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MEMORANDUM

To: **The Met Council**

From: Thomas Wittmann, Nelson\Nygaard

Date: December 31, 2020

Subject: The Met Council Bus Service Allocation Study – Intermediate Scenario Evaluation Results

Introduction

The Met Council is conducting a Service Allocation Study. The goals of the study include:

- Facilitate regional discussion with policy makers on transit priorities,
- Understand region-wide need for better mobility options,
- Develop and evaluate a series of expansion scenarios that reflect regional goals, and
- Document regional values to inform future service investment.

The purpose of this memo is to outline the results of the evaluation of six intermediate 2040 expansion scenarios. This builds off the materials presented in the Scenario Evaluation Results Memo that presented the results of two initial expansion scenarios that were developed to illustrate the potential outcomes of differing investment strategies. In the initial evaluation, Scenario 1 focused more on improving service in Market Areas 1 and 2, while Scenario 2 focused on geographic coverage and improving service in outlying Market Areas. The intermediate scenarios are intended to illustrate the balance between Scenario 1 (core service improvements) and Scenario 2 (coverage improvements).

Scenario Summary

The development of the five intermediate scenarios involved a proportional scaling of the steps used to develop the two initiative expansion scenarios:

- Scenario A: 80% Scenario 1 / 20% Scenario 2
- Scenario B: 67% Scenario 1 / 33% Scenario 2
- Scenario C: 50% Scenario 1 / 50% Scenario 2
- Scenario D: 33% Scenario 1 / 67% Scenario 2
- Scenario E: 20% Scenario 1 / 80% Scenario 2

A summary of the composition of the seven total scenarios can be seen in Figure 1

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Figure 1 Intermediate Scenario Summary

Improvement Type	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-frequency routes improved	15	12	8	4	-	-	-
Local routes improved to high frequency	12	12	12	12	8	4	-
Basic routes improved to local	5	5	6	13	21	21	20
Commuter routes improved	-	1	1	1	2	2	2
New reverse commute and suburb-to-suburb routes	-	2	4	4	4	4	4
New local routes	5	9	15	17	22	27	30
New commuter routes	-	-	-	-	-	-	2
Expanded on-demand service	-	-	-	Yes	Yes	Yes	Yes

Scenario Development

In addition to the two primary expansion scenarios, five intermediate scenarios were developed to illustrate the range of performance with different levels of the two investment strategies. This process was guided by feedback obtained from policymakers during the December 2020 workshop. The new scenarios were built using the routes and frequency assumptions created for two primary scenarios. The development of the intermediate scenarios involved a proportional scaling of the steps used to develop the two primary scenarios. No new routes or corridors were developed for any of the new scenarios. This section describes the steps taken to develop each of the scenarios.

Scenario A: 80% Scenario 1 / 20% Scenario 2

Scenario A improvements are heavily weighted toward improving service on the region's most productive routes but include improved job access improvements too.

- **Step One: Increase frequency to areas of highest transit potential, communities of color, and areas of concentrated poverty**

  This step upgrades high frequency transit and local routes in areas where there are high concentrations of low-income households and BIPOC.

- **Step Two: Improve 75% top productive local and high-frequency transit (HFT) routes**

  The step targets the 75% top productive bus routes in the region for increased service. Planned B Line and E Line Arterial BRT routes were included in this step, as they have significant overlap with Routes 21 and 6, which fall within the top productive routes in the region.

- **Step Three: Expand reverse commute routes**

  This step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes and new all-day reverse commute services.

- **Step Four: Expand connecting bus service with planned transitways from Scenario 1**

  This step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways.

Scenario B: 67% Scenario 1 / 33% Scenario 2

Scenario B improvements are weighted toward improving service on the region's most productive routes. It also includes improved job access to suburban locations and improvements in some local services.

- **Step One: Increase frequency to areas of low-income households and BIPOC**

  This step upgrades high frequency transit and local routes in areas where there are high concentrations of low-income households and BIPOC.

- **Step Two: Improve 50% top productive Local and HFT routes**

  The step targets the 25% top productive bus routes in the region for increased service. The planned B Line and E Line Arterial BRT routes were included in this step.

- **Step Three: Expand reverse commute routes and suburb-to-suburb connections**

  This step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes, new all-day reverse commute services, and new suburb-to-suburb connections.

- **Step Four: Expand connecting bus service with planned transitways from Scenario 1 and Scenario 2 that serve low-income households, BIPOC, and low-income jobs**

  This step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways. All transitway connections from Scenario 1 are included in this scenario, as well as Scenario 2 transitway connections that serve areas with high concentrations of low-income households, BIPOC, and low-income jobs.

- **Step Five: Increase frequency on basic routes that serve low-income households, BIPOC, and low-income jobs**

  This step aims to provide local service (30-minute frequency) on the basic transit corridors that serve areas with high concentrations of low-income households, BIPOC, and low-income jobs.

Scenario C: 50% Scenario 1 / 50% Scenario 2

Scenario C improvements evenly balance improvements to the most productive routes and improving geographic coverage.

- **Step One: Increase frequency to areas of low-income households and BIPOC**

  This step upgrades high frequency transit and local routes in areas where there are high concentrations of low-income households and BIPOC.

- **Step Two: Improve 25% top productive Local and HFT routes**

  The step targets the 25% top productive bus routes in the region for increased service. The B Line Arterial BRT was included in this step.

- **Step Three: Expand reverse commute routes and suburb-to-suburb connections**

  This step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes, new all-day reverse commute services, and new suburb-to-suburb connections.

- **Step Four: Expand connecting bus service with planned transitways**

  This step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways. All transitway connections from Scenario 1 and Scenario 2 are included in this scenario.

- **Step Five: Increase frequency on basic routes with top 50% of productivity**

  This step aims to provide local service (30-minute frequency) on the top 50% most productive basic transit corridors.

- **Step Five: Expand on-demand services**

  This step expands on-demand and alternative services that are better suited for lower productivity markets.

Scenario D: 33% Scenario 1 / 67% Scenario 2

Scenario D improvements weight geographic coverage improvements over improving the most productive routes. The most productive high frequency routes are still improved in this scenario.

- **Step One: Increase frequency to areas of low-income households and BIPOC with top 75% of productivity**

  This step upgrades top 75% most productive high frequency transit and local routes in areas where there are high concentrations of low-income households and BIPOC.

- **Step Two: Improve 25% top productive HFT routes**

  The step targets the most productive local transit bus routes in the region for increased service. Productivity values were calculated with 2018 route level data. The planned B Line Arterial BRT route were included in this step.

- **Step Three: Expand reverse commute routes and suburb-to-suburb connections**

  This step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes, new all-day reverse commute services, and new suburb-to-suburb connections.

- **Step Four: Expand connecting bus service with planned transitways**

  This step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways. All transitway connections from Scenario 1 and Scenario 2 are included in this scenario.

- **Step Five: Increase frequency on basic routes**

  This step aims to provide local service (30-minute frequency) on all basic routes that have sufficient productivity to support fixed-route transit (more than 10 boardings per service hour).

- **Step Six: Expand on-demand services**

  This step expands on-demand and alternative services that are better suited for lower productivity markets.

- **Step Seven: Add expansion routes from Scenario 2 that serve areas with the highest population and employment density, as well as concentrations of low-income households and BIPOC**

  This step looks at additional opportunities across the region to provide all-day fixed route services to populations outside of the fixed-route service network. Routes included in this scenario serve areas with relatively high population and employment density and serve relatively high concentrations of low-income households and BIPOC.

Scenario E: 20% Scenario 1 / 80% Scenario 2

Scenario E improvements heavily weight geographic coverage improvements over improving the most productive routes. High frequency route improvements are targeted to areas of highest equity needs.

- **Step One: Increase frequency to areas of low-income households and BIPOC with top 50% of productivity**

  This step upgrades top 50% most productive high frequency transit and local routes in areas where there are high concentrations of low-income households and BIPOC.

- **Step Two: Expand reverse commute routes and suburb-to-suburb connections**

  This step focuses on adding service to job-rich areas, particularly areas with low-wage employment, through additional service to existing reverse commute routes, new all-day reverse commute services, and new suburb-to-suburb connections.

- **Step Four: Expand connecting bus service with planned transitways**

  This step extends and upgrades bus service to provide frequent connections to funded transitways. Expansion routes were selected from various regional plans that propose routes to connect to the transitways. All transitway connections from Scenario 1 and Scenario 2 are included in this scenario.

- **Step Five: Increase frequency on basic routes**

  This step aims to provide local service (30-minute frequency) on all basic routes that have sufficient productivity to support fixed-route transit (more than 10 boardings per service hour).

- **Step Six: Expand on-demand services**

  This step expands on-demand and alternative services that are better suited for lower productivity markets.

- **Step Seven: Add expansion routes from Scenario 2 that serve areas with concentrations of low-income households and BIPOC**

  This step looks at additional opportunities across the region to provide all-day fixed route services to populations outside of the fixed-route service network. Routes included in this scenario serve areas with relatively high population and employment density and serve relatively high concentrations of low-income households and BIPOC.

Scenario Evaluation

Access to Transit

Improved Transit Service

The results in this analysis represent the percentage of the Twin Cities regional total of each population and employment group with increased service (both improvements to existing service and expanded service) and the number of people and jobs with improved service.

Scenario C improves transit service for the largest proportion of most of the population and employment groups of all of the intermediate scenarios. It surpasses Scenario 1 in total population (37% of the base regional total), older population (47%), affordable housing units

(36%), total employment (55%), and both low-wage (52%) and high-wage (57%) employment. Scenario 1 provides slightly more low-income residents (55%) and BIPOC (55%) with improved transit service than Scenario C. Scenario A is the third highest performing scenario according to this measure.

Across the market areas, Scenarios 1 and A best serve Market Areas 1 and 2, while Scenarios D, 3, and 2 benefit population and jobs in Market Areas 3 and 4.

Figure 2 Population and employment with improved transit service (additional service frequency or expanded service) – Intermediate Scenarios

Improved fixed-route transit for…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Population								
Total Population	3,013,000 people	+37% (1,104,000 people)	+36% (1,075,000 people)	+35f% (1,046,000 people)	+37% (1,117,000 people)	+33% (1,008,000 people)	+32% (972,000 people)	+27% (819,000 people)
BIPOC	792,000 people	+54% (431,000 people)	+54% (426,000 people)	+51% (404,000 people)	+53% (421,000 people)	+46% (364,000 people)	+43% (341,000 people)	+34% (267,000 people)
Low-Income Population	624,000 people	+55% (343,000 people)	+54% (338,000 people)	+51% (320,000 people)	+53% (330,000 people)	+44% (278,000 people)	+41% (255,000 people)	+31% (195,000 people)
Affordable Housing Units	714,000 units	+47% (334,000 units)	+46% (327,000 units)	+45% (319,000 units)	+47% (336,000 units)	+42% (302,000 units)	+40% (285,000 units)	+34% (240,000 units)
Individuals in Zero Car Households	50,000 people	+70% (35,000 people)	+69% (35,000 people)	+65% (33,000 people)	+67% (34,000 people)	+53% (27,000 people)	+44% (22,000 people)	+34% (17,000 people)
Older Population	399,000 people	+33% (133,000 people)	+32% (127,000 people)	+32% (127,000 people)	+36% (143,000 people)	+34% (137,000 people)	+34% (134,000 people)	+29% (117,000 people)
Employment								
Total Employment	1,763,000 jobs	+51% (893,000 jobs)	+50% (882,000 jobs)	+50% (886,000 jobs)	+55% (963,000 jobs)	+50% (876,000 jobs)	+48% (853,000 jobs)	+44% (770,000 jobs)
Low-Wage Employment	822,000 jobs	+49% (400,000 jobs)	+47% (388,000 jobs)	+47% (389,000 jobs)	+52% (427,000 jobs)	+46% (382,000 jobs)	+45% (367,000 jobs)	+40% (330,000 jobs)
High-Wage Employment	941,000 jobs	+52% (494,000 jobs)	+53% (494,000 jobs)	+53% (497,000 jobs)	+57% (536,000 jobs)	+52% (494,000 jobs)	+52% (487,000 jobs)	+47% (440,000 jobs)

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Figure 3 **Population and employment with improved transit service by Transit Market Area – Intermediate Scenarios**

Improved access within…	Scenario 1 (% of regional scenario Total)	Scenario A (% of regional scenario Total)	Scenario B (% of regional scenario Total)	Scenario C (% of regional scenario Total)	Scenario D (% of regional scenario Total)	Scenario E (% of regional scenario Total)	Scenario 2 (% of regional scenario Total)
Regional Scenario Total							
Population	1,104,000 people	1,075,000 people	1,046,000 people	1,117,000 people	1,008,000 people	972,000 people	819,000 people
Employment	893,000 jobs	882,000 jobs	886,000 jobs	963,000 jobs	876,000 jobs	853,000 jobs	770,000 jobs
Market Area 1							
Population	34% (371,000 people)	34% (361,000 people)	31% (325,000 people)	29% (320,000 people)	21% (215,000 people)	15% (147,000 people)	11% (93,000 people)
Employment	49% (436,000 jobs)	48% (426,000 jobs)	45% (397,000 jobs)	41% (393,000 jobs)	34% (296,000 jobs)	29% (251,000 jobs)	29% (221,000 jobs)
Market Area 2							
Population	43% (480,000 people)	40% (429,000 people)	37% (391,000 people)	36% (403,000 people)	34% (347,000 people)	34% (327,000 people)	31% (252,000 people)
Employment	26% (231,000 jobs)	22% (195,000 jobs)	22% (197,000 jobs)	22% (212,000 jobs)	21% (185,000 jobs)	21% (179,000 jobs)	21% (158,000 jobs)
Market Area 3							
Population	21% (234,000 people)	25% (264,000 people)	30% (309,000 people)	33% (371,000 people)	42% (421,000 people)	48% (463,000 people)	54% (442,000 people)
Employment	23% (205,000 jobs)	26% (231,000 jobs)	30% (261,000 jobs)	34% (327,000 jobs)	41% (362,000 jobs)	45% (383,000 jobs)	46% (351,000 jobs)
Market Area 4							
Population	2% (19,000 people)	2% (21,000 people)	2% (22,000 people)	2% (23,000 people)	3% (25,000 people)	4% (35,000 people)	4% (32,000 people)
Employment	2% (22,000 jobs)	3% (30,000 jobs)	3% (31,000 jobs)	3% (31,000 jobs)	4% (33,000 jobs)	5% (41,000 jobs)	5% (40,000 jobs)

Market Area 5							
Population	0% (0 people)	0% (0 people)	0% (0 people)	<1% (<1,000 people)	<1% (<1,000 people)	<1% (<1,000 people)	<1% (<1,000 people)
Employment	0% (0 jobs)	0% (0 jobs)	0% (0 jobs)	<1% (<1,000 jobs)	<1% (<1,000 jobs)	<1% (<1,000 jobs)	<1% (<1,000 jobs)

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Change in Access to Transit by Service Level

Total population served

Of the intermediate scenarios, Scenario A provides the most people with upgraded HFT access (73% more people over the base), while Scenario E results in the greatest increase of people with access to local transit service (64% more).

Across the market areas, Scenario A best serves the population in Market Areas 1, 2, and 3 with HFT upgrades. Scenario E best serves the population in Market Areas 2, and 3 with local service upgrades.

Figure 4 Population with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	645,000 people	+78% (504,000 people)	+73% (472,000 people)	+64% (416,000 people)	+57% (367,000 people)	+43% (276,000 people)	+28% (182,000 people)	+0% (0 people)
Local	610,000 people	+18% (112,000 people)	+24% (149,000 people)	+34% (207,000 people)	+43% (260,000 people)	+57% (346,000 people)	+64% (388,000 people)	+66% (403,000 people)
Basic	338,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	426,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (1,000 people)
Total*	2,019,000 people	+30% (615,000 people)	+31% (621,000 people)	+31% (623,000 people)	+31% (627,000 people)	+31% (622,000 people)	+28% (570,000 people)	+20% (404,000 people)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Figure 5 **Population with access to a route that has an upgraded service level or to a new route by service type within each Transit Market Area – Intermediate Scenarios**

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Market Area 1								
High-Frequency	309,000 people	+21% (64,000 people)	+21% (64,000 people)	+20% (62,000 people)	+19% (59,000 people)	+17% (53,000 people)	+12% (38,000 people)	+0% (0 people)
Local	374,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Basic	40,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	267,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Market Area 2								
High-Frequency	265,000 people	+94% (251,000 people)	+90% (238,000 people)	+78% (207,000 people)	+72% (192,000 people)	+60% (158,000 people)	+38% (100,000 people)	+0% (0 people)
Local	540,000 people	+3% (16,000 people)	+5% (27,000 people)	+6% (32,000 people)	+6% (33,000 people)	+7% (39,000 people)	+7% (39,000 people)	+7% (39,000 people)
Basic	164,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	406,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Market Area 3								
High-Frequency	70,000 people	+267% (187,000 people)	+233% (163,000 people)	+200% (140,000 people)	+154% (108,000 people)	+72% (50,000 people)	+24% (17,000 people)	+0% (0 people)
Local	281,000 people	+31% (87,000 people)	+45% (126,000 people)	+65% (183,000 people)	+85% (238,000 people)	+113% (316,000 people)	+126% (354,000 people)	+135% (378,000 people)
Basic	402,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	769,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Market Area 4								

High-Frequency	0 people	+2,073% (3,000 people)	+1,060% (2,000 people)	+1,060% (2,000 people)	+1,060% (2,000 people)	+1,044% (2,000 people)	+0% (0 people)	+0% (0 people)
Local	5,000 people	+374% (19,000 people)	+380% (19,000 people)	+416% (21,000 people)	+431% (22,000 people)	+515% (26,000 people)	+688% (34,000 people)	+591% (30,000 people)
Basic	23,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	141,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (<1,000 people)
Market Area 5								
High-Frequency	0 people	N/A (131 people)	N/A (131 people)	N/A (131 people)	N/A (131 people)	N/A (131 people)	+0% (0 people)	+0% (0 people)
Local	0 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+224% (<1,000 people)	+333% (<1,000 people)
Basic	0 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	9,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (<1,000 people)

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Black, indigenous, and people of color (BIPOC) served

Scenario A provides the most BIPOC with upgraded HFT access (61% more over the base). Scenario E provides the most BIPOC with upgraded local transit service (53%).

Figure 6 BIPOC with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	274,000 people	+64% (176,000 people)	+61% (167,000 people)	+54% (149,000 people)	+48% (133,000 people)	+37% (101,000 people)	+25% (70,000 people)	+0% (0 people)
Local	198,000 people	+17% (34,000 people)	+23% (45,000 people)	+32% (63,000 people)	+37% (72,000 people)	+48% (96,000 people)	+53% (105,000 people)	+53% (105,000 people)
Basic	99,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	81,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (1,000 people)

Total*	652,000 people	+32% (210,000 people)	+33% (212,000 people)	+32% (212,000 people)	+31% (205,000 people)	+30% (197,000 people)	+27% (175,000 people)	+16% (105,000 people)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Low-income population served

Scenario A provides the most low-income residents with upgraded HFT access (61% more over the base). Scenario E provides the most low-income residents with upgraded local transit service (44%).

Figure 7 Low-income population with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	222,000 people	+65% (143,000 people)	+61% (134,000 people)	+54% (121,000 people)	+48% (107,000 people)	+37% (83,000 people)	+26% (57,000 people)	+0% (0 people)
Local	161,000 people	+12% (19,000 people)	+17% (27,000 people)	+24% (39,000 people)	+29% (47,000 people)	+40% (65,000 people)	+44% (71,000 people)	+45% (73,000 people)
Basic	68,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	59,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (1,000 people)
Total*	509,000 people	+32% (162,000 people)	+32% (162,000 people)	+31% (159,000 people)	+30% (153,000 people)	+29% (148,000 people)	+25% (128,000 people)	+14% (73,000 people)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Affordable housing units served

Scenario A provides the most affordable housing units with upgraded HFT access (68% more over the base). Scenario E provides the most affordable housing units with upgraded local transit service (54%).

Figure 8 Affordable housing units with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Housing units with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	208,000 units	+73% (151,000 units)	+68% (140,000 units)	+60% (125,000 units)	+52% (108,000 units)	+39% (80,000 units)	+24% (51,000 units)	+0% (0 units)

Local	176,000 units	+14% (24,000 units)	+20% (35,000 units)	+28% (49,000 units)	+35% (61,000 units)	+49% (87,000 units)	+54% (95,000 units)	+58% (102,000 units)
Basic	91,000 units	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)
Commuter & Express	86,000 units	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+0% (0 units)	+<1% (1,000 units)
Total*	561,000 people	+31% (175,000 units)	+31% (176,000 units)	+31% (174,000 units)	+30% (169,000 units)	+30% (167,000 units)	+26% (146,000 units)	+18% (102,000 units)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Population without auto access served

Scenario A provides the most low-vehicle access residents with upgraded HFT access (37% more over the base). Scenario E provides the most low-vehicle access residents with upgraded local transit service (34%).

Figure 9 Population without auto access with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	27,000 people	+39% (10,000 people)	+37% (10,000 people)	+34% (9,000 people)	+31% (8,000 people)	+24% (7,000 people)	+17% (5,000 people)	+0% (0 people)
Local	12,000 people	+10% (1,000 people)	+13% (2,000 people)	+20% (2,000 people)	+21% (2,000 people)	+32% (4,000 people)	+34% (4,000 people)	+36% (4,000 people)
Basic	4,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	3,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (1,000 people)
Total*	45,000 people	+26% (12,000 people)	+26% (11,000 people)	+25% (11,000 people)	+24% (11,000 people)	+23% (10,000 people)	+19% (9,000 people)	+9% (4,000 people)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Older population served

Scenario A provides the most older residents with upgraded HFT access (85% more over the base). Scenario E provides the most older residents with upgraded local transit service (70%).

Figure 10 Older population with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	72,000 people	+91% (66,000 people)	+85% (61,000 people)	+75% (54,000 people)	+65% (47,000 people)	+47% (34,000 people)	+30% (22,000 people)	+0% (0 people)
Local	85,000 people	+20% (17,000 people)	+26% (22,000 people)	+36% (30,000 people)	+48% (41,000 people)	+63% (54,000 people)	+70% (59,000 people)	+71% (61,000 people)
Basic	49,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)
Commuter & Express	66,000 people	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+0% (0 people)	+<1% (1,000 people)
Total*	273,000 people	+30% (83,000 people)	+30% (83,000 people)	+31% (84,000 people)	+32% (88,000 people)	+32% (88,000 people)	+30% (81,000 people)	+22% (61,000 people)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Total employment served

Scenario A provides the most jobs with upgraded HFT access (40% more over the base). Scenario E provides the most jobs with upgraded local transit service (37%).

Across the market areas, Scenario A best serves the jobs in Market Areas 1, 2, and 3 with HFT upgrades. Scenario E best serves the jobs in Market Areas 2 and 3 with local service upgrades.

Figure 11 Employment with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Employment with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	617,000 jobs	+43% (263,000 jobs)	+41% (253,000 jobs)	+38% (234,000 jobs)	+32% (199,000 jobs)	+24% (151,000 jobs)	+16% (97,000 jobs)	+0% (0 jobs)
Local	329,000 jobs	+33% (107,000 jobs)	+39% (127,000 jobs)	+50% (164,000 jobs)	+65% (214,000 jobs)	+81% (268,000 jobs)	+89% (292,000 jobs)	+91% (299,000 jobs)
Basic	211,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	245,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+<1% (<1,000 jobs)

Total*	1,402,000 jobs	+26% (370,000 jobs)	+27% (380,000 jobs)	+28% (399,000 jobs)	+29% (414,000 jobs)	+30% (419,000 jobs)	+28% (389,000 jobs)	+21% (299,000 jobs)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Figure 12 Employment with access to a route that has an upgraded service level or to a new route by service type within each Transit Market Area – Intermediate Scenarios

Population with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Market Area 1								
High-Frequency	405,000 jobs	+8% (32,000 jobs)	+8% (31,000 jobs)	+7% (30,000 jobs)	+7% (29,000 jobs)	+6% (26,000 jobs)	+5% (20,000 jobs)	+0% (0 jobs)
Local	438,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Basic	175,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	379,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Market Area 2								
High-Frequency	139,000 jobs	+79% (109,000 jobs)	+80% (111,000 jobs)	+75% (103,000 jobs)	+65% (90,000 jobs)	+55% (76,000 jobs)	+28% (39,000 jobs)	+0% (0 jobs)
Local	266,000 jobs	+2% (5,000 jobs)	+3% (7,000 jobs)	+3% (8,000 jobs)	+3% (9,000 jobs)	+4% (11,000 jobs)	+4% (11,000 jobs)	+4% (11,000 jobs)
Basic	118,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	211,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Market Area 3								
High-Frequency	74,000 jobs	+162% (120,000 jobs)	+138% (102,000 jobs)	+125% (92,000 jobs)	+98% (72,000 jobs)	+48% (35,000 jobs)	+12% (9,000 jobs)	+0% (0 jobs)
Local	190,000 jobs	+49% (94,000 jobs)	+63% (119,000 jobs)	+84% (160,000 jobs)	+113% (214,000 jobs)	+140% (266,000 jobs)	+148% (281,000 jobs)	+151% (287,000 jobs)

Basic	288,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	523,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Market Area 4								
High-Frequency	0 jobs	+618% (1,000 jobs)	+209% (405 jobs)	+209% (405 jobs)	+209% (405 jobs)	+157% (306 jobs)	+0% (0 jobs)	+0% (0 jobs)
Local	2,000 jobs	+1,063% (22,000 jobs)	+1,070% (22,000 jobs)	+1,110% (23,000 jobs)	+1,125% (23,000 jobs)	+1,404% (29,000 jobs)	+1,936% (40,000 jobs)	+1,853% (38,000 jobs)
Basic	27,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	73,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+<1% (<1,000 jobs)
Market Area 5								
High-Frequency	0 jobs	+N/A (<1,000 jobs)	+N/A (<1,000 jobs)	+N/A (<1,000 jobs)	+N/A (<1,000 jobs)	+N/A (<1,000 jobs)	+0% (0 jobs)	+0% (0 jobs)
Local	0 jobs	+0% (0 jobs)	+0% (0 jobs)	+156% (<1,000 jobs)	+156% (<1,000 jobs)	+285% (<1,000 jobs)	+285% (<1,000 jobs)	+1,579% (<1,000 jobs)
Basic	0 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	5,000 jobs	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Low-wage employment served

Scenario A provides the most low-wage jobs with upgraded HFT access (35% more over the base). Scenario E provides the most low-wage jobs with upgraded local transit service (37%).

Figure 13 Low-wage employment with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Employment with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	268,000 jobs	+48% (129,000 jobs)	+47% (126,000 jobs)	+44% (117,000 jobs)	+38% (102,000 jobs)	+29% (77,000 jobs)	+19% (51,000 jobs)	+0% (0 jobs)

Local	163,000 jobs	+28% (46,000 jobs)	+34% (55,000 jobs)	+44% (71,000 jobs)	+59% (96,000 jobs)	+75% (122,000 jobs)	+82% (133,000 jobs)	+84% (136,000 jobs)
Basic	100,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	111,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+<1% (<1,000 jobs)
Total*	642,000 jobs	+27% (176,000 jobs)	+28% (180,000 jobs)	+29% (188,000 jobs)	+31% (199,000 jobs)	+31% (199,000 jobs)	+29% (184,000 jobs)	+21% (136,000 jobs)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

High-wage employment served

Scenario A provides the most high-wage jobs with upgraded HFT access (35% more over the base). Scenario E provides the most high-wage jobs with upgraded local transit service (38%).

Figure 14 High-wage employment with access to a route that has an upgraded service level or to a new route by service type – Intermediate Scenarios

Employment with access to…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
High-Frequency	349,000 jobs	+38% (133,000 jobs)	+36% (127,000 jobs)	+34% (117,000 jobs)	+28% (97,000 jobs)	+21% (74,000 jobs)	+13% (45,000 jobs)	+0% (0 jobs)
Local	167,000 jobs	+36% (61,000 jobs)	+44% (73,000 jobs)	+56% (93,000 jobs)	+71% (118,000 jobs)	+88% (146,000 jobs)	+96% (160,000 jobs)	+97% (163,000 jobs)
Basic	111,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)
Commuter & Express	133,000 jobs	+0% (0 jobs)	+0% (0 people)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+0% (0 jobs)	+<1% (<1,000 jobs)
Total*	760,000 jobs	+26% (194,000 jobs)	+26% (200,000 jobs)	+28% (210,000 jobs)	+28% (215,000 jobs)	+29% (220,000 jobs)	+27% (205,000 jobs)	+21% (163,000 jobs)

* This total does not reflect the total number of jobs receiving an increase in service by scenario. Those values can be seen in the Improved Transit Service measure.

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Access to New All-Day Transit

Of the intermediate scenarios, Scenario E provides the most residents and jobs across all population and employment categories with access to new all-day transit, followed by Scenario D.

Figure 15 Population and employment with access to new all-day transit – Intermediate Scenarios

New All Day Transit for…	Base	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Population								
Total Population	1,592,000 people	+3% (42,000 people)	+5% (84,000 people)	+7% (110,000 people)	+7% (119,000 people)	+8% (125,000 people)	+9% (143,000 people)	+10% (151,000 people)
BIPOC	571,000 people	+1% (7,000 people)	+3% (16,000 people)	+4% (22,000 people)	+4% (24,000 people)	+5% (26,000 people)	+5% (30,000 people)	+6% (32,000 people)
Low-Income Population	451,000 people	+1% (5,000 people)	+2% (11,000 people)	+3% (14,000 people)	+3% (15,000 people)	+4% (16,000 people)	+4% (18,000 people)	+4% (20,000 people)
Affordable Housing Units	474,000 units	+1% (7,000 people)	+3% (16,000 people)	+4% (20,000 people)	+5% (22,000 people)	+5% (24,000 people)	+6% (27,000 people)	+7% (32,000 people)
Individuals in Zero Car Households	42,000 people	+1% (<1,000 people)	+1% (1,000 people)	+2% (1,000 people)	+2% (1,000 people)	+2% (1,000 people)	+2% (1,000 people)	+2% (1,000 people)
Older Population	207,000 people	+3% (7,000 people)	+6% (13,000 people)	+8% (16,000 people)	+8% (17,000 people)	+9% (18,000 people)	+10% (21,000 people)	+10% (22,000 people)
Employment								
Total Employment	1,158,000 people	+4% (49,000 people)	+6% (70,000 people)	+8% (87,000 people)	+8% (93,000 people)	+9% (101,000 people)	+10% (111,000 people)	+10% (115,000 people)
Low-Wage Employment	531,000 people	+4% (21,000 people)	+6% (30,000 people)	+7% (37,000 people)	+8% (41,000 people)	+8% (45,000 people)	+9% (49,000 people)	+10% (51,000 people)
High-Wage Employment	627,000 people	+4% (28,000 people)	+6% (40,000 people)	+8% (50,000 people)	+8% (52,000 people)	+9% (56,000 people)	+10% (62,000 people)	+10% (65,000 people)

Note: Due to rounding, there may be slight inconsistencies between the values and percentages.

Ridership Potential

Of the intermediate scenarios, Scenario B shows the greatest potential for increasing ridership with an estimated 19% increase.

Figure 16 Potential Ridership Increases

	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Ridership Increase	20%	18%	19%	18%	17%	16%	15%

Scenario Evaluation Summary

All scenarios improve mobility – but who benefits and where the improvements are focused varies. The following table shows a high-level summary of the relative success of all seven scenarios across various regional values. Overall, Scenario 1 and A succeed at generating the most ridership, serving the most diverse populations, expanding high-frequency transit, and best serving Market Areas 1 and 2. Scenarios D, E, and 2, excel at expanding new access to all-day transit to those who do not currently have it, expanding the local transit network, and best serving Market Area 3.

Figure 17 Summary of Relative Summary Success

Which scenario better…	Scenario 1	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario 2
Generates ridership	✓✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓
Improves service for region's population and employment	✓✓✓	✓✓	✓✓	✓✓✓	✓✓	✓	✓
Expands new access to all-day transit to population and employment	✓	✓	✓✓	✓✓	✓✓	✓✓✓	✓✓✓
Serves more diverse population groups	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓	✓
Expands 15-minute transit to population and employment	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓	
Expands 30-minute transit to population and employment	✓	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓
Better serves Market Areas 1 and 2	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓
Better serves Market Area 3	✓	✓	✓✓	✓✓	✓✓	✓✓✓	✓✓✓