

ITASCA *project*

# **Regional Transit System: Return on Investment Assessment**

May 2014



## Today's agenda

- Itasca Project introduction
- Transit ROI objectives
- Results of analysis
- Comments from business leaders
- Conclusion

# Itasca Project introduction

## What is Itasca?

An employer-led civic alliance focused on:

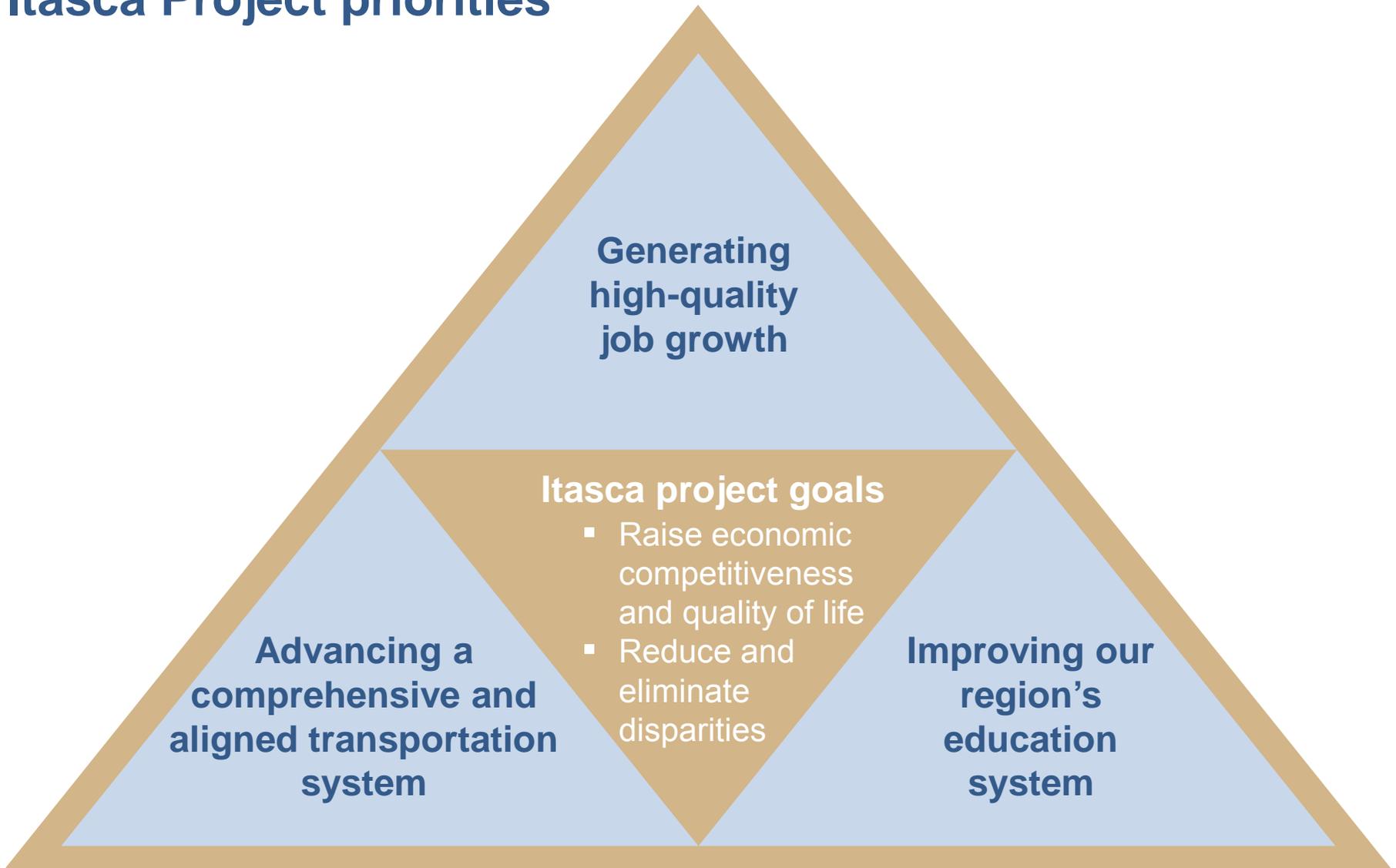
- Building a thriving economy and quality of life in the Minneapolis-Saint Paul Metropolitan region
- Reducing and eliminating socioeconomic disparities

## Who is Itasca?

50-plus cross-sector community leaders from Minneapolis-Saint Paul:

- Private sector CEOs
- Public sector leaders: the Governor, the Mayors of Minneapolis and St. Paul, Chair of the Metropolitan Council, the leaders of the University of Minnesota and MnSCU
- Leaders of major foundations and United Way

# Itasca Project priorities



# The transportation system impacts the economic health and vitality of a region...

A comprehensive, integrated, and efficient transportation system is an important driver of economic development and, therefore, job growth because it...

- **Connects employers** to their workforce and enables employees to **access employment**; connects **businesses to customers**; maintains **timely movement** of goods
- **Attracts and retains residents by providing greater diversity of travel options**, including more free-flowing roads and affordable transit options
- **Enables strategic, efficient investment** in long-term infrastructure, e.g., energy grid, water system, housing, commercial and industrial buildings

## ...Transit is increasingly critical to sustaining the economic vitality of our region

- **In Minnesota, transit plays a vital role in connecting jobs and employees today...**
  - **40% of downtown Minneapolis and St. Paul commuters use transit**
  - According to MetCouncil, transit riders are more than 1/3 of peak hour users of major freeways
- **...and will become more important in the future**
  - Building out full transit system would give **regional employers access to an additional half a million people** within half an hour commute
  - Increasingly, talented **millennial generation employees are seeking cities with good transit**
- **Transit can be a cost-efficient way to add capacity in corridors**, improving travel times across the system especially during peak congestion periods
- **Competitor regions are investing heavily in transit**; these regions include Denver, Salt Lake City and Dallas, all rapidly growing, dynamic regions

# Transit ROI study

**Objective: Evaluate potential transit impacts to the region using data-driven and transparent approach**

- Commissioned by Itasca
- Conducted by Cambridge Systematics, experts in transportation and economic analysis
- Guided by local Technical Advisory Committee

## Itasca asked 3 questions about regional transit investments

- 1 A built-out regional transit system would require substantial investment. *What would be the return on that investment?*
- 2 Investments can be made more or less quickly. *Would accelerating build out change the return on investment?*
- 3 Many communities with developing transit systems experience more growth near transit stations. *Would such expectations for growth change the return on investment?*

## We compared four scenarios

### Base case

- Includes current transit options and assumes outstanding commitments are built out (including Central Corridor)

1

### 2030 regional plan

- Assumes Metropolitan Council 2030 plan is executed, including expansion of bus service at 1% annually, nine arterial BRTs, four completed BRT corridors, and three new LRT lines

2

### Accelerated regional plan

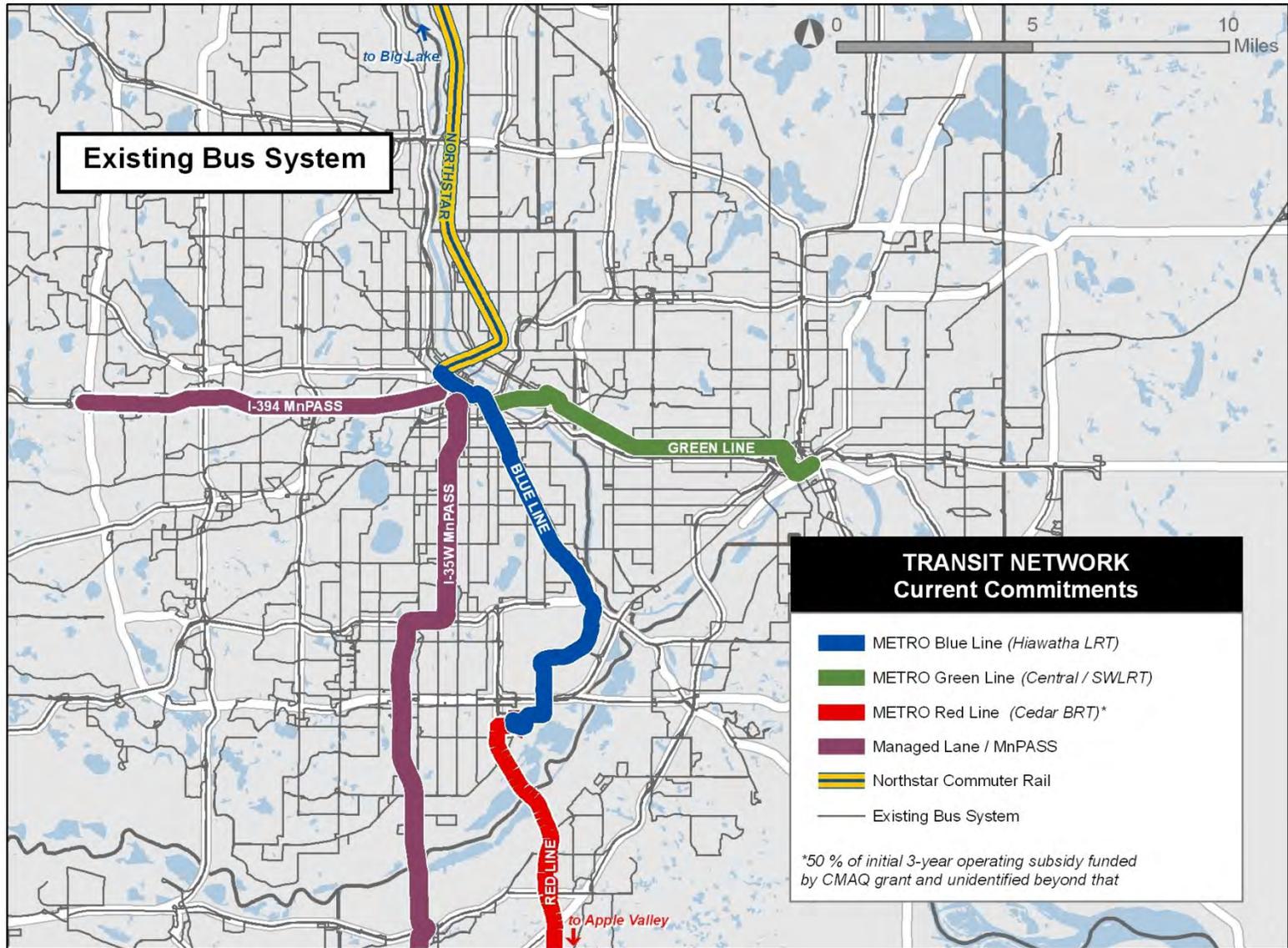
- Accelerates the regional plan from scenario one to a 2023 completion

3

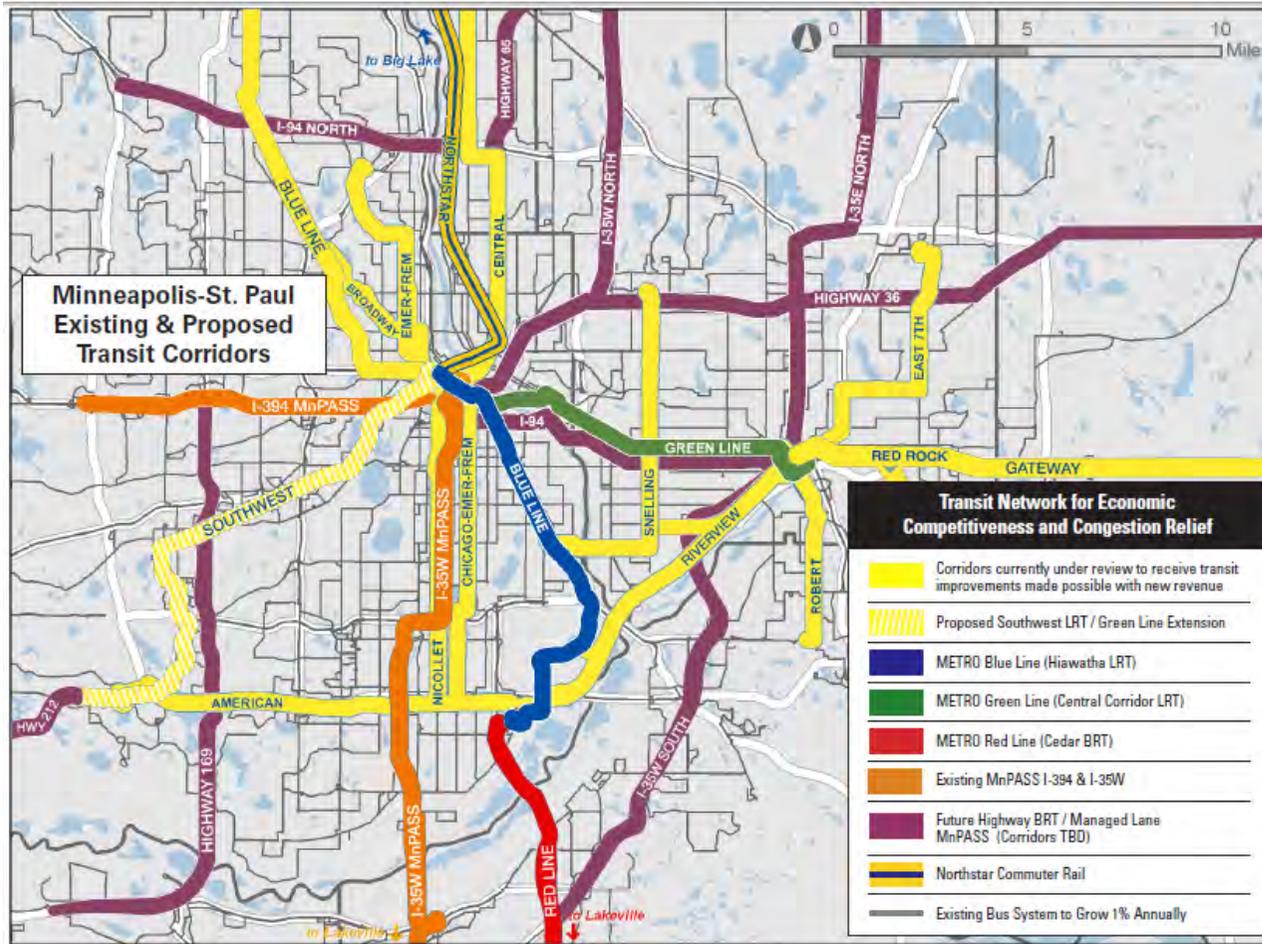
### 2030 plan with growth near stations

- Proposes 2030 plan is built as in scenario one, but reallocates 25% of expected community growth to station areas (i.e., assumes station areas absorb more of future growth though does not presume new growth)

# Current Regional Transit System Commitments



# Proposed Regional Transit System – 2030



- A regional transit system in the Minneapolis – St. Paul Metro area includes:
- 1% per year bus service expansion
  - Addition of nine arterial BRTs
  - Four BRT lines
  - Total of five LRT lines
- Mode and alignment for each corridor are still being determined

## We calculated six kinds of direct impacts

A few well-established metrics focused on transportation, safety, and health were incorporated as direct impacts:

1. Vehicle operating costs
2. Travel times and travel reliability
3. Shippers and logistics costs
4. Emissions
5. Safety costs
6. Road pavement conditions

We worked with the Metropolitan Council to develop costs for each scenario: capital + operations & maintenance

## Direct Impacts – Results

		Compared to base case scenario 2010 \$ Millions			
		Investment	Total direct impacts		IRR*
Scenario			Low	High	
1	2030 Regional Plan	\$4,361	\$6,571	\$10,083	7.8 – 14.8%
2	Accelerated Regional Plan	\$5,289	\$10,762	\$16,516	11.2 – 18.0%
3	2030 Plan with growth near stations	\$4,361	\$9,082	\$13,927	13.0 – 20.9%

Note: Benefits and operating and maintenance costs are calculated for 15-year period 2030-2045 for regional system, 2023-2045 for accelerated system. All are reported in 2010 dollar

\*IRR = Internal Rate of Return, the discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero

## Direct impacts by category

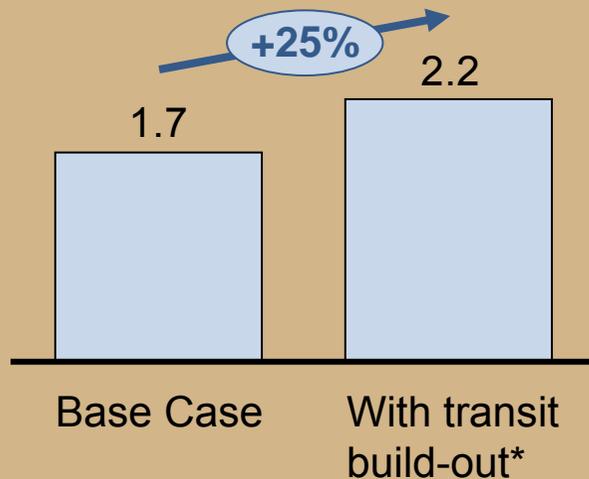
	Compared to base case 2010 \$ Millions
1. Travel time savings and reliability	\$4,643 - \$11,429
2. Vehicle operating cost savings	\$1,479 - \$4,717
3. Shipper and logistics cost savings	\$185 - \$271
4. Reduction in emissions	\$185 - \$395
5. Safety benefits	\$53 - \$88
6. Pavement maintenance savings	\$26 - \$54
<b>TOTAL</b>	<b>\$6,571 - \$16,516</b>

Note: Benefits and operating and maintenance costs are calculated for 15-year period 2030-2045 for regional system or 2023-2045 for accelerated scenario. All are reported in 2010 dollars

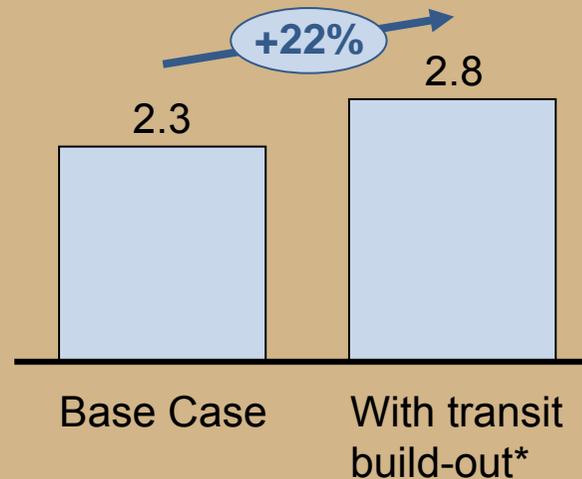
# A regional transit system enables employers to access more potential employees

**Working-age population accessible to employers within 30 minute commute (Millions)**

**In year 2030**



**In year 2045**



Building the regional transit system would enable **employers in the region to access 500,000 more employees** within a 30 minute commute, a 22 – 25% increase

## Additional impact not considered in the ROI study results:

### Short-term economic impacts:

- **\$4.3 billion in construction impacts** – Economic activity created over the construction period
- **30,000 construction jobs** – FTE job-years tied to build-out of the transit system

**If Federal dollars are leveraged** for investments, then the ROI of state/local dollars would be even higher

### Experience with Hiawatha and Central Corridor suggest **Scenario 3, with the highest benefits, is a likely scenario**

- **2 million square feet of office space** was constructed within half a mile of Hiawatha from 2004-2010
- Development of **new housing exceeded 2020 projections** by nearly 50% within first year of operation
- **\$2.5B of construction** has been approved along Central Corridor, set to open in 2014

## In addition to the quantitative analysis, we interviewed regional businesses about how they view transit

### *Transit is important to employers' ability to attract employees*

“Improved transit provides greater efficiency to attract employees, enables them to connect with labor groups.”

“Our younger workers show a higher level of interest in transit.”

“60% of our downtown employees have a Metropass. We want to support that.”

“Transit comes up in every HR conversation with new employees.”

“Transit is important to attracting workers. Without it, working downtown would be very difficult.”

“We have a company priority to be green and socially-responsible. Supporting transit is important. We find that it gets a very positive reaction within our younger employees.”

“We worry about future commuting costs, as gas could be significantly more expensive.”

## What business leaders say (cont)...

*Transit enables higher density development and greater customer access*

“Improved transit would allow higher densities and greater customer access.”

“Higher densities encourage entrepreneurial activities.”

*Transit must be connected to and aligned with destinations and other modes of transit*

“Pedestrian access is important to support transit, complete last mile connections.”

“Want to see more suburb-to-suburb connections.”

“I appreciate the LRT connection to the airport but there are limited door-to-door mass transit options.”

“Must be reliable.”

# Recent data have validated the importance of transit from potential employees' point of view

## Millennials consider transit when deciding where to live

When **potential employees** (highly educated 18-39 year olds) consider where to live, they rank “**reasonable commute time**” and **transportation options** and second, and fifth, respectively after job options<sup>1</sup>

## Their preference for transit options seems to persist through major life changes

36% of Millennial parents agree with the statement “having a family doesn't mean you have to rush out buy a car” and 42% agree that “having a family doesn't mean you have to move out of the city”<sup>2</sup>

## Talented Millennials see transit options as lacking in our region

227 free-response comments mentioned **transit**, 201, or **89%**, of those mentions **were negative**<sup>1</sup>

<sup>1</sup> GREATER MSP talent survey, distributed January 2014. Respondents were given a list of 20 factors and asked to rank their importance in choosing a region in which to live.

<sup>2</sup> American Public Transit Association, 2013, “Millennials and Mobility: Understanding the Millennial Mindset”

# Summary

- Based on direct impacts alone, the benefits of implementing a regional transit system far outweigh the costs
  - Building the 2030 regional plan would result in \$6.6 – 10.1 billion in direct benefits, on a \$4.4 billion investment (between 2030 – 2045)
  - Accelerating the system buildout to 2023 would result in increased direct benefits: \$10.7 – 16.5 billion on a \$5.3 billion investment
  - More community growth near transit stations would also increase the return on investment by an additional \$2 - \$4 billion
  
- In addition to the quantified direct benefits, the region would benefit from many wider economic benefits
  - Increased access to employers (an additional 500,000 within 30-minute commute)
  - 30,000 construction jobs and \$4.3 billion in economic impacts
  
- Interviewed employers reinforced the benefits of a regional transit system
  - A comprehensive transit system is critical to attract and retain employees

# Appendix

## Methodology and key assumptions

- The analysis estimates future benefits arising from transportation system user benefits, sustainability benefits, state-of-good repair benefits and wider economic development benefits
- Utilizes output from Metropolitan Council's regional travel demand model; population estimates based on Met Council
- Discount rate is 2.8 percent, as recommended by MnDOT
- The SW Corridor is assumed to commence operation in 2018; for regional assessment, all corridors are assumed to operational in 2030 and impacts from 2030-2045 are estimated and reported
- The price of fuel used in the travel demand and mode choice models is \$3.41 per gallon (\$2.59 in 2000\$ based on the CPI) to reflect the average cost of fuel in the region on October 26, 2011

# Thank you to Itasca Project Transportation Task Force

---

Jay Cowles, Chair	Unity Ave
Mike Erlandson	SUPERVALU
David Freed	Xcel Energy
Restor Johnson	UnitedHealth
Richard Murphy	Murphy Warehouse
Judi Nevonon	US Bancorp
Duane Ring	Century Link
Lee Sheehy	McKnight Foundation
David Sparby	Xcel Energy
John Stanoch	
Richard Varda	Target
Charlie Zelle, Chair	Jefferson Lines

---

## Itasca Project leadership

---

Mary Brainerd, Chair	HealthPartners
Richard Davis, Vice-Chair	US Bancorp

---

# Thank you to Technical Advisory Committee

---

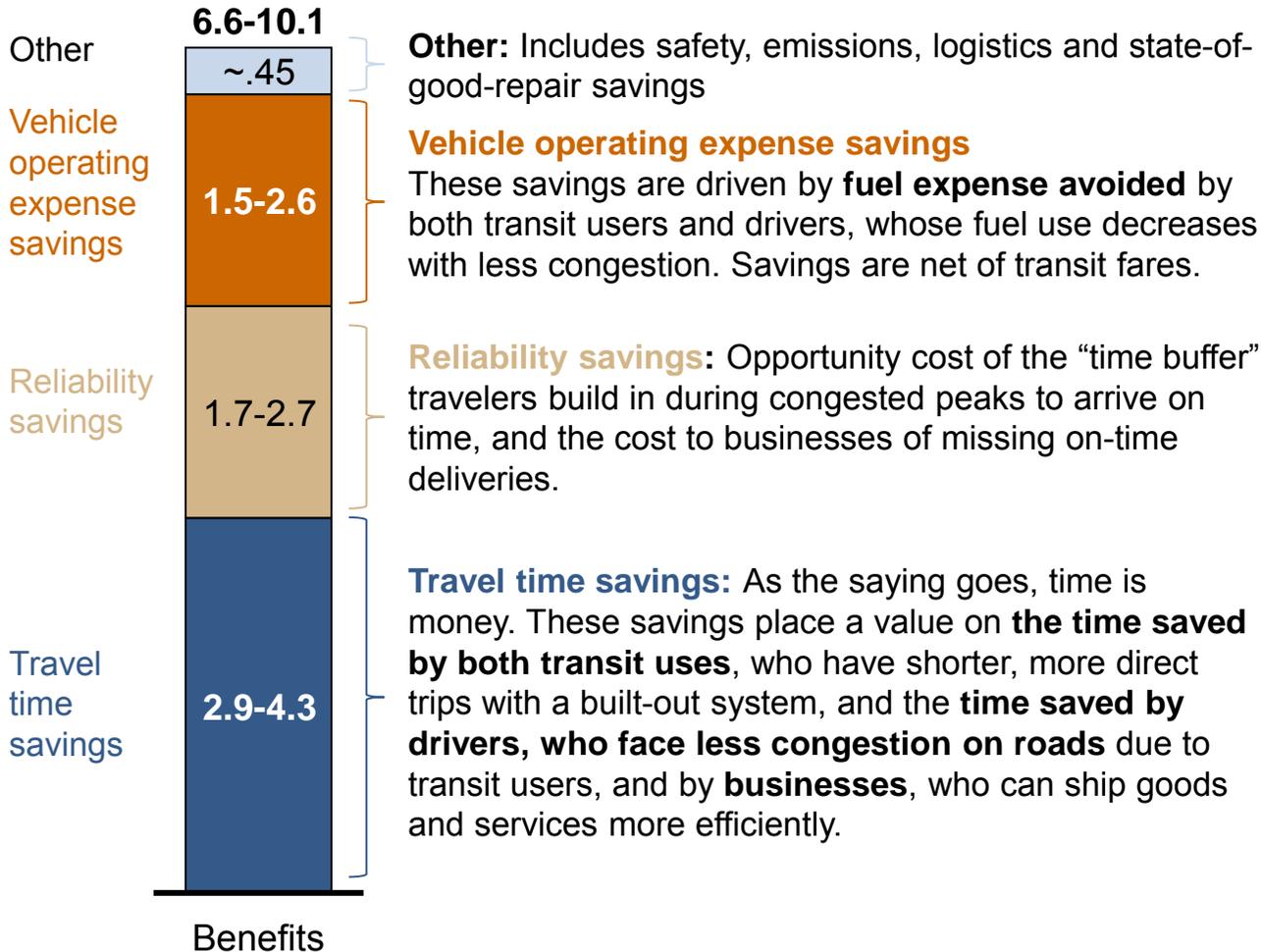
Mary Richardson	CTIB
Mary Kay Baily	Corridors of Opportunity
Katie Walker	Hennepin County
David Lawless	Hennepin County
Lee Sheehy	McKnight Foundation
Eric Muschler	McKnight Foundation
Arlene McCarthy	Metropolitan Council
Guy Peterson	Metropolitan Council
Mark Filipi	Metropolitan Council
John Kari	Metropolitan Council
Will Schroeer	Minneapolis Regional Chamber of Commerce and Saint Paul Area Chamber of Commerce
Jim Erkel	Minnesota Center for Environmental Advocacy
Kate Johansen	Minnesota Chamber of Commerce
David Levinson	University of Minnesota
Laurie McGinnis	University of Minnesota
Caren Dewar	ULI MN and Regional Council of Mayors
Ted Schnoenecker	Washington County

---

# Breakdown of net benefits (2030 system built out example)

## Quantified benefits of transit investment

\$B

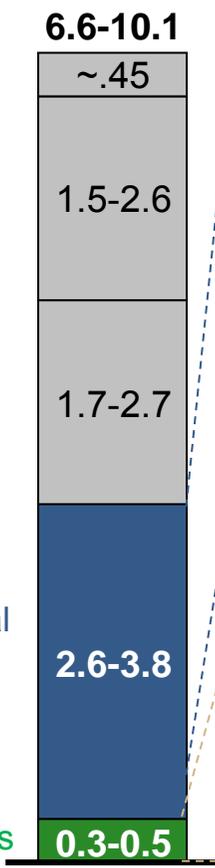


## Not included in benefits:

- Induced development
- Qualitative benefits (e.g., enjoyment of driving, lowered stress from not driving)
- Livability benefits, e.g., cost of housing, walkability, social capital
- Clustering benefits, e.g., more efficient use of public infrastructure, increased productivity

# Travel time savings are calculated by type – personal and business

Quantified benefits of transit investment  
\$B



Travel time savings

Personal

Business

Benefits

## Benefit description<sup>1</sup>

- Includes all personal trips, including commutes, journeys to school, errands
- Does not include leisure trips
- Based on opportunity costs

- All business-generated trips, including visits to clients, movement of goods, services

## Calculation

- 50% of the regional average wage rate<sup>1</sup>, e.g., an hour saved in a region with a \$20/hr wage rate is worth \$10<sup>1</sup>
  - Values ranged from 13.93 – 20.67/hour
- Estimated daily, and then multiplied by 260 working days to arrive at annual savings

- Estimated out-of-pocket expense per unit output, includes wages for truck drivers, inventory costs
  - Values ranged from \$17.51-\$58.57/hour
- Estimated daily and multiplied by 365 for annual savings

## Examples

- A parent arrives home 15 minutes earlier, and pays a babysitter less
- A commuter has time to make herself breakfast in the morning, and saves a trip to the deli
- A couple has extra time at night to search travel websites, and saves \$100 on their next vacation

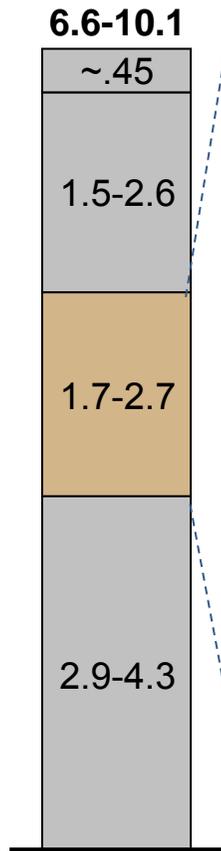
- A shipping company pays less overtime to its truck drivers
- A corner store is able to increase deliveries to 3 times a week, freeing up shelf space from inventory and increasing sales

<sup>1</sup>These are net benefits, that is, the generally higher travel times of transit users are subtracted from the lower travel times of highway users

<sup>2</sup> These values were drawn from MNDOT, the Bureau of Labor Statistics, and the Transportation Research Forum

# Reliability savings are based on lower “buffer” times needed for on time arrival

Quantified benefits of transit investment  
\$B



Reliability savings

Benefits

Benefit description

- Value of time saved when travelers are able to reduce the “time buffer” they build in to be arrive at their

Calculation

- Estimate buffer time index (BTI), which compares the 95<sup>th</sup> percentile of travel time to the average<sup>1</sup>
- Calculate the change in BTI between build and no-build scenarios and multiply by number of travelers affected and by value of time by trip type
- BTI for estimated as
  - 2.5 times during peak periods I-94/I-90
  - 1 for off-peak (meaning travelers build in no buffer)
- Value to time for trip type is the same as used in the travel time savings
  - Personal: \$13.93 – \$20.67/hour
  - Business: \$17.51- \$58.57/hour

Examples

- A shift worker is able to stay an extra 15 minutes and still arrive on time for his next job
- A parent is able to leave the house 10 minutes later, and packs his child lunch, saving the price of school lunch
- An office worker is able to make a new transit connection, shortening his commute by 30 min
- A dentists’ office near a busy freeway can reduce overtime cost since patients arrive on time more often
- A delivery is made on time, avoiding a late fee
- An on-time delivery of produce prevents food spoilage

<sup>1</sup> We drew our value from an empirical estimate made in 2009 of the BTI as 2-3 times average trip time

<sup>2</sup> These values were drawn from MNDOT, the Bureau of Labor Statistics, and the Transportation Research Forum

# Breakdown of travel time benefits by user group

## Select benefits by user group

\$B



# Credentials of Cambridge Systematics

The Itasca Project working team, in consultation with its Technical Advisory Committee, selected Cambridge Systematics (CS) via a competitive bidding process. CS was selected based on the breadth and depth of its experience in transit and economic analyses. Details on services provided and relevant experience of CS is available on the CS website: <http://www.camsys.com/>

## Key Qualifications

Cambridge Systematics has deep experience with **Federal, state, and local government**

- Relationships with **9 Federal agencies**, including on-call contracts with FHWA and FTA
- Served **44 state governments** and over **60 MPOs** and other local government bodies

Experience with **multiple modes** of transit (e.g., LRT, local and intercity bus, alternative transportation services)

## Highlighted projects

**TCRP H-9: Economic Impact Analysis of Transit Investments:** Evaluation of methods used to conduct economic impact analysis for proposed transit investments

**APTA Economic Analysis:** Economic impacts of national transit investments

**Envision Utah Economic Impacts of Public Transportation System Expansion:** Direct effects of public transit investments on travel efficiency, user benefits, and the regional economy.

**LAMTA Economic Impact Benefits Study:** Long-range economic impacts of alternative transportation development and financing plans

**NYMTA Benefits:** Long-term economic consequences of investments in public transportation facilities and services

**California High-Speed Rail:** Induced Growth Summary and Secondary Impacts Analysis