



# Riverview Pre-Project Development Study

Technical Advisory Committee - Appendix  
February 23, 2017



# Right-of-Way

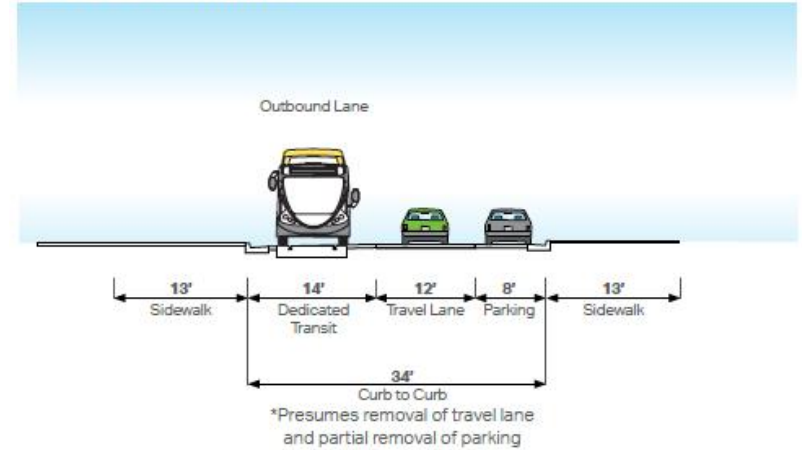
Downtown, Seven Corners, and W. 7<sup>th</sup> to Toronto St



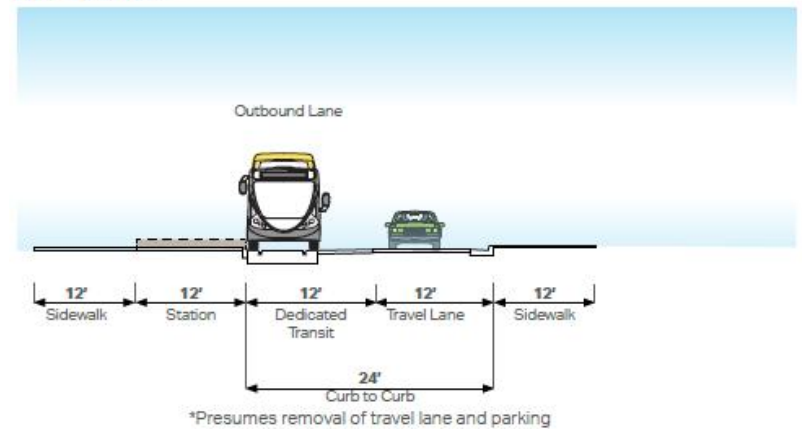
## Finding:

- All transit alternatives would fit within existing public ROW

Between Stations



At Station





# Right-of-Way

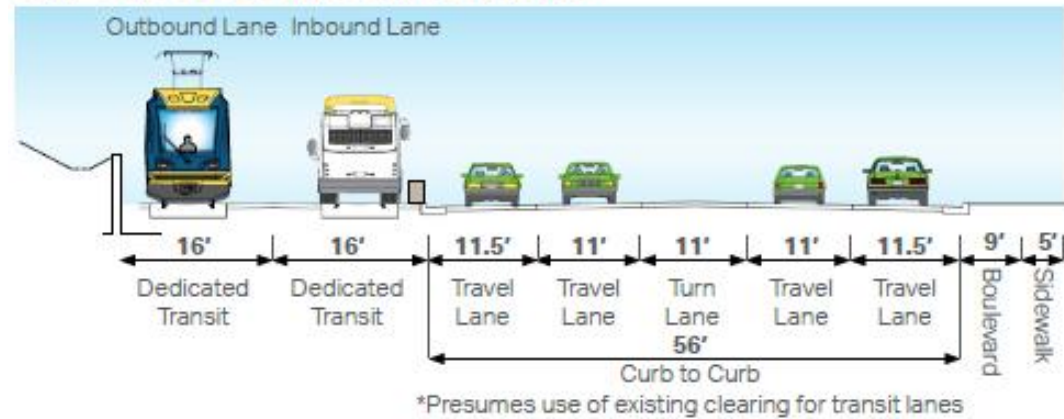
W. 7<sup>th</sup> from Toronto to St. Paul Ave



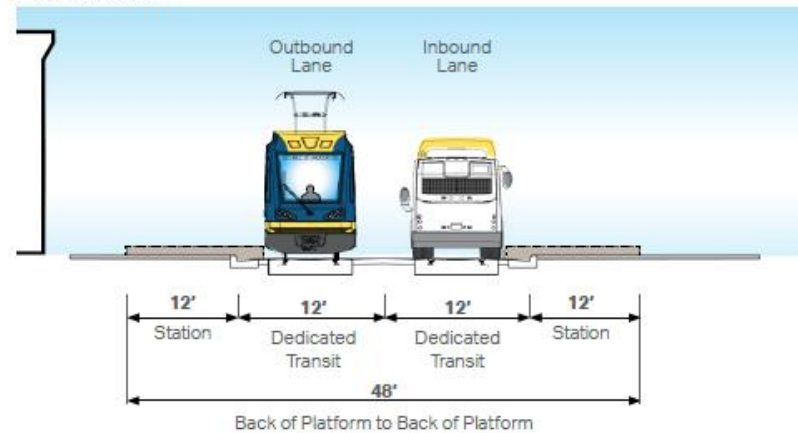
## Findings:

- Anticipated ROW impacts:
  - W. 7<sup>th</sup>, Montreal-St. Paul Ave
    - Dedicated transit could affect part of 3 parcels owned by Saint Paul

### Off-Street Between Stations



### At Station





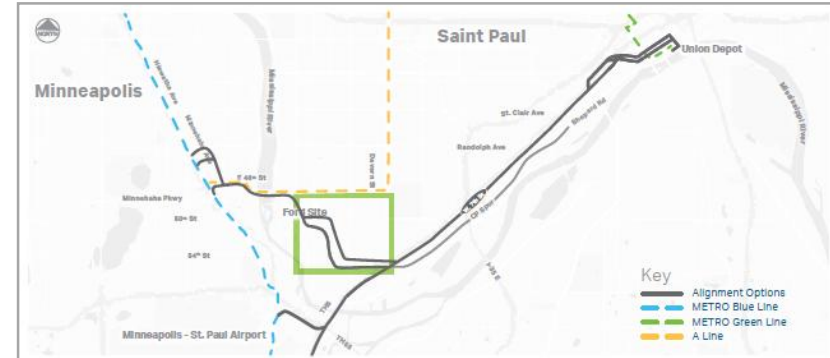
# Right-of-Way

## Ford Site



### Findings:

- CP Spur (St. Paul Ave-Ford Site) – Would entail acquisition of CP Spur ROW from private owner
- St. Paul Ave – No anticipated ROW acquisition
- Presumed transit ROW – Reserved as part of Ford Site redevelopment
  - CP rail yard south of Ford Site
  - ROW through the Ford Site





# Right-of-Way

## Hwy 5/Fort Snelling



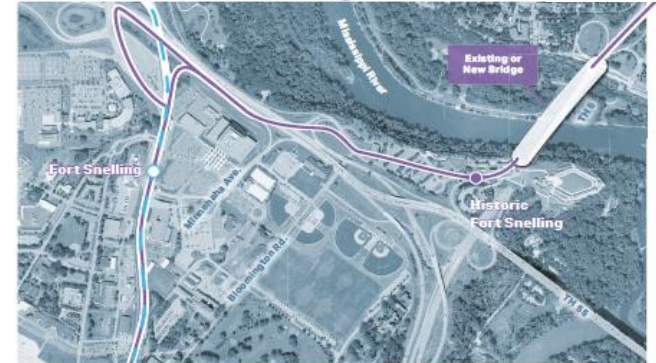
COMMUNITY

### Findings:

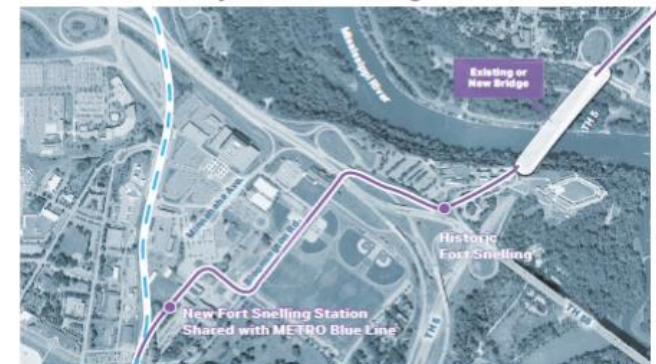
- Bus/BRT alternatives – No anticipated ROW impact
- Rail alternatives – Depending on alignment, could affect 17 parcels
  - 8 public owners
  - 8 private owners

Concept | Rail

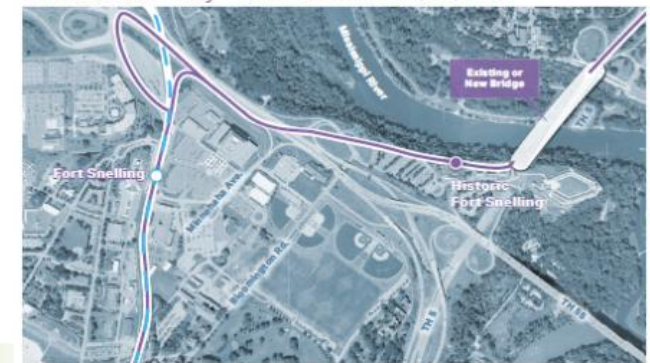
Under Historic Fort Snelling



Cross Under Hwy 55 at Bloomington Rd



Cross Over Hwy 55 Near Minnehaha Ave





# Right-of-Way

Ford Pkwy Bridge – 46<sup>th</sup> St Station



## Findings:

- Bus/BRT – None anticipated
- Rail – Would depend on refined alignment, including Blue Line tie-in (after Study)

Concept | Rail

Via 44th St



Via 45th St



Via 46th St / 50th St





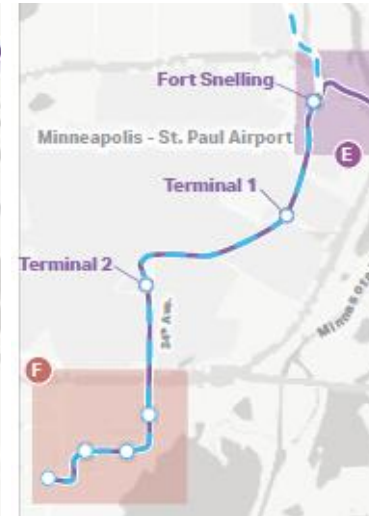
# Right-of-Way

46<sup>th</sup> St/Fort Snelling Station– Bloomington South Loop



## Findings:

- All transit alternatives would fit within existing public ROWs
  - Bus/BRT Use existing roadways
  - Rail alternatives: Tie into the Blue Line





# Visual



## Definition:

Qualitative assessment of potential visual impacts. Determine important views and then assess potential impacts. Effects and mitigation will be determined during a future environmental review.

## Ranking Methodology

	Non-sensitive areas	Sensitive areas	Important Viewsheds
Similar transit mode (rail or bus) currently operates in segment	Low	Low	Medium
New transit type operates in segment	Low	Medium	High
Requires grade-separated elements	Low	High	High

- Non-sensitive areas (e.g., industrial, airport, transportation)
- Sensitive areas (e.g., residential, parkland, historic resources)
- Important viewsheds and scenic overlooks identified using:
  - MNRRA Visual Resource Protection Plan
  - Great River Passage Master Plan
  - City and County Comprehensive Plans

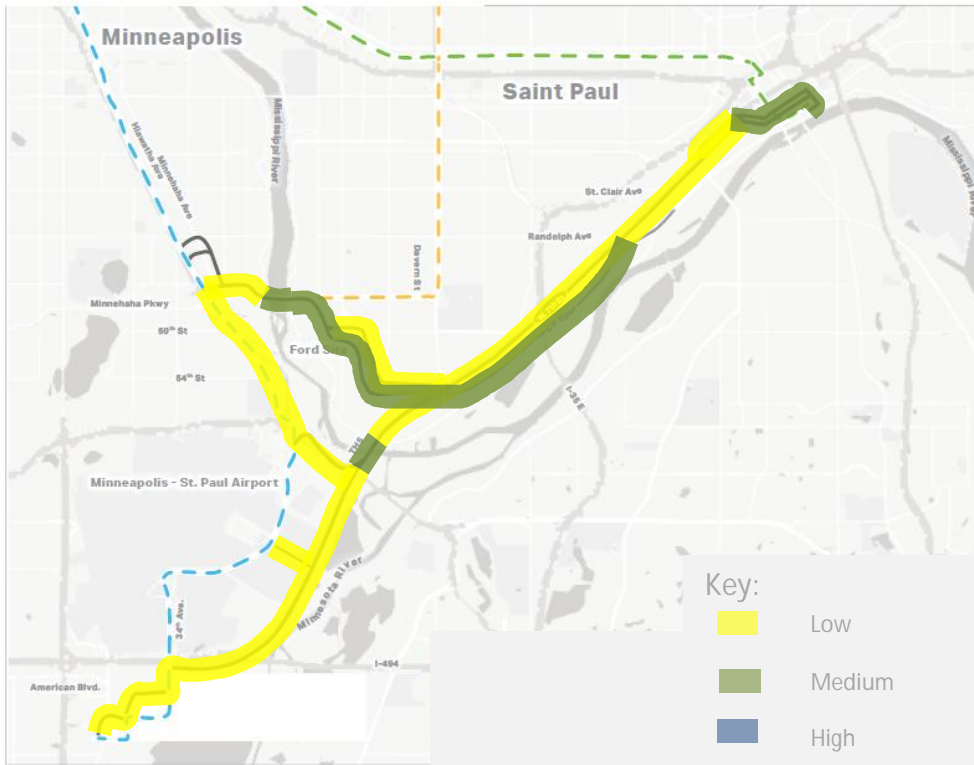




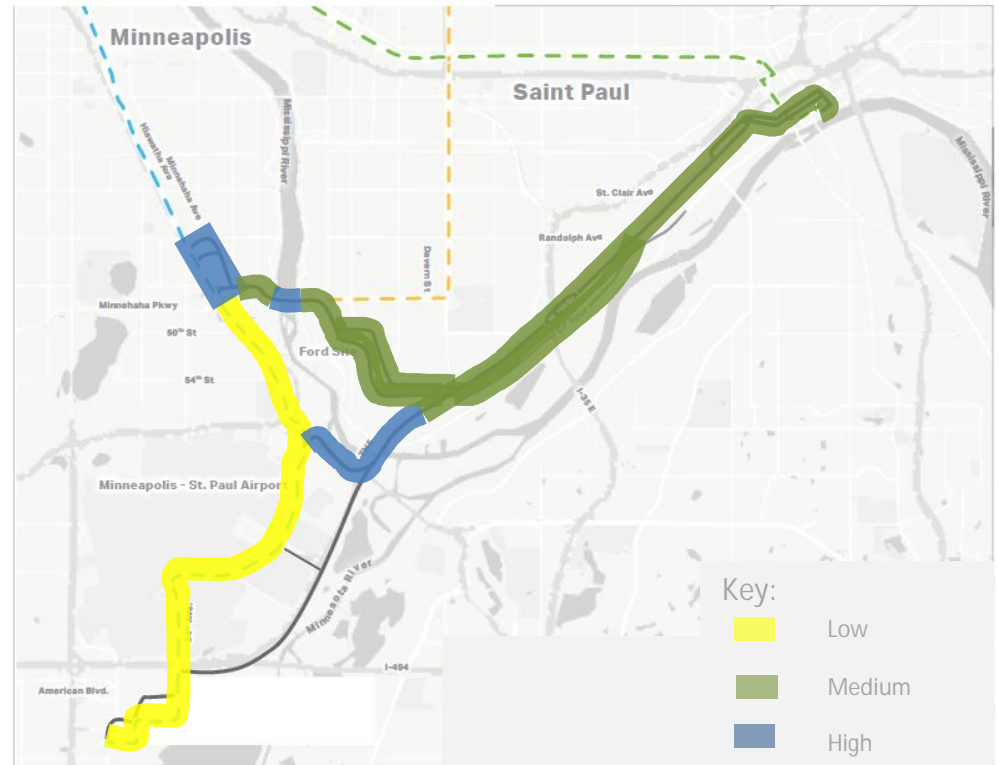
# Visual: BRT



## Visual: BRT



## Visual: Rail





# Visual



## Findings:

- Differentiate by mode and segment
- Rail alternatives ranked “medium-high” potential for visual impact in some segments due to proximity to important viewsheds, new transit type operating in segment, or requires grade-separated elements (above or below)
- Arterial BRT and BRT alternatives ranked “low-medium” or “medium” for potential visual impact



# Mississippi River



## Definition:

- Qualitative assessment based on NPS sequencing guidance
  - Highway 5 Bridge
  - Ford Parkway Bridge
- Other related criteria: Mississippi River Crossing, Visual, Cultural, Parkland Resources, and Capital Cost.
- Determine effects during future environmental review



# Mississippi River



## Findings:

- Hwy 5/Fort Snelling

## BRT:

1. Use existing

## Rail:

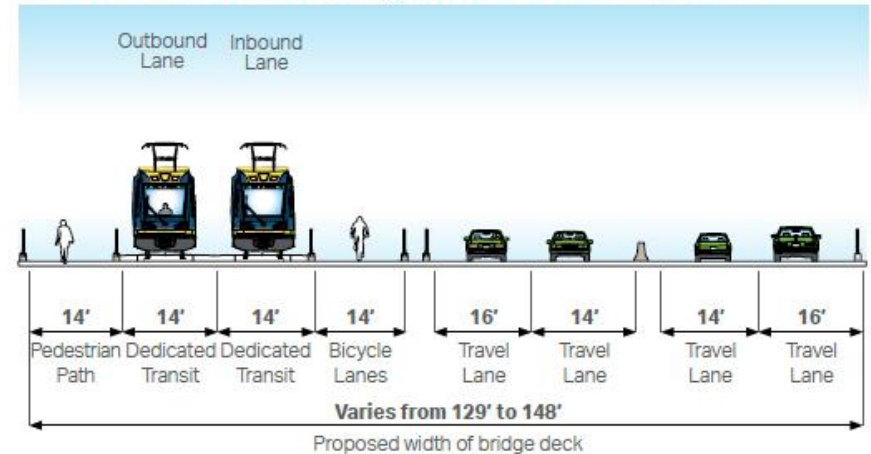
1. Reconstruct existing for traffic, rail, pedestrian, and bike

## OR

2. Build new adjacent to existing TH 5 bridge for transit, pedestrian, and bike

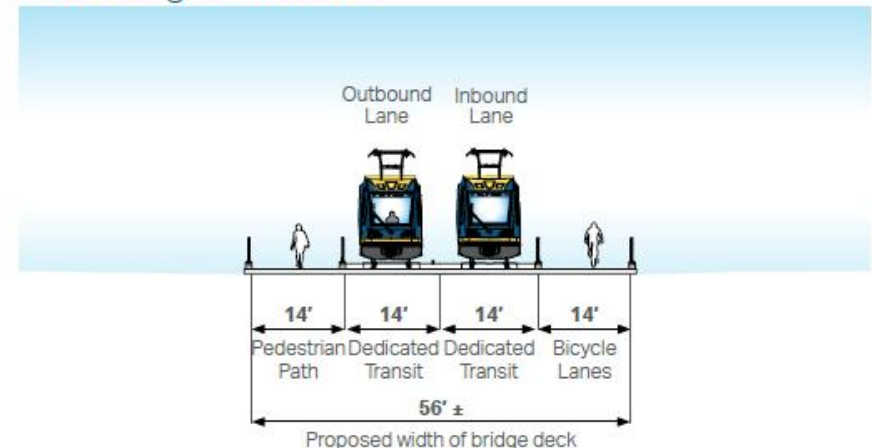
## Rail:

### 1 Reconstruct TH 5 Bridge at Current Location



## Rail:

### 2 New Bridge near TH 5



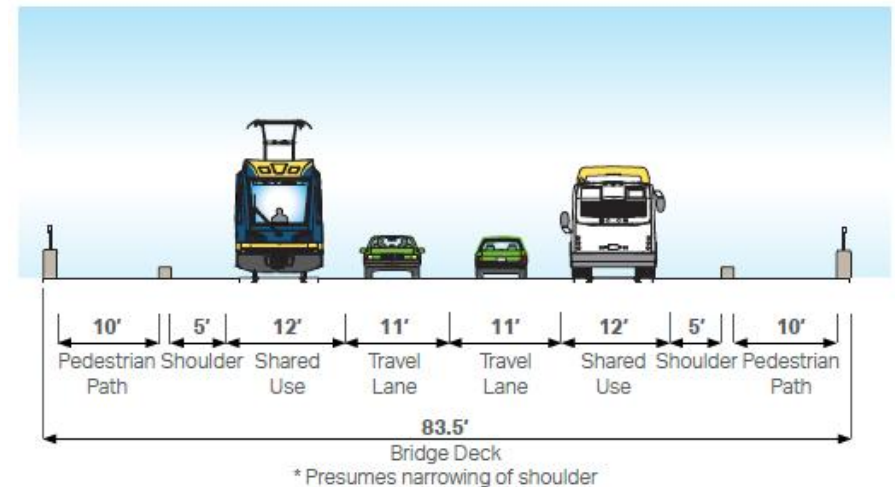


# Mississippi River



## Findings:

- Ford Parkway Bridge
  - BRT: Use existing
  - Rail: Reconstruct existing





# Traffic

W. 7<sup>th</sup> St.



## Dedicated Lane:

### Side Running

Intersection	AM Peak		PM Peak	
	LOS	Delay (s)	LOS	Delay (s)
Chestnut	F	90	D	41
Smith	C	21	E	59
Randolph	C	26	D	38
Montreal/Lex.	F	176	F	144

### Center Running

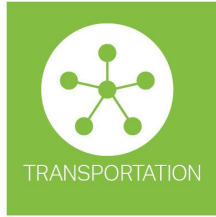
Intersection	AM Peak		PM Peak	
	LOS	Delay (s)	LOS	Delay (s)
Chestnut	E	68	E	67
Smith	B	19	F	218
Randolph	C	27	D	45
Montreal/Lex.	F	176	F	144

Source: Synchro model based on 2012 traffic count from the City of St. Paul



# Traffic

W. 7<sup>th</sup> St.



## Shared Lane:

### Shared Lane

Intersection	AM Peak		PM Peak	
	LOS	Delay (s)	LOS	Delay (s)
Chestnut	C	28	C	23
Smith	B	15	D	44
Randolph	C	25	C	33
Montreal/Lex.*	D	55	D	39

\*Bus/Rail would be off-street between stations at this location.

### Shared Lane

Intersection	AM Peak		PM Peak	
	LOS	Delay (s)	LOS	Delay (s)
Chestnut	C	25	C	21
Smith	B	15	D	44
Randolph	C	23	C	28
Montreal/Lex.*	D	55	D	39

\*Bus/Rail would be off-street between stations at this location.

Source: Synchro model based on 2012 traffic count from the City of St. Paul



# 2040 Ridership Inputs



## Methodology

- 2040 population and employment forecasts
- Transit travel times based on route and station/stop locations
- Service plan:

Period	Time	Frequency
Early	4:00 a.m. – 5:30 a.m.	15 min
Daytime	5:30 a.m. – 8:00 p.m.	10 min
Evening	8:00 p.m. – 10:15 p.m.	15 min
Late	10:15 p.m. – 2:00 a.m.	30 min

## Findings:

- Ridership is consistent throughout the day and does not have large a.m. and p.m. peaks
- Rail - 2040 demand requires 1 car trains
- BRT - 2040 demand would require slightly higher frequency to meeting peak demand (9 min. headways rather than 10 min.)





# Operating Cost Estimates

In 2015\$



## Methodology and Assumptions

- Unit prices are mode specific cost drivers from Metro Transit
- Cost drivers include
  - Peak vehicles
  - Revenue hours
  - Revenue miles
  - Track/guideway miles
  - Stations
  - Maintenance facilities
- Use of cost categories to facilitate comparisons



# Capital Cost Estimates



In 2015\$

## Methodology and Assumptions

- Based on the Most Promising Alternatives
- Base + subareas as a separate cost
- Use cost categories to facilitate comparison
- Unit costs from local examples and FTA
  
- Order-of-magnitude estimates in Base Year \$ (2015 \$; without inflation)
- Developed for purposes of comparison
- Cost estimates are not the cost to deliver any one of these Most Promising Alternatives as none of them will be open today
- Cost to deliver is the base year cost estimate inflated by 3.5% compounded annually to the year of expenditure
  - A \$500MM project opening today will cost approximately \$729MM to open in 2025
  - A \$1B project opening today will cost approximately \$1.46MM to open in 2025



# Capital Cost Estimates



## Methodology and Assumptions

- Most Promising Alternatives
  - Draft capital cost estimates for Alternatives 2 through 10 (Arterial BRT, BRT, and Rail)
  - No-Build would incur no additional capital cost
- Options within sub-areas
  - Seven Corners
  - Trunk, between Randolph and Alton
  - Ford Site
  - TH 5/Fort Snelling
  - Bloomington South Loop
- Base alternative defined
  - Present incremental cost of options within a sub-area relative to base alternative
    - Excludes OMF, vehicles, and finance charges