Explanation of University Link Ridership Estimates

Introduction

University Link Light Rail is slated to begin service in the First Quarter of 2016. University Link Light Rail will provide a fast, frequent and reliable connection between the University District, Capitol Hill, Downtown Seattle, Rainier Valley, Tukwila and SeaTac. Because of this we expect to see major changes in travel patterns as riders flock to Link Light Rail. This will result in a loss of ridership on existing routes that connect the University District, Capitol Hill and Downtown Seattle. At the same time we expect that Link Light Rail will generate new travel patterns within Northeast Seattle, the University District and Capitol Hill as riders wish to use bus service to reach a Link station. This document explains the methodology used to estimate changes in ridership under both a "no action" scenario where Metro does not change service and the current proposal where Metro would modify service to reduce duplication and add service to routes connecting riders to the Link stations.

Uncertainty of Estimates

Given the high uncertainty associated with making ridership estimates, a "low end" estimate and a "high end" estimate has been prepared. For the "low end" estimates the assumptions are tilted toward the negative where a large number of rides are lost and a small amount of rides gained, while the "high end" estimates assumes a small amount of rides are lost and a large amount of rides gained.

Factors Impacting Ridership

The following factors are what we expect to impact ridership on each route. Each route will have different factors influencing ridership. Many routes will have multiple factors leading to changes in ridership, some of which may serve to add rides while others serve to subtract rides from the route.

- *Rides switching to using Link Light Rail:* *For routes where Link Light Rail will provide a competitive option to the existing bus route, the percentage of rides on each route that would be subject to competition was calculated. For this group of rides we then assumed a "low end" estimate of two-thirds of rides who would switch and a "high-end" estimate of one-third of rides switching from bus to rail.*
- *Structural Changes to Routes:* *When a route is deleted or structurally changed so that existing riders can no longer make use of the service, ridership was assumed to be lost. In the case of a deleted service all rides on the route were assumed to be lost (some might be retained on other routes, but are accounted for on that other route). For a route that is significantly changed the rides in (both to and from) the segment losing that service was considered to be lost.*
- *Increases in Frequency/Additional Trips:* *Where trips are being added either as a part of the Seattle investments or Metro redeployment of service hours, an estimate of the riders gained for the additional service was generated. Industry research recommends*

assuming a 30% to 100% increase in ridership for each doubling of service, therefore our "low end" assumed only 30% gain and the "high-end" assumed 100% gain adjusted to the amount of service increased.

- *Improved Reliability: Service would be more reliable on a number of routes as Metro shortens routes and revises them to avoid the worst congestion points. Metro consistently hears from riders that reliability is one of the most important factors to determining ridership. So improvements in reliability should also result in better ridership as current riders are retained and new ones attracted. We have assumed that shortening a route will improve reliability by about 10% and limited industry research indicates an improvement of reliability would result in a 3% to 5% increase in ridership for a 10% increase in reliability.*

- *Riders Switching from Existing Routes: Where a route is deleted or structurally changed and the remaining routes serve the same function as the other route, we have assumed those rides would switch to the other service. Based on the quality of the other option we assumed between 50% and 100% of the riders retained. If the quality is as good as the current then both the "low-" and "high-end" estimates assumed 100% retention.*

- *New Markets Served: Some of the resources freed up will allow Metro to provide new connections between Northeast Seattle and South Lake Union, First Hill, Wallingford, Green Lake, Fremont and Sand Point. For new connections, we considered comparable services and how many rides they attract for providing a similar trip function. For example, Route 309 which operates between the SR-522 corridor and South Lake Union/First Hill carries 480 daily rides on nine daily trips. The current proposal calls for 30 daily trips on Routes 64 and 66 between Northeast Seattle and South Lake Union/First Hill, likely providing for 1,000 to 2,000 daily commute trips.*

Route	Current Annual Rides	Retain Current Routes R: Link will be a faster alternative	SDOT investment in more trips	Change (Low end)	Change (High end)	Link will be a faster alternative	Structural Change in Route	Change in Number of Trips (SDOT and Metro)	Improved Reliability	Riders Switching From Other Routes	New Markets Served	Change (Low end)	Change (High end)
8	3,080,000		X	12,000	39,000		X	X	X			-545,000	-223,000
10	1,472,000	X	X	-412,000	-15,000	X		X				-412,000	-15,000
11	1,056,000	X	X	-87,000	243,000	X				X		666,000	1,084,000
12	1,024,000		X	46,000	153,000			X				46,000	153,000
16	1,495,000		X	48,000	162,000		X					-1,495,000	-1,495,000
25	139,000			7,000	23,000		X					-139,000	-139,000
26	1,057,000			0	0		X	X		X		-180,000	-42,000
28	1,182,000			0	0		X	X				-553,000	-582,000
30	130,000		X	5,000	18,000		X					-130,000	-130,000
31	524,000			0	0			X				5,000	17,000
32	902,000		X	4,000	12,000			X				14,000	46,000
38	0			0	0		X		X			1,233,000	1,268,000
43	2,467,000	X	X	-791,000	-382,000	X	X					-2,467,000	-2,467,000
44	2,352,000		X	69,000	230,000			X				69,000	230,000
45	0			0	0		X	X	X	X		2,979,000	3,482,000
48	3,594,000		X	46,000	153,000		X	X	X	X		-1,022,000	-715,000
49	2,507,000	X	X	-973,000	-341,000	X		X				-882,000	66,000
62	0			0	0		X	X		X	X	3,002,000	3,855,000
63	0			0	0						X	162,000	202,000
64	198,000			0	0		X	X			X	-2,000	23,000
65	923,000			0	0			X	X	X		282,000	717,000
66	1,026,000		X	35,000	116,000		X					-1,026,000	-1,026,000
67	426,000		X	12,000	39,000		X	X	X	X		1,049,000	2,006,000
68	582,000		X	27,000	89,000		X					-582,000	-582,000
70	1,236,000		X	188,000	628,000			X		X		473,000	1,055,000
71	1,633,000	X		-700,000	-345,000	X	X					-1,633,000	-1,633,000
72	1,507,000	X	X	-561,000	-99,000	X	X					-1,507,000	-1,507,000
73	1,904,000	X	X	-789,000	-276,000	X	X	X	X			-1,684,000	-1,631,000
74	335,000	X	X	-108,000	-39,000	X		X				-93,000	27,000
75	1,414,000			0	0			X				136,000	453,000
76	304,000		X	23,000	76,000			X		X		165,000	470,000
77	278,000			0	0							0	0
78	0			0	0					X		83,000	111,000
238	205,000			0	0					X		47,000	63,000
242	98,000			0	0		X					-98,000	-98,000
316	257,000			0	0			X		X		78,000	181,000
372	1,248,000			0	0		X	X		X		696,000	1,578,000
373	247,000			0	0							0	0
RUW	0			0	0			X				46,000	61,000
Contingency	0			0	0			X				14,000	23,000
TOTALS	36,802,000			-3,899,000	484,000							-3,205,000	4,886,000