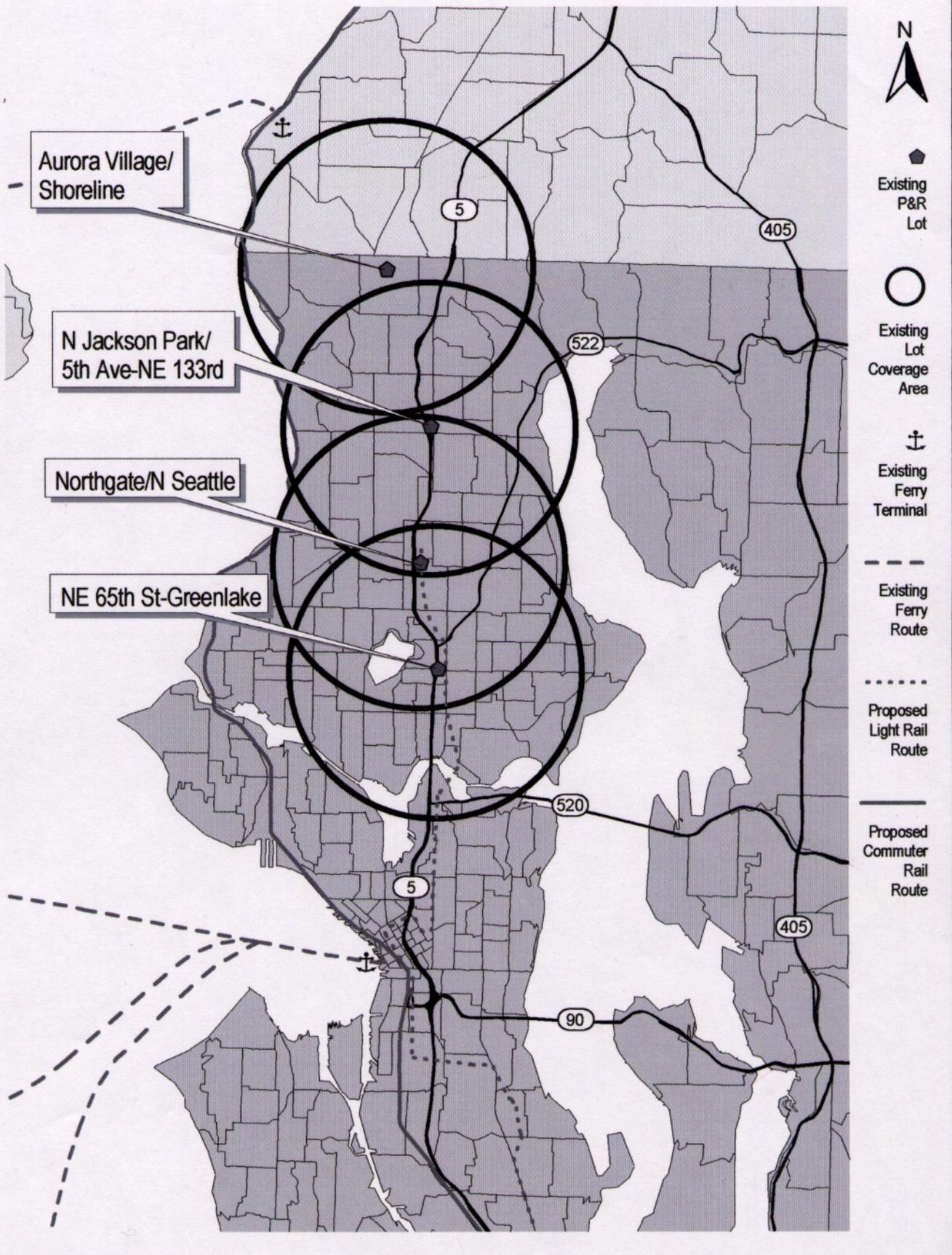
Coverage Areas

An initial step in the demand estimation involves the identification of ideal coverage areas for each corridor. Coverage areas for individual park-and-ride facilities within each transit corridor are shown in Figures 5.8 through 5.12. Proxy lots and combined existing lots shown in these figures were located for analysis purposes, and do not suggest finalized recommendations.

Transit Assumptions

The PRD model requires the input of transit assumptions. In order to estimate “unconstrained” park-and-ride demand, reasonably aggressive existing and future transit service levels were assumed. These assumptions included:

- Service inputs for the lots in the I-5 (North) corridor were assumed to be similar to the Northgate Transit Center.
- Service inputs for the Georgetown and Boeing Access proxy lots were assumed to be similar to the Tukwila facility.
- Service inputs for the Normandy proxy lot were assumed to be similar to the Kent-Des Moines facility.
- Service inputs for the lots in the I-405 corridor were assumed to be similar to the Houghton facility.
- Existing service inputs for the lots in the I-90 corridor, other than the Lakemont Proxy lot, were assumed to be similar to the Issaquah facility. Service inputs for the Lakemont lot were assumed to be similar to the Eastgate facility.
- Existing headway inputs for the Lakemont and Issaquah Highlands lots were assumed to be similar to the Issaquah facility. Headway inputs for the Preston lot were assumed to be similar to the North Bend inputs.
- Further detailed transit assumptions for individual park-and-ride facilities are presented in Tables 5.4 through 5.8. These represent “aggressive” service assumptions provided by King County based on the proposed TRIP-21 transit improvement program and an assumed annual growth factor based on expected sales tax revenue growth.



Coverage Areas for the I-5 (North) Corridor

