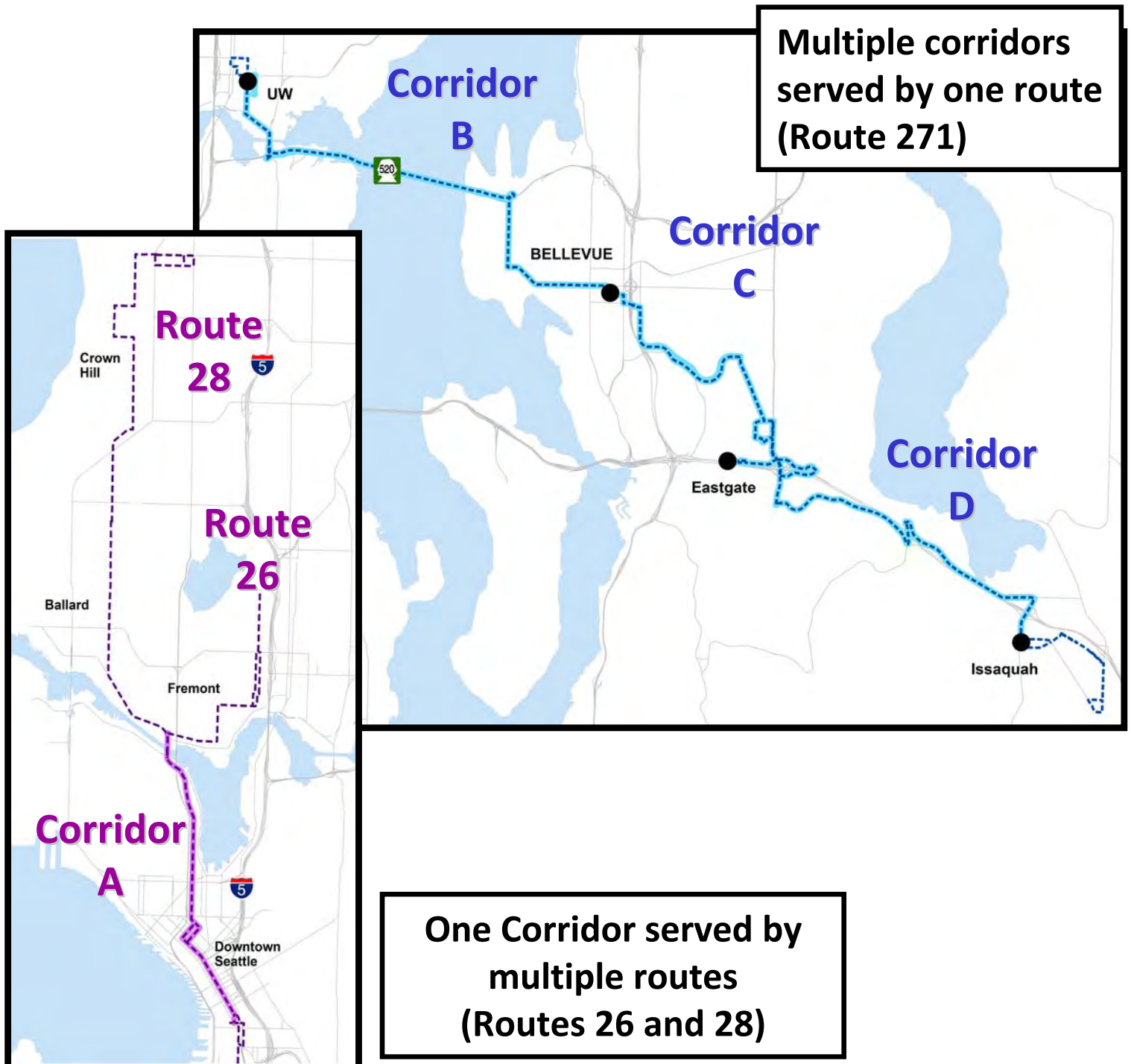


Regional Transit Committee Workshop
3/30/11

All Day Packet

CORRIDOR SELECTION

BETWEEN	AND	VIA
A. Fremont	Seattle CBD	Dexter Ave N
B. U. District	Bellevue	SR 520
C. Bellevue	Eastgate	Lake Hills Connector
D. Issaquah	Eastgate	Newport Way



CONNECTION EVALUATED

BETWEEN

AND

VIA

Burien

Seattle CBD

Delridge, Ambaum



Corridor Profile

Land Use

1,167 HH/Corridor Mile

(16,126 households/13.8 corridor miles)

5,798 jobs/Corridor Mile

(80,128 jobs/13.8 corridor miles)

Social Equity

74% of inbound boardings in minority census tracts

(2,376 of the 3,206 boardings)

91% of inbound boardings in low income tracts

(2,925 out of 3,206 boardings)

Geographic Value

- Primary connection between activity centers
- Primary connection between two regional growth centers

BETWEEN

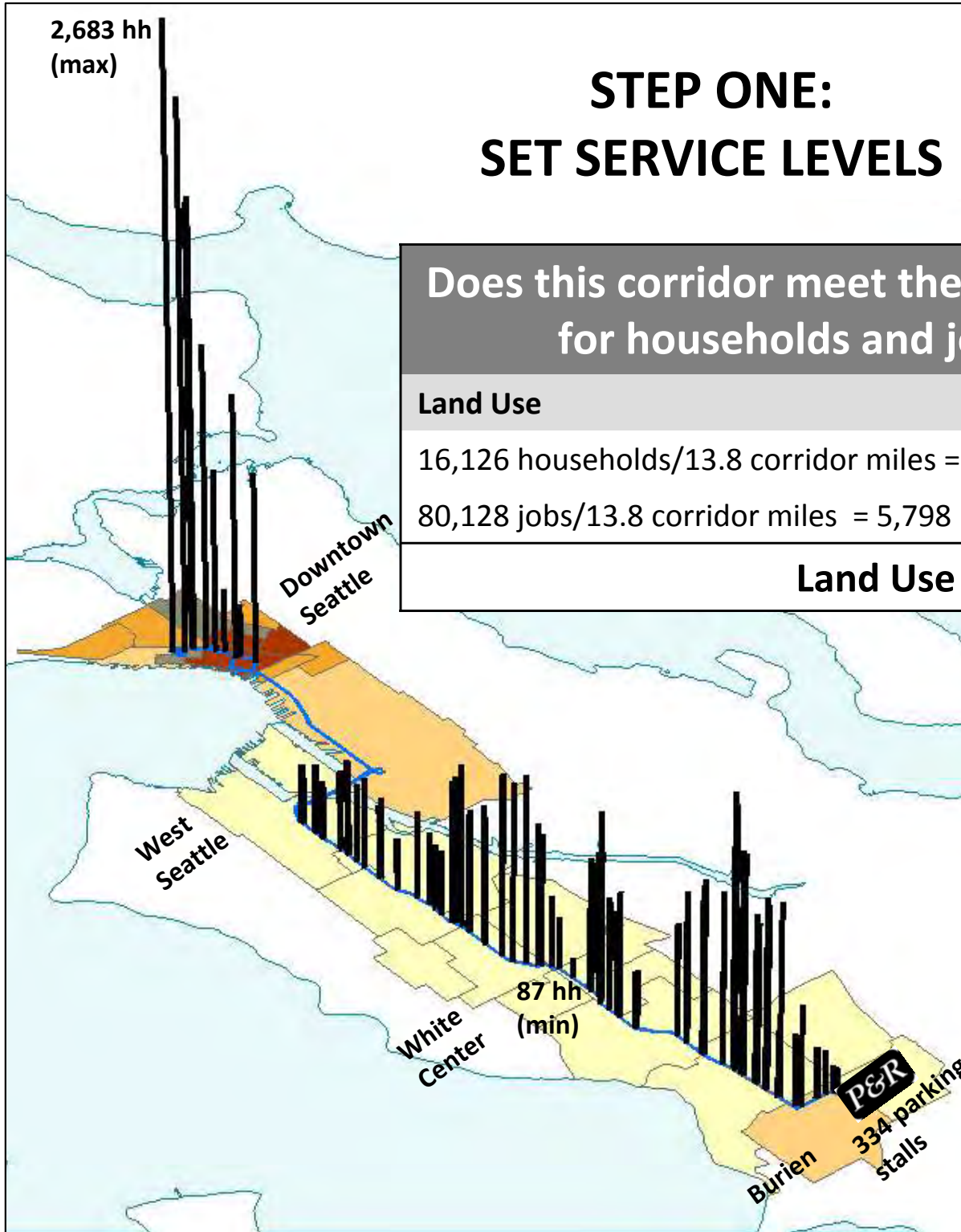
AND

VIA

Burien

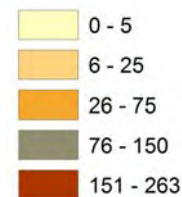
Seattle CBD

Delridge, Ambaum



Land Use Thresholds		
Households within ¼ mile of stops per corridor mile	Jobs within ¼ mile of stops per corridor mile	Points
3,110	17,390	10
2,080	11,480	7
1,040	5,810	4
<1,040	<5,810	0

Job Density – jobs per acre



Total # of hh's within a ¼ mile walk distance of each stop



BETWEEN

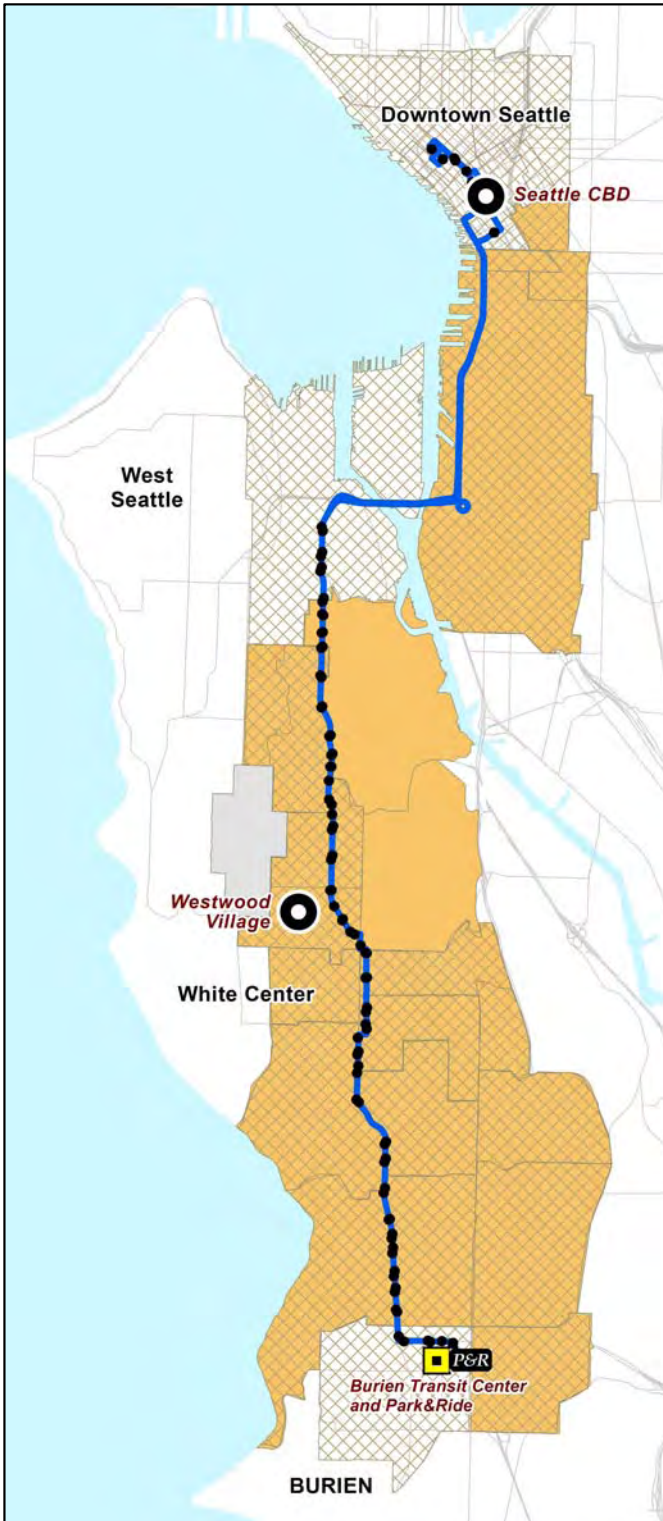
AND

VIA

Burien

Seattle CBD

Delridge, Ambaum







STEP ONE: SET SERVICE LEVELS

Does this corridor meet thresholds for minority and low income population along the route?

Social Equity	%	Points
2,376 of the 3,206 inbound boardings are in minority tracts	74%	5
2,925 out of 3,206 inbound boardings are in low income tracts	91%	5
Social Equity Score		10

Social Equity Thresholds

Percent of inbound boardings in low-income census tracts	Percent of inbound boardings in minority census tracts	Points
Above system average (56.4%)	Above system average (52.7%)	5
Below system average (56.4%)	Below system average (52.7%)	0

-  Low Income Census Tracts (>9.7%)
-  Minority Census Tracts (>35.5%)
-  Both Low Income and Minority
-  Neither Low Income nor Minority

BETWEEN

AND

VIA

Burien

Seattle CBD

Delridge, Ambaum

Burien

Seattle CBD

1st Ave S, South Park, Airport Wy

Burien

Seattle CBD

Des Moines Mem Dr, South Park

STEP ONE: SET SERVICE LEVELS

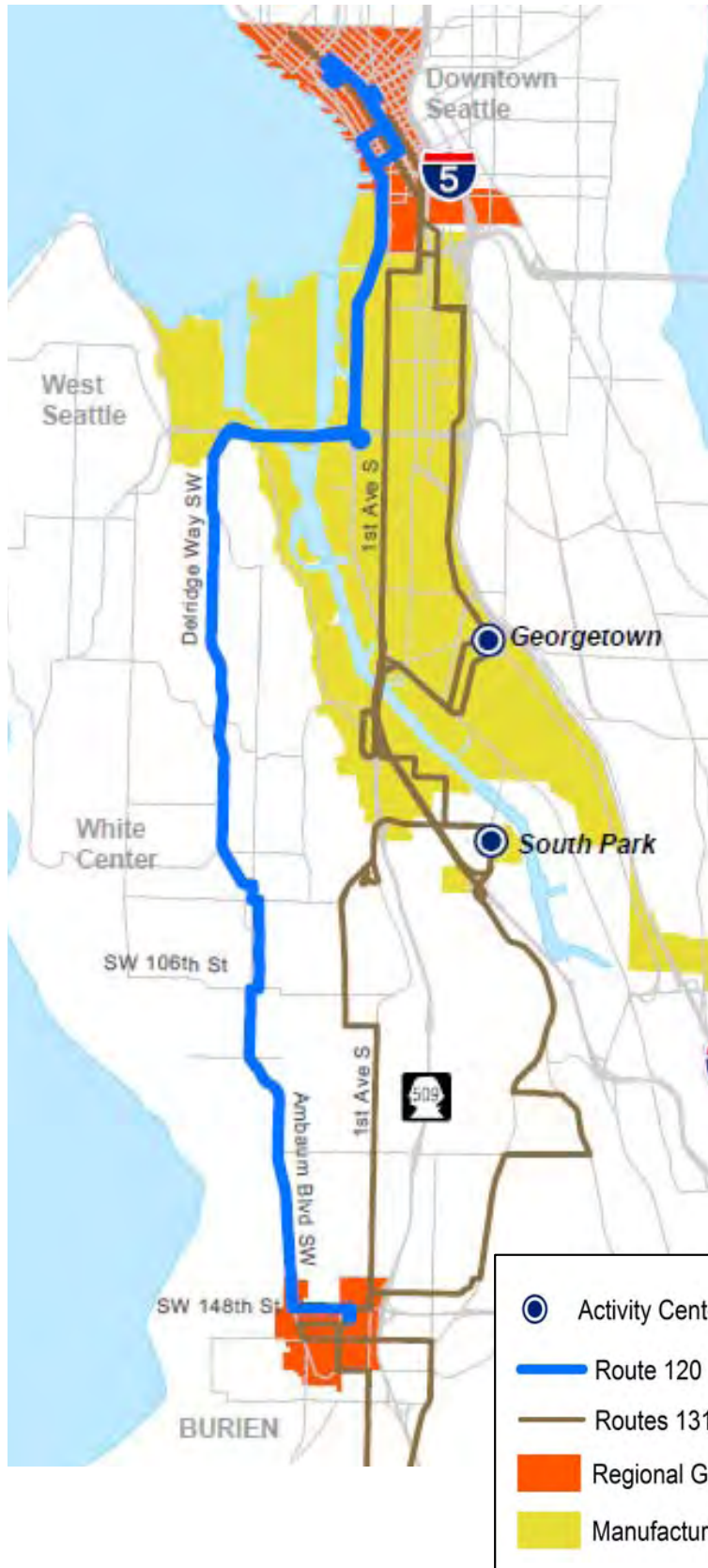
Is this corridor a primary connection*?

Geographic Value	Points
Primary connection between two regional growth centers – Burien and Seattle CBD	5
Primary connection between activity centers	5
Geographic Value Score	10

Ridership/Travel Time Comparison

Route	Daily Rides	Travel Time +
120	6,850	43 min
131	1,040	64 min
132	1,420	53 min

+ Midday travel time comparison



***A primary connection** is defined as the predominant transit connection between centers based on a combination of ridership and travel time.

BETWEEN**AND****VIA**

Burien

Seattle CBD

Delridge, Ambaum

STEP ONE SUMMARYPoints
Awarded

Land Use	HH/Corridor Mile	1,167	4
	Jobs/Corridor Mile	5,798	0
Social Equity	Minority	Yes	5
	Low Income	Yes	5
Geographic Value	Activity Centers Primary Connection	Yes	5
	Regional/MI Centers Primary Connection	Yes	5
TOTAL			24

Initial frequency assignment*based on total score*

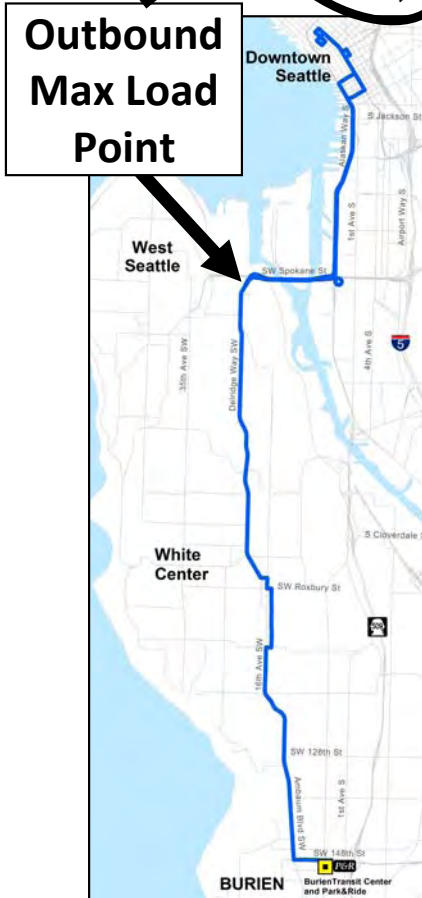
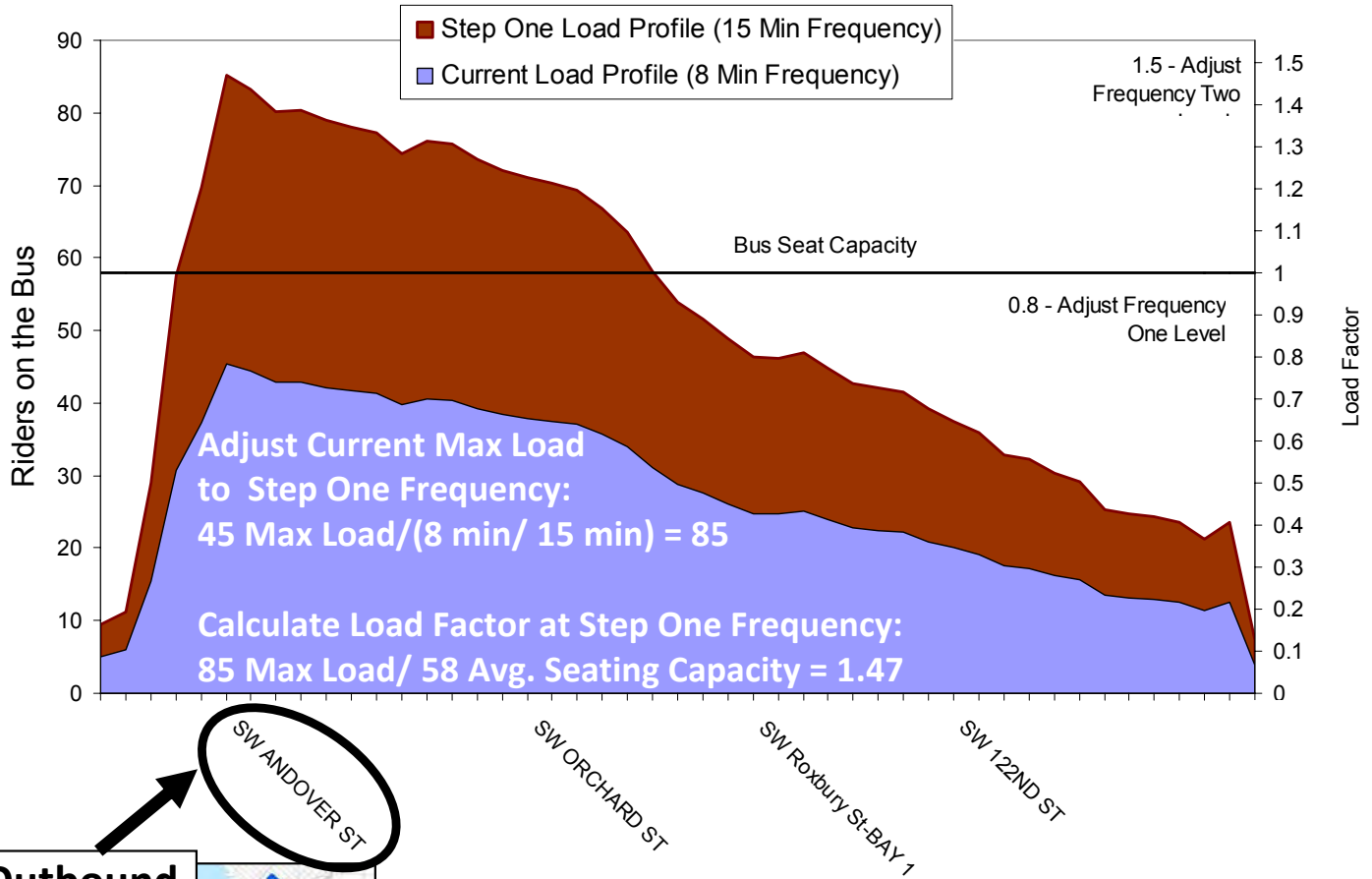
Scoring range	Peak service frequency	Off-peak service frequency (minutes)	Night service frequency (minutes)
25-40	15	15	30
18-24	15	30	30
10-18	30	30	--
0-9	60 or worse	60 or worse	--

Burien

Seattle CBD

Delridge, Ambaum

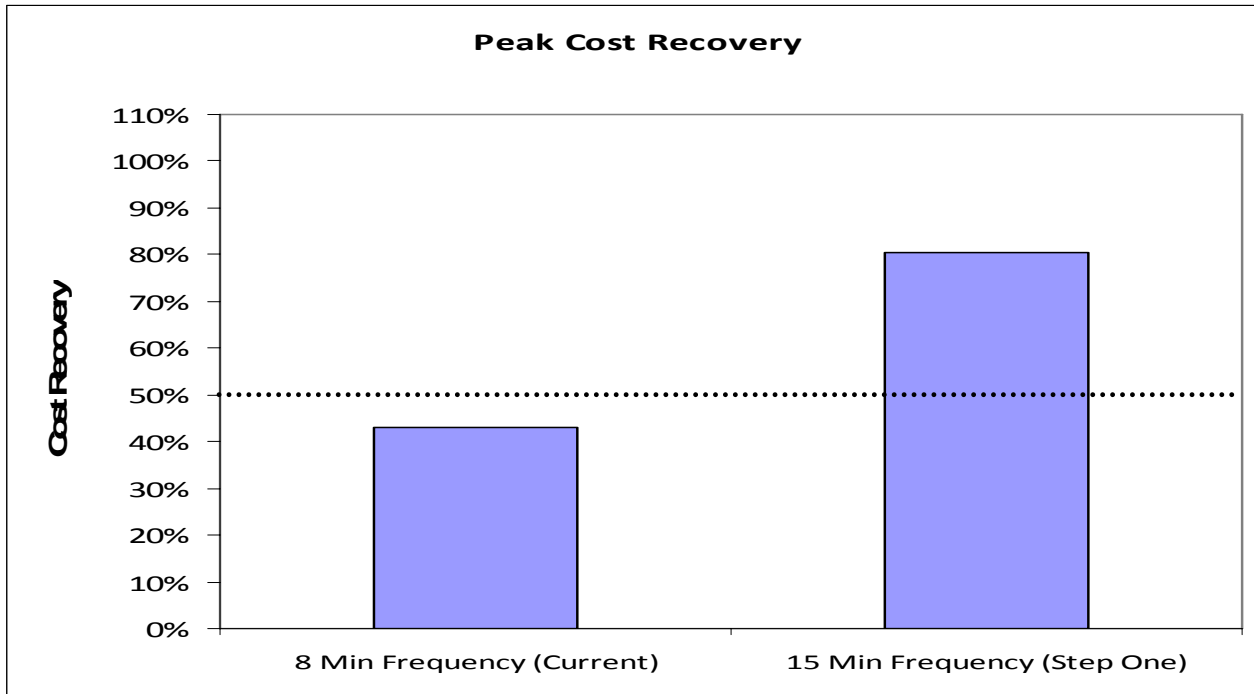
STEP TWO: ADJUST SERVICE LEVELS



	Threshold	Service level adjustment	Step 1 frequency	Adjusted frequency
Estimated load factor by time of day*	>1.5	Adjust two levels	15 or 30	<15
			≥ 60	15
	>0.8	Adjust one level	15	<15
			30	15
			≥ 60	30

**if existing riders were served by step 1 service levels*

STEP TWO: ADJUST SERVICE LEVELS



Peak Period Cost Recovery @ Current Service Frequency

= (Rides/platform hr x avg fare per boarding)/(avg hourly rate)
 = (42 x \$1.30)/\$127.52 = **42.9% Peak Period Cost Recovery**

Step 1 Cost Recovery @ Step 1 Frequency (15 minute)

=(Peak Period Cost Recovery)/(Peak Period Frequency/Step 1 Frequency)
 = 42.9/(8 min/15 min) = **80.4% Step 1 Cost Recovery**

Cost Recovery	Threshold	Service level adjustment	Step 1 frequency	Adjusted frequency
Estimated cost recovery by time of day – if existing riders were served by Step 1 service levels	>100% in any time period	Adjust 2 levels	15 or 30	<15
	Peak > 50%	Adjust 1 level	≥ 60	15
	Off-peak > 50%		15	<15
			30	15
	Night > 33%		≥ 60	30
	Night > 16%	Add night service	--	30
Night > 8%	--		≥ 60	

BETWEEN**AND****VIA**

Burien

Seattle CBD

Delridge, Ambaum

STEP TWO SUMMARY

LOADS	Loads at step one frequency	1.47
	Adjusted frequency based on loads	<15 min
COST RECOVERY	Cost recovery at step one frequency	81%
	Adjusted frequency based on cost recovery	<15 min
SERVICE LEVELS	Step one service level	15
	Step two adjustments	Adjust one level
	Final suggested service level	<15 min

RESULTING SERVICE FAMILY – VERY FREQUENT***Service Family Thresholds***

Service Family	Frequency (minutes)			Days of Service	Hours of Service
	Peak	Off-Peak	Night		
Very Frequent	15 or better	15 or better	30 or better	7 days	16-20 hours
Frequent	15 or better	30	30	7 days	16-20 hours
Local	30	30-60	--	5-7 days	12-16 days
Hourly	60 or worse	60 or worse	--	5 days	8-12 days
Peak	8 trips/day minimum	--	--	5 days	peak

CONNECTION EVALUATED

BETWEEN

AND

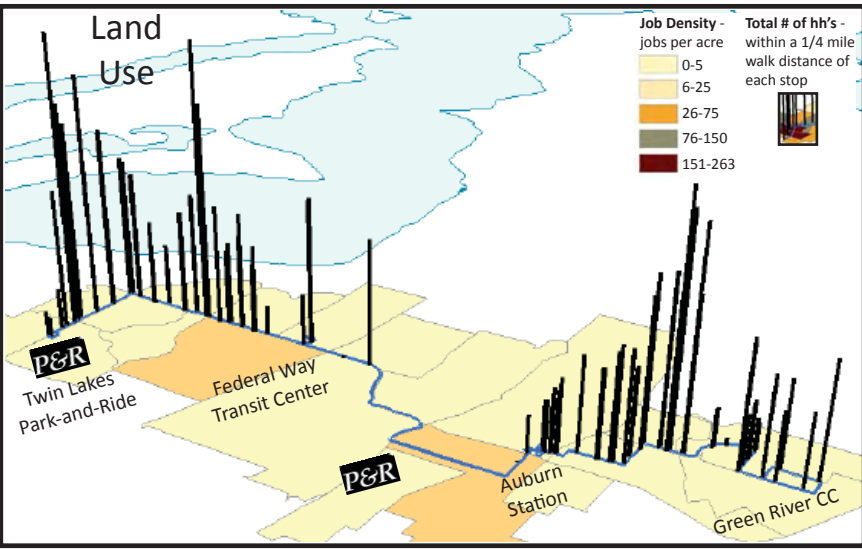
VIA

Auburn/GRCC

Federal Way

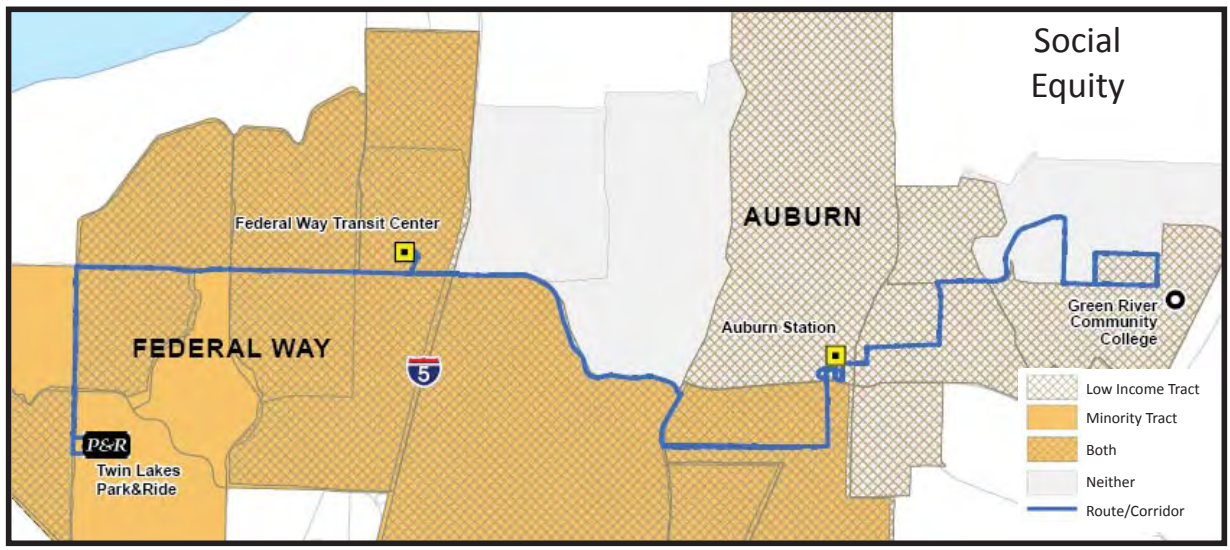
15th Street SW, Lea Hill Road

STEP ONE: SET SERVICE LEVELS



	Points
$\frac{8,583 \text{ households}}{15.84 \text{ corridor miles}} = 542$	0
$\frac{10,715 \text{ jobs}}{15.84 \text{ corridor miles}} = 676$	0

Land use score = 0 points



	Points
$\frac{930 \text{ low income}}{1,058 \text{ total boardings}} = 88\%$	5
$\frac{335 \text{ minority}}{1,058 \text{ total boardings}} = 32\%$	0

Social equity score = 5 points



	Points
Primary connection between two regional growth/ manufacturing/ industrial centers	5
Primary connection between two activity centers	5

Geographic value score = 10 points

Initial frequency assignment - 15 points in step one indicate:
 Peak frequency of 30 minutes, Off-peak frequency of 30 minutes, and Night service frequency of 0 minutes

CONNECTION EVALUATED

BETWEEN

AND

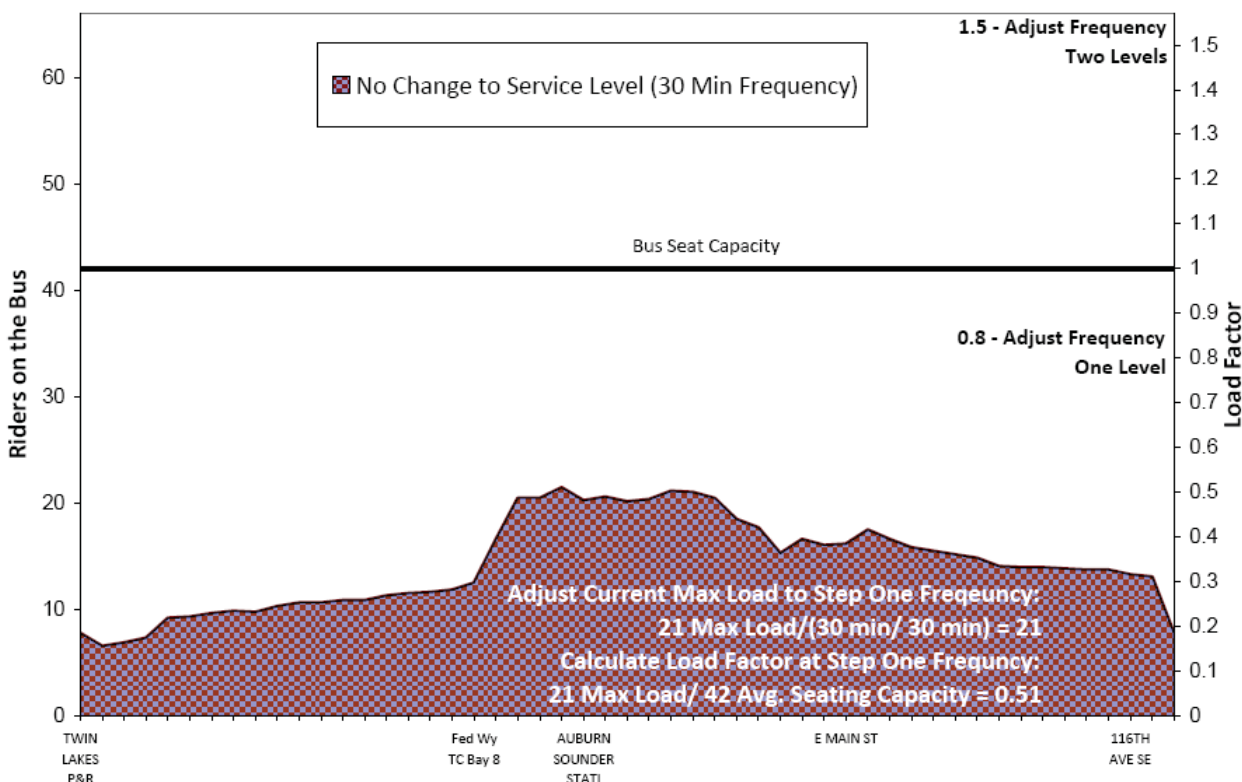
VIA

Auburn/GRCC

Federal Way

15th Street SW, Lea Hill Road

STEP TWO: ADJUST SERVICE LEVELS



Passenger Loads

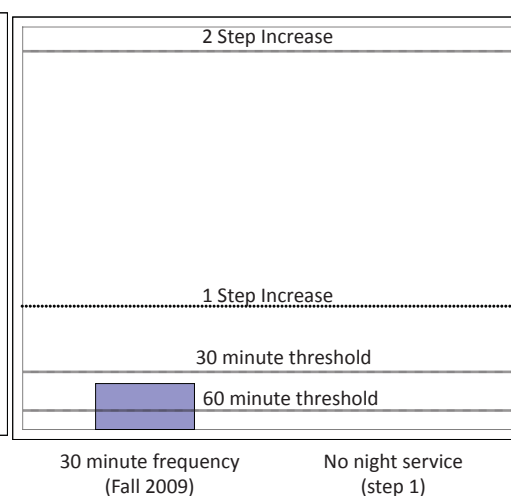
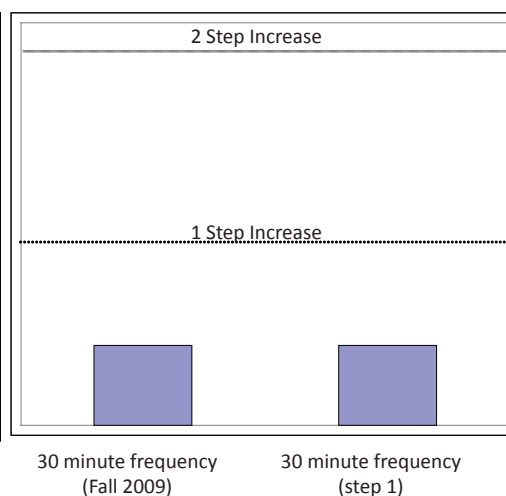
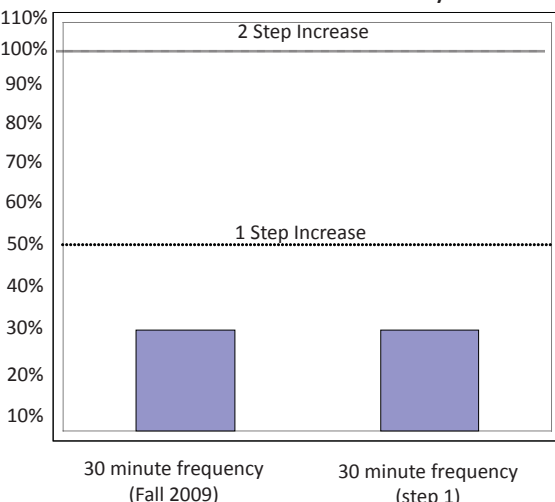
The current average maximum passenger load on the route 181 is 21 in the peak period. With a 30 minute service frequency in the peak period, the service adequately meets demand.

Since the frequency remains at 30 minutes in step 1, there is sufficient capacity to meet demand.

Peak Cost Recovery

Off-Peak Cost Recovery

Night Cost Recovery



Cost Recovery

The estimated cost recovery of the route 181 is currently 27% in the peak period and 22% in the off-peak period.

Since the frequency is not adjusted in step 1, the cost recovery remains the same in step two for the peak and off-peak periods.

Night Service

The estimated cost recovery of the route 181 is currently 13% at night, which warrants 60 minute night service.

In addition, the route 181 is a primary connection between centers. Night service is added in step two at a 60 minute frequency.

Step two adjustment:
 No frequency adjustment for peak (30 min) and off-peak (30 min) service.
 Increase frequency to 60 minutes at night.

**RESULTING SERVICE FAMILY
 LOCAL**

CONNECTION EVALUATED

BETWEEN

AND

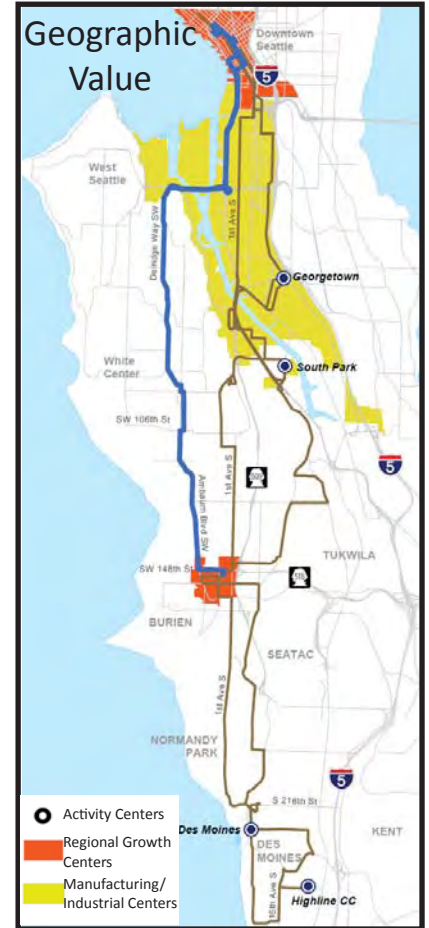
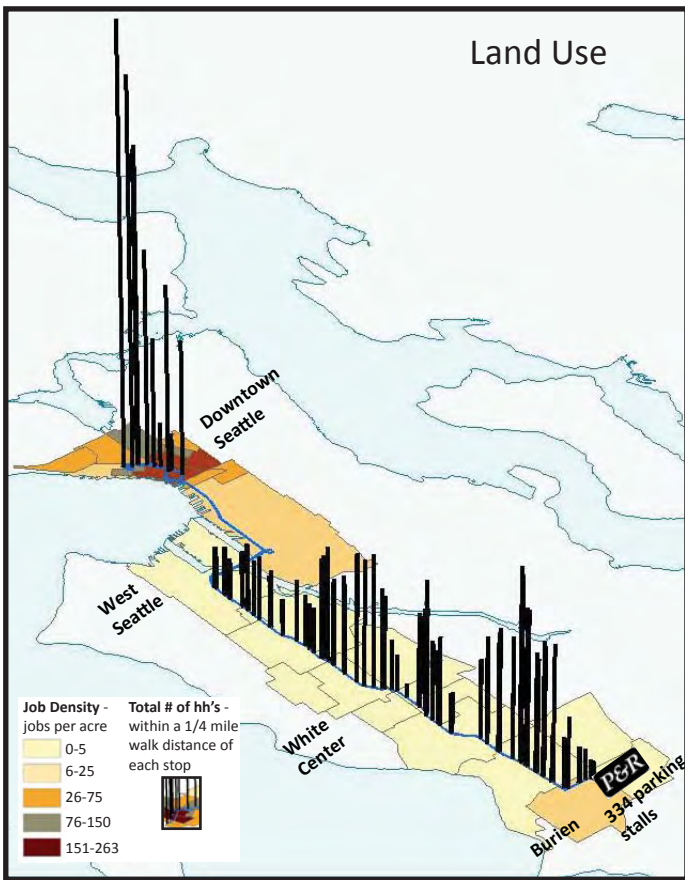
VIA

Burien

Seattle CBD

Delridge, Ambaum

STEP ONE: SET SERVICE LEVELS



Points

$\frac{16,126 \text{ households}}{13.82 \text{ corridor miles}} = 1,167$	4
$\frac{80,128 \text{ jobs}}{13.82 \text{ corridor miles}} = 5,798$	0

Land use score = 4 points

Points

$\frac{3,055 \text{ low income}}{3,206 \text{ total boardings}} = 95\%$	5
$\frac{2,306 \text{ minority}}{3,206 \text{ total boardings}} = 72\%$	5

Social equity score = 10 points

Points

Primary connection between two regional growth/ manufacturing/ industrial centers	5
Primary connection between two activity centers	5

Geographic value score = 10 points

Initial frequency assignment - 24 points in step one indicate:

Peak frequency of 15 minutes, Off-peak frequency of 30 minutes, and Night service frequency of 30 minutes

CONNECTION EVALUATED

BETWEEN

AND

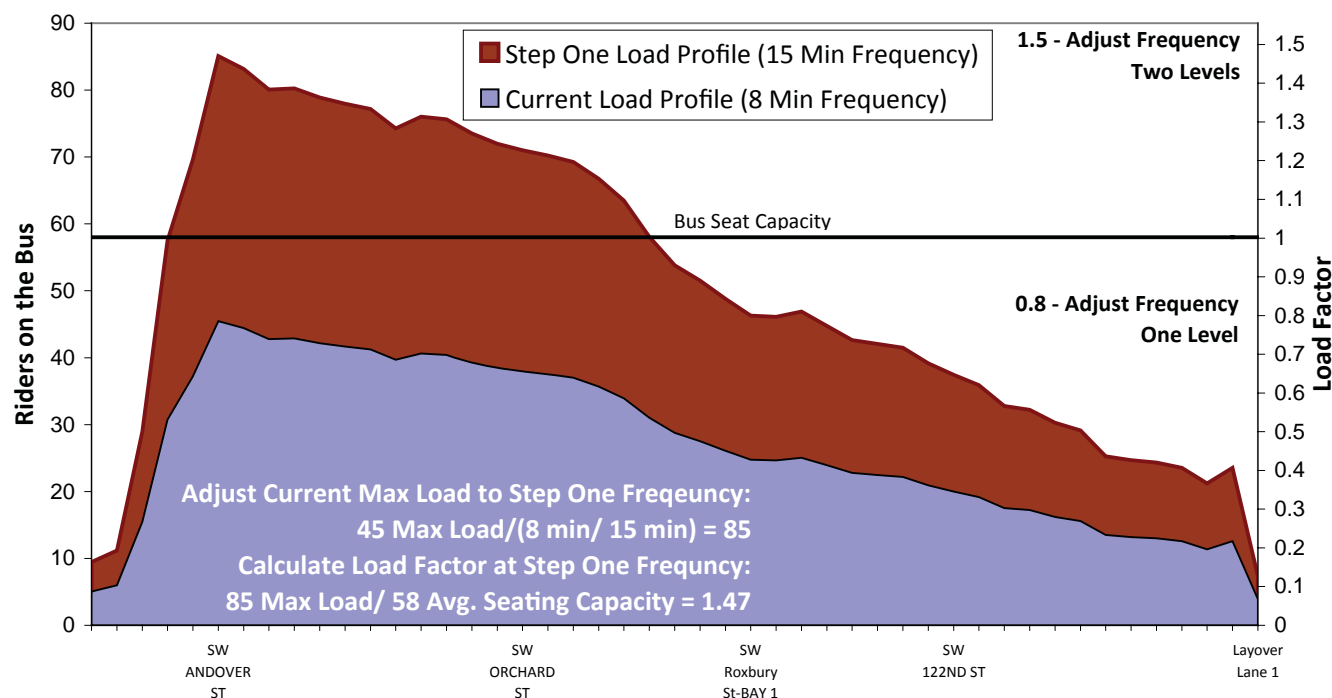
VIA

Burien

Seattle CBD

Delridge, Ambaum

STEP TWO: ADJUST SERVICE LEVELS



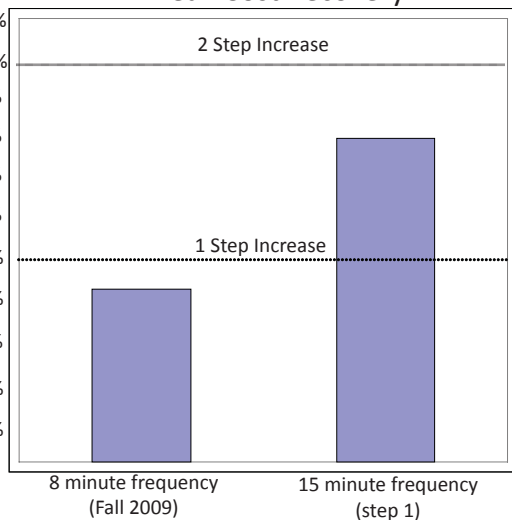
Passenger Loads

The average passenger load on the route 120 is currently 44. With a less than 15 minute service frequency in the peak period, the service adequately meets demand.

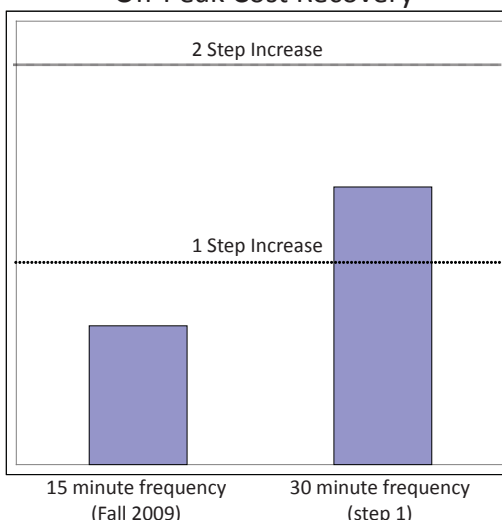
Should the frequency be adjusted to 15 minutes (as suggested in step 1), there would no longer be enough capacity to meet demand.

The service frequency should be adjusted by one level to less than 15 minutes.

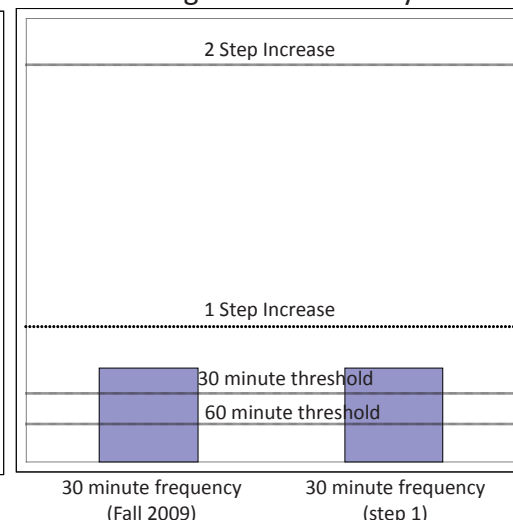
Peak Cost Recovery



Off-Peak Cost Recovery



Night Cost Recovery



Cost Recovery

The estimated cost recovery of the route 120 is currently 49% in the peak period and 35% in the off-peak period.

Should the frequency be adjusted as suggested in step 1, the cost recovery would increase to 80% in the peak and 69% in the off-peak.

The service frequency should be adjusted by one level to less than 15 minutes in the peak.

The service frequency should be adjusted in the off-peak period from 30 minutes to 15 minutes.

Night Service

The estimated cost recovery of the route 120 is currently 23% at night, which warrants 30 minute night service.

In addition, the route 120 is a primary connection between centers and has a policy frequency of 30 minutes. Night service is added in step 2 at a 30 minute frequency.

Step two adjustments:

- Increase frequency by one service level in the peak period to <15 minutes.
- Increase frequency in the off-peak period by one service level to 15 minutes.
- Retain night service at 30 minutes.

**RESULTING SERVICE FAMILY
VERY FREQUENT**

CONNECTION EVALUATED

BETWEEN

AND

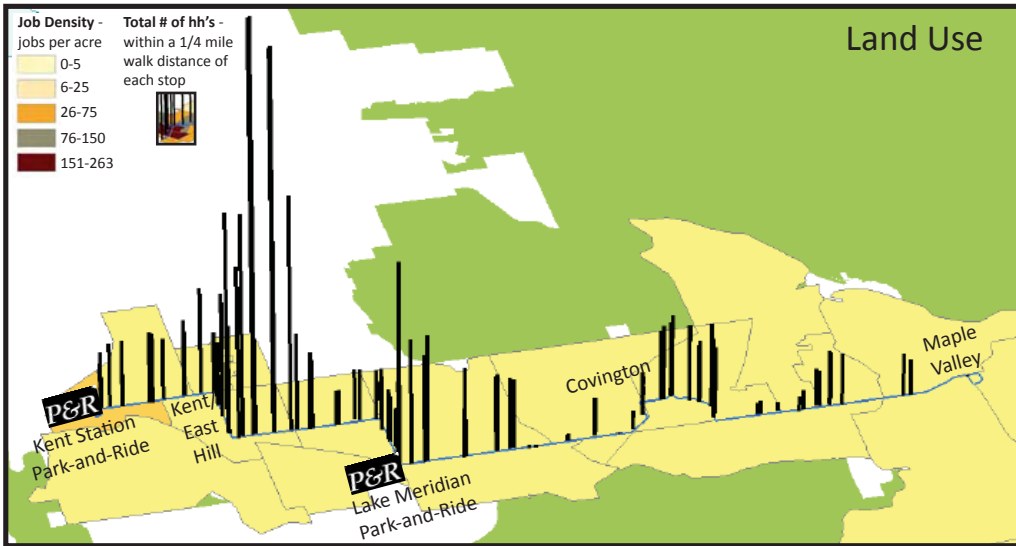
VIA

Kent

Maple Valley

Kent-Kangley Road

STEP ONE: SET SERVICE LEVELS



	Points
$\frac{8,207 \text{ households}}{14.02 \text{ corridor miles}} = 585$	0
$\frac{7,022 \text{ jobs}}{14.02 \text{ corridor miles}} = 501$	0

Land use score = 0 points



	Points
$\frac{603 \text{ low income}}{828 \text{ total boardings}} = 73\%$	5
$\frac{580 \text{ minority}}{828 \text{ total boardings}} = 70\%$	5

Social equity score = 10 points



	Points
Primary connection between two regional growth/ manufacturing/ industrial centers	0
Primary connection between two activity centers	5

Geographic value score = 5 points

Initial frequency assignment - 15 points in step one indicate:

Peak frequency of 30 minutes, Off-peak frequency of 30 minutes, and Night service frequency of 0 minutes

CONNECTION EVALUATED

BETWEEN

AND

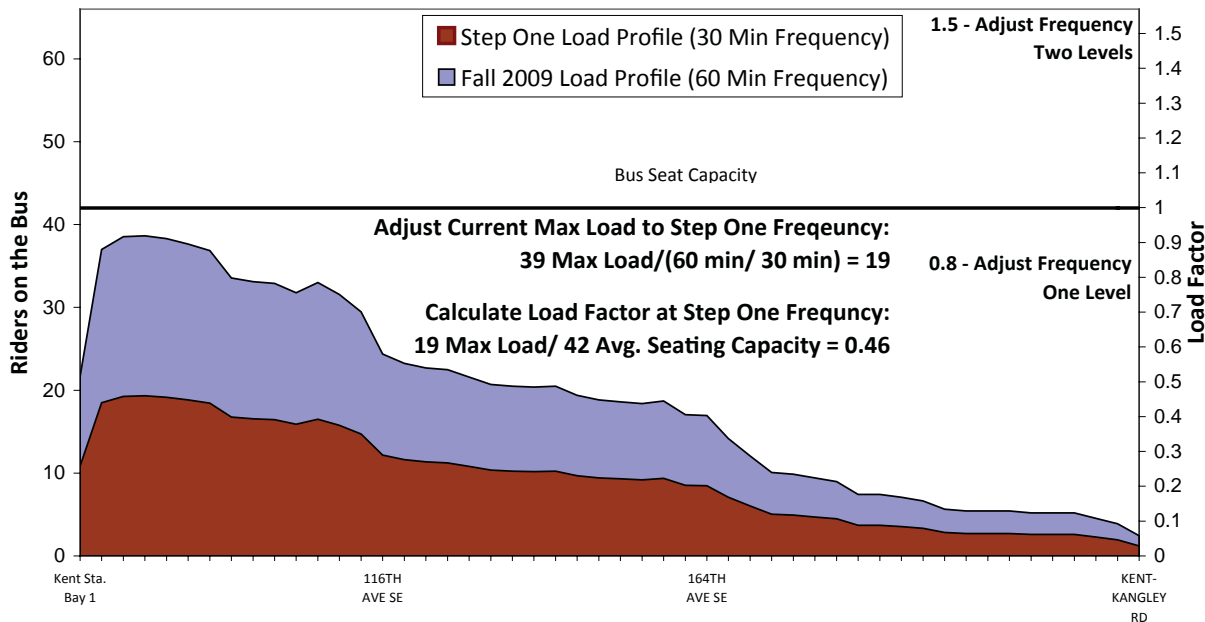
VIA

Kent

Maple Valley

Kent-Kangley Road

STEP TWO: ADJUST SERVICE LEVELS



Passenger Loads

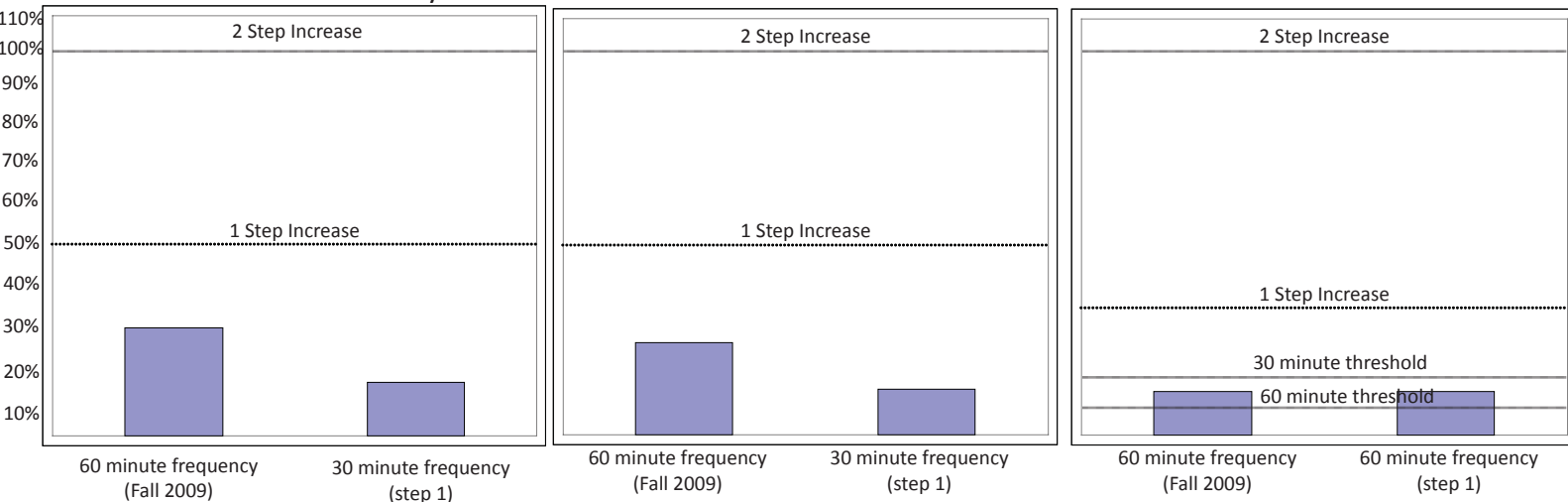
The average passenger load on the route 168 is currently 39. With 60 minute service frequency in the peak period, the service adequately meets demand.

Should the frequency be adjusted to 30 minutes (as suggested in step 1), there would still be enough capacity to meet demand, with a load factor of 19.

Peak Cost Recovery

Off-Peak Cost Recovery

Night Cost Recovery



Cost Recovery

The estimated cost recovery of the route 168 is currently 28% in the peak period and 24% in the off-peak period.

Should the frequency be adjusted as suggested in step 1, the cost recovery would decrease to 14% in the peak period and 12% in the off-peak period.

The service frequency does not need to be adjusted for cost recovery in the peak and off-peak period.

Night Service

The estimated cost recovery of the route 168 is currently 11% at night, which warrants 60 minute service at night.

Night service is adjusted from the step 1 frequency of 0 to 60 minutes in step 2.

Step two adjustments:

No frequency adjustment for peak (30 min) and off-peak service (30 min).
 Increase frequency to 60 minutes at night.

RESULTING SERVICE FAMILY LOCAL

CONNECTION EVALUATED

BETWEEN

AND

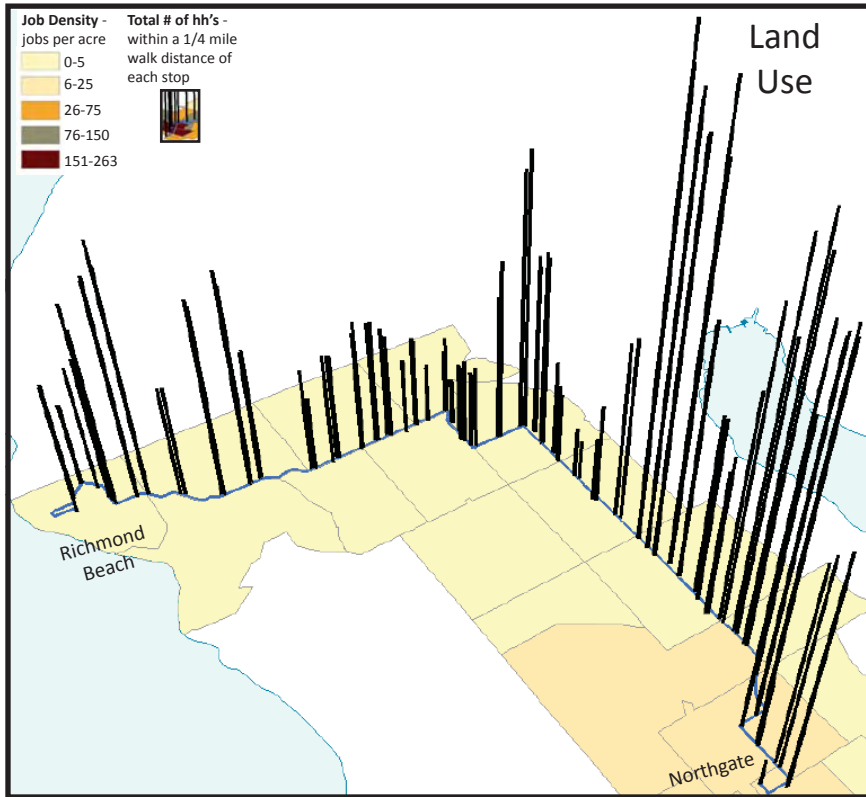
VIA

Richmond Beach

Northgate

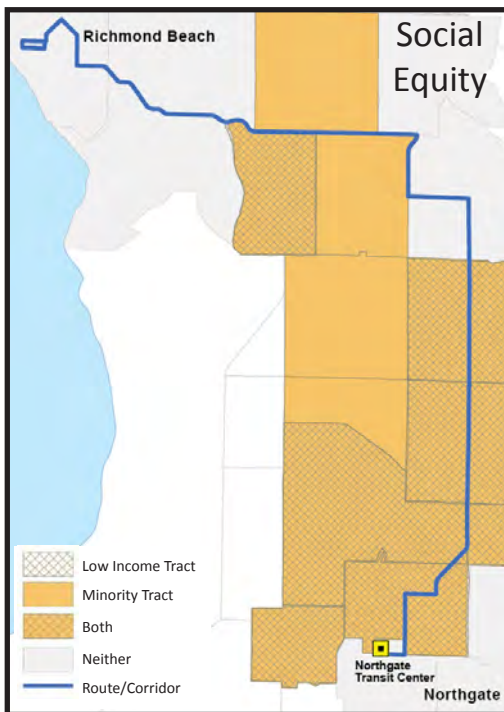
Richmond Beach Road, 15th Avenue NE

STEP ONE: SET SERVICE LEVELS



		Points
$\frac{11,421 \text{ households}}{9.61 \text{ corridor miles}} = 1,188$		0
$\frac{9,997 \text{ jobs}}{9.61 \text{ corridor miles}} = 1,040$		4

Land use score = 4 points



		Points
$\frac{280 \text{ low income}}{646 \text{ total boardings}} = 43\%$		0
$\frac{376 \text{ minority}}{646 \text{ total boardings}} = 58\%$		5

Social equity score = 5 points

		Points
Primary connection between two regional growth/ manufacturing/ industrial centers		0
Primary connection between two activity centers		5

Geographic value score = 5 points



Initial frequency assignment - 14 points in step one indicate:

Peak frequency of 30 minutes, Off-peak frequency of 30 minutes, and Night service frequency of 0 minutes

CONNECTION EVALUATED

BETWEEN

AND

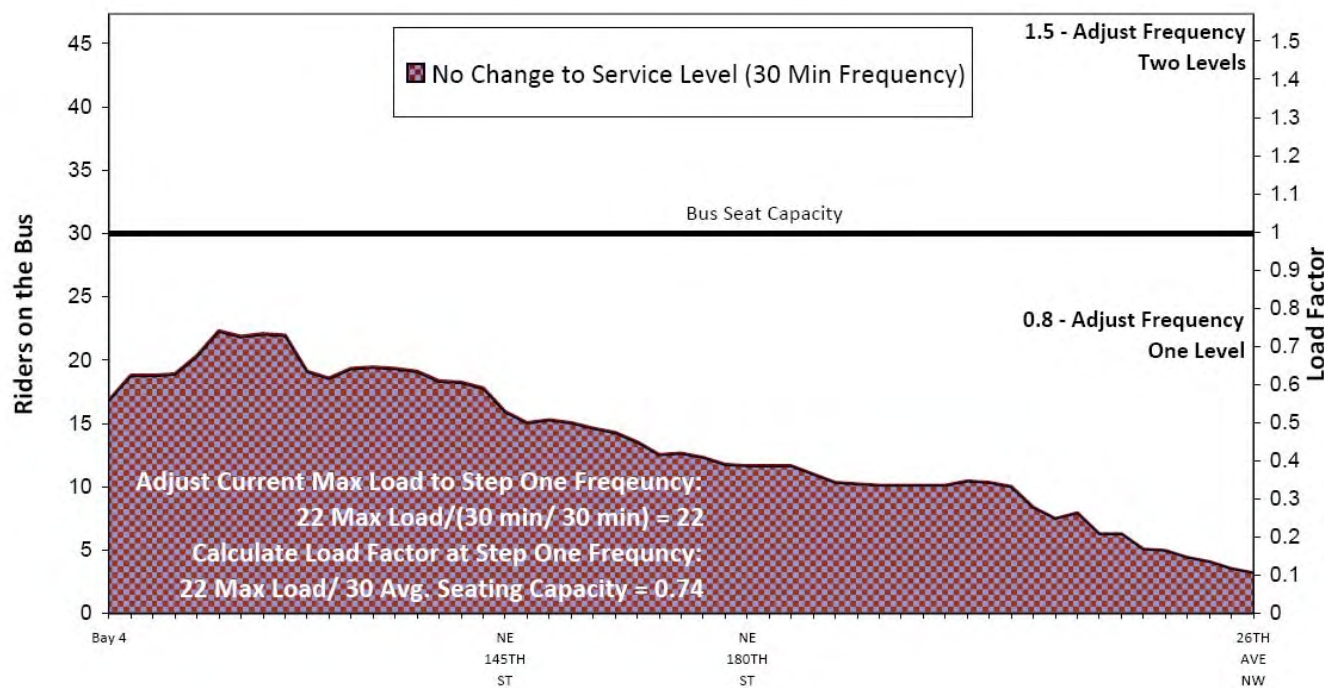
VIA

Richmond Beach

Northgate

Richmond Beach Road, 15th Avenue NE

STEP TWO: ADJUST SERVICE LEVELS

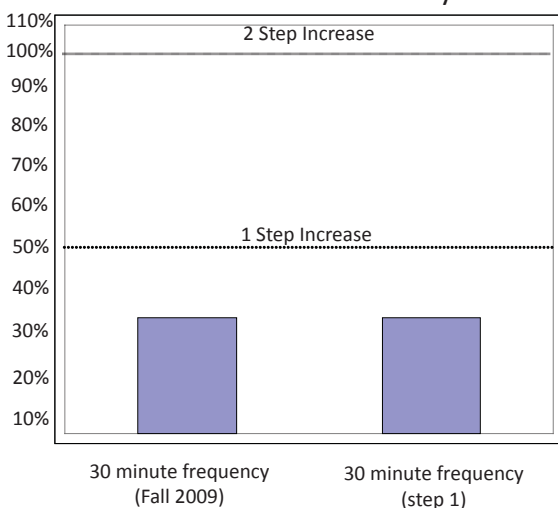


Passenger Loads

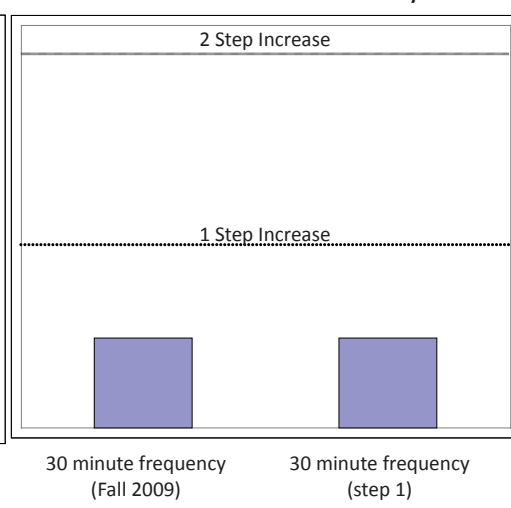
The current average maximum passenger load on the route 348 is 22 in the peak period. With a 30 minute service frequency in the peak period, the service adequately meets demand.

Since the frequency remains at 30 minutes in step 1, there is sufficient capacity to meet demand.

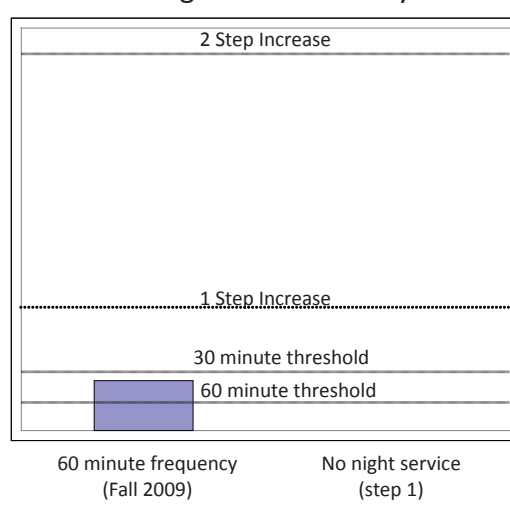
Peak Cost Recovery



Off-Peak Cost Recovery



Night Cost Recovery



Cost Recovery

The estimated cost recovery of the route 348 is currently 31% in the peak period and 25% in the off-peak period.

Since the frequency is not adjusted in step 1, the cost recovery remains the same in step two for the peak and off-peak periods.

Night Service

The estimated cost recovery of the route 348 is currently 14% at night, which warrants 60 minute night service.

Step two adjustment:

No frequency adjustment for peak (30 min) and off-peak service (30 min). Increase frequency to 60 minutes at night.

RESULTING SERVICE FAMILY LOCAL

CONNECTION EVALUATED

BETWEEN

AND

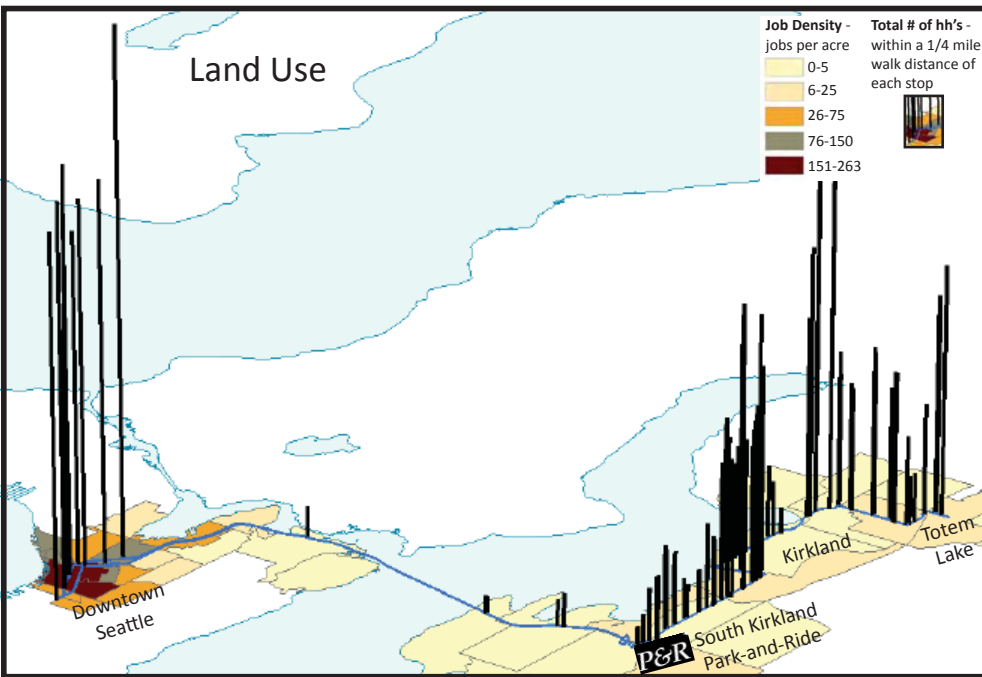
VIA

Totem Lake

Seattle CBD

Kirkland, SR-520

STEP ONE: SET SERVICE LEVELS



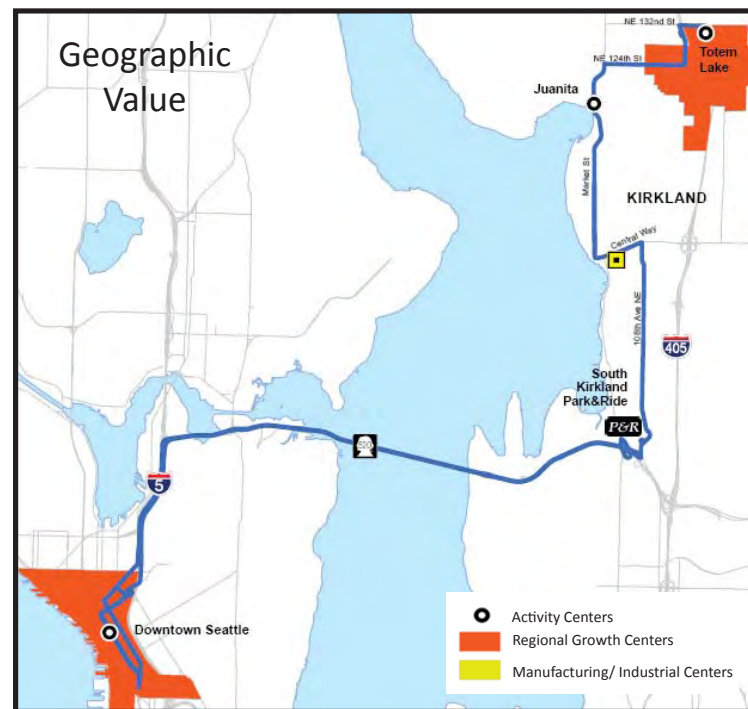
	Points
$\frac{15,733 \text{ households}}{17.38 \text{ corridor miles}} = 905$	0
$\frac{107,682 \text{ jobs}}{17.38 \text{ corridor miles}} = 6,197$	4

Land use score = 4 points



	Points
$\frac{43 \text{ low income}}{1,634 \text{ total boardings}} = 3\%$	0
$\frac{0 \text{ minority}}{1,634 \text{ total boardings}} = 0\%$	0

Social equity score = 0 points



	Points
Primary connection between two regional growth/ manufacturing/ industrial centers	5
Primary connection between two activity centers	5

Geographic value score = 10 points

Initial frequency assignment - 14 points in step one indicate:

Peak frequency of 30 minutes, Off-peak frequency of 30 minutes, and Night service frequency of 0 minutes

CONNECTION EVALUATED

BETWEEN

AND

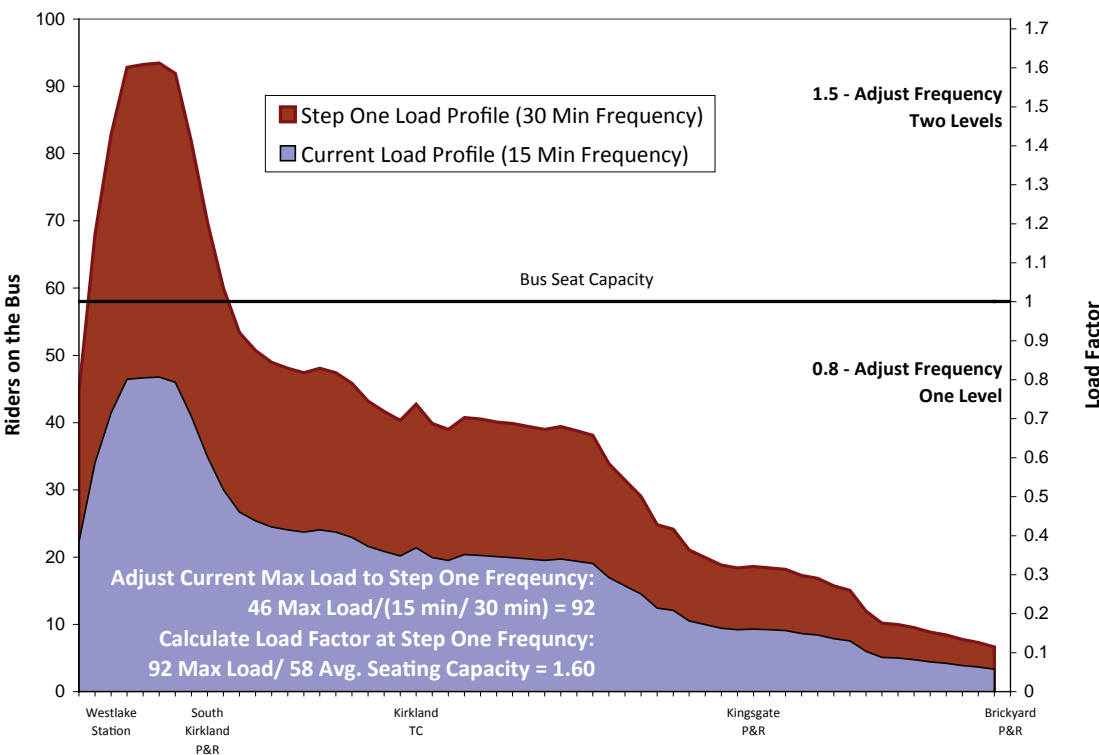
VIA

Totem Lake

Seattle CBD

Kirkland, SR-520

STEP TWO: ADJUST SERVICE LEVELS



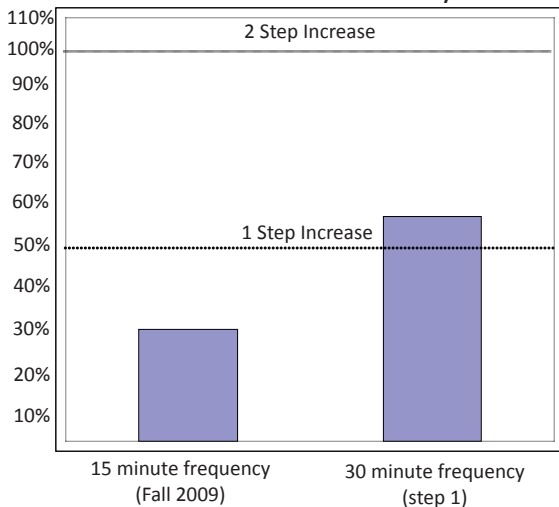
Passenger Loads

The current maximum load on the route 255 is 46 in the peak period. With a 15 minute service frequency in the peak period, the service adequately meets demand.

Should the frequency be adjusted to 30 minutes (as suggested in step 1), there would no longer be enough capacity to meet demand, with a maximum load of 92.

The service frequency should be adjusted two steps to less than 15 minutes in the peak period.

Peak Cost Recovery



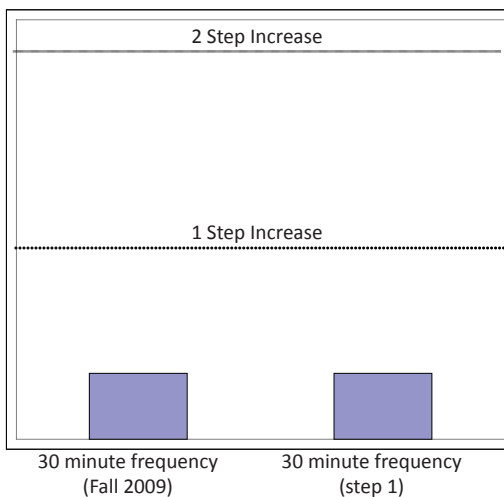
Cost Recovery

The estimated cost recovery of the route 255 is currently 29% in the peak period and 17% in the off-peak period.

Should the frequency be adjusted as suggested in step 1, the cost recovery would increase to 58% in the peak period.

The service frequency does not need to be adjusted in the off-peak period.

Off-Peak Cost Recovery

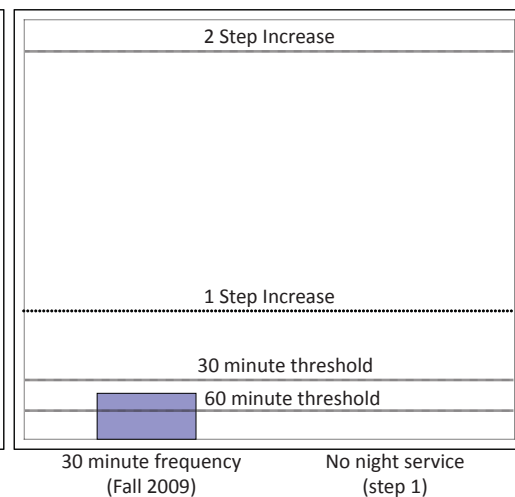


Night Service

The estimated cost recovery of the route 255 is currently 12% at night, which warrants 60 minute night service.

In addition, the route 255 is a primary connection between centers and has a policy frequency of 30 minutes. Night service is added in step 2 at a 30 minute frequency.

Night Cost Recovery



Step two adjustments:

- Increase frequency in the peak period by two service levels to <15 minutes.
- Retain frequency of 30 minutes off-peak.
- Increase frequency to 30 minutes at night.

**RESULTING SERVICE FAMILY
FREQUENT**

Geographic Value in the Guidelines

Is used to:	By:	Page
Determine corridor service levels	<ul style="list-style-type: none"> ▪ Assigning points to primary connections for activity centers 	<ul style="list-style-type: none"> ▪ p. SG-3 -4
Encourage ridership	<ul style="list-style-type: none"> ▪ Establishing higher productivity thresholds for corridors that serve the Seattle core ▪ Including both the total riders that use the route and how full the bus is 	<ul style="list-style-type: none"> ▪ SG-7; SG-8 ▪ SG-5; SG-14
Examine crowding	<ul style="list-style-type: none"> ▪ Considering both size of passenger load and length of time people stand ▪ Prioritizing seats for all riders on peak commute services longer than 20 minutes 	<ul style="list-style-type: none"> ▪ SG-9, SG-14
Examine on-time performance	<ul style="list-style-type: none"> ▪ Considering all times of the day 	<ul style="list-style-type: none"> ▪ SG-9; SG-14
Help determine service reductions	<ul style="list-style-type: none"> ▪ Preserving and maintaining access to service in low density communities where productivity thresholds would otherwise suggest reductions 	<ul style="list-style-type: none"> ▪ SG-15
Help determine service additions	<ul style="list-style-type: none"> ▪ Serving centers and other areas of concentrated activity, consistent with Vision 2040 and Transportation 2040 ▪ Providing service throughout King County – regional growth centers, manufacturing/industrial centers, and activity centers 	<ul style="list-style-type: none"> ▪ SG-14

Geographic Value in the Objectives and Strategies

1. Facilitate access to jobs and other destinations

- (p18) **Objective 2.1:** Provide public transportation products and services that add value throughout King County and that facilitate access to jobs, education, and other destinations.

2. Preserve and maintain access to service in all communities now served

- (p. 19) **Strategy 2.1.3:** Provide products and services that are designed to provide geographic value in all parts of King County.

3. Expand services to accommodate economy and growing population

- (p22) **Strategy 3.2.1:** Expand services to accommodate the region’s growing population and serve new markets where financially feasible.

4. Work with transit partners

- (p23) **Strategy 3.2.3:** Work with transit partners, WSDOT, and others to manage park-and-ride capacity needs.

5. Serve centers & areas of concentrated activity

- (p24) **Strategy 3.4.1:** Serve centers and other areas of concentrated activity, consistent with Transportation 2040.