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CHICAGO TRANSIT AUTHORITY

MOBILITY, EQUITY, AND ECONOMIC IMPACT OF TRANSIT EXPANSION IN CHICAGO REGION



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U.S. DEPARTMENT OF
ENERGY

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REMOVING TRANSIT

Key Takeaways

Previous
Study

Travel Time

+35%

CITY

Activity
Cancellations
CITY

26%

by lowest 20% income

Economic
Activity
REGION

\$35B

REGION

Speed

-33%

CITY

Daily Activity
Cancellations

2M

REGION

53%

by women

Return on
Investment

13x

REGION

IMPROVING LEVEL OF SERVICE THROUGH ADDITIONAL FUNDING

SCENARIO 1 *Baseline at % of 2019 Service*

- CTA
 - Bus: 91%
 - Metro: 78%
- PACE: 88%
- METRA & SSL: 96%

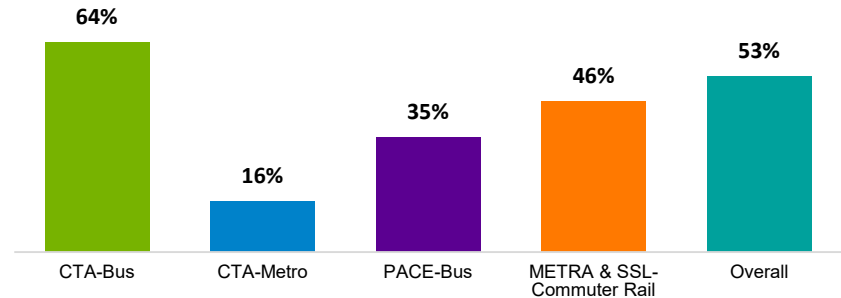
SCENARIO 2 *Short Term*

- Improve frequency
- Increase speeds by 20% in certain corridors through Better Streets for Buses (BSB)
- Add Ashland and Western BRTs for CTA
- Add 95th and Halsted Pulse (ART) for PACE
- Include Red Line Extension
- Reduce lane in BSB and BRT corridors
- Decrease maximum speed in the city from 30 mph to 25 mph

DAILY TOTAL SCHEDULED SERVICE TRIPS

AGENCY	MODE	BASELINE	SHORT AND LONG TERM
CTA	Bus	17,035	27,910
CTA	Metro	1,329	1,535
PACE	Bus	6,448	8,690
METRA and SSL	Commuter Rail	705	1,028
TOTAL		25,517	39,163

% CHANGE IN DAILY TOTAL SCHEDULED SERVICE TRIPS



IMPROVING LEVEL OF SERVICE THROUGH ADDITIONAL FUNDING

SCENARIO 3 *Long Term* *include land use and car ownership*

SCENARIO 2, plus

- Shift population to the city, especially to transit oriented development (TOD) areas
 - 170K households (4.3%) would move to the city
- Reduce car ownership per household, especially in TOD areas:
 - 10% outside the city
 - 13% in the city
 - 12% overall

	BASELINE	SHORT TERM	LONG TERM	CHANGE	% CHANGE
HOUSEHOLD					
Non-City	2,862,216	2,862,216	2,692,484	-169,732	-6%
City	1,155,384	1,155,384	1,328,408	173,024	15%
TOTAL	4,017,600	4,017,600	4,020,892	3,292	0%
NUMBER OF CARS					
Non-City	5,092,976	5,092,976	4,313,400	-779,576	-15%
City	1,295,340	1,295,340	1,293,324	-2,016	0%
TOTAL	6,388,316	6,388,316	5,606,724	-781,592	-12%
CARS PER HOUSEHOLD					
Non-City	1.78	1.78	1.60	-0.18	-10%
City	1.12	1.12	.97	-0.15	-13%
TOTAL	1.59	1.59	1.39	-0.20	-12%

IMPROVING LEVEL OF SERVICE

Key Takeaways

Transit Boardings

+53%

REGION

Speed

+5%

REGION

Travel Time Savings

+9%

REGION

Energy, GHG Savings

+11%

REGION

Change in Activities

+12%

CITY

Return on Investment

13x

REGION

TRANSIT MODE SHARE INCREASES

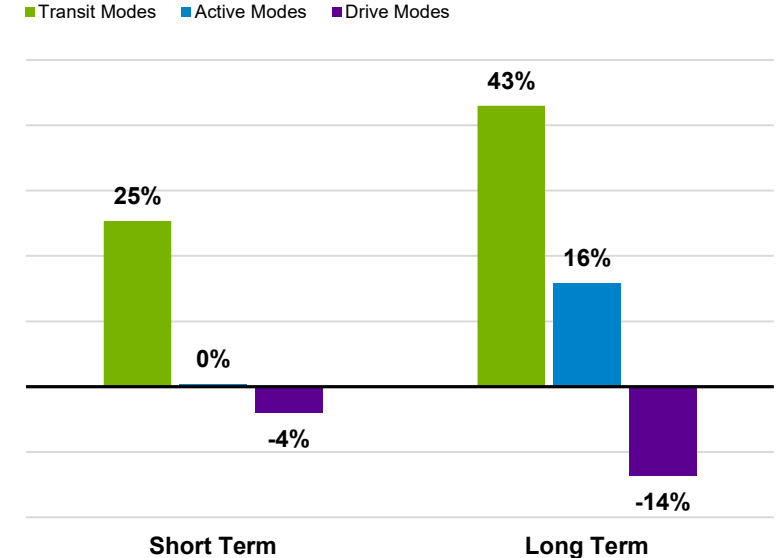
25% (short term) – 43% (long term) in the city

MODE SHARE

MODE	BASELINE	SHORT TERM	LONG TERM
Transit Modes	9.4%	11.8%	13.5%
Active Modes	28.0%	28.1%	32.5%
Drive Modes	62.5%	60.0%	54.0%

- In the short term, transit mode share increases substantially in the city given the service improvements.
- With people moving into the city and reducing their car ownership, the mode share would increase further.

% CHANGE IN MODE SHARE



SERVICE IMPROVEMENTS INCREASE BOARDINGS

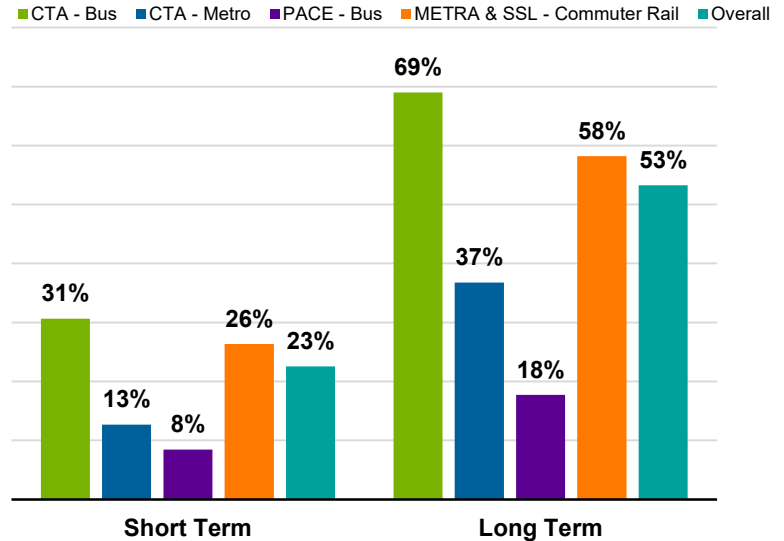
23% (short term) – 53% (long term) in the region

DAILY TRANSIT BOARDINGS

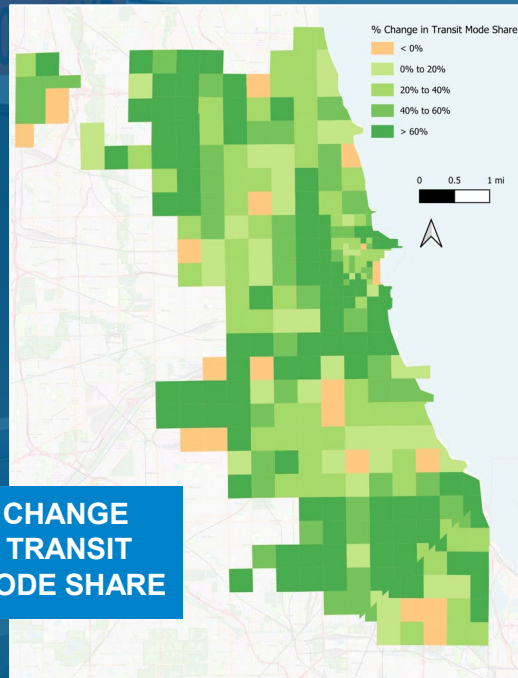
AGENCY	MODE	BASELINE	SHORT TERM	LONG TERM
CTA	Bus	611.4 K	798.8 K	1.03 M
CTA	Metro	445.1 K	501.5 K	608.7 K
PACE	Bus	87.5 K	94.9 K	103.0 K
METRA and SSL	Commuter Rail	175.2 K	221.3 K	277.2 K
Overall		1.32 M	1.62 M	2.02 M

- In the short-term, transit boardings would go up to 1.6M.
- With people moving into the city and reducing their car ownership, the boardings would go up to 2.0M.

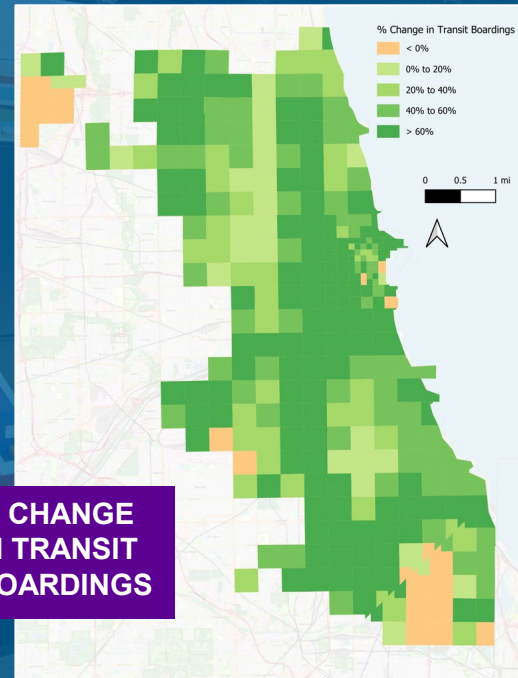
% CHANGE IN DAILY TRANSIT BOARDINGS



MAJOR INCREASE IN TRANSIT MODE SHARE AND BOARDINGS ACROSS THE CITY



**% CHANGE
IN TRANSIT
MODE SHARE**

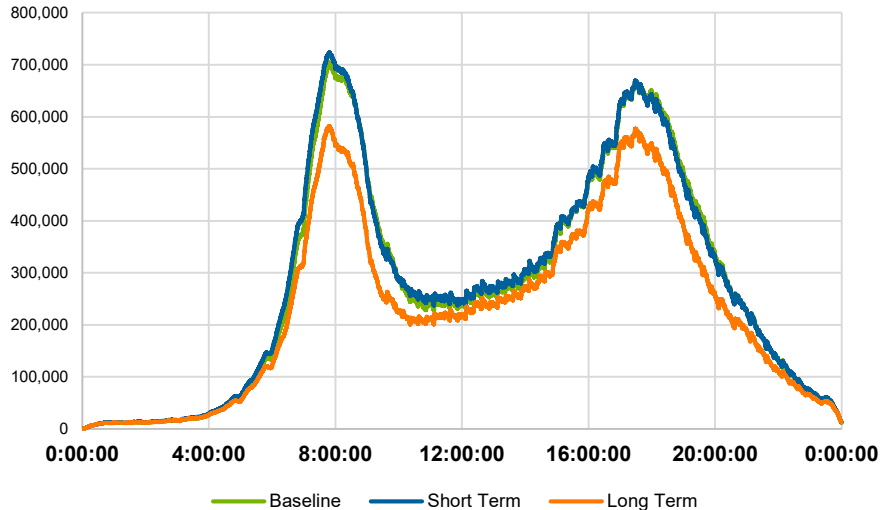


**% CHANGE
IN TRANSIT
BOARDINGS**

TRANSIT SERVICE IMPROVEMENTS POSITIVELY AFFECT ALL TRAVELERS

Not just transit ones

VEHICLES IN TRAFFIC

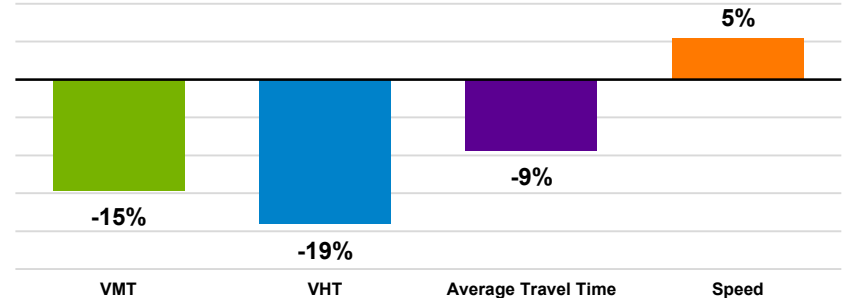


Major congestion relief is observed in the long term, especially in peak hour traffic.

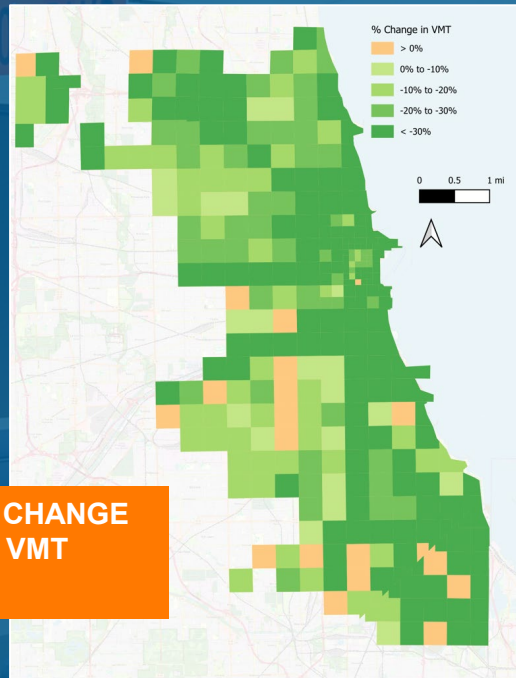
PASSENGER CAR TRAVEL METRICS

VALUES	BASELINE	SHORT TERM	LONG TERM
Million VMT	150.2	147.2	128.1
Million VHT	5.5	5.6	4.5
AVERAGE SPEED <i>mph</i>	27.3	26.5	28.7
AVERAGE TRAVEL TIME <i>min</i>	17.2	17.4	15.5

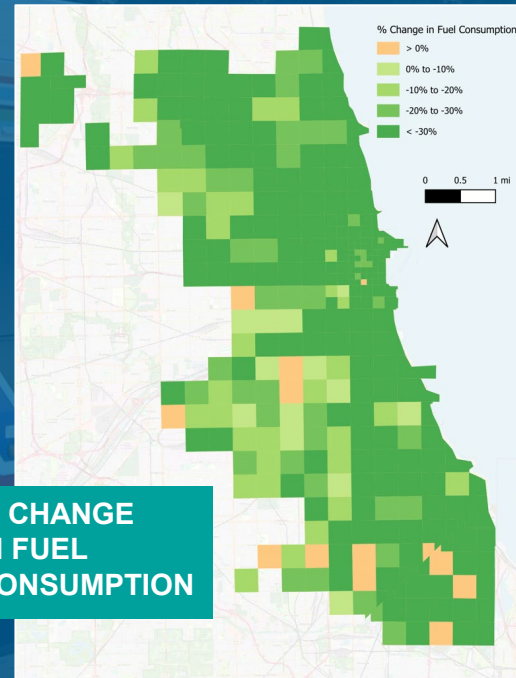
% CHANGE IN PASSENGER CAR TRAVEL METRICS



MAJOR VMT REDUCTION IN THE CITY DRIVES FUEL SAVINGS



**% CHANGE
IN VMT**



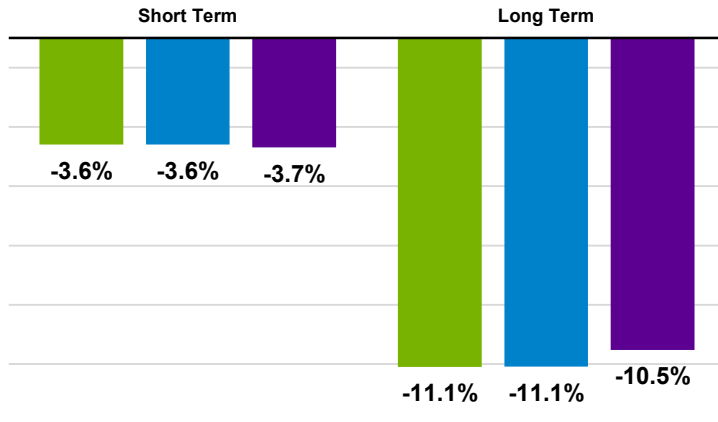
**% CHANGE
IN FUEL
CONSUMPTION**

REGIONAL DECREASE IN GHG EMISSIONS AND POLLUTANTS

Major climate change and public health benefits

% CHANGE IN FUEL, GHG, PM2.5

■ Fuel Consumption ■ Tailpipe GHG ■ Tailpipe PM2.5



SCENARIO	FUEL CONSUMPTION <i>thousand metric ton</i>	TAILPIPE GHG <i>thousand metric ton</i>	TAILPIPE PM2.5 <i>metric ton</i>
Baseline	36.3	118.4	3.6
Short Term	35.0	114.1	3.5
Long Term	32.3	105.2	3.2

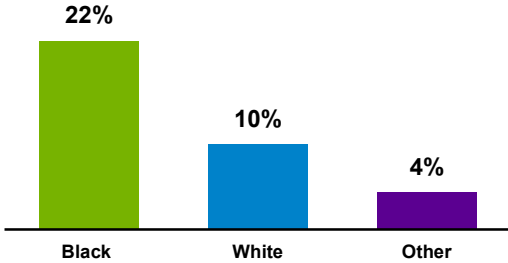
- There is 4% decrease in fuel consumption, tailpipe greenhouse gas emissions (GHG) and particulate matter (PM2.5) in the short run.
- The reduction is 11% in the long run due to higher modal shift to transit and active modes.

*GHG and PM2.5 estimated using GREET

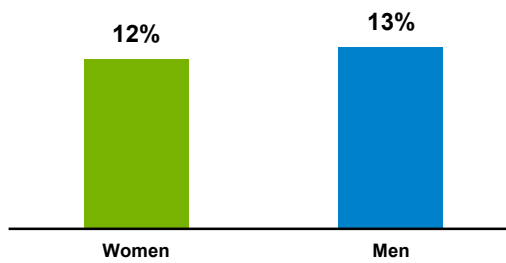
INCREASES IN ACTIVITY COUNTS FAVORS UNDERSERVED COMMUNITIES

Black, very low- and very high-income people in the city

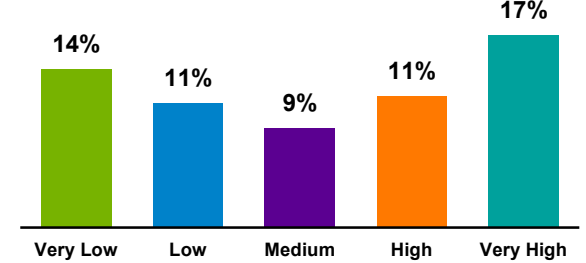
% CHANGE IN ACTIVITIES BY RACE



% CHANGE IN ACTIVITIES BY GENDER



% CHANGE IN ACTIVITIES BY INCOME



- While overall activity count in the city increases by 12%, black communities enjoy a larger increase.
- Very low- and very high-income groups see a larger increase.

TRANSIT INVESTMENT HAS A SUBSTANTIAL POSITIVE IMPACT ON REGIONAL ECONOMY

CATEGORY	ANNUAL TOTAL
Travel Time Savings	\$10.45 billion
Annual Car Ownership Savings	\$8.38 billion
TOTAL	\$18.84 billion

- Every \$1 invested in transit generates \$13 in economic activity and travel time savings in the Chicago region (assuming \$1.5 billion additional operating funding)
- This is a partial analysis. Additional factors to consider:
 - Public health benefits due to air quality improvements and reduced car crashes
 - Increase in consumer spending based on household savings



IMPROVING LEVEL OF SERVICE

Key Takeaways

Speed

+5%

REGION

Travel Time Savings

+9%

REGION

Transit Boardings

+53%

REGION

Energy, GHG Savings

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Change in Activities

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CITY

Return on Investment

13x

REGION

ACKNOWLEDGMENT

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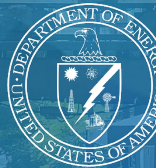


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