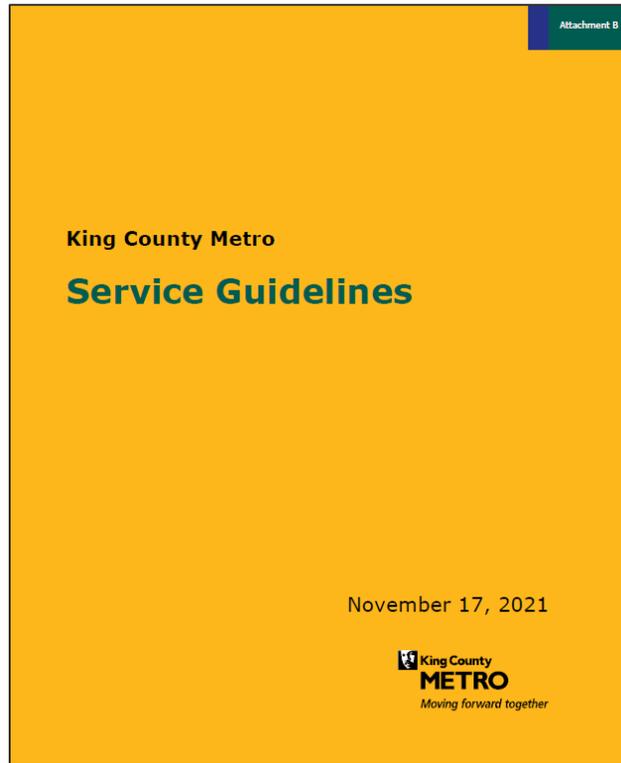


2023 Draft System Evaluation

Applying King County Metro's Service Guidelines to evaluate investment needs

Service Guidelines

Annual System Evaluation



Policy outlining evaluation methods and priorities

Annual evaluation of system investment needs (fixed route, flexible, marine)

2023 System Evaluation



What is in the Annual System Evaluation?

- Evaluation of the transit system at the route level
- Focus on fixed route, flexible, and marine services
- RapidRide progress report (Bus Rapid Transit)
- Investment needs per King County's Service Guidelines
- Must be formally accepted by County Council

Data Analysis: services & evaluation measures

Fixed Route Services



Metro Flex



Marine (Water Taxi)



Data Analysis: services & evaluation measures

Fixed Route Services

- **Crowding**
- **Reliability**
- **Service Growth**
 - Equity
 - Land Use
 - Connectivity

- **Productivity**
- **Equity**

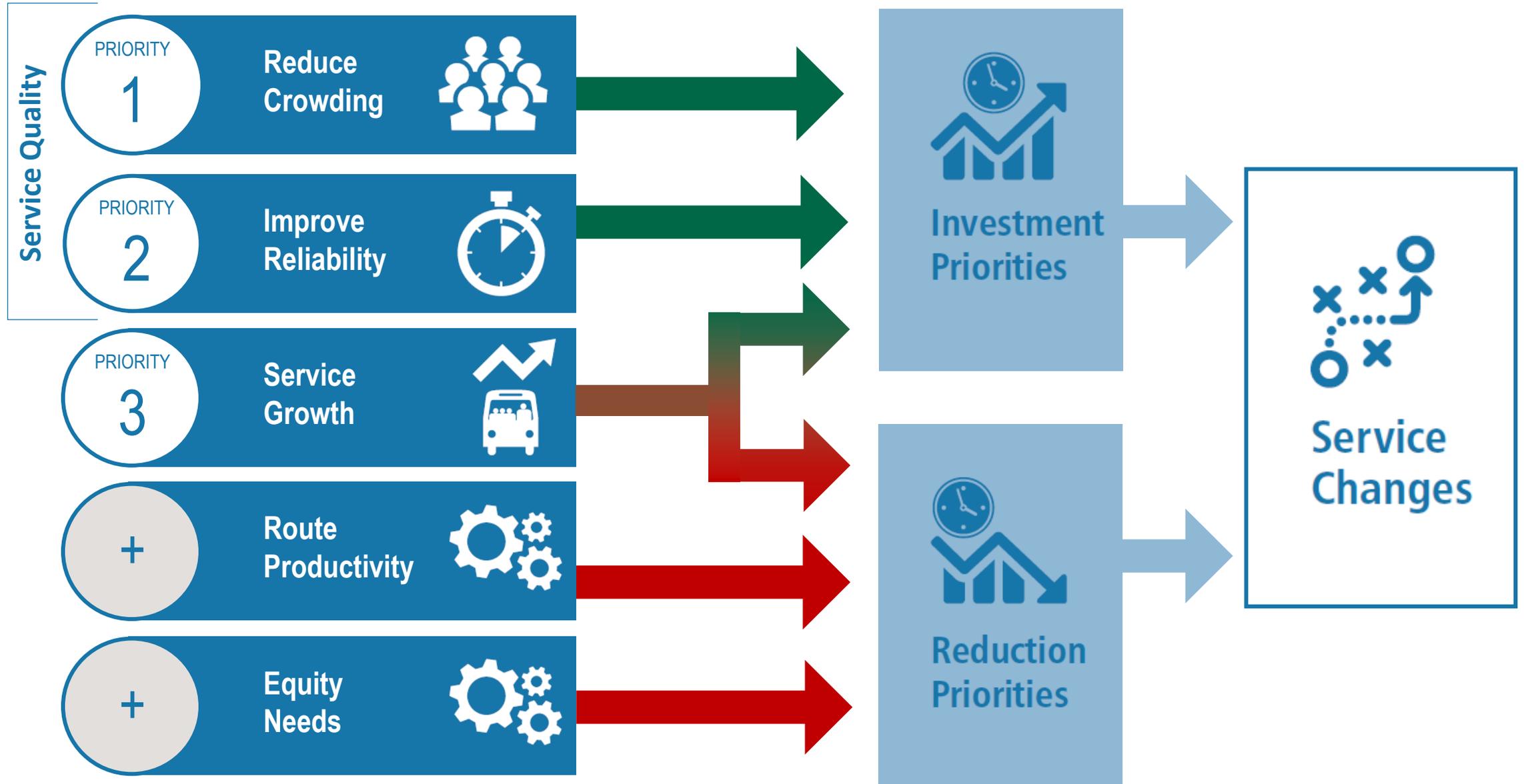
Flexible Services

- **Existing Services**
 - Equity
 - Efficiency
 - Productivity
- **New Services & Pilots**
 - Density
 - Equity
 - Accessibility

Marine (Water Taxi)

- **Ridership**
- **Productivity**
- **Passenger Loads**
- **Schedule Reliability**

Fixed Route Service Evaluation



Priority 1: Crowding



Reduce
Crowding



Defining “Crowding” Investment Needs

- Routes with trips exceeding the vehicle’s crowding threshold
- Routes with standing loads for more than 20 minutes
- Must be crowded consistently for multiple months

2023 Findings

- 0 hours of service are needed to relieve crowding

Priority 2: Reliability



Improve
Reliability



Defining “Reliability” Investment Needs

- Routes that operate late more than 20% of the time
- Routes that miss their designated headways more than 20% of the time

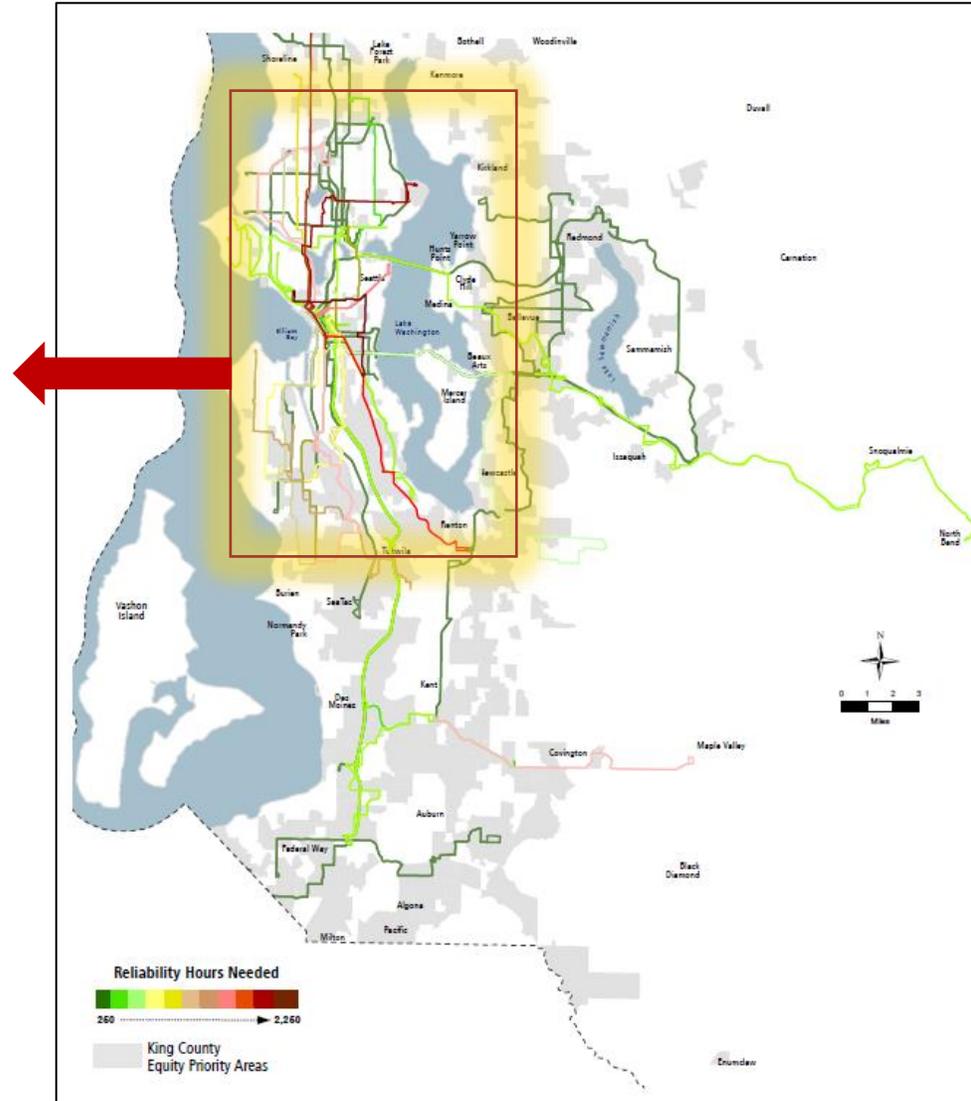
2023 Findings:

- 31,050 additional bus hours needed to improve reliability
(6,300 increase from 2022)
- 56 routes identified for reliability investments

Priority 2: Reliability Investment Needs

PRIORITY
2

Improve
Reliability



Priority 3: Service Growth (methodology)

PRIORITY
3

Service
Growth



Target Service Levels for each route:



Service Hour Investment Prioritization:

1. **Social Equity** – priority populations near a particular route
2. **Land Use** – access to jobs, education, housing, and park and rides
3. **Geographic Value** – connections between activity centers

2023 Findings:

- **Investment Need:** 1,689,900 hours of service needed over the next 14-16 years to maintain progress on the Metro Connects interim network (avg. of 120,000 hrs annually)

Priority 3: Equity Prioritization Scores



Service
Growth



1

Score Block Groups (Equity Priority Area Score):

Assign 1-5 points to block groups based on “priority population” demographic data.

2

Score bus stops:

Assign the equity priority area score to every bus stop within the block group.

3

Calculate Route Scores (Route Equity Prioritization Score):

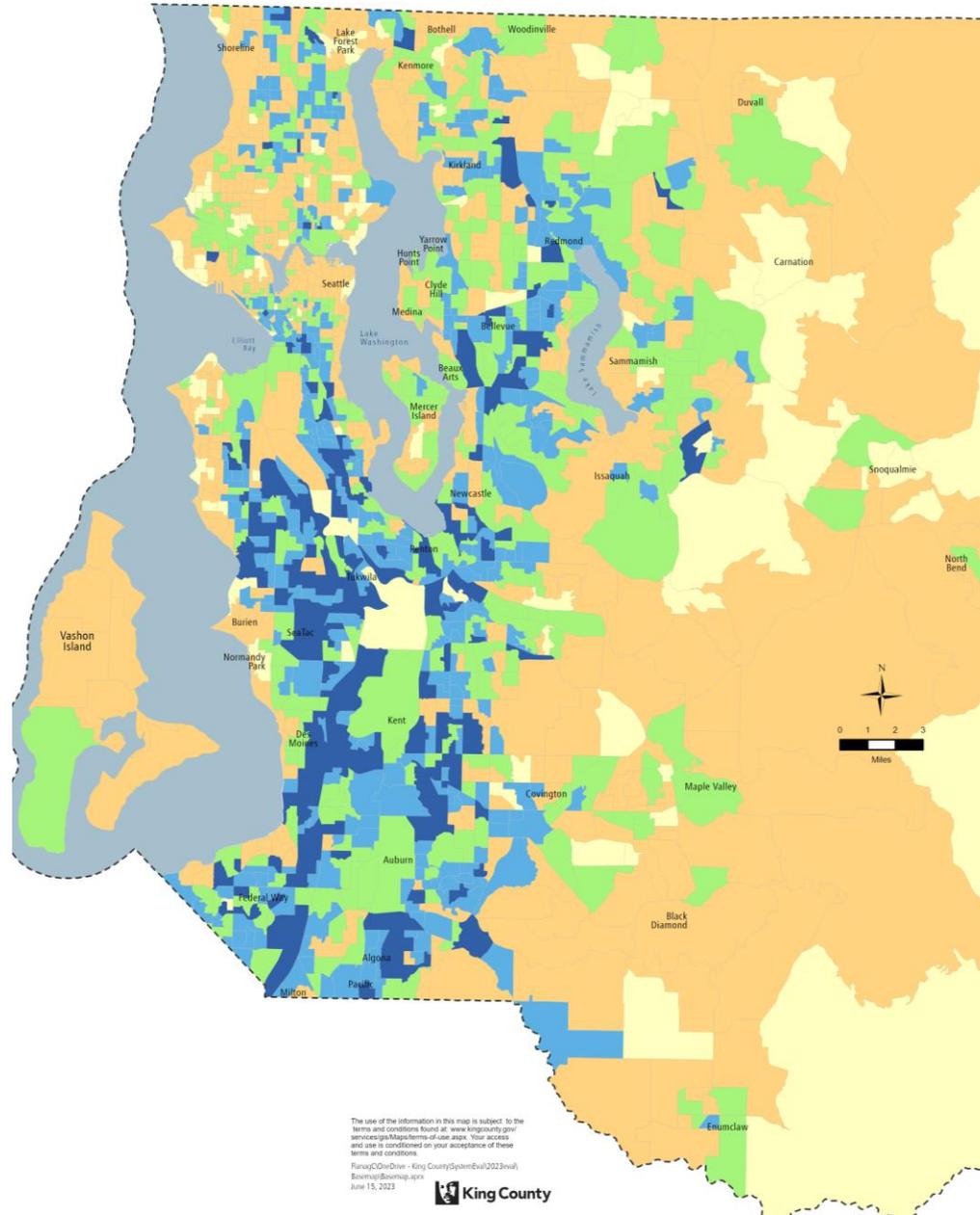
Average the bus stop scores for each route

Priority Population weighting (for EPAS)	Variable Weight
Population that is non-white or Hispanic	40%
Population living 200% below the federal poverty line	30%
Population that is foreign-born	10%
Limited-English speaking households	10%
Population living with a disability	10%

Scoring Block Groups

King County Equity Priority Area Scores

(2020 ACS data)



PRIORITY 3

Service Growth

King County Equity Priority Area Scores*



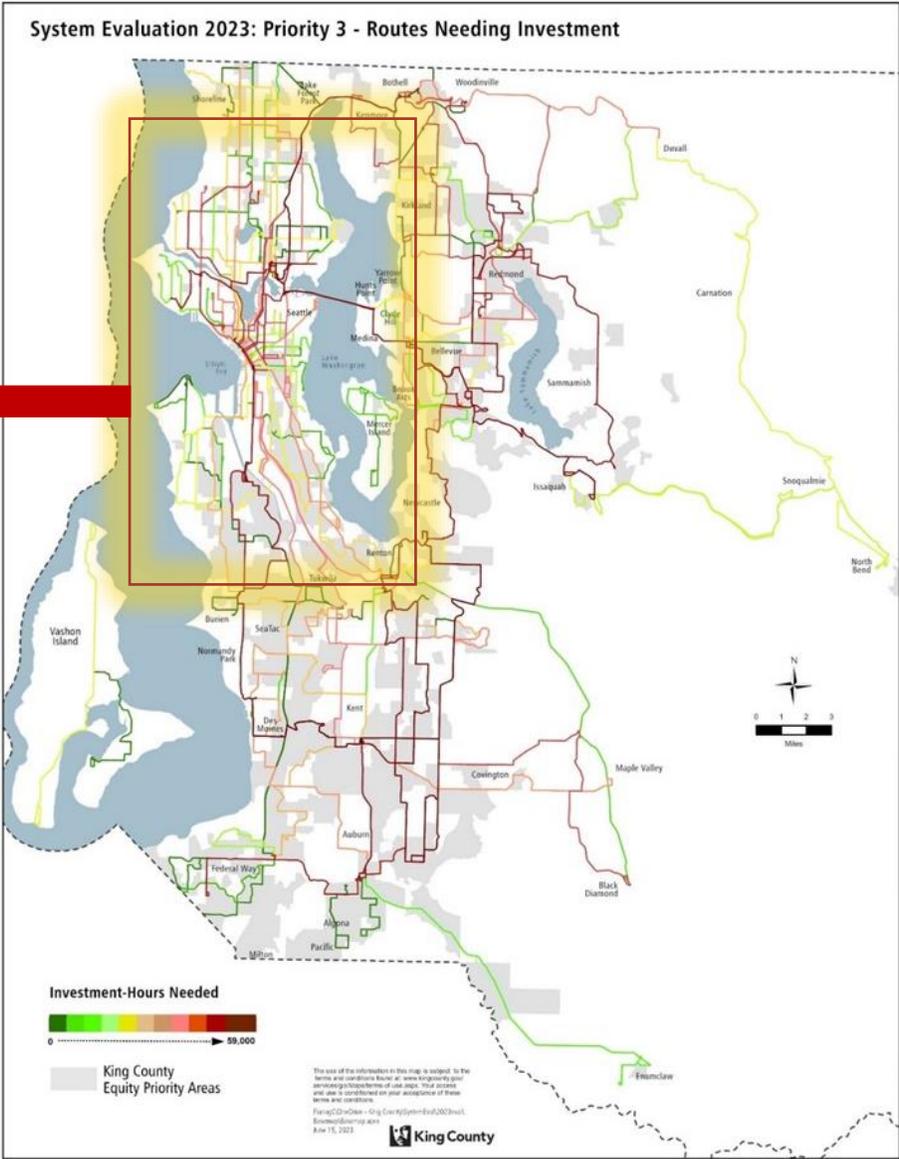
*Scores of 4 and 5 are considered King County Equity Priority Areas

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June 15, 2023

Priority 3: Service Growth

PRIORITY
3

Service
Growth



Reducing Service (Productivity & Equity)

Reduction
Priorities



Productivity

- Rides per platform hours: Number of riders that board a transit vehicle relative to the number of hours it operates
- Passenger miles per platform mile: Total miles a rider travels on a route relative to the total number of miles it operates

Equity

- Opportunity Index Score (OIS): Percentage of a route's stops in block groups with an EPAS of 5. Sorted into quintiles:

Top 20% of routes get a score of 5

Bottom 20% of routes get a score of 1

Factors & prioritization to identify service reduction candidates

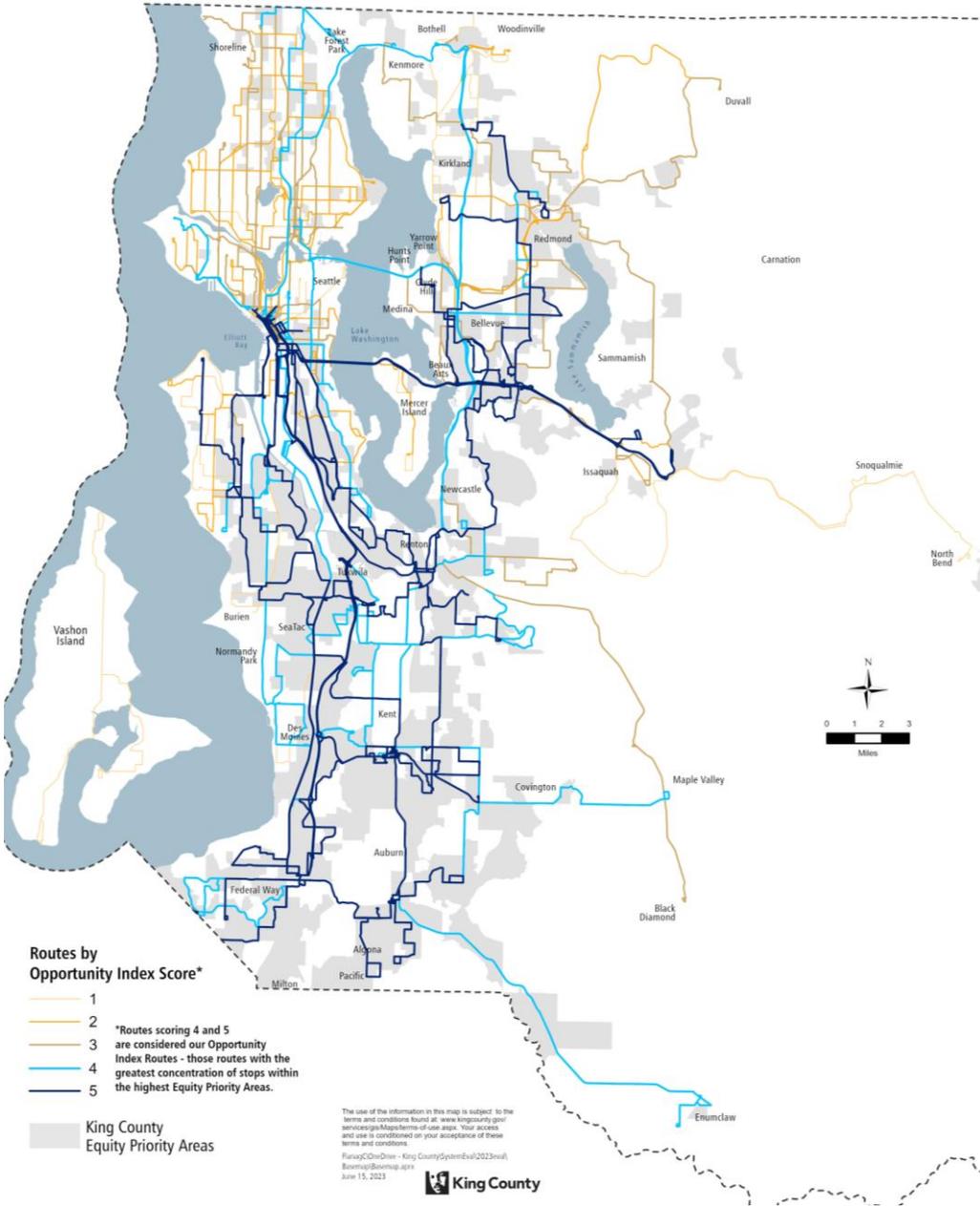
Reduction
Priorities



Priority	Factors
1	Routes within the bottom 25% on both productivity measures and with OIS of 3 or less
2	Routes within the bottom 25% on both productivity measures and with OIS of 4 or 5
3	Routes within the bottom 25% on one productivity measure and with OIS of 3 or less
4	Routes within the bottom 25% on one productivity measure and with OIS of 4 or 5
5	Routes within the bottom 50% on one or both productivity measures and with OIS of 3 or less
6	Routes within the bottom 50% on one or both productivity measures and with OIS of 4 or 5

King County

Opportunity Index Scores (2020 ACS data)



System Evaluation: Fixed Route Transit Summary

PRIORITY
1 Reduce Crowding 

- ▶ No major investment needs for crowding

PRIORITY
2 Improve Reliability 

- ▶ 56 Routes with investment needs (27 routes in Seattle)
- ▶ Reliability investment needs are up by 6,400 hours (31,050 total)
- ▶ Need to track progress as traffic congestion increases

PRIORITY
3 Service Growth 

- ▶ 1,689,900 hours of service needed over the next 15 years to implement the Metro Connects interim network
- ▶ Avg. of ~120,000 service hours needed annually to stay on track with the interim network

Note: Any investments in crowding and reliability will directly address service growth needs.

RapidRide Progress Report (as of September 2023)

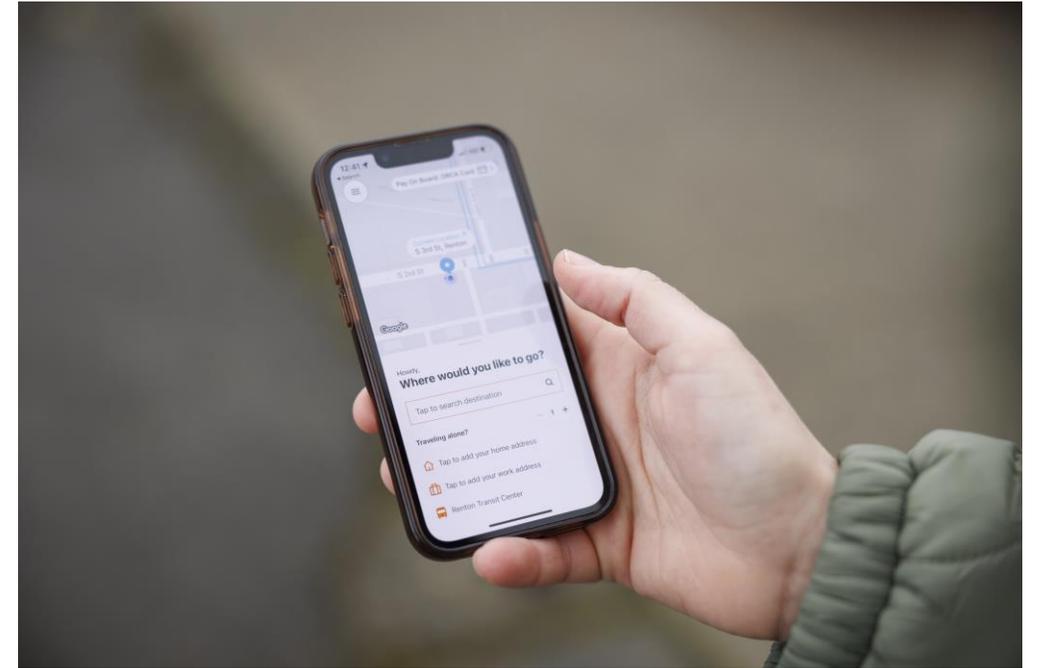
Route name	To / From / Via	Comparable Route(s)	One-Way Miles	Project Status	Expected Opening	Federal Funding (FTA)
G Line*	Madison Valley - Seattle CBD - E Madison St	11, 12	2.4	Construction	2024	Small Starts grant, American Rescue Plan funding, & Congestion Mitigation and Air Quality Improvement funding
I Line	Renton – Auburn – Kent	160	17.9	Design - 90%	2026	Pending Small Starts Grant
J Line*	U. District – Seattle CBD – Eastlake	70	5.2	Design - 100%	2027	Pending Small Starts Grant, Congestion Mitigation and Air Quality funding, & Surface Transportation Program funding
K Line	Totem Lake – Eastgate - Kirkland	255, 271	14.6	Preliminary planning	TBD	TBD
R Line	Rainier Beach - Seattle CBD - Mt Baker	7	9.4	Design - 10%	TBD	TBD

* City of Seattle is leading the design and construction of the G and J Lines

RapidRide Progress Report: H Line Investments



- **Corridor length:** 12 miles
- **Total stations and stops:** 51
- **Intersections with transit signal priority:** 19
- **Bus lanes:** 15 miles total
- **New sidewalks:** 4 miles
- **New or improved crosswalks:** 40
- **Mid-block crossings with push-button flashing signals:** 8
- **New ADA accessible curb ramps:** 60
- **Project budget:** \$154.1 million (Metro, Seattle, and Burien investments)



Evaluating Existing Flexible Services

Efficiency

- Cost per boarding

Productivity

- Rides per vehicle hour

Equity

- Percent of riders picked up or dropped off in a designated equity priority area

Evaluating Flexible Services Pilots

Metro Flex Zone	Cost Per Ride (\$)						Percent trips in Equity Priority Areas
	AM Peak	Midday	PM Peak	Night	Saturday	Sunday	
Juanita	\$ 37.12	\$ 37.25	\$ 40.78	-	-	-	29%
Kent	\$ 36.39	\$ 31.26	\$ 32.90	\$ 12.10	\$ 63.04	\$ 49.21	79%
Othello	\$ 15.08	\$ 15.03	\$ 15.07	\$ 11.75	\$ 15.89	\$ 15.75	91%
Rainier Beach	\$ 16.81	\$ 15.34	\$ 16.29	\$ 13.82	\$ 17.28	\$ 18.01	83%
Renton	\$ 19.55	\$ 18.49	\$ 18.92	\$ 14.91	\$ 18.99	\$ 19.66	84%
Sammamish	\$ 27.97	\$ 24.41	\$ 21.71	-	\$ 30.93	-	23%
Skyway	\$ 20.50	\$ 17.32	\$ 16.15	\$ 13.26	\$ 18.16	\$ 18.38	69%
Tukwila	\$ 14.52	\$ 16.54	\$ 15.72	\$ 13.29	\$ 17.00	\$ 18.21	86%

2023 Findings:

- Established services have a lower cost-per-boarding than newer pilots
- Metro will continue to monitor flexible services performance
- Metro may adjust marketing, service areas, service levels as needed

Evaluating Marine Services (Water Taxi)



Ridership

Average daily ridership

Productivity

Rides per round trip

Passenger Loads

Passenger loads/rides per trip

- **Threshold:** Exceeds 95% capacity 5+ times in 12 months

Schedule Reliability

Departure within 5 minutes of published schedule

- **Goal:** 98% on time
- **Threshold:** 25% late trips in 12 months

Evaluating Marine Services (Water Taxi)



Route	Average Weekday Boardings	Average Saturday Boardings	Average Sunday Boardings	Average Rides per Round Trip	Trips operating at over 95% of Capacity	Percent Late Trips
West Seattle	338	-	-	54	2	0.31%
Vashon Island	759	1419	893	56	0	0.51%

Findings:

- Water Taxi is currently meeting needs as defined in Metro's Service Guidelines
- West Seattle route maintaining increased summer sailing schedule all year
- Pilot program pending to increase service on Vashon Island Route

Questions?

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