

Nicollet-Central Transit Alternatives

Policy Advisory Committee

February 28, 2013

Agenda

1. Action Item: Approve October meeting notes
2. Alternatives for Detailed Evaluation
 - Review work to date and presented to public
 - Review Feb 12-14 open house public input
 - Action Item: approve alternatives for evaluation
3. Discuss Funding Opportunities



Study Overview

- Evaluate costs, impacts and benefits of a variety of alternative transit options
- Select a locally preferred alternative for transit improvements on Nicollet-Central corridor



WHY CONSIDER TRANSIT IMPROVEMENTS?



Corridor Needs

- Strong and Growing Travel Demand
 - Density and growth

- 90,000 residents and 125,000 jobs within one-half mile
- Grow by 25,000 residents and 50,000 jobs in next 20 years, mostly in or near downtown



Corridor Needs

- Strong and Growing Travel Demand
 - Density and growth
 - Diversity of trip purposes/destinations
- Downtown Employment
 - Dense Neighborhoods
 - Shopping and Restaurant Districts
 - Convention Center
 - 6,000 hotel rooms
 - Only half of existing route 10/18 trips are work trips



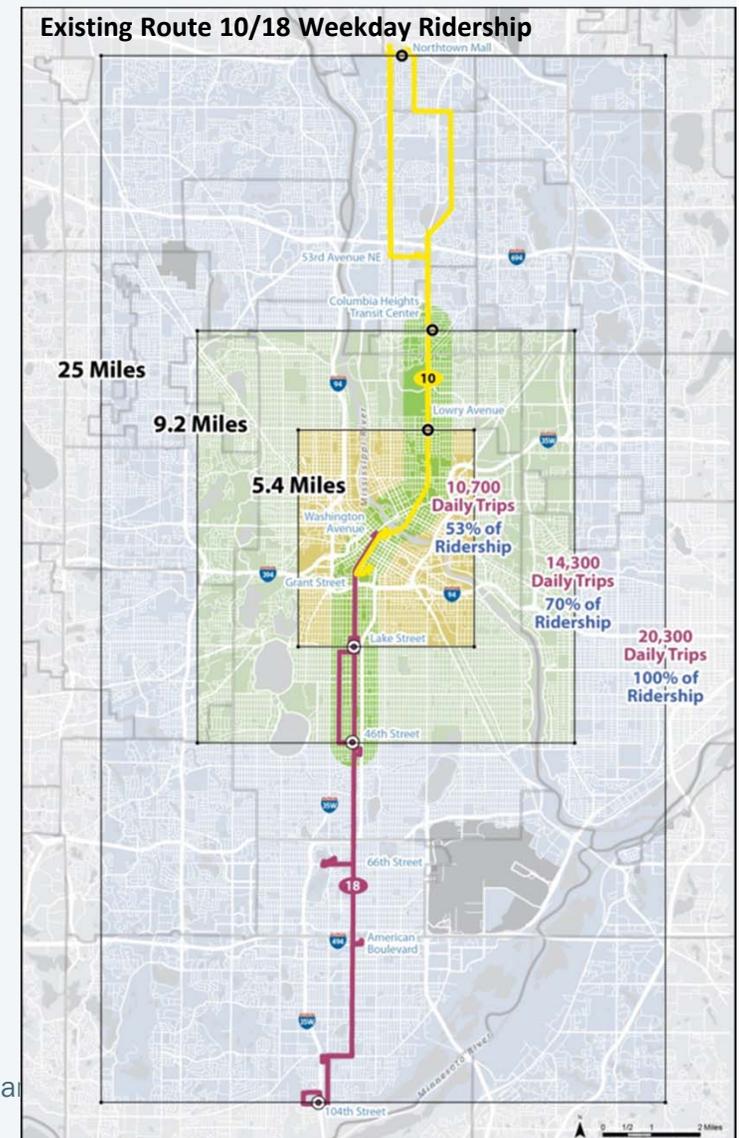
Corridor Needs

- Strong and Growing Travel Demand
 - Density and growth
 - Diversity of trip purposes/destinations
 - People who rely on transit
- 25% of households have no car
 - 24% of residents live in poverty
 - Higher than city and regional averages



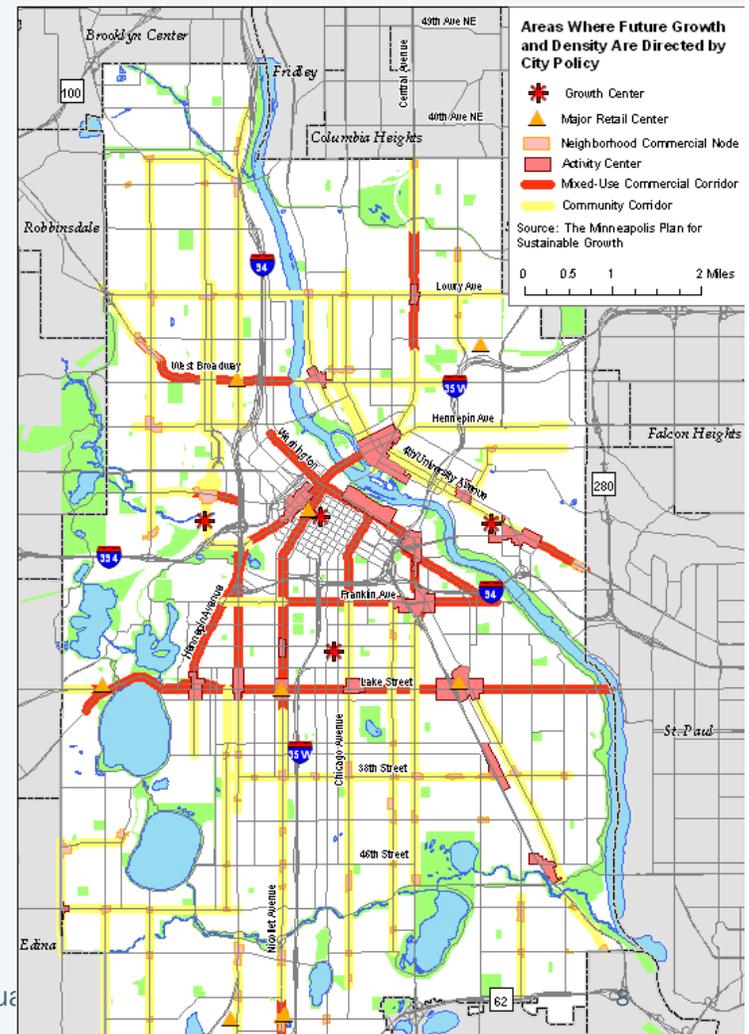
Corridor Needs

- Strong and Growing Travel Demand
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 - Lots of short trips



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- Strong and Growing Travel Demand
 - Density and growth
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 - People who rely on transit
 - Lots of short trips
- Economic Development Trends and Objectives



Corridor Needs

- Strong and Growing Travel Demand
 - Density and growth
 - Diversity of trip purposes/destinations
 - People who rely on transit
 - Lots of short trips
- Economic Development Trends and Objectives
- Deficiencies in Existing Bus Services
 - Stopping every block
 - Paying fares at the front door
 - Reliability challenges
 - Crowding
 - Minimal stop amenities



Project Purpose

(approved by Policy Advisory Committee 10/25/2012)

- The purpose is to...
 - improve transit connectivity,
 - enhance the attractiveness of transit service, and
 - catalyze development through an investment in transit infrastructure within the Nicollet-Central Corridor.



INITIAL SCREENING OF ALTERNATIVES



Initial Screening of Modes

- Modes Considered
 - conventional bus*
 - enhanced bus (in mixed traffic)*
 - modern streetcar*
 - bus rapid transit (in a dedicated busway)
 - light rail transit
 - heavy rail
 - maglev
 - monorail
 - personal rapid transit
 - commuter rail

**Recommended for detailed analysis*

Conventional Bus



Enhanced Bus

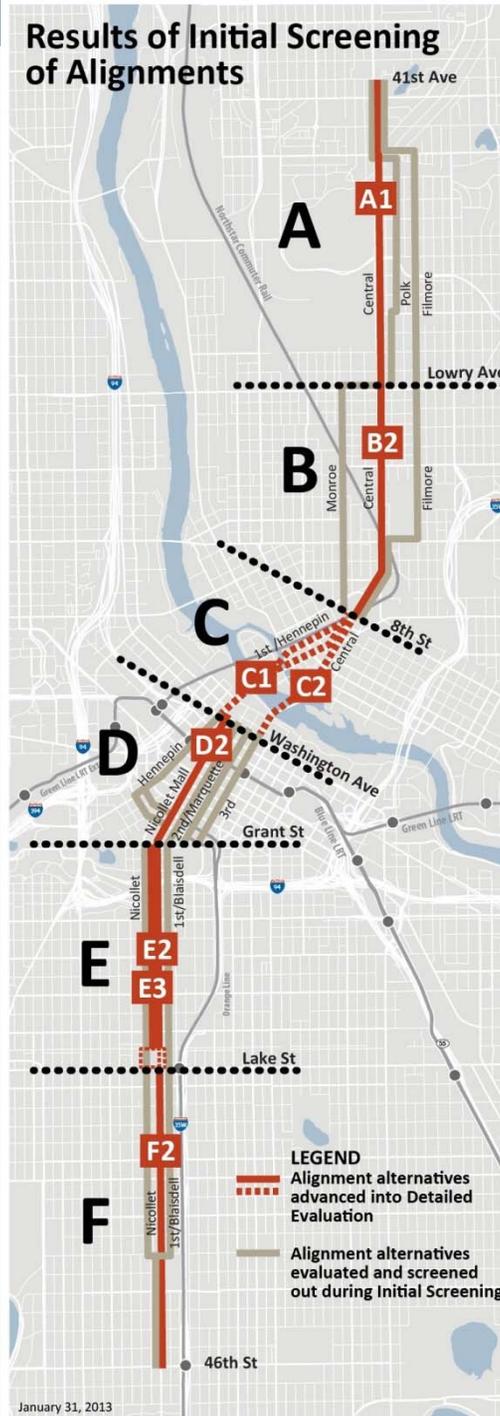


Modern Streetcar



Initial Screening of Alignments

- Variety of parallel alignments considered
- Recommended Alignment
 - Nicollet Avenue S, Nicollet Mall, Central Avenue NE
 - Two river crossing options (Hennepin/First vs. Third/Central)
 - Two Lake Street connection options (through Kmart, around Kmart)



Detailed Evaluation of Alternatives

Modern Streetcar



Enhanced Bus



No Build (existing local bus)



MODERN STREETCAR VS. LRT



Not Light Rail

Modern Streetcar

- mixed traffic lanes with cars
- single car trains (~70' long)
- ¼ to ½ mile stop spacing
- Short route distance
- Activity center circulation



Light Rail

- tracks separate from cars
- 2-3 car trains (each ~90' long)
- ½ to 1 mile stop spacing
- Long route distance
- Regional, long-haul service



Not Light Rail



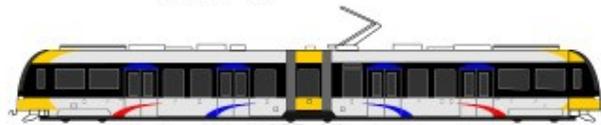
Bus - 40'



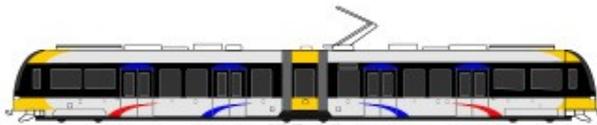
Articulated Bus - 60'



Streetcar - 67'



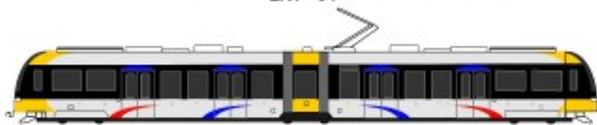
LRT - 94'



LRT - 94'



LRT - 94'



LRT - 94'



LRT - 94'



Not Light Rail

Modern Streetcar

- Less construction impacts
- \$30-60 million per mile



Portland Streetcar

Light Rail

- More extensive construction
- \$80-125 million per mile



St. Paul Green Line

Not Light Rail

Modern Streetcar



Light Rail



Not Vintage Streetcar

Boarding in the Street



Minneapolis



Toronto

Boarding from Platform



Portland



Seattle

COMMON ELEMENTS OF ENHANCED BUS AND MODERN STREETCAR



Use Same Lanes as Cars and Trucks

(With Other buses on Nicollet Mall)

Modern Streetcar



Enhanced Bus



Larger, Easily Recognizable Vehicle

Modern Streetcar



Enhanced Bus



We will not select an exact vehicle during this study.
Vehicle design and selection is an important step and takes time.

Modern Streetcar Vehicle

- 67-foot long vehicle
 - Predominant in US
 - Longer vehicles typical in Europe
- Typically designed with more standing capacity than buses because it serves short trips
- Section with low floor/no steps



Enhanced Bus Vehicle

- 60-foot articulated hybrid-electric bus
- Typically two seats on each side, but can be designed for more standing room
- Section with low-floor/no steps



Source: Metro Transit

Fewer Stops

- Stops approximately every ¼-mile
 - Typically every other block
 - Similar stop spacing on Nicollet Mall as today
 - Becomes primary local service in corridor
- Compared with:
 - Existing local bus – every block (1/8 mile)
 - LRT – every ½ to 1 mile
 - I-35W Highway BRT – every 2-4 miles

This study will identify the number of stops so we can estimate costs and ridership.
Exact stop locations to be identified during design.



Service Features

- Frequent, all-day service
 - Every 7.5 to 10 minutes
 - All day and evening
 - As frequent as today's bus service
- Complementary bus service
 - Enhanced bus and modern streetcar to replace local service
 - Service to downtown via limited-stop service north of 41st and south of 46th
 - No changes expected to Routes 11, 17 and 25

Preliminary concepts are presented and will undergo refinements during design.



Fewer Signal Delays

- Transit signal priority
 - A little more green time or a little earlier green time for enhanced bus or modern streetcar
 - Not transit signal preemption, as on Hiawatha LRT
 - More reliable travel time



Faster Boarding

- Pay before boarding
 - “Proof of Payment” and fare inspection, like light rail
- Board through any door



Seattle



Swift BRT, Everett, WA

Faster Boarding

- Typical curb/sidewalk height: 6 inches
- For enhanced bus/modern streetcar:
 - “Low-floor” section of vehicle (no steps)
 - Advantage for elderly, wheelchair, strollers
 - More reliable travel time



Better Stop Amenities

- Sidewalk curb extended into parking lane
- Streetcar/bus stops in traffic lane
- Separates passenger waiting area and sidewalk walking area



Better Stop Amenities

- Real-time information



Cleveland HealthLine



Kansas City MAX



At Mall of America Station

HOW DO ENHANCED BUS AND MODERN STREETCAR DIFFER?

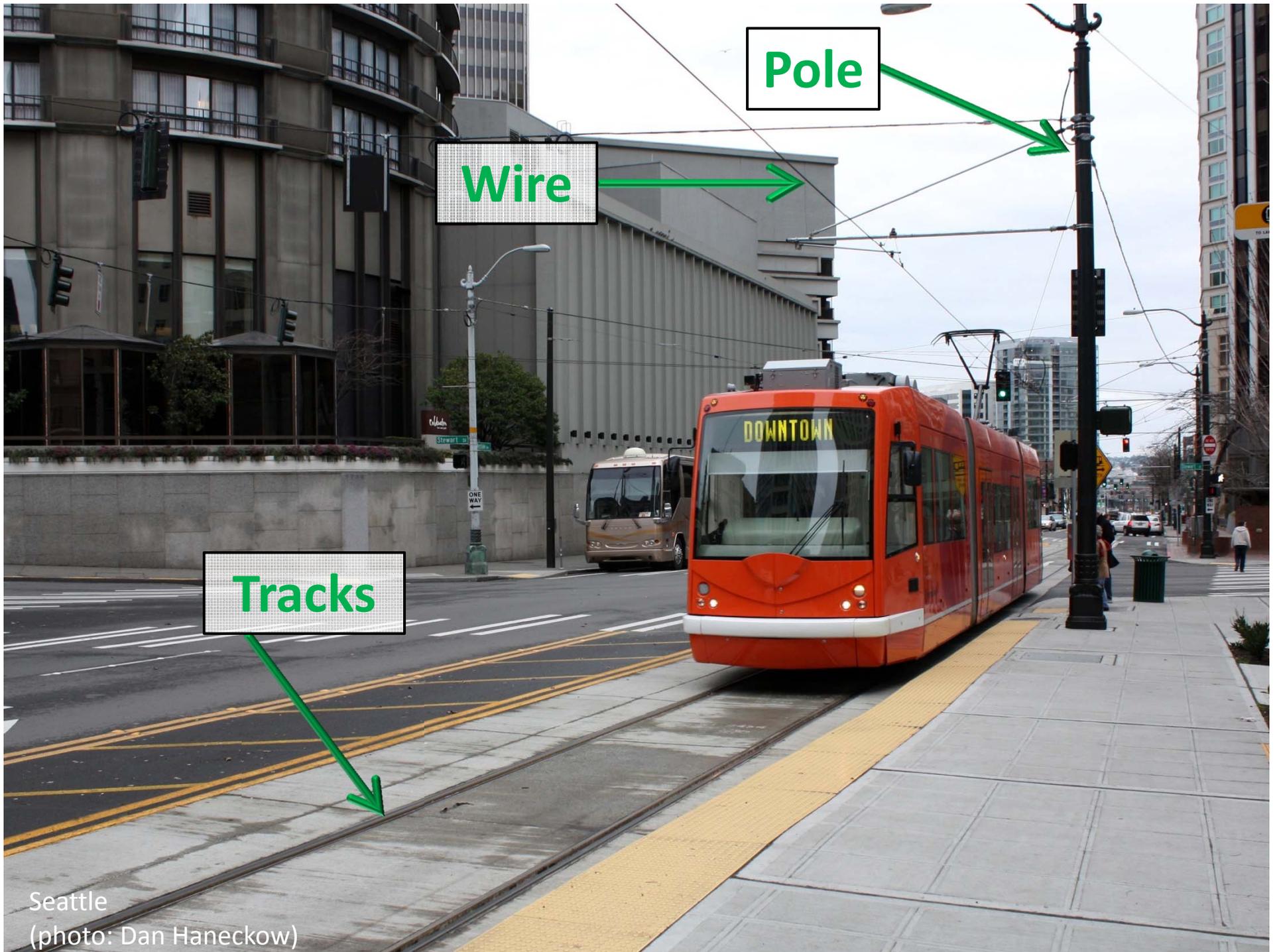


Modern Streetcar Entails More Infrastructure

- Tracks
- Power System
 - Overhead contact system
 - Substations
- Maintenance Facility



More Infrastructure = Higher Cost



Wire

Pole

Tracks

Seattle
(photo: Dan Haneckow)

Peer City Construction Cost

(based on recent projects implemented in the US)

Modern Streetcar

\$30 to \$60 million per mile



Portland
(photo: Sam Beebe/Ecotrust)

Enhanced Bus

\$2 to \$6 million per mile*



Everett, WA
(photo: Dave Honan)

* Cost may be higher for Nicollet-Central due to close stop spacing

Bus is Flexible

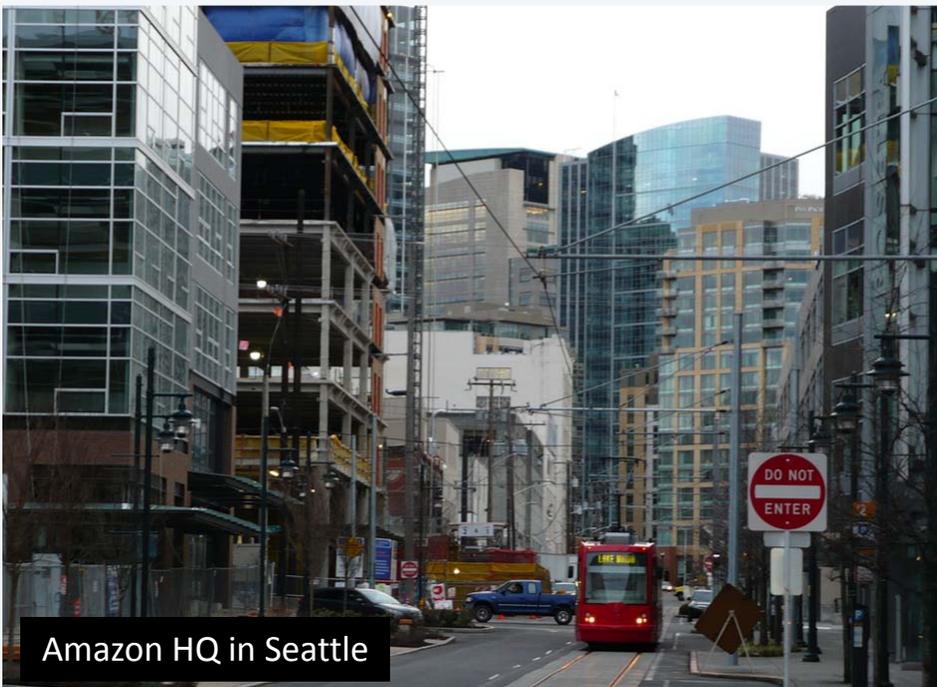
- Rubber tires mean enhanced bus can easily:
 - Get around obstacles
 - Extend its route
 - Be rerouted

...Unlike modern streetcar that is fixed on rails



Modern Streetcar and Development

- Modern streetcar is associated with more development than enhanced bus
- Unique amenity that attracts development and attention



Preliminary Enhanced Bus and Modern Streetcar Concepts

STREET DESIGN



Priorities and Considerations

- Maintain existing street design as much as possible
 - Traffic, parking, sidewalks, bike lanes
- Stay within existing curbs
- Minimize reconstruction
- Include new on-street bike facilities where identified in the bike plan



Modern Streetcar: Center, Right or Left Lane?



Other Assumptions

- Enhanced bus
 - Right-side running along the entire corridor
- Modern streetcar has doors on both sides
 - Nicollet Avenue/Mall: Right-side running
 - Hennepin/First Avenue: Left-side running
 - Central Avenue: Has four lanes and could run on either side



Modern Streetcar-Bicycle Integration

Options

1. Bicycle route on parallel street
2. Right-lane running modern streetcar with separate bike lane and bypass at stop
3. Left-lane running modern streetcar with bicycles on the right (in traffic lane or bike lane)



NEXT STEPS



Detailed Evaluation of Alternatives

- Primary Alternatives
 - “No-Build”
 - Modern Streetcar (9.2 miles)
 - Enhanced Bus (9.2 miles)



Cost & Peer City Experience

Modern Streetcar

- Higher cost
- Shorter line

City	Opening Year	Construction Cost*	Route Miles
Portland Phases 1-4	2001-2007	\$103 million	4.0
Portland - Phase 5	2012	\$148 million	3.3
Seattle – South Lake Union	2007	\$52 million	1.3
Seattle – First Hill	2014	\$134 million	2.5
Tucson	2013	\$199 million	3.9
Atlanta	2014	\$69 million	1.3
Dallas	2014	\$62 million	1.6
Salt Lake City	2014	\$56 million	2.0
Cincinnati	2015	\$125 million	3.6

Enhanced Bus

- Lower cost
- Longer line

Oakland	2004	\$25 million	18
Kansas City	2005	\$21 million	6
New York City	2008	\$10 million	8.5
Cleveland	2008	\$200 million	6.8
Everett, WA	2009	\$29 million	17



Initial Starter Line Concept for Comparison

- Will likely need to phase implementation due to cost and experience of peer modern streetcar systems
- Initial concept: Lake St to East Hennepin Avenue (3½ miles)
- Length and end points may be refined based on evaluation results



Information to Prepare for Evaluation

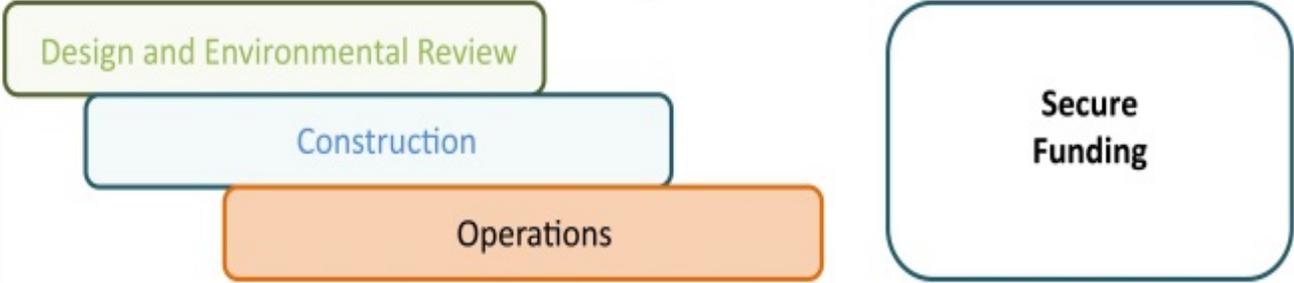
- Cost to build
- Number of people who would ride it
- Effects on the environment
- Effects on traffic flow
- Annual cost to operate and maintain
- Cost effectiveness (cost divided by riders)
- Ability to attract more housing and businesses/
jobs to the corridor
- Public and stakeholder sentiment



2012 – 2013: Nicollet-Central Transit Alternatives Study



Metropolitan Council - Approval of LPA



Funding to be determined
Conceptual goal is:

- 50% federal government
- 50% local (city, regional, state)

OPEN HOUSE PUBLIC INPUT



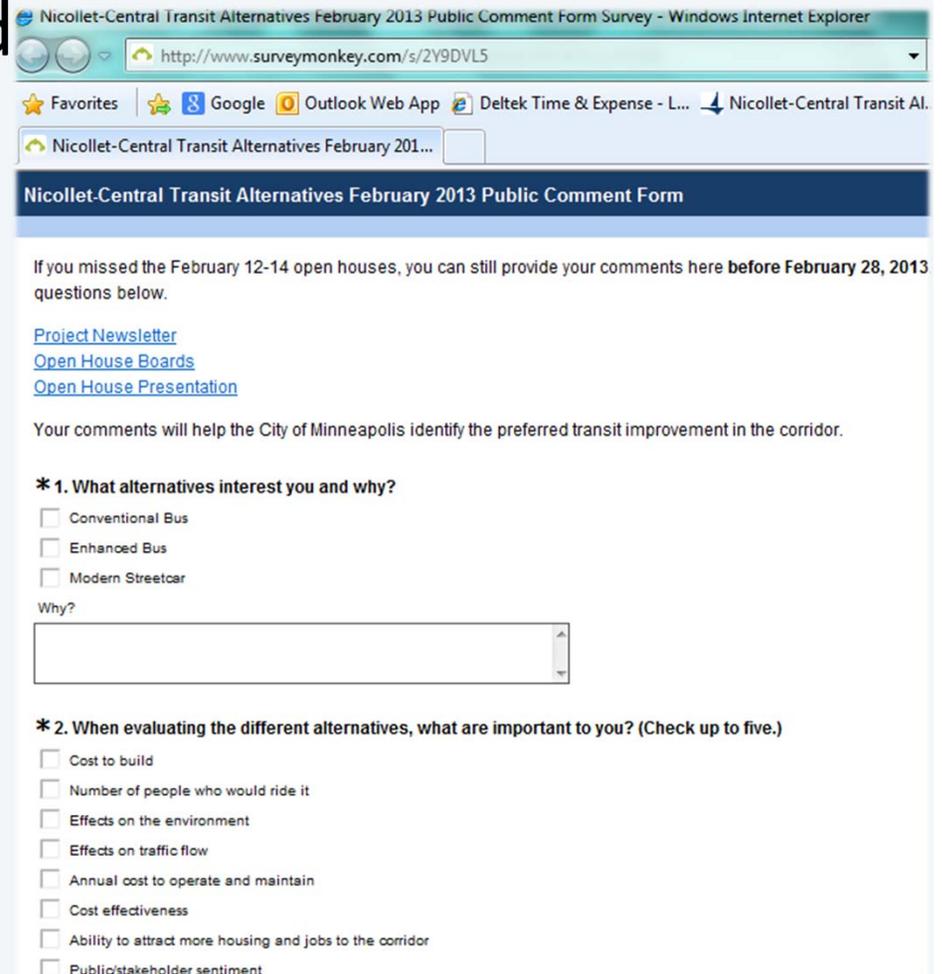
Open Houses - Participation

- Public open houses on February 12-14, 2013
 - Three venues, 171 attendees signed in
 - Northeast (MPHA Parker Skyview): 66
 - South (HCMC Whittier Clinic): 51
 - Downtown (Central Library): 54
 - 78 comment forms received



Open Houses - Participation

- Comment form posted online February 15
 - Same as open house comment forms
 - 41 received through February 21
 - Will remain online through February 28



Nicollet-Central Transit Alternatives February 2013 Public Comment Form Survey - Windows Internet Explorer

http://www.surveymonkey.com/s/2Y9DVL5

Favorites | Google | Outlook Web App | Deltek Time & Expense - L... | Nicollet-Central Transit Al.

Nicollet-Central Transit Alternatives February 201...

Nicollet-Central Transit Alternatives February 2013 Public Comment Form

If you missed the February 12-14 open houses, you can still provide your comments here before February 28, 2013 questions below.

[Project Newsletter](#)
[Open House Boards](#)
[Open House Presentation](#)

Your comments will help the City of Minneapolis identify the preferred transit improvement in the corridor.

*** 1. What alternatives interest you and why?**

Conventional Bus
 Enhanced Bus
 Modern Streetcar

Why?

*** 2. When evaluating the different alternatives, what are important to you? (Check up to five.)**

Cost to build
 Number of people who would ride it
 Effects on the environment
 Effects on traffic flow
 Annual cost to operate and maintain
 Cost effectiveness
 Ability to attract more housing and jobs to the corridor
 Public/stakeholder sentiment



Open Houses – Common Themes

- Strong support for modern streetcar
- Need to integrate bicycle infrastructure with improved transit
- Transit ridership is an important factor
- Support for attracting jobs and housing to the corridor
- New transit service should integrate well with existing bus routes



Open Houses – Common Themes

- Concern for the environment
 - Noise
 - Burning fossil fuels
- Cost effectiveness
- Minimize negative impacts on pedestrian experience especially Nicollet Mall
- Interest in the length of time it would take to implement the new system
- Support for re-opening Nicollet Avenue at Lake Street

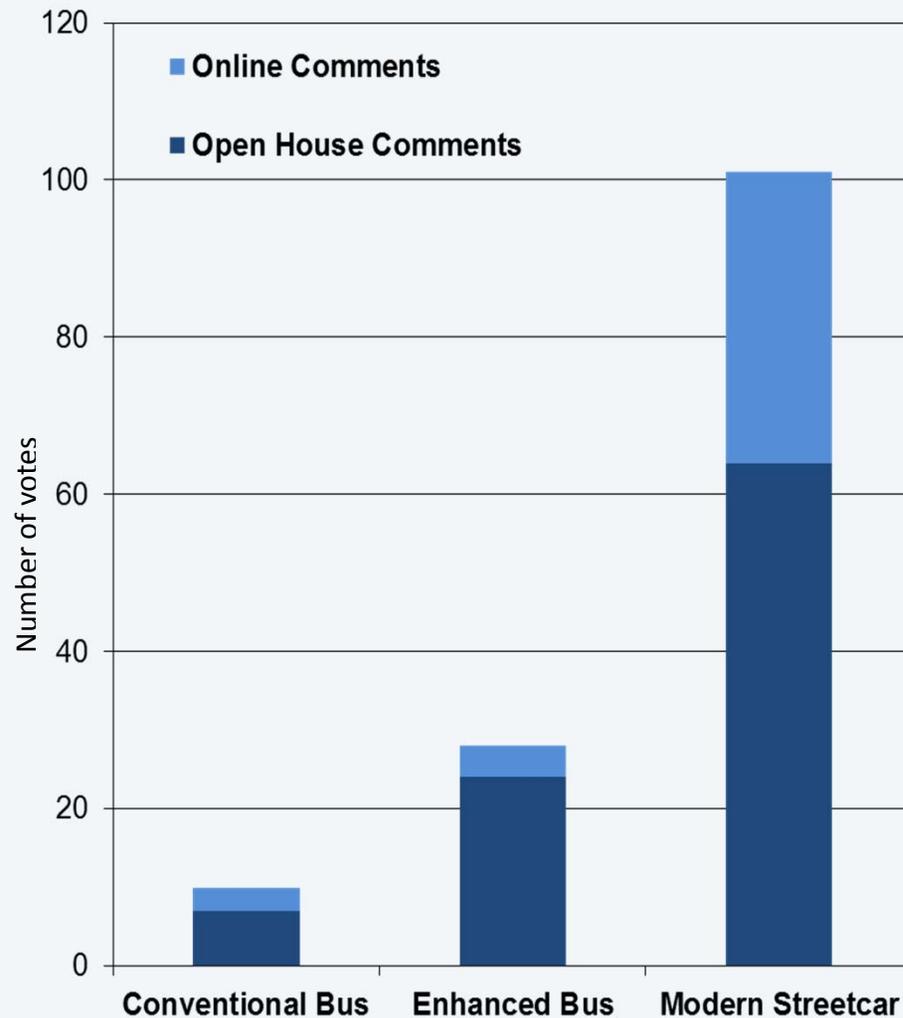


Open Houses – Common Themes

- Concern that the Twin Cities’ transit system is “falling behind” other peer cities
- Interest in extending the corridor south to 66th Street (Richfield)
- Appeal not only to local users, but also visitors to the City
- Minimize automobile traffic conflicts and delays

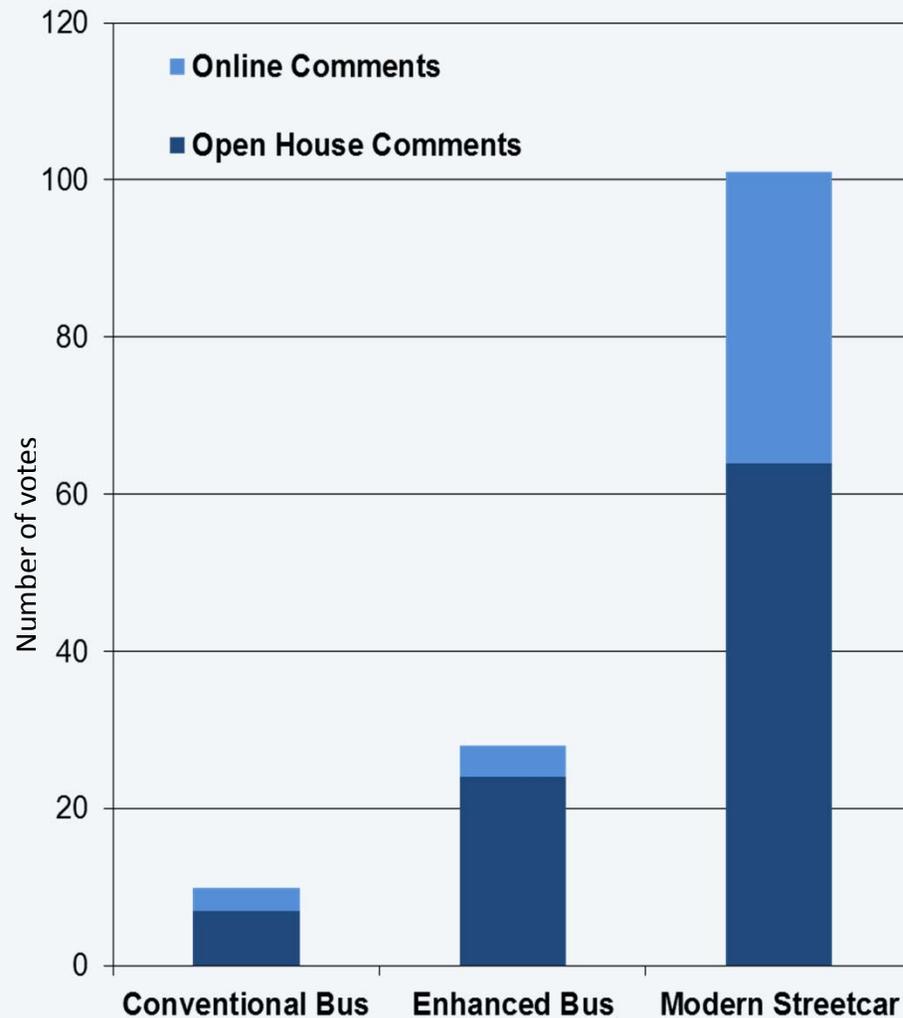


What alternative(s) interest you and why?



- Respondents could select more than one alternative
- 119 respondents answered this question
- 139 total selections were made
- Modern Streetcar was selected by 85% of all respondents
- 79% of those who selected Modern Streetcar chose only one alternative

What alternative(s) interest you and why?



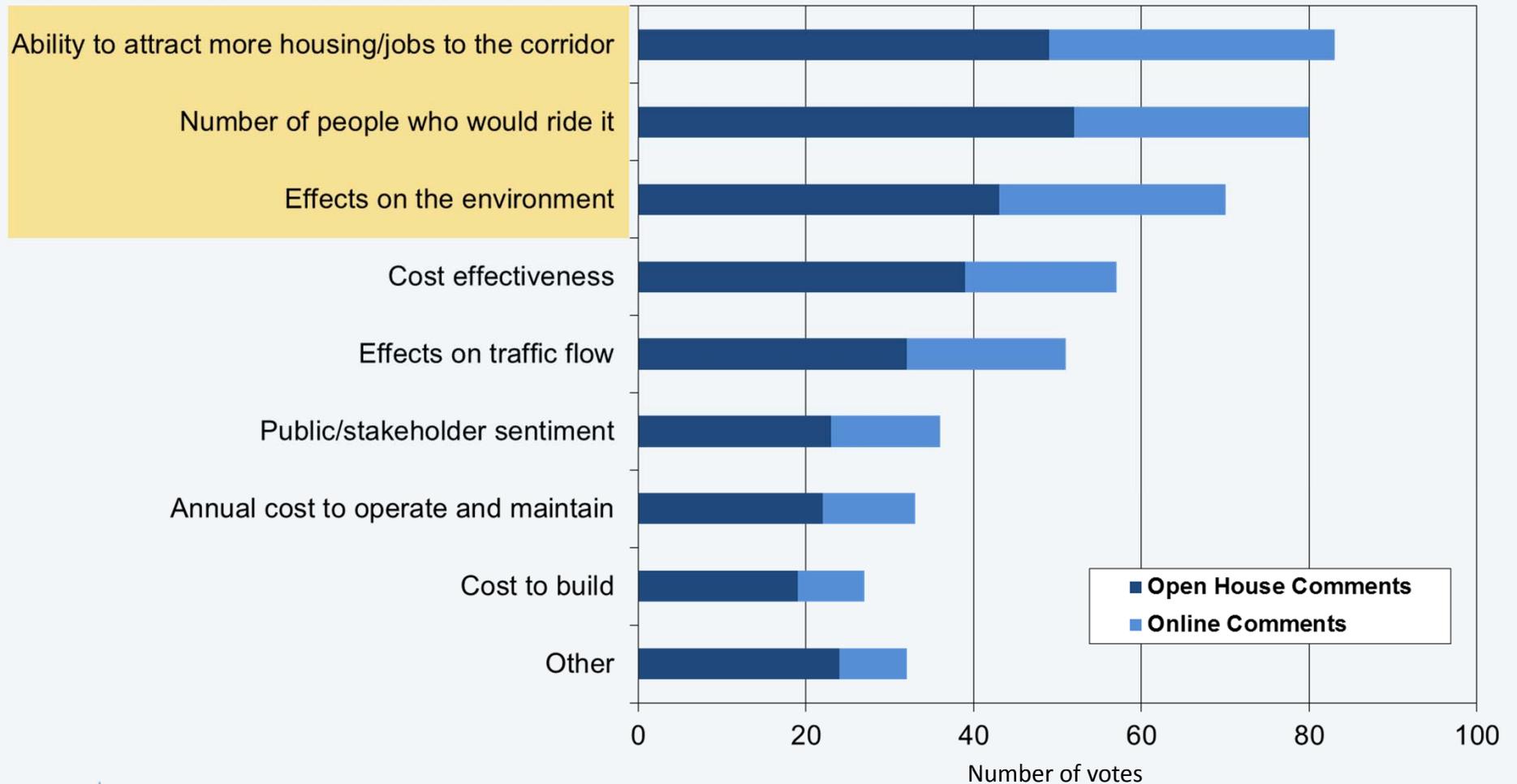
Modern Streetcar:

- Permanence of investment
- Quieter, smoother ride
- Greater economic impact
- Better for the environment
- Modern and reliable
- More accessible

Enhanced Bus:

- Less expensive to build with similar benefits
- Greater flexibility
- Less intrusive construction and infrastructure

When evaluating the different alternatives, what are important to you? (Check up to five)

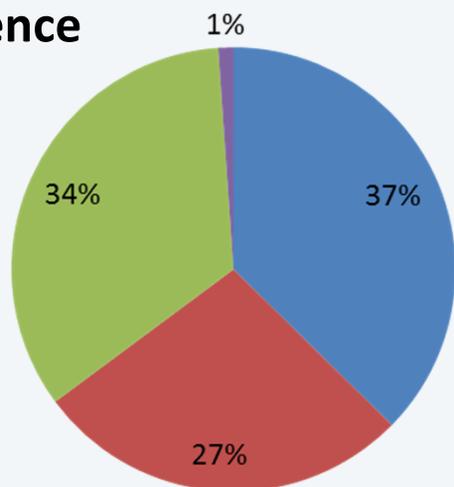


Where comment form respondents live and work by zip code

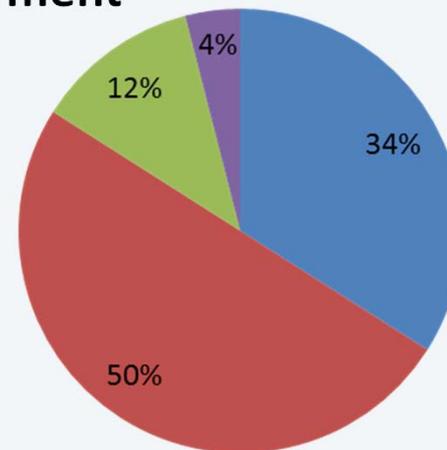
Total of all respondents (open house and online)

Area	Zip Codes	I live in the corridor	I work in the corridor	I own a business in the corridor	Total
North of Mississippi River	55413, 55414, 55418	34	17	5	56
Downtown Minneapolis	55401, 55403, 55405	25	25	8	58
South of Downtown Minneapolis	55404, 554017, 55408, 55409, 55423	31	6	1	38
Other		1	2	0	3
Total		91	50	14	155

Residence



Employment



- North of Mississippi River
- Downtown Minneapolis
- South of Downtown Minneapolis
- Other



ACTION ITEM: APPROVE ALTERNATIVES FOR DETAILED EVALUATION



Approve Alternatives for Detailed Evaluation

- “No Build”
- Enhanced bus
- Modern streetcar, including the preliminary starter line concept

