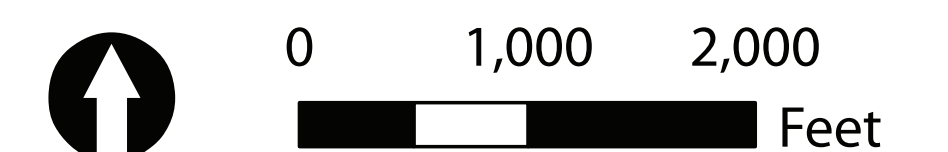




Study Area



- Double/Single-Track Rail Alignment
- Enhanced Bus Alignment
- Midtown Transitway Stations
- Transit Centers
- Local Bus Route



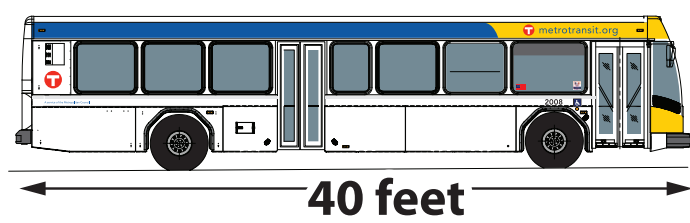


Mode Characteristics

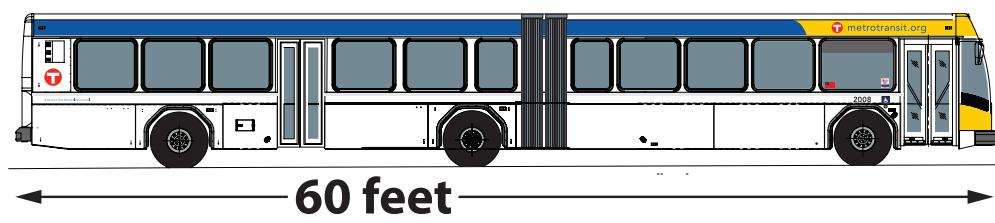


Enhanced Bus	Streetcar	Light-Rail Transit
Station spacing every ½ mile	Every ¼ mile	Every ½ mile or greater
Off-board fare payment	Off-board fare payment	Off-board fare payment
Near-level boarding	Near-level boarding	Fully-level
Transit signal priority	Transit signal priority	Transit signal priority
Improved station	Improved station	Improved station
Articulated bus (60')	Modern streetcar (67')	Light-Rail vehicle (94')
Street running / mixed traffic	Street running / mixed traffic	Exclusive guideway
73 passengers	115 passengers	134 passengers

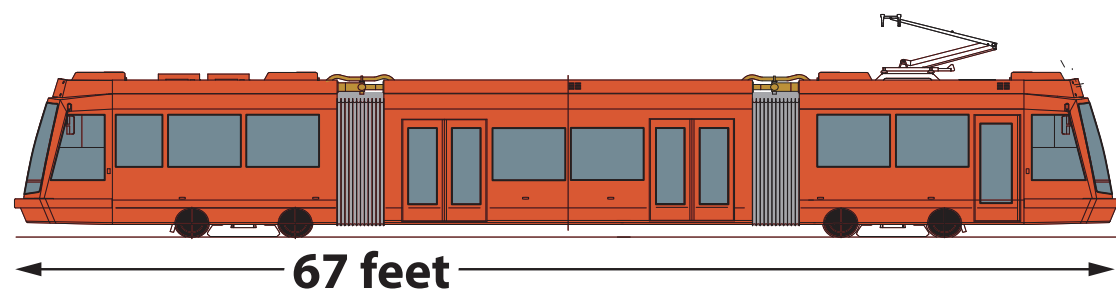
Vehicle Comparison



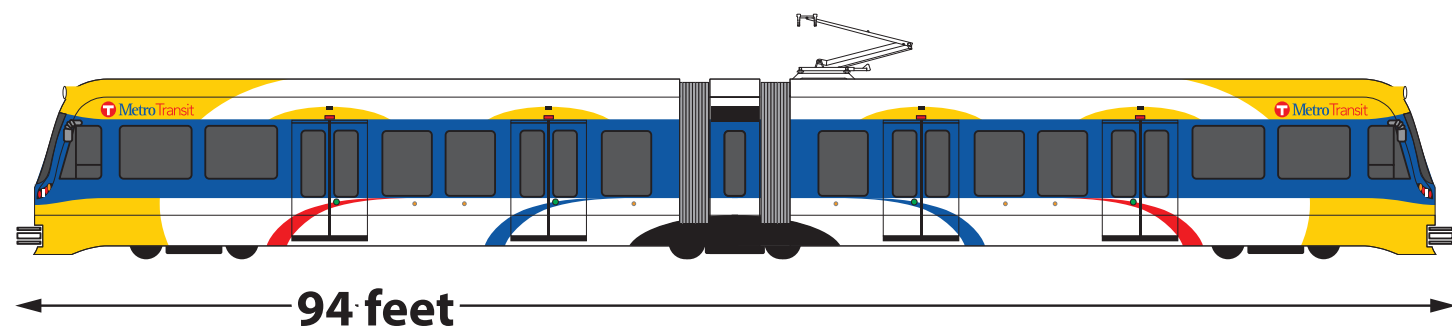
Metro Transit Local Bus



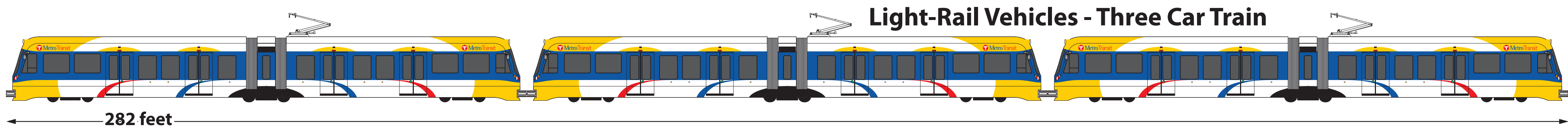
Enhanced Bus Vehicle



Modern Streetcar



Single Light Rail Vehicle



Light-Rail Vehicles - Three Car Train



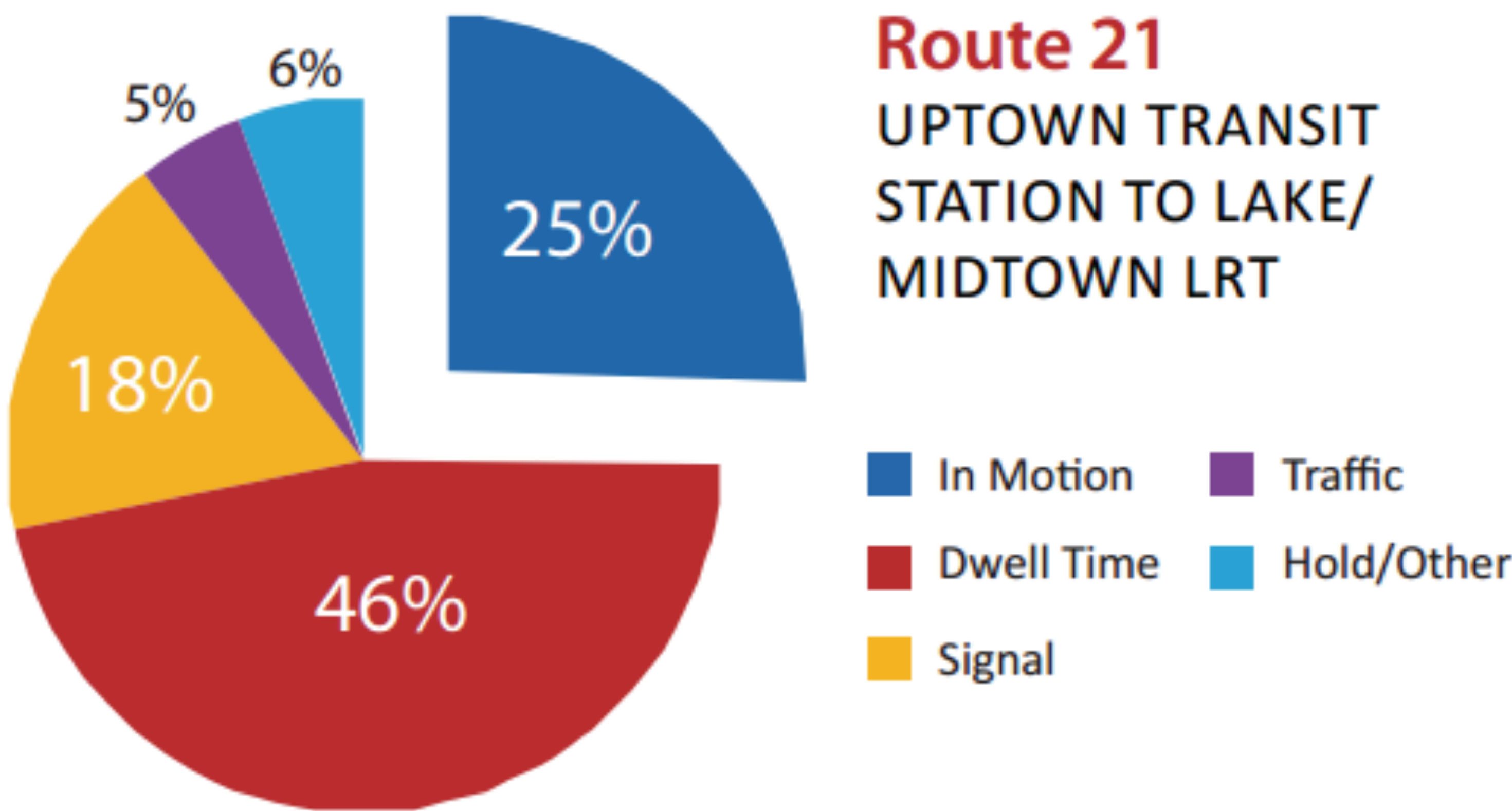
Service Plan - Route Frequencies (in minutes)

Alternative	Local Bus		Rail		Enhanced Bus	
	Peak	Midday	Peak	Midday	Peak	Midday
Enhanced Bus	15	15	–	–	7.5	10
Rail	15	15	10	10	–	–
Dual	15	15	10	10	10	10

Travel Times

Mode	West Lake to Hiawatha	West Lake to Minnehaha	Uptown to Snelling
Local Bus	42	44	57
Enhanced Bus	30	32	42
Rail	13	–	–

Delay Factors for Route 21





Alternatives Analyzed

1. Enhanced bus on Lake Street
2. Double/single-track rail in the Midtown Greenway
3. Combination of enhanced bus on Lake Street and double/single-track rail in the Midtown Greenway, with an enhanced bus extension to St. Paul



W. Lake Street and Hennepin Avenue

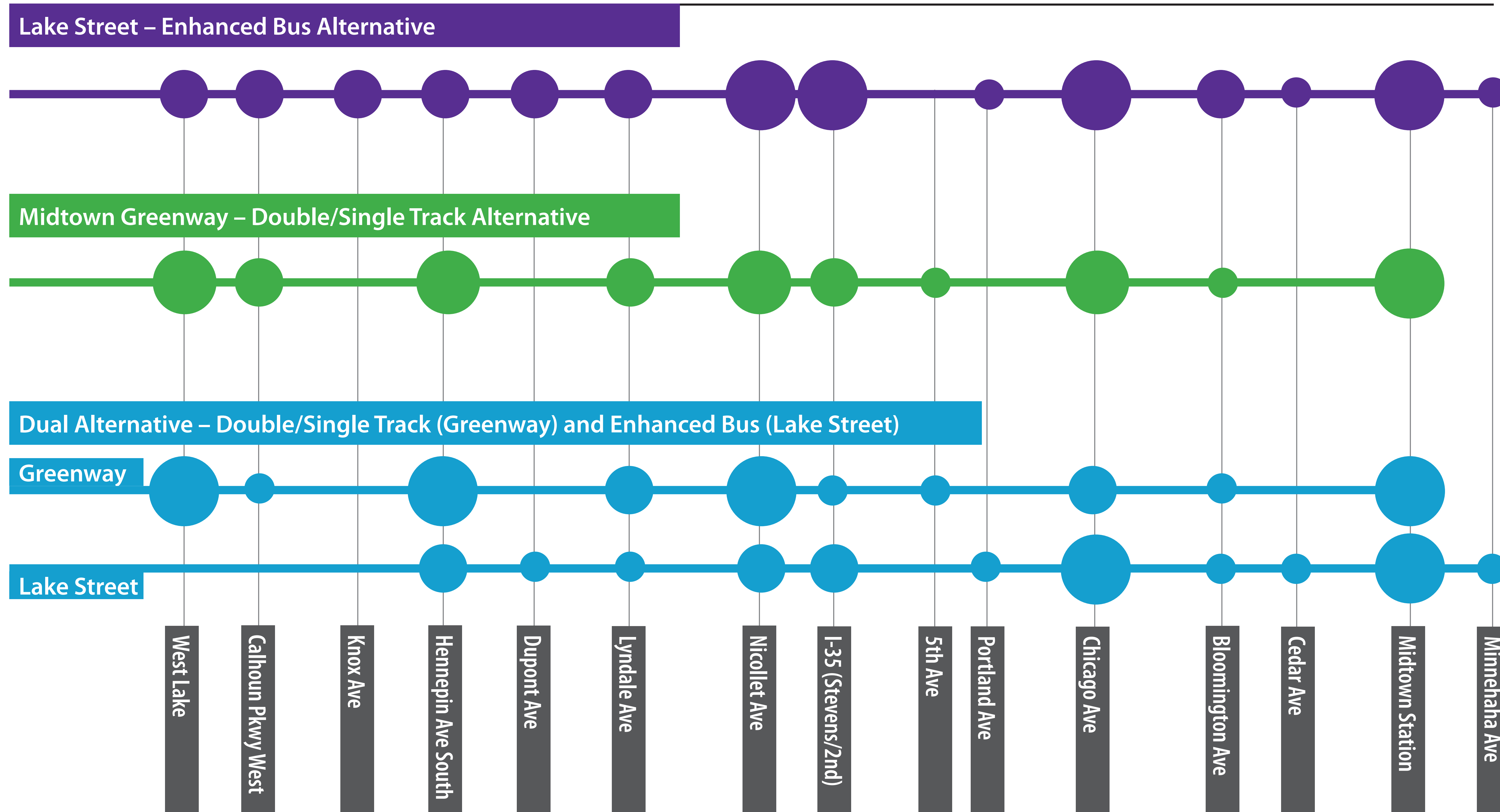
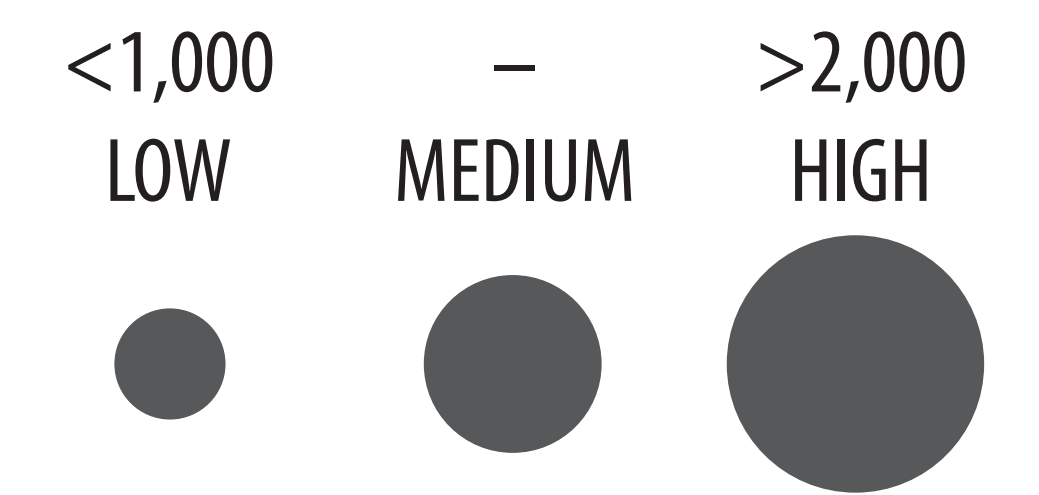


Midtown Greenway at 10th Avenue



Ridership Projections (2030)

Circle size represents relative estimated daily 2030 Station Activity
(Sum of boardings and alightings)





Cost Estimates

Alternative	Capital Costs	Operating Costs (annual)
Enhanced Bus	\$50 million	\$7 million
Rail	\$185 - 220 million	\$8 million
Dual	\$215 - 250 million	\$15 million

Ridership Projections (2030)

Alternative	Local Bus	Rail	Enhanced Bus		Corridor Total
			Study Area	Extended Corridor	
Existing (2012)	14,600	–	–	–	14,600
Enhanced Bus	8,500	–	11,000	3,000	22,500
Rail	9,500	11,000	–	–	20,500
Dual Alignment	6,000	9,500	8,500	8,000	32,000

Transitway Ridership Summary (2030)

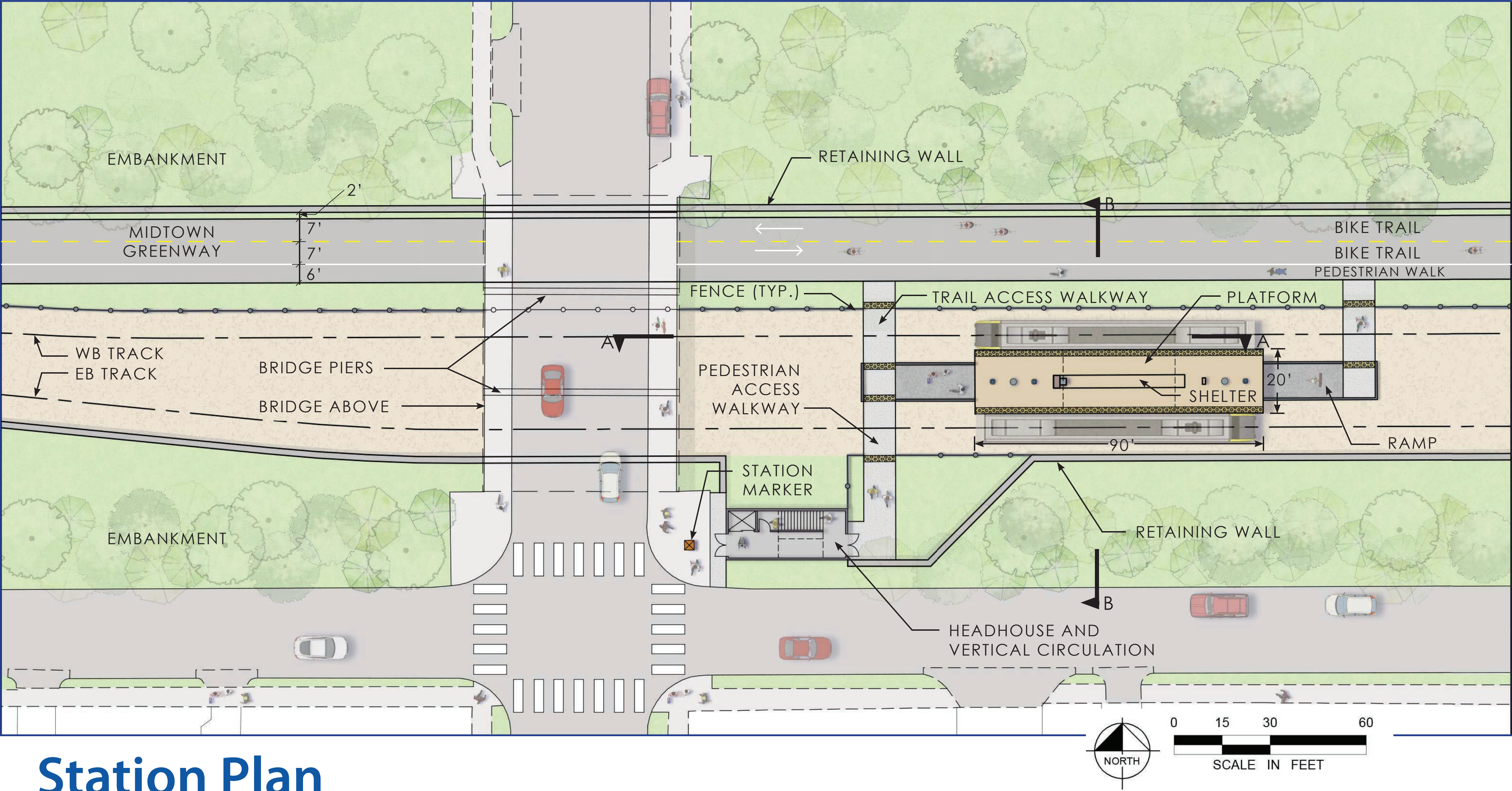
Alternative	Transitway ¹ / Project Total	New Transit Riders ²	Transit-Reliant Riders	% Transit-Reliant Riders
Existing (2012)	–	–	6,800	51%
Enhanced Bus	14,000	300	8,100	58%
Rail	11,000	2,200	6,200	56%
Dual	26,000	3,300	12,400	48%

¹Includes double/single-track rail and entire enhanced bus route both inside and outside corridor.

²Mode switch from auto or non-motorized based on travel demand model.



Midtown Greenway Station



Station Plan

Bloomington Avenue Station



Before



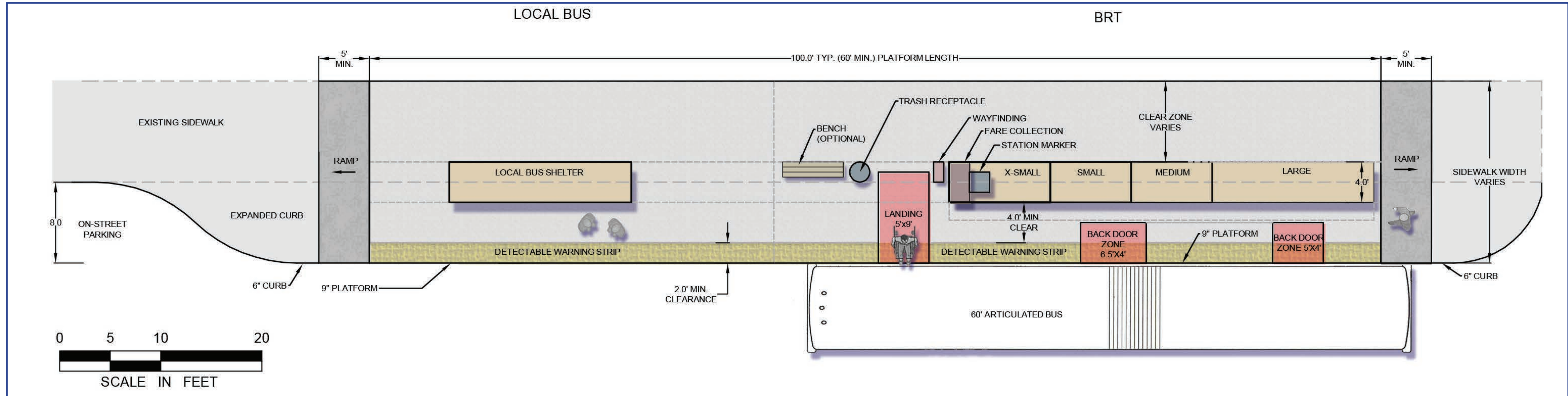
After with ballasted track



After with turf track



Lake Street Station



Before



After



Single or Double-Track? Strike the Right Balance

- **Double-track segments**
 - Increased reliability and flexibility
 - Built-in redundancy for service disruptions and maintenance
 - Always necessary at stations
- **Single-track**
 - Lower cost
 - Less retaining walls
 - Potential for fewer impacts to corridor
- **Balance both needs:** double-track where practical or operationally necessary, single-track as feasible to avoid greatest impacts.



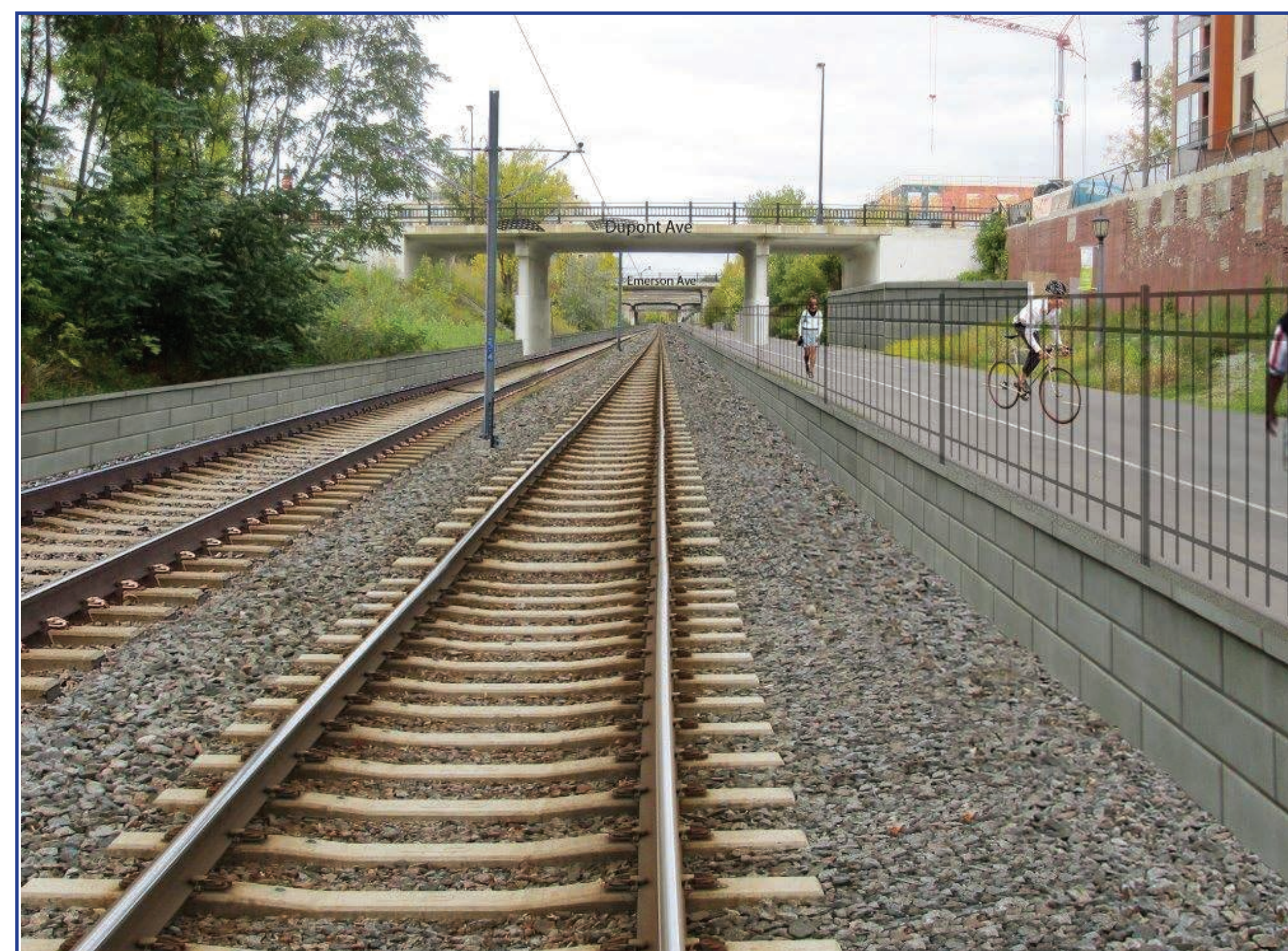
Single with ballasted track



Single with turf track



Before



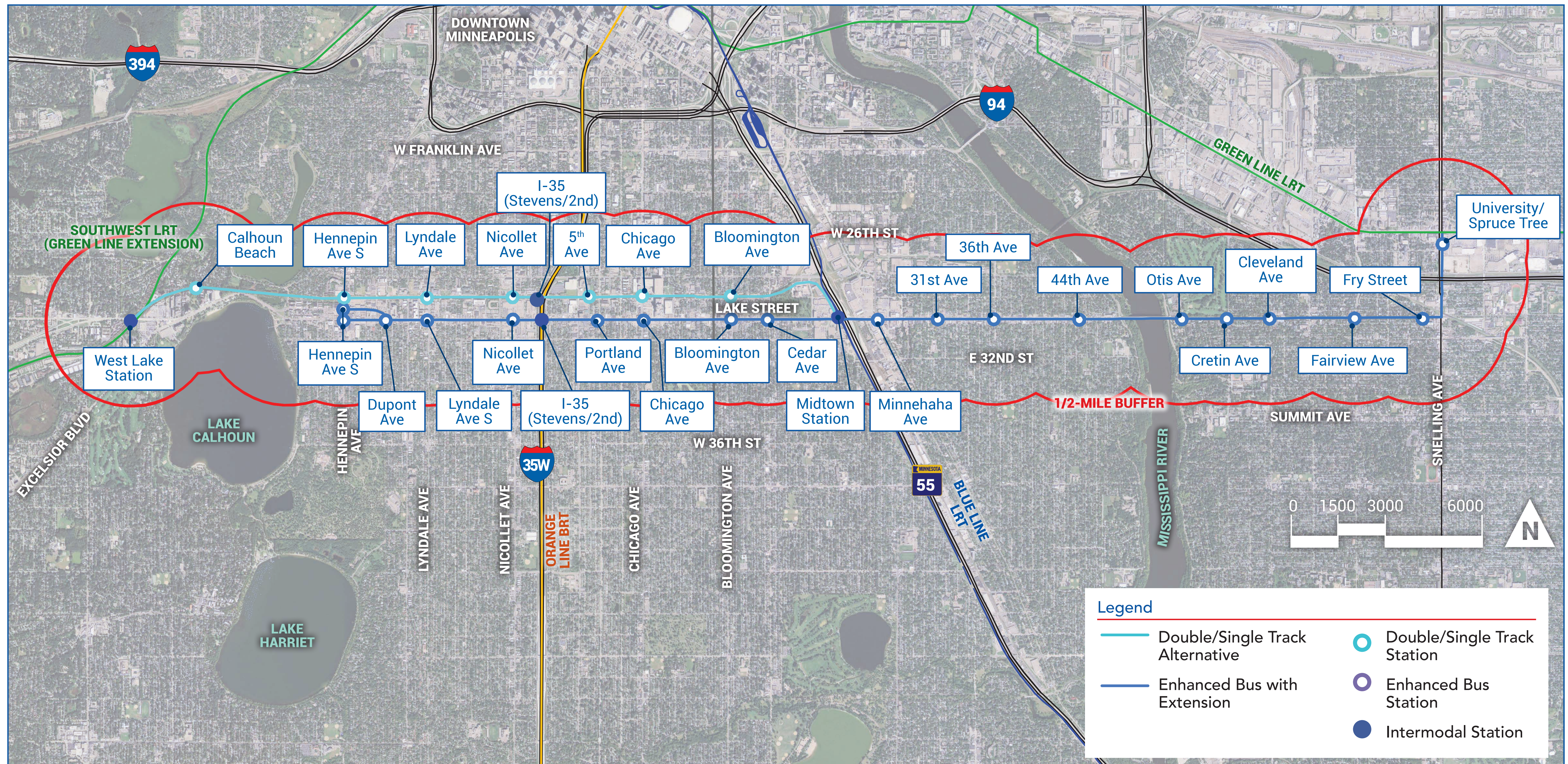
Double with ballasted track



Double with turf track



Results for Enhanced Bus Extension



- Adds 8,000 more riders
- Provides access to 11,000 more jobs within reach
- Provides 4.2 miles of expanded service & 10 more stations
- Adds \$18.9 million capital costs
- Adds \$3.2 million annual operating costs



Evaluation Results

Goals	Enhanced Bus	Rail in the Greenway	Dual Alternative
Goal 1: Increase transit use among the growing number of corridor residents, employees, and visitors			
Goal 2: Improve corridor equity with better mobility and access to jobs and activities			
Goal 3: Catalyze and support housing and economic development along the corridor			
Goal 4: Develop a cost-effective transitway that is well-positioned for implementation			
Goal 5: Build upon the vibrancy and diversity of the corridor by supporting healthy, active communities and the environment			
TOTAL			

KEY TO SYMBOLS

Strongly supports goal Supports goal Does not support goal

Note: Results for study area only



Evaluation Results

Evaluation Measures	Enhanced Bus on Lake Street	Single/Double- Track Rail in the Greenway	Dual Alternative	Dual Alternative + Extension
Goal 1: Increase transit use among the growing number of corridor residents, employees, and visitors				
1. Daily project linked trips 2030 Forecast	11,000	11,000	18,000	26,000
Goal 2: Improve corridor equity with better mobility and access to jobs and activities				
2. Number of transit reliant riders 2030 Forecast	8,100	6,200	12,400	-
3. Travel time savings	12 minutes	29 minutes	11 min (E. Bus)/ 29 min (rail)	19 min (E. Bus)/ 29 min (rail)
Goal 3: Catalyze and support housing and economic development along the corridor				
4. Available land for development (Vacant parcels + commercial parking)	TBD	TBD	TBD	-
5. Existing TOD policies	Same	Same	Same	-
6. Station area population densities (2010)	14,100 persons per sq. mile	14,600 persons per sq. mile	14,400 persons per sq. mile	12,200 persons per sq. mile
7. Corridor employment (2010)	27,000	29,000	34,000	45,000
8. Proportion of affordable housing units compared to proportion of affordable units in Hennepin County (and FTA MAP-21 rating)	1.6 (Medium)	1.7 (Medium)	1.6 (Medium)	n/a
9. Affordable housing policies	Same	Same	Same	n/a
Goal 4: Develop a cost-effective transitway that is well positioned for implementation				
10. Capital costs (\$2013)	\$50 million	\$185 million – \$220 million	\$215 million – \$250 million	\$232 million - \$268 million
11. Net operating and maintenance costs (\$2012)	\$7 million	\$8 million	\$15 million	\$15 million
12. Annualized capital plus operating costs per trip (Assuming double ballasted track)	\$2.74	\$4.39	\$3.51	\$2.94
13. Passengers per revenue hour	55	142	104	104
14. Subsidy per passenger	\$1.05	\$1.27	\$1.10	\$0.87
Goal 5: Build upon the vibrancy and diversity of the corridor by supporting healthy, active communities and the environment				
15. Potential impacts to historic and cultural resources (Section 4(f) and Section 106 historic and cultural resources)	Medium potential for impacts	High potential for impacts	High potential for impacts	-
16. Potential impacts to parklands (Section 4(f) parklands)	Low potential for impacts	Low potential for impacts	Low potential for impacts	-
17. Potential impacts of noise and vibration Category 1: Hospitals, recording studios, etc. Category 2: Places where people sleep	8 Category 1 892 Category 2	6 Category 1 848 Category 2	10 Category 1 1,430 Category 2	-
18. Potential right of way impacts	None	3.5 acres	3.5 acres	3.5 acres
19. Potential traffic impacts Traffic flow impacts Loss of parking	Minor impacts 26 spaces	Minor impacts None	Minor impacts 26 spaces	-
20. Pedestrian and bicycle impacts Pedestrian impacts Bicycle impacts	None None	None Minor impacts	None Minor impacts	- -
21. Daily reduction in vehicle miles traveled (VMT)	1,400	11,200	11,800	18,500



Next Steps

- February 12, 2014 PAC vote on locally-preferred alternative
- Recommendations will not include specific vehicle type or single/double-track segments
- Both determined through additional analysis and stakeholder engagement

Future Midtown Transitway Development Process

