

SOUTHWEST

Green Line LRT Extension



Business Advisory Committee

June 17, 2015



Today's Topics

- Construction Cost Estimate Review
- Transit Options Review
- Potential Cost Reduction Evaluation



Construction Cost Estimate Review

Construction Cost Estimation Review

- Perform evaluation of current construction cost estimate using existing Peer Review Consultant (PRC)
- Review project budget quantities and unit costs compared with LRT projects nationally, industry standards and PRC's professional experience implementing similar LRT projects

Cost Review: Scope

- PRC evaluated construction cost estimates against FTA Capital Cost Database for Standard Cost Categories (SCC):
 - Guideway, track
 - Stations, stops, terminals, intermodal
 - Support facilities, yards, shops, admin buildings
 - Sitework, special conditions
 - Systems
- Identified project components with higher levels of construction risk

Construction Cost Estimate Comparison

Element (in \$ millions, 2014)	FTA Capital Cost Database Range	SWLRT Construction PE Cost Estimate
Guideway and Track	\$550 – 600	\$414
Stations, Stops, Terminal, Intermodal	\$96 – 114	\$103
Support Facilities: Yards, Shops, Admin Buildings	\$67 – 74	\$92
Sitework, Special Conditions	\$143 – 189	\$169
Systems	\$159 – 194	\$187
Construction Subtotal (SCC 10-50)	\$1,020 - 1,170	\$965
Unallocated Contingency (SCC 10-50)	NA	\$96.5
Construction Total	\$1,020 - 1,170	\$1,060

Recommendations

- Bridges: 15% of estimated construction costs
 - Identify design refinements that result in construction efficiencies
- Tunnels: 8% of estimated construction costs
 - Consider longer construction segments
- Retaining walls: 11% of estimated construction costs
 - Review retaining wall design approach for construction efficiencies
- Market conditions
 - Monitor local construction market

Summary

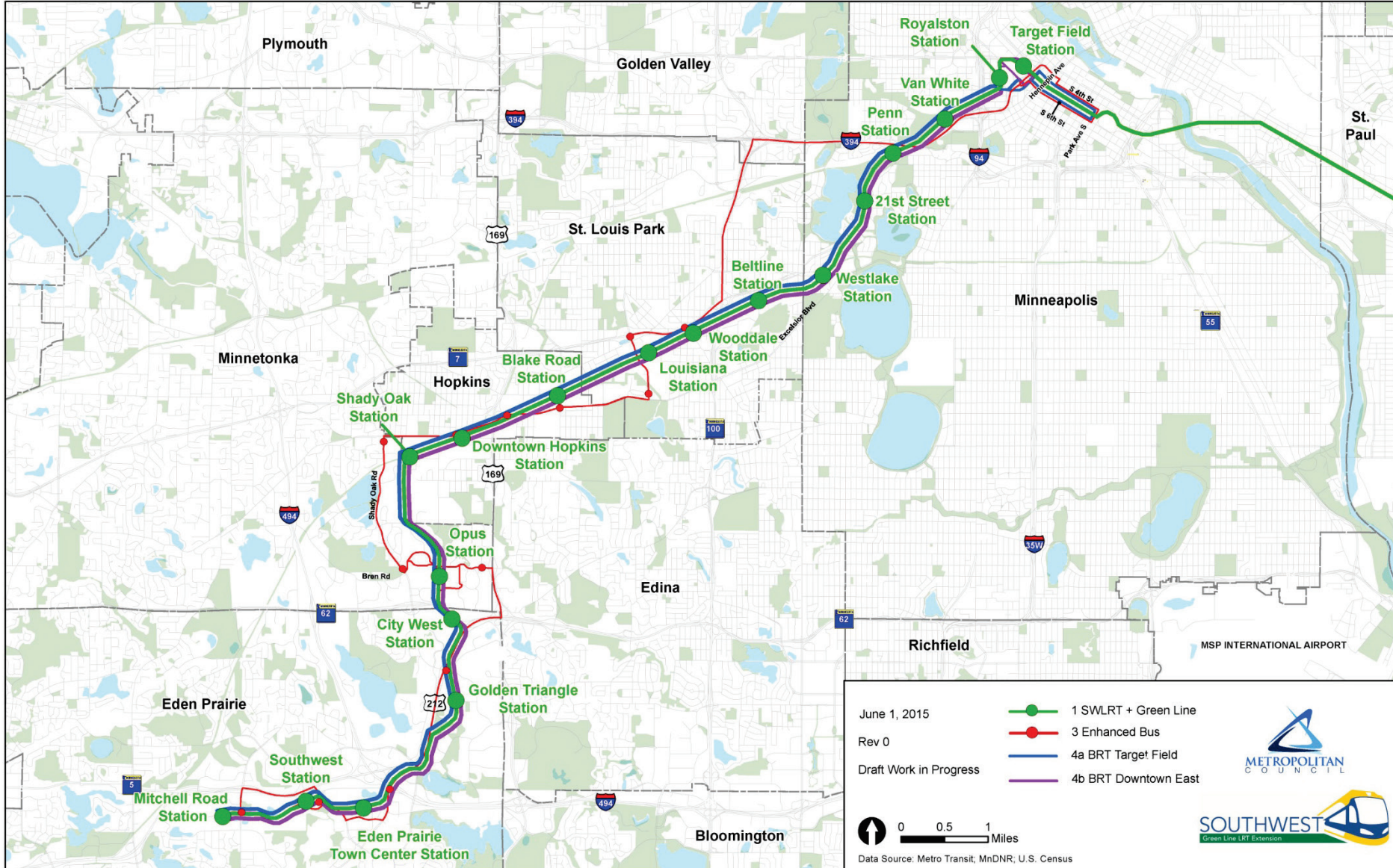
- Construction cost estimate is developed to an adequate level of detail with all major elements of the project accounted for
- Cost estimate's level of accuracy is appropriate for this phase of project development, and is within range of cost for similar LRT projects
- Elements of market risk remain in unit price and quantity cost estimate in areas of bridges, tunnels and retaining walls

Transit Options Review

Transit Options Review: Methodology

- Compared corridor transit options including:
 - Light Rail Transit (LRT)
 - No Build (No significant capital investment in transit)
 - Enhanced Bus
 - Bus Rapid Transit (BRT)
- Reviewed transit options from previous analysis with updated data using the following metrics
 - Cost
 - Ridership
 - Travel time and reliability
 - Economic development

Transit Options Review: Route by Mode



Transit Options Review: Assumptions

Evaluation Measure	1 LRT: Mitchell - Target Field	2 No-Build	3 Enhanced Bus: Mitchell – DT East	4a BRT: Mitchell - Target Field	4b BRT: Mitchell - DT East
Length (miles)	15.7	N/A	21.1	16.7	18.2
Stations/Stops	17 new	N/A	19 new	18 new	28 new
Park and Ride	3,800 new	N/A	2,000	3,800 new	
Frequency: Peak	10 min.	N/A	10 min. E. of Shady Oak 20 min. W. of Shady Oak	10 min.	
Frequency: Off Peak	20 min.	N/A	15 min. E. of Shady Oak 30 min. W. of Shady Oak	20 min.	
Guideway	Exclusive	N/A		Exclusive for 15 miles	
Other	Connecting bus service	Background regional bus service growth	Enhanced shelters, Ticket vending machines, signal priority	Connecting bus service	

Summary

	Strengths	Weaknesses
LRT	<ul style="list-style-type: none"> Shortest transit travel time Highest ridership Highest reduction to annual VMT 	<ul style="list-style-type: none"> Highest capital cost Highest annual operational costs
No Build	<ul style="list-style-type: none"> No capital cost or increase in annual operating costs 	<ul style="list-style-type: none"> No change in transit improvement, VMT
Enhanced Bus	<ul style="list-style-type: none"> Lowest capital Lowest annual operating costs 	<ul style="list-style-type: none"> Longest travel time Lowest ridership Lowest increase to access for transit dependent riders Least reduction to annual VMT
BRT	<ul style="list-style-type: none"> Slightly lower capital cost than LRT Annual operating cost comparable to Enhance Bus option Higher ridership than Enhanced Bus 	<ul style="list-style-type: none"> Half the ridership of LRT 39%-43% of LRT congestion relief Schedule impacts due to restarting New Starts, Environmental and LPA processes

Potential Cost Reduction Evaluation

Cost Reduction Coordination

- Compiled initial list of potential cost reduction items
 - Met with project partner staff to review list on May 11, 15, 18
 - Added items based on stakeholder input
 - Presented to policy makers on May 20
 - Presented to CAC on May 26, June 9 and BAC on May 27
- Developed initial potential cost reduction scenarios
 - Discussed with project partner staff on May 27, June 1
 - Presented to policy makers on June 3
- Refined scenarios ending at Eden Prairie Town Center
 - Reviewed and discussed with project partner staff on June 8 and 15 as well as city specific meetings

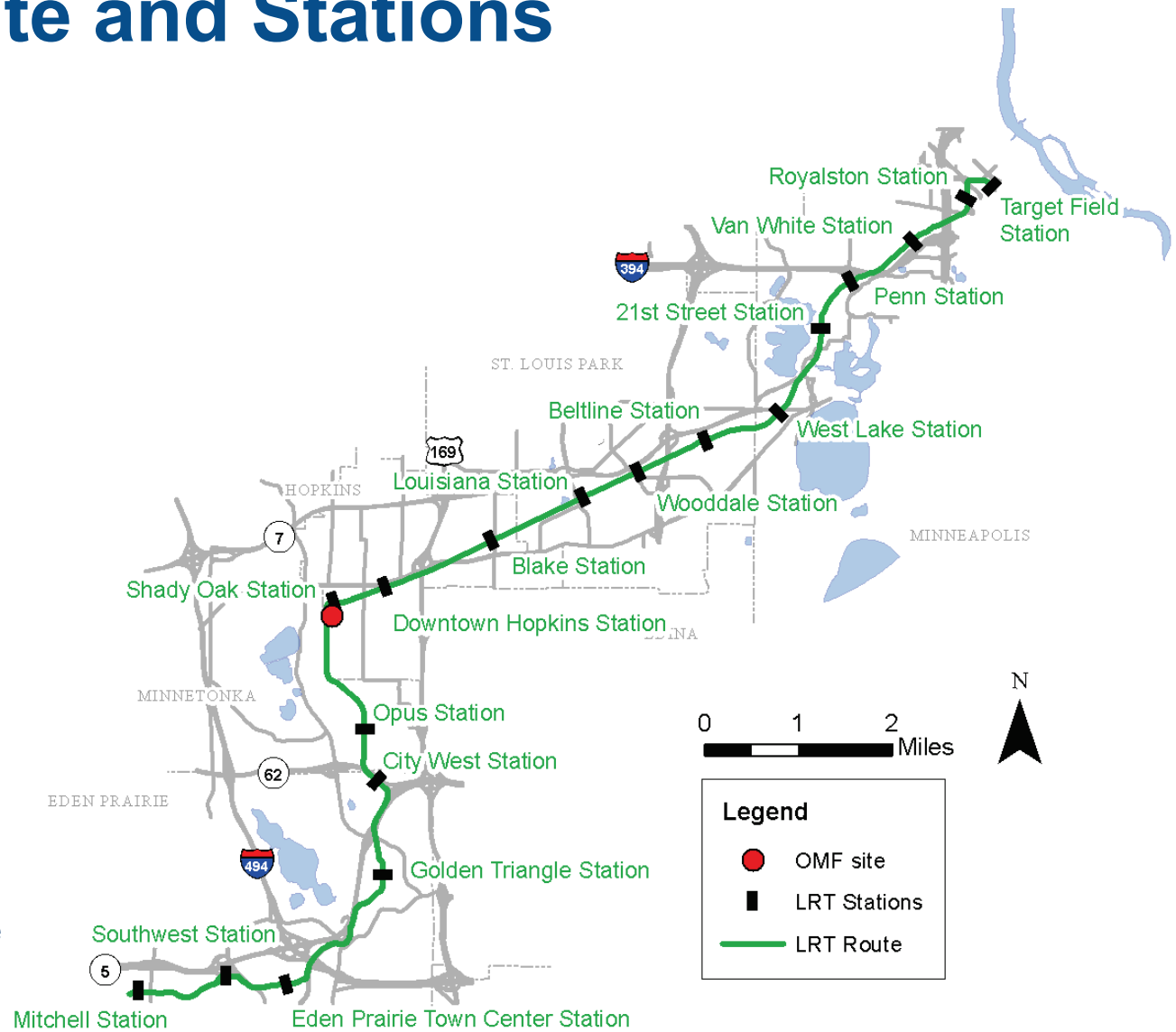
Methodology

- Grouped potential cost reductions
 - Corridor-wide such as reducing all park and rides to 2020 forecasted demand and reducing landscaping, public art
 - Operations such as changes to the OMF
 - Stakeholder such as deleting park and rides or other features within a specific city
 - Western end of the line options
- Determined range of cost savings for each item
- Based on each of the western end of the line options, determined reduction range for stakeholder scope items

Criteria for Evaluating Cost Reductions

- Must identify cost reductions totaling at least \$341M to keep the project budget at \$1.65B
- Must have forecasted average weekday ridership of 29,000 to 30,000
- Must be a shared sacrifice by all communities along the line

SWLRT Route and Stations



* The environmental review of the project is ongoing and all of the project details remain subject to change throughout that process.

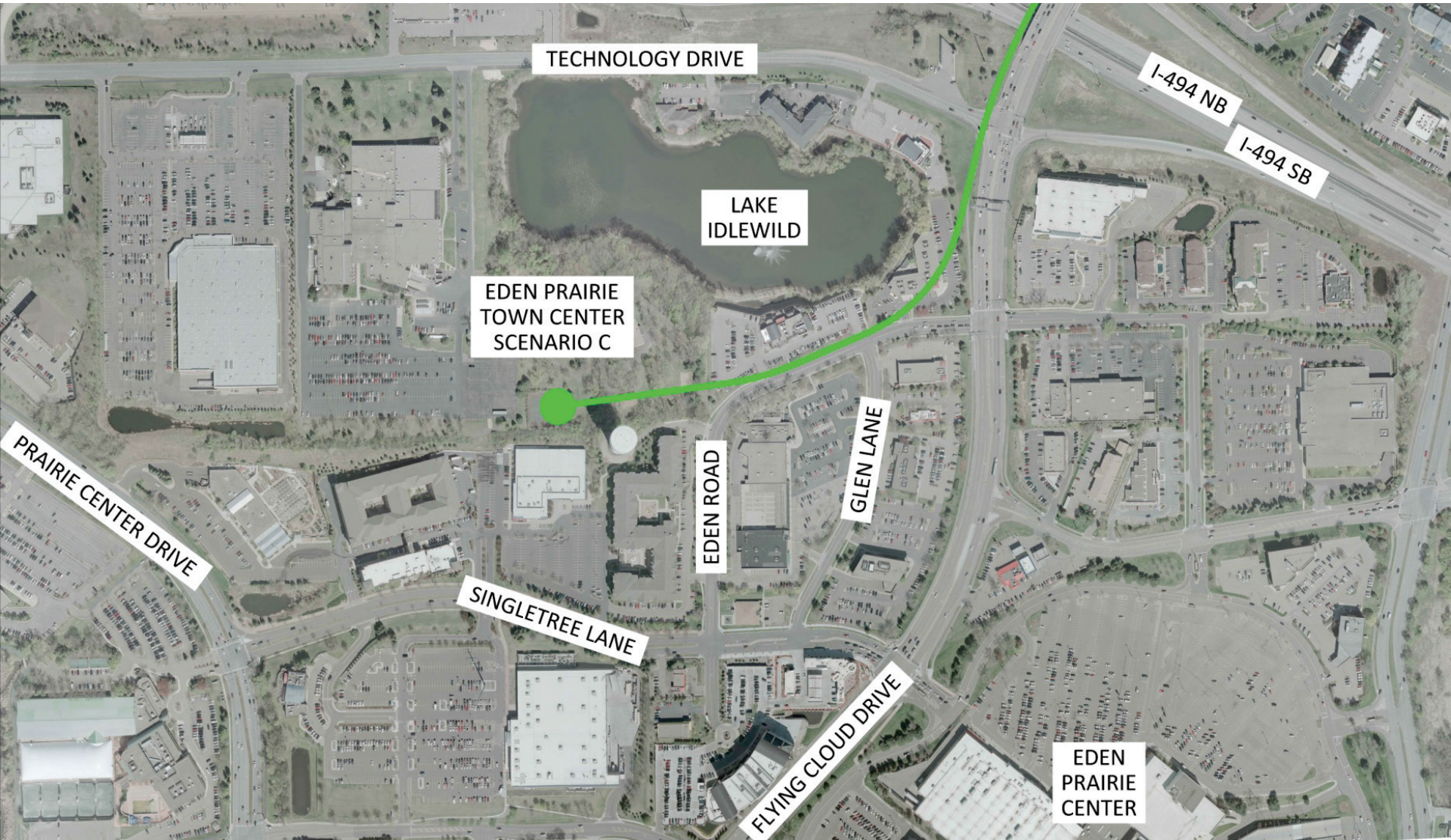
Scenario A: End at Southwest Station

Scope (in \$ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	\$33	\$41
Operations	\$11	\$14
Stakeholder	\$146	\$167
Western End at Southwest Station	\$120	\$125
Total Reduction	\$310	\$347
May 20 CMAQ Award – Beltline PnR	\$9	\$9
Remaining Reduction Needed to Achieve \$341M	\$22	(\$15)

Scenario B: End at Golden Triangle Station

Scope (in \$ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	\$0	\$0
Operations	\$9	\$11
Stakeholder	\$0	\$0
Western End at Golden Triangle Station	\$375	\$380
Total Reduction	\$384	\$391
May 20 CMAQ Award – Beltline PnR	\$9	\$9
Remaining Reduction Needed to Achieve \$341M	(\$52)	(\$59)

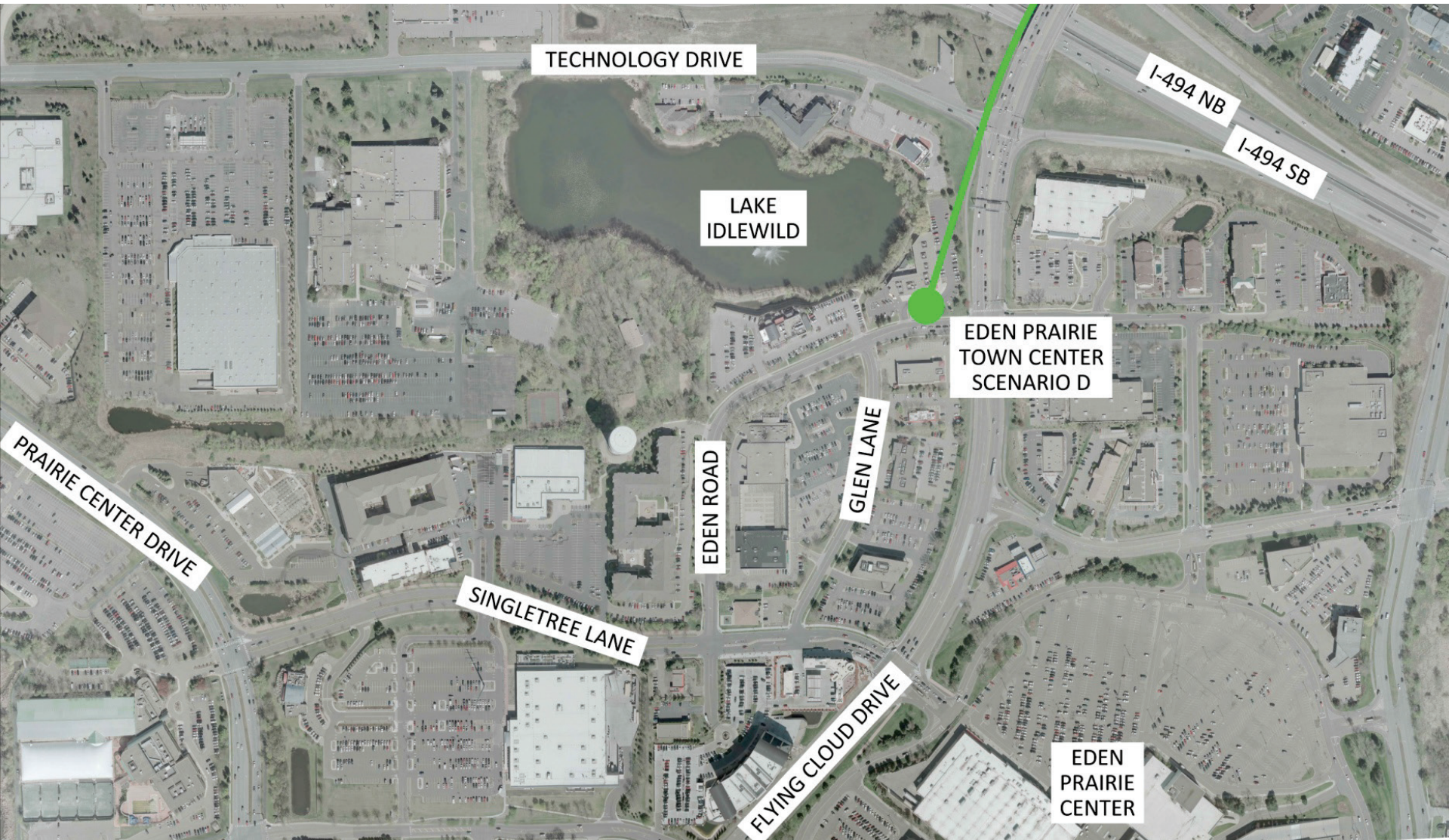
Scenario C: End at Town Center Station



Scenario C: End at Town Center Station

Scope (in \$ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	\$33	\$41
Operations	\$11	\$14
Stakeholder		
Western End at Town Center Station	\$190	\$195
Total Reduction	\$234	\$250
May 20 CMAQ Award – Beltline PnR	\$9	\$9
Remaining Reduction Needed to Achieve \$341M	\$98	\$82

Scenario D: End at Town Center Station At Flying Cloud Drive



Scenario D: End at Town Center Station At Flying Cloud Drive

Scope (in \$ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	\$33	\$41
Operations	\$11	\$14
Stakeholder		
Western End at Town Center Station at Flying Cloud Drive	\$230	\$235
Total Reduction	\$274	\$290
May 20 CMAQ Award – Beltline PnR	\$9	\$9
Remaining Reduction Needed to Achieve \$341M	\$58	\$42

Stakeholder Options for Consideration

- Reduce LRV fleet and OMF vehicle storage
- Delete Park and Rides at: Beltline, Louisiana, Blake, DT Hopkins, Shady Oak, Opus, City West and/or Golden Triangle
- Delete Joint Development at Blake
- Defer Royalston, Penn and/or 21st Station
- Delete Royalston, Penn and/or 21st Station and associated pedestrian improvements

Stakeholder Options for Consideration

- Delete vertical circulation West Lake
- Delete trail underpass under freight tracks at Louisiana
- Delete trail/ped bridge crossing of LRT and freight east of Beltline
- Delete North Cedar Lake Trail bridge crossing of LRT and freight west of Penn
- Remove 2 pedestrian underpasses at Opus

Today's Discussion

- Consider cost reduction scenarios in relation to scoping principles

Next Steps

Project Options Work Plan Next Steps

- June 24: Corridor Management Committee
 - Deliberation on potential cost reduction scenarios
 - Technical capacity review
- June 24: Met Council
 - Deliberation on potential cost reduction scenarios
 - Technical capacity review
- July 1: Corridor Management Committee
 - Recommendation on project scope and budget
- July 1: Met Council Committee of the Whole
 - Recommendation on project scope and budget
- July 8: Met Council
 - Action on project scope and budget

Member and Committee Reports / Public Forum

Next Meeting

- Wednesday, July 29, 2015 at 7:30 AM

More Information

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