SOUTHWEST

Green Line LRT Extension

Metropolitan Council

June 10, 2015

METROPOLITAN COUNCIL | Metro Transit | FTA | Counties Transit Improvement Board | Minnesota Department of Transportation | Hennepin

EDEN PRAIRIE | MINNETONKA | EDINA | HOPKINS | ST. LOUIS PARK | MINNEAPOLIS

Today's Topics

- Potential Cost Reduction Evaluation
- Construction Cost Estimate Review
- Transit Options Review
- Project Options Work Plan

  Deliverables Schedule

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 (2040) of 29,000 to 30,000
- Must be a shared sacrifice by all communities along the line

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 and 18
  - Added items based on stakeholder input
  - Analyzed items based on criteria
  - Presented to policy makers on May 20
  - Presented to CAC on May 26 and BAC on May 27
- Developed initial potential cost reduction scenarios
  - Met with project partner staff to discuss potential cost reduction scenarios on May 27 and June 1

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

Scenario A: End at Southwest Station

Scope (in $ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	$23	$31
Operations	$11	$14
Stakeholder	$146	$167
Western End at Southwest Station	$120	$125
Total Reduction	**$300**	**$337**
May 20 CMAQ Award – Beltline PnR	$9	$9
Remaining Reduction Needed to Achieve $341M	$32	($5)

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

Scope (in $ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	$23	$31
Operations	$11	$14
Stakeholder		
Western End at Town Center Station	$190	$195
Total Reduction	**$224**	**$240**
May 20 CMAQ Award – Beltline PnR	$9	$9
Remaining Reduction Needed to Achieve $341M	$108	$92

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

Scope (in $ Millions)	Capital Cost Savings Range	
	Low	High
Corridor-Wide	$23	$31
Operations	$11	$14
Stakeholder		
Western End at Town Center Station at Flying Cloud Drive	$230	$235
Total Reduction	$264	$280
May 20 CMAQ Award – Beltline PnR	$9	$9
Remaining Reduction Needed to Achieve $341M	$68	$52

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 east of Penn
- Remove 2 pedestrian underpasses at Opus

What We Heard at 6/3 CMC

- Little support for scenarios A or B.
  - A: Ending at Southwest Station required too many cuts along rest of line to maintain a viable level of ridership
  - B: Ending at Golden Triangle considered “draconian;” requires Eden Prairie to bear brunt of cuts
- Discussion centered around scenarios C and D which end at Town Center
- Commitment to ensuring cuts are equitable

Next Steps

- SPO and project partner staff complete evaluation of potential cost reduction scenarios based on CMC feedback and metrics from 5/6 CMC meeting
  - Ridership
  - Cost effectiveness
  - Other FTA project justification measures
  - Job accessibility
  - Development opportunity
- SPO staff present potential cost reduction scenarios for CMC and Met Council deliberation at their June 24 meetings

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

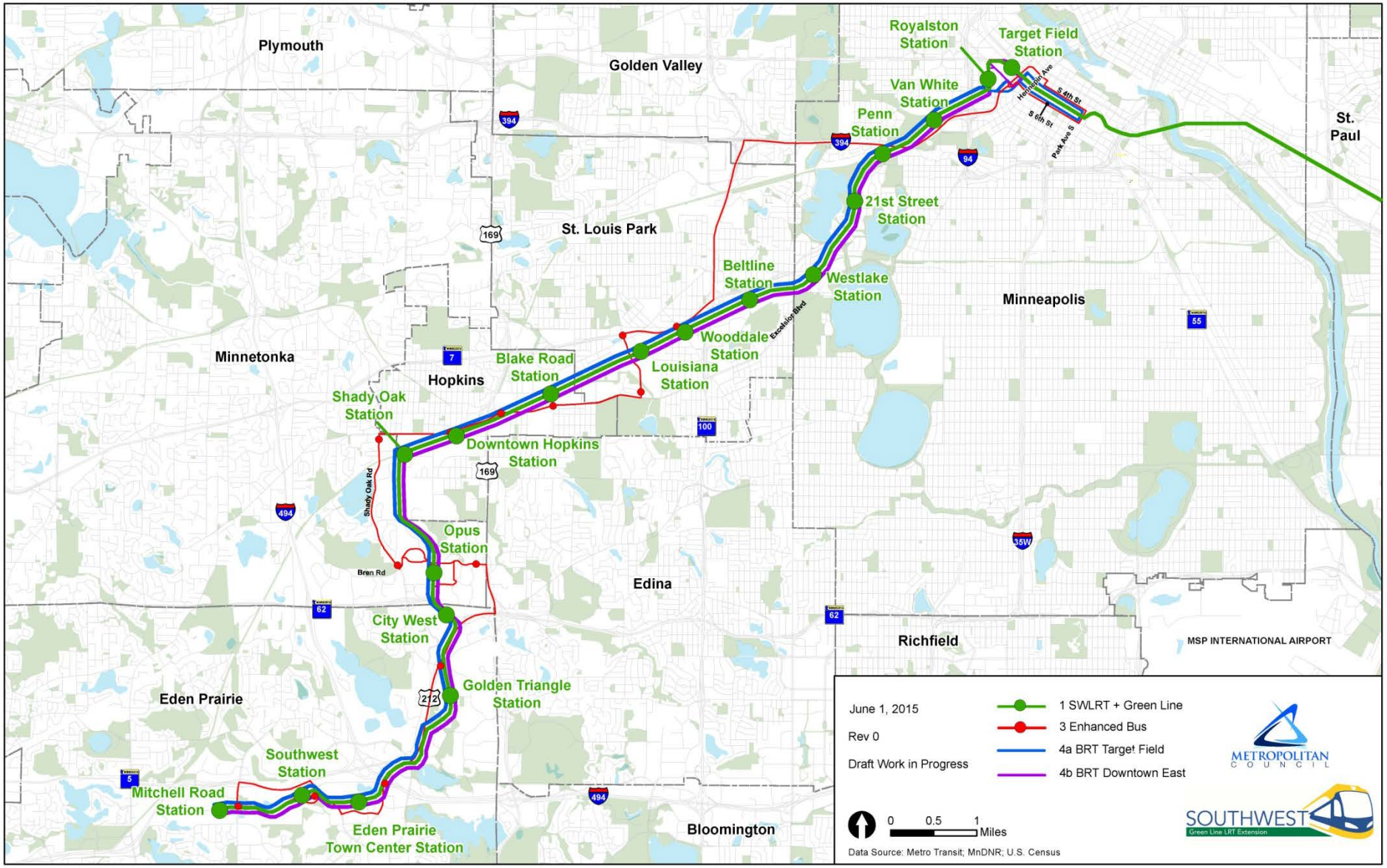
- Construction cost estimate is developed to an adequate level of detail with all major elements of the project accounted for
- Cost estimate's level of accuracy is appropriate for this phase of project development, and is within range of cost for similar LRT projects
- Elements of market risk remain 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.		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	Shortest transit travel time Highest ridership Highest reduction to annual VMT	Highest capital cost Highest annual operational costs
No Build	No capital cost or increase in annual operating costs	No change in transit improvement, VMT
Enhanced Bus	Lowest capital Lowest annual operating costs	Longest travel time Lowest ridership Lowest increase to access for transit dependent riders Least reduction to annual VMT
BRT	Slightly lower capital cost than LRT Annual operating cost comparable to Enhance Bus option Higher ridership than Enhanced Bus	Half the ridership of LRT 39%-43% of LRT congestion relief Schedule impacts due to restarting New Starts, Environmental and LPA processes

Project Options Work Plan Deliverables Schedule

Advisory Committees

- Community Advisory Committee
  - May 26: Potential cost reductions
  - June 9: More discussion on potential cost reductions
  - June 30: Transit options review, construction cost estimate review and potential cost reductions
- Business Advisory Committee
  - May 27: Potential cost reductions
  - June 17: Transit options review, construction cost estimate review and potential cost reductions

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

More Information

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