

SOUTHWEST

Green Line LRT Extension



Corridor Management Committee

June 3, 2015



Today's Topics

- Response to Questions from May 20 CMC meeting
- Potential Cost Reduction Evaluation
- Construction Cost Estimate Review
- Transit Options Review
- Project Options Work Plan Deliverables Schedule



SDEIS Public Hearings: Dates/Locations

- June 16: Hopkins Center for the Arts
 - 1111 Mainstreet, Hopkins
 - Open House: 5:00 PM
 - Public Hearing: 6:00 PM
- June 17: Eden Prairie City Hall
 - 8080 Mitchell Rd, Eden Prairie
 - Open House: 5:00 PM
 - Public Hearing: 6:00 PM
- June 18: Dunwoody College of Technology
 - 818 Dunwoody Boulevard, Minneapolis
 - Open House: 5:00 PM
 - Public Hearing: 6:00 PM

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

Response to Questions from May 20 CMC meeting

Response to Questions from May 20

- What is break down of ridership impact? Are passengers getting off at a station for jobs, services or something else?

Of the approximately **36,200** average 2040 weekday ridership:

- **19,400 (54%)** occurs during peak periods
- **16,800 (46%)** occurs during off-peak periods

- **24,900 (69%)** is for employment purposes
- **11,300 (31%)** is for other trip purposes

Response to Questions from May 20

- What is the total of the deferred or deleted potential cost reductions?

| | Cost Reduction | Cost to Build Post Project |
|----------|----------------|----------------------------|
| Deferred | \$23-29M | \$27-36M |
| Deleted | \$146-167M | \$168-224M |

- Can you add an option with additional reduction in vehicles and show the implications?
 - Metro Transit conducting operational impact analysis of reducing fleet below 30 LRVs
- What is the transfer point for 21st St. Station?
 - Connection with Rte 25 is adjacent to station on 22nd St.

Response to Questions from May 20

What are the bus transfer points for Royalston Station?



Stops for Local Bus
and Future C & D
Lines:



Future SWLRT
Royalston Station:



Revising ridership
model to connect ABRT
lines with a 2 min. walk
to Royalston Station

Response to Questions from May 20

- How many businesses are impacted by the OMF?
 - Relocating 6 businesses
- Can we reduce the 3% finance charge assumption
 - Est. \$65M for future financing is part of the financial plan that has been reviewed and accepted by FTA
 - We have reached out to FTA to inquire if the reduction to 2% is feasible at this stage of Project Development and are awaiting a response

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) |

Summary

- Scenario A: End at Southwest Station
 - Includes all potential cost reductions including all park and rides, 3 stations in Eden Prairie and 3 stations in Minneapolis
 - Does not reduce overall project budget by \$341M
 - Not likely to be viable for FTA New Starts funding
- Scenario B: End at Golden Triangle Station
 - Reduces project budget by more than \$341M
 - Does not geographically distribute cost reductions

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
- Reduce OMF vehicle storage
- Delete Park and Ride: Beltline
- Delete Park and Ride: Louisiana
- Delete Park and Ride: Blake
- Delete Park and Ride: DT Hopkins
- Delete Park and Ride: Shady Oak
- Delete Park and Ride: Opus
- Delete Park and Ride: City West
- Delete Park and Ride: Golden Triangle
- Delete Joint Development at Blake

Stakeholder Options for Consideration

- Defer Royalston Station
- Delete Royalston, associated pedestrian improvements, 7th St bikeway
- Defer Penn Station
- Delete Penn Station, associated pedestrian improvements
- Defer 21st Station
- Delete 21st Station, associated pedestrian improvements

Stakeholder Options for Consideration

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

Today's Discussion

- Consider cost reduction scenarios in relation to scoping principles
- Provide direction to SPO staff to complete more detailed evaluation of potential cost reduction scenarios

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 deliberation at June 24 meeting

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

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

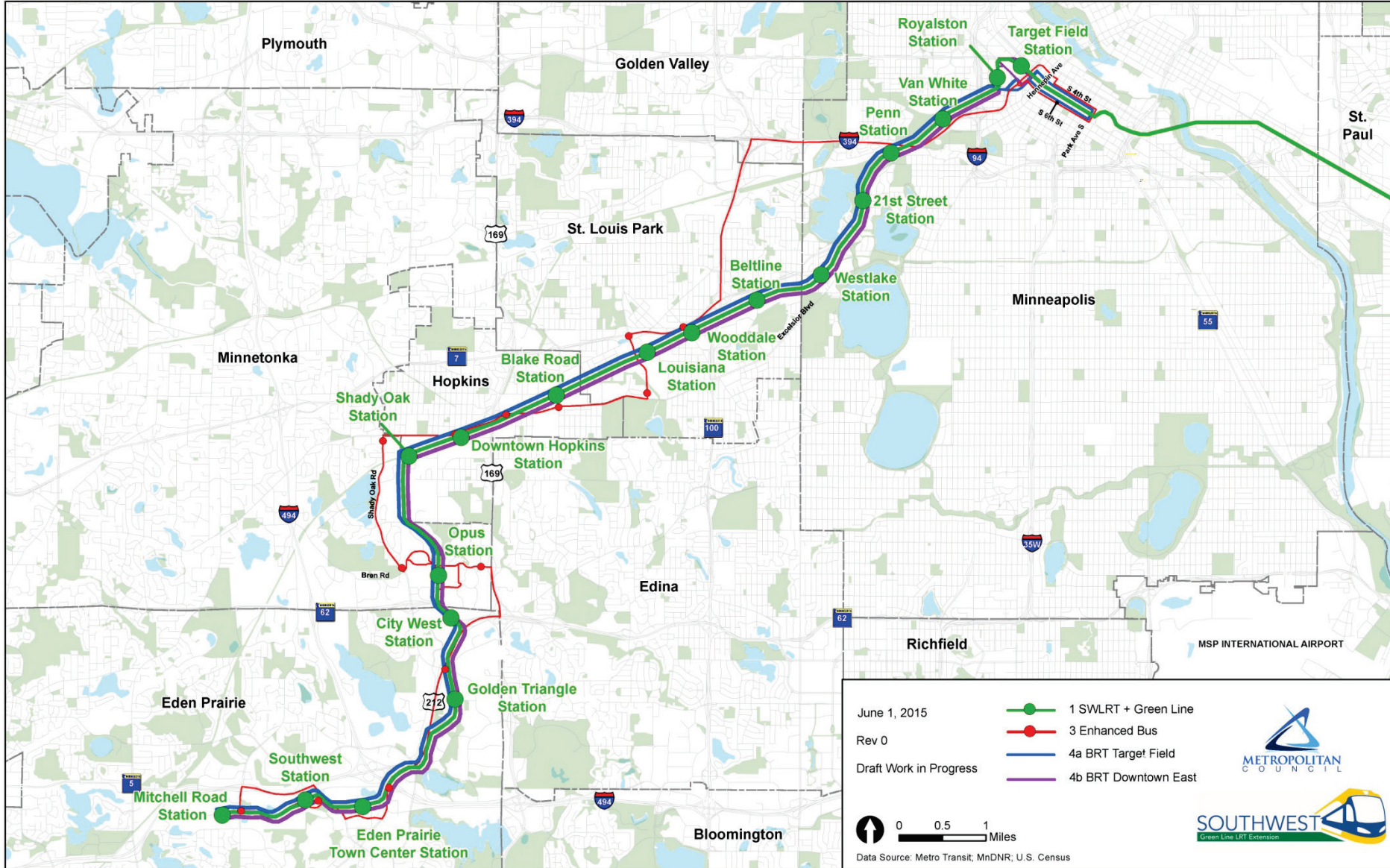
- Construction cost estimate is developed to an adequate level of detail with all major elements of the project accounted for
- Cost estimate's level of accuracy is appropriate for this phase of project development, and is within range of cost for similar LRT projects
- Elements of market risk remain 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 |

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
- 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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