

SOUTHWEST

Green Line LRT Extension



# Committee of the Whole

May 6, 2015



# Today's Topics

- Project Budget and Schedule Update
- Project Options Work Plan
- Upcoming Meeting Schedule



# Project Budget and Schedule Update

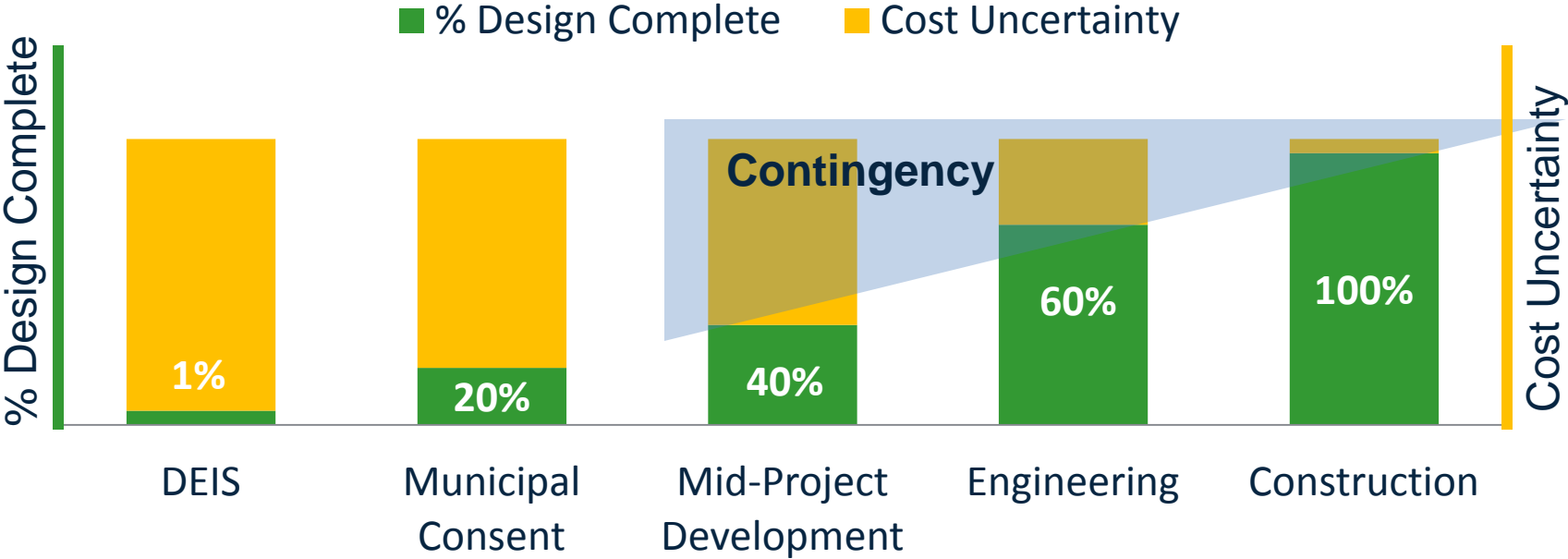
# Project Updates:

- Budget: Updated cost estimate above \$1.653 billion
- Schedule: Updated revenue service beyond 2019

# Questions to be Addressed:

- What are the primary reasons for the cost estimate increase?
- What are the primary reasons for the schedule delay?

# Cost Uncertainty By Project Development Phase



# Project Delivery Process

	DEIS	Municipal Consent	Preliminary Engineering	Engineering	Construction Bid Packages
% Design	1%	15-20%	30%	60%	90-100%
Level of Design Detail	General station locations, route and cost allowances	Station footprints, general track location and grade and facilities	Stations, track, facilities and structure dimensions	Station types, track, facilities and structure detail  Construction methods	Color and texture of facilities  Electrical and communications systems
Survey Work	None	Phase I: Desk review and field observations	Phase II: Technical field work including surveying, soil sampling, wetland delineations, archaeological		Archaeological recovery, mitigation measures

# Updated Project Budget Overview

- Updated cost estimate: \$1.994 billion
- Contributing factors include:
  - Refined design:
    - Environmental requirements (wetlands, floodplains)
    - Engineering requirements (soft soil conditions and contamination)
    - Operational and safety requirements (light rail, freight rail)
  - Identified additional property acquisitions and relocations
  - Added retaining walls, bridges and connecting roads
  - Delayed revenue service date



# Updated Project Budget

Budget Category (in \$ millions, Year of Expenditure)	Approved Budget 7/2014	Updated Est. 4/2015	Change
Guideway and Track	\$418	\$462	\$44
Stations, stops, terminals	\$82	\$116	\$34
Support facilities	\$62	\$104	\$42
Sitework, special conditions	\$146	\$190	\$44
Systems	\$173	\$216	\$43
<b>Construction Subtotal</b>	<b>\$881</b>	<b>\$1,088</b>	<b>\$207</b>
ROW, land, existing improvements	\$176	\$209	\$33
Vehicles	\$127	\$145	\$18
Soft Costs <sup>1</sup>	\$469	\$552	\$83
<b>Total Project Costs</b>	<b>\$1,653</b>	<b>\$1,994</b>	<b>\$341</b>

<sup>1</sup> Professional Services , Unallocated Contingency and Finance Charges



# Primary Cost Drivers: Guideway and Track

- Over 80% more required retaining wall area and associated piles, excavation
- Kenilworth tunnel foundation, waterproofing, and systems/ventilation
- Different track design on longer bridges and land bridges
- Required special trackwork



# Primary Cost Drivers: Stations

- Joint Development at Blake Station
  - Non CTIB/HCRRA funded
- Required indoor LRT and bus passenger waiting area at SouthWest Station
- Required additional geotechnical mitigation at SouthWest Station
- Increased costs for stairs and elevators at West Lake, Penn and Van White stations

# Primary Cost Drivers: OMF

- Increased building size to accommodate refined maintenance requirements and additional light rail vehicles
- Required additional geotechnical mitigation
- Identified additional hazardous materials and contaminated soils by Phase II Environmental Site Assessment
- Increased cost of required maintenance equipment
- Required vapor mitigation system
- Required culvert to control surface water movement across site
- Required embedded track for access roadway

# Primary Cost Drivers: Site Work

- Required additional vehicle and freight traffic control during construction
- Refined drainage to meet watershed requirements
- Required additional roadway work to address LRT impacts
- Refined wetland mitigation to meet local requirements
- Required bridge pier protection under I-394 and I-94 adjacent LRT
- Identified additional hazardous materials/contaminated soils by Phase II Environmental Site Assessments
- Required pile supported boardwalk across Purgatory Creek

# Primary Cost Drivers: Systems

- Refined operational requirements for train control/ductbank/interlocking
- Added 5 gated LRT crossings
  - 4 on Technology Drive and 1 on Eden Road
- Refined design of 5 shared LRT/freight crossings to meet FRA requirements
- Added one Traction Power Substation
- Increased capacity at existing Rail Control Center for expanded operations

# Primary Cost Drivers: Non Construction

- Established construction limits; identified additional 11 acres of property acquisition
  - 126 to 137 acres
- Confirmed building occupancy; increased relocations by 99
  - 47 to 146 relocations (43 are mini-storage units)
- Added 3 light rail vehicles to meet operational requirements
  - 29 to 32 vehicles
- Updated professional services
- Delayed revenue service date

# Updated Project Schedule Overview

- Revised revenue service date 2020
- Contributing factors include:
  - Additional studies followed by more public meetings on study results
  - Extension of municipal consent process
  - Additional time to prepare the SDEIS to incorporate changes as a result of additional studies, tests and comments on municipal consent plans
  - Addition of more detailed park impact analysis into the SDEIS



# Updated Project Schedule

	Schedule as of 7/2014	Schedule as of 4/2015
Publish SDEIS	Nov 2014	May 2015
Publish FEIS and Issue ROD	Q4 2015	Q1/Q2 2016
Entry into Engineering	Q4 2015	Q2 2016
Full Funding Grant Agmt.	Q3 2016	Q4 2016
Heavy Construction	2016-2018	2017-2019
Revenue Service Date	2019	2020

# Project Options Work Plan

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- Conduct transit options review
- Complete construction cost estimation review
- Conduct technical capacity review
- Identify potential cost reductions

# Transit Options Review

- Description

- Compare transit options including:
  - No Build (status quo)
  - Enhanced Bus
  - Bus Rapid Transit (BRT)
  - Light Rail Transit (LRT)
- Review these transit options from previous analysis but supplemented with updated data

# Transit Options Review

- Metrics
  - Cost
  - Ridership
  - Travel time and reliability
  - Access to jobs
  - Economic development
- Tentative Schedule
  - Presentation to CMC: **June 3**
  - CMC deliberation: **June 24**

# Construction Cost Estimation Review

- Description

- Peer Review Consultant (PRC) performing evaluation of current construction cost estimate
- Review quantities and unit costs compared with industry standards and PRC's professional experience implementing similar LRT projects

- Tentative Schedule

- Presentation to CMC: **June 3**

# Technical Capacity Review

- Description
  - Independent review of the Southwest Project Office management structure and project management systems
- Tentative Schedule
  - Review team convenes: **May**
  - Results: **June**
  - Presentation to CMC: **June 24**



# Identify Potential Cost Reductions

- Description
  - Invite project partners to offer cost reduction ideas
  - Continue review of design plans for cost reduction opportunities
  - Evaluate proposed refinements and associated cost savings to share with project partners and Met Council for consideration
  
- Tentative Schedule
  - Identify cost reductions: **In process**
  - Present evaluation to CMC and Met Council: **May 20**

# Cost Reduction Approach

- Identify potential cost reductions through design refinement of current scope
- Seek further cost reduction ideas from project partners
- Evaluate all potential cost reductions against SWLRT Scoping Principles

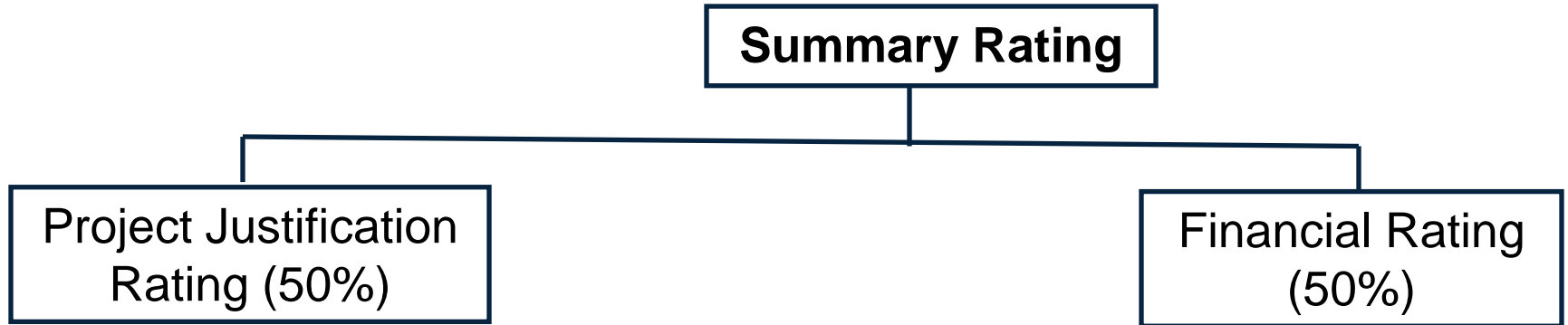
# SWLRT Scoping Principles

- March 2013: CMC recommended and Met Council adopted SWLRT Scoping Principles
- Purpose
  - Provide clear and transparent process for making project scope refinements
  - Use to evaluate alternatives
  - Make informed decisions on project scope refinements

# SWLRT Scoping Principles

- Follow SWLRT Design Criteria, including criteria for safety & security
- Positively impact (increase) FTA project rating, ridership, equity, environmental benefits and multimodal connections
- Minimal or no adverse impact to project schedule, capital cost and operating cost
- Actively engage and encourage input from interested and impacted stakeholders

# New Starts Rating Components



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## Summary Rating

Project Justification  
Rating (50%)

Financial Rating  
(50%)

Economic  
Development  
(16.66%)

Mobility  
Improvements  
(16.66%)

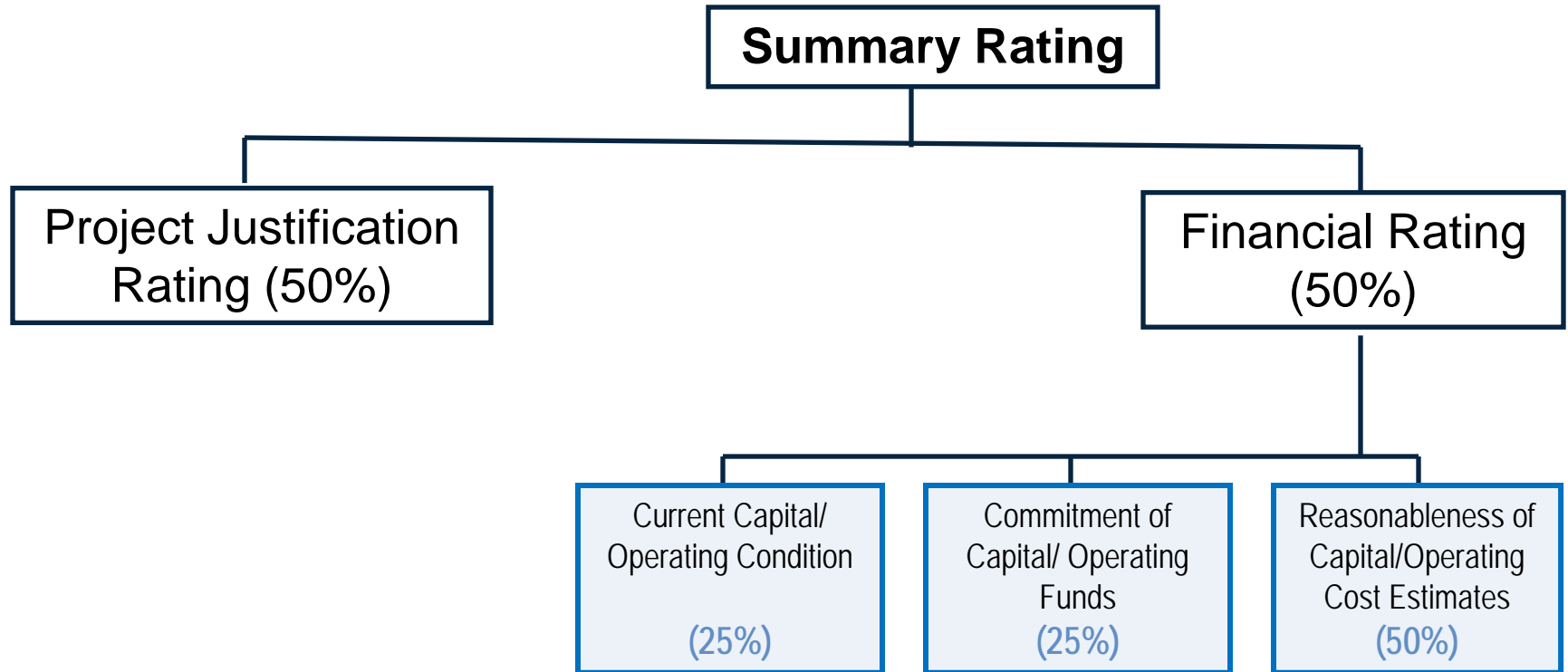
Environmental  
Benefits  
(16.66%)

Congestion  
Relief  
(16.66%)

Cost  
Effectiveness  
(16.66%)

Land Use  
(16.66%)

# New Starts Rating Components





# New Starts Project Rating

	SWLRT (Nov 2014)
Project Justification Rating	Medium
Local Commitment Financial Rating	High
<b>Overall Project Rating</b>	<b>Medium-High</b>

# New Starts Project Rating

	SWLRT (Nov 2014)
<b>Project Justification Rating</b>	<b>Medium</b>
Economic Development	Medium-High
Land Use	Medium
Cost Effectiveness	Medium
Environmental Benefits	Medium
Mobility Improvements	Medium
Operating Effectiveness	N/A
Congestion Relief	Medium
<b>Local Commitment Financial Rating</b>	<b>High</b>
Sub-Criteria #1	High
Sub-Criteria #2	High
Sub-Criteria #3	Medium-High
<b>Overall Project Rating</b>	<b>Medium-High</b>

# Sample Matrix

Scope Item	Cost Savings	Ridership Impact	Impact to New Starts Rating	Capital Cost Post Project	Add'l Environmental Study	Schedule Delay	Municipal Consent (Y/N)

# Discussion: Cost Reduction Suggestions

# Upcoming Meeting Schedule

# Corridor Management Committee

- May 20 (Special Meeting)
  - Potential cost reduction evaluation
- June 3
  - Transit options review
  - Construction cost estimate review
- June 24 (Special Meeting)
  - Technical capacity review
  - Deliberation on project scope and budget
- July 1
  - Project scope and budget recommendation

# Counties Transit Improvement Board

- May 6
  - Project schedule and budget update
  - Project options work plan
- June 17 (*Tentative*)
  - Potential cost reduction evaluation
  - Transit options review
  - Construction cost estimate review



# Hennepin County Regional Railroad Authority

- April 28 (**Complete**)
  - Project schedule and budget update
- May 19 (*Tentative*)
  - Project options work plan
- June 16 (*Tentative*)
  - Potential cost reduction evaluation
  - Transit options review
  - Construction cost estimate review

# Met Council

- May 6 Committee of the Whole
  - Project schedule and budget update
  - Project options work plan
- May 20 Committee of the Whole
  - Potential cost reduction evaluation
- July 1 Committee of the Whole
  - Technical capacity review
  - Transit options review
  - Construction cost estimate review
  - Project scope and budget recommendation
- July 8
  - Project scope and budget approval

# More Information

Online:

[www.SWLRT.org](http://www.SWLRT.org)

Email:

[SWLRT@metrotransit.org](mailto:SWLRT@metrotransit.org)

Twitter:

[www.twitter.com/southwestlrt](http://www.twitter.com/southwestlrt)

