

# 2045 Traffic Forecast Update



**MOPAC SOUTH**  
ENVIRONMENTAL STUDY

# 2045 Spotlight Content

## Traffic Forecast Requirements

Modeling Differences, No Build Comparison

## CAMPO 2045 Travel Times

Flow Rates & Travel Time Analysis

## Evaluation Process

Purpose & Need; Criteria Development

## Build Alternative Evaluation

Criteria Evaluation ; Benefit Analysis

## Alternative Lane(s) Operational Configuration Options Evaluation

Options Development, Benefit Analysis

## Next Steps

*Visit [MoPacSouth.com](http://MoPacSouth.com)  
for past materials and  
more information about the  
ongoing Environmental Study*

# Traffic Forecast Requirements



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## Why do we need a traffic forecast?

- National Environmental Policy Act (NEPA) requires that every Environmental Assessment (EA) includes a traffic study performed per Federal Standards based on the Regional Transportation Model adopted by the Metropolitan Planning Organization, the Capital Area Metropolitan Planning Organization (CAMPO) for Central Texas
- One factor used in the assessment of no-build and build alternatives
- Foundation for air quality, noise and environmental justice analysis for technical reports

## What is a traffic forecast?

- CAMPO develops and updates the Regional Transportation Plan, population/employment demographics, and Travel Demand Model every 5 years
- The project team refines CAMPO's macro-level Transportation Demand Model so that it more accurately forecasts micro-level conditions on the MoPac South corridor
- The forecast provides a modeled scenario that represents our best available estimates of traffic, travel times, and project impacts
- No model is 100% accurate, it is a well-informed scenario that serves as one data source for comparing project alternatives/configurations and making decisions

## Who reviews the methodology?

- The MoPac South traffic forecast methodology is reviewed by TxDOT Austin District and TxDOT Division of Transportation Planning and Programming teams
- The MoPac South Project Corridor Traffic Forecast Report from Enfield Road to La Crosse Avenue received concurrence.

# 2035 vs 2045 Traffic Forecast



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- **Open House #1: November 7, 2013**  
Preliminary purpose and need, goals presented
- **Open House #2: April 29, 2014**  
Preliminary build alternatives presented
- **Open House #3: February 26, 2015**  
Evaluation of build alternatives presented  
Express Lanes alternative recommended
- **Open House #4: November 10, 2015**  
Preliminary operational configuration options presented
- **Open House #5: November 22, 2021 - January 7, 2022**  
Re-engagement of the public  
Preliminary operational configuration options re-presented

## Key Takeaways:

- Public involvement has occurred at each step in project development and will continue
- Express Lane(s) build alternative previously recommended based on 2035 Model data evaluation
- All build alternatives and the six alternative lane(s) operational configuration options will be evaluated based on the 2045 Model

**Required to use current CAMPO Regional Transportation Plan as foundation of project work**

**CAMPO 2045 data reflects the best collective understanding of our region's growth**

**Differences between the 2035 and 2045 models result in variations between the MoPac South 2035 and 2045 traffic evaluations**

**Human and environmental factors remain important and will be part of the full evaluation presented at Open House 6**

**The 2045 traffic evaluation yields similar indications as the previously presented 2035 evaluation**

## 1 | Socioeconomic Forecast

- Living, working, and travel patterns changed from centralized employment in 2035 model to distributed employment in 2045 model.
- The distribution reduces directional intensity of traffic despite high overall growth.

## 2 | Major Background Projects

- Additional regional highway improvements, such as I-35 and LP 360, reduce growth of traffic on MoPac.

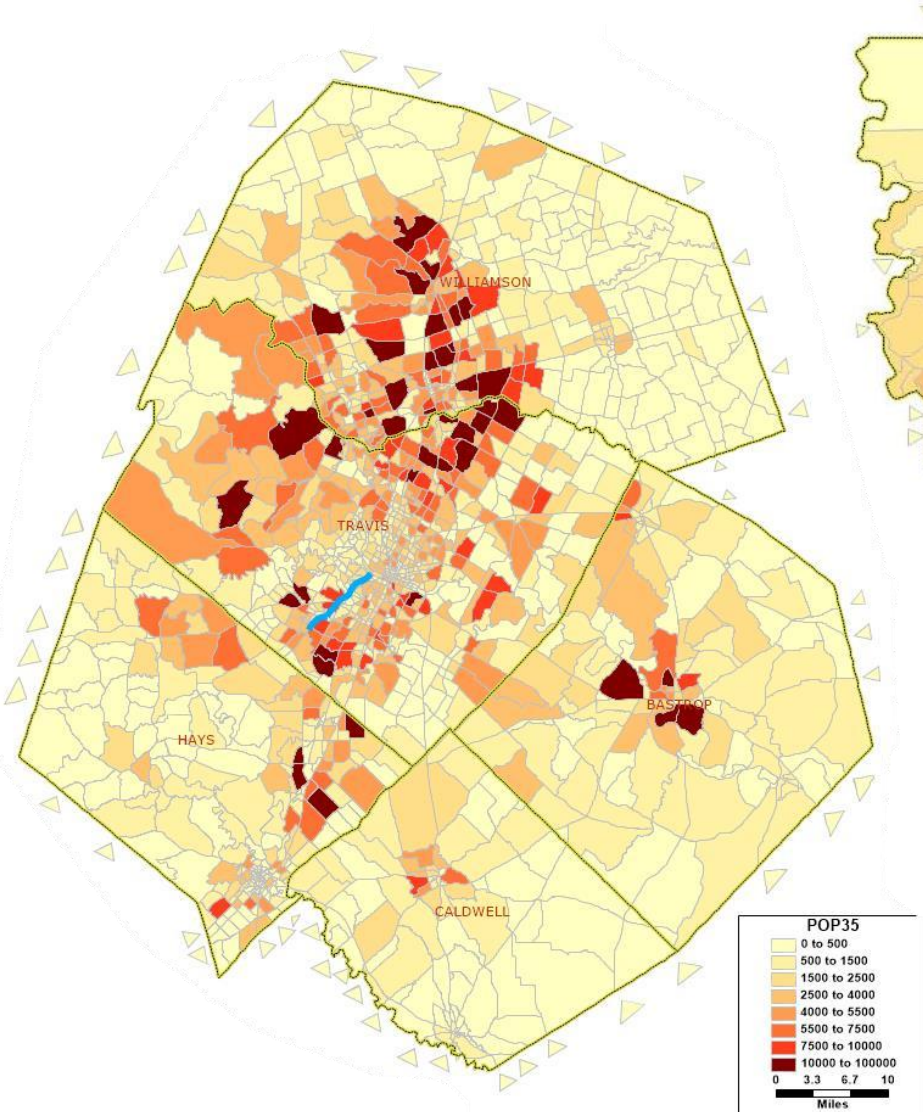
## 3 | Modeled Congestion Estimation Differences

- Travel times impacted by truck congestion and speed changes. Corridor assumes less truck traffic, to be more consistent with corridor experience, which reduces travel time details due to truck traffic congestion.

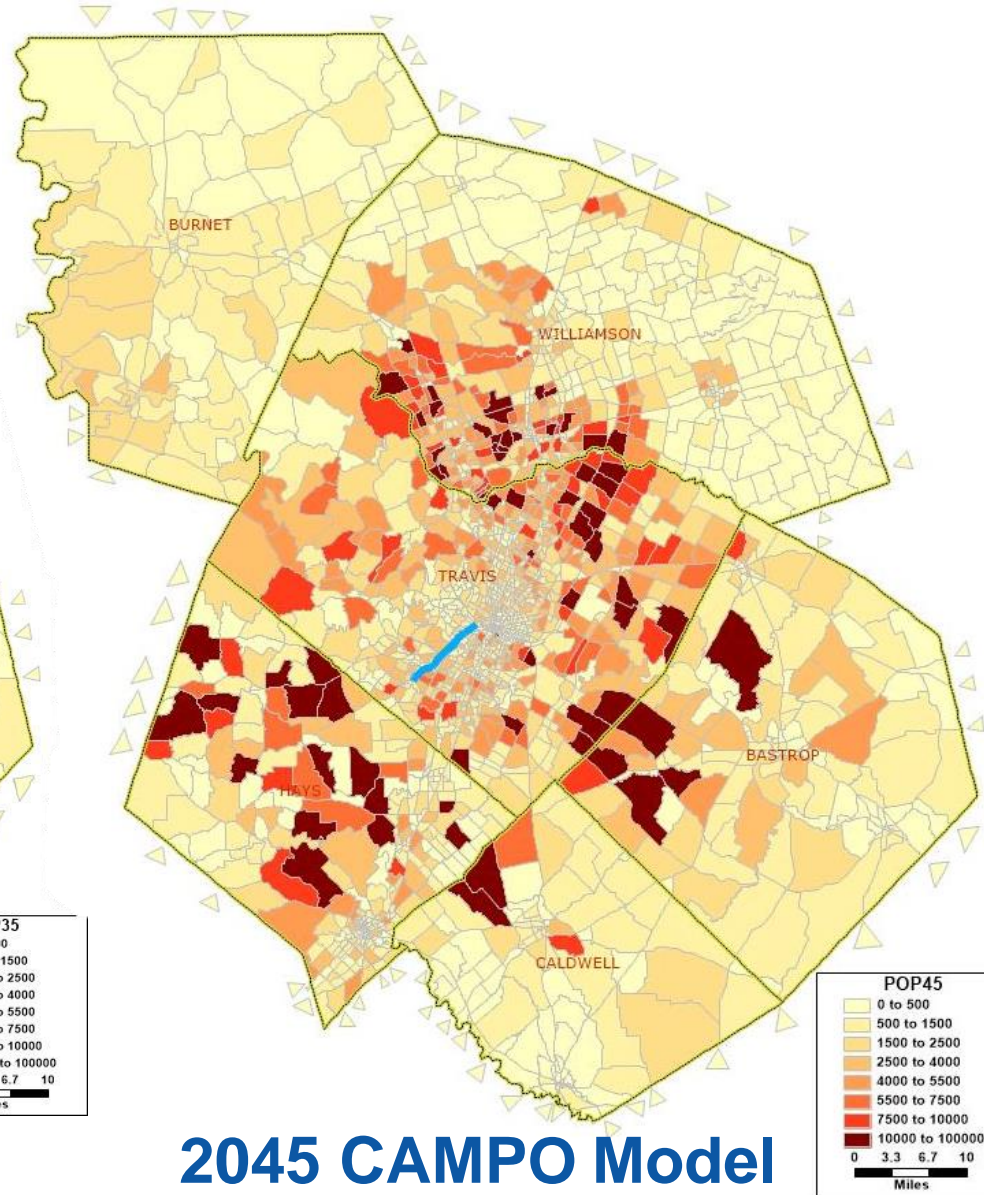


## Key Takeaways:

- Decentralized living trend; People are living farther from the city center

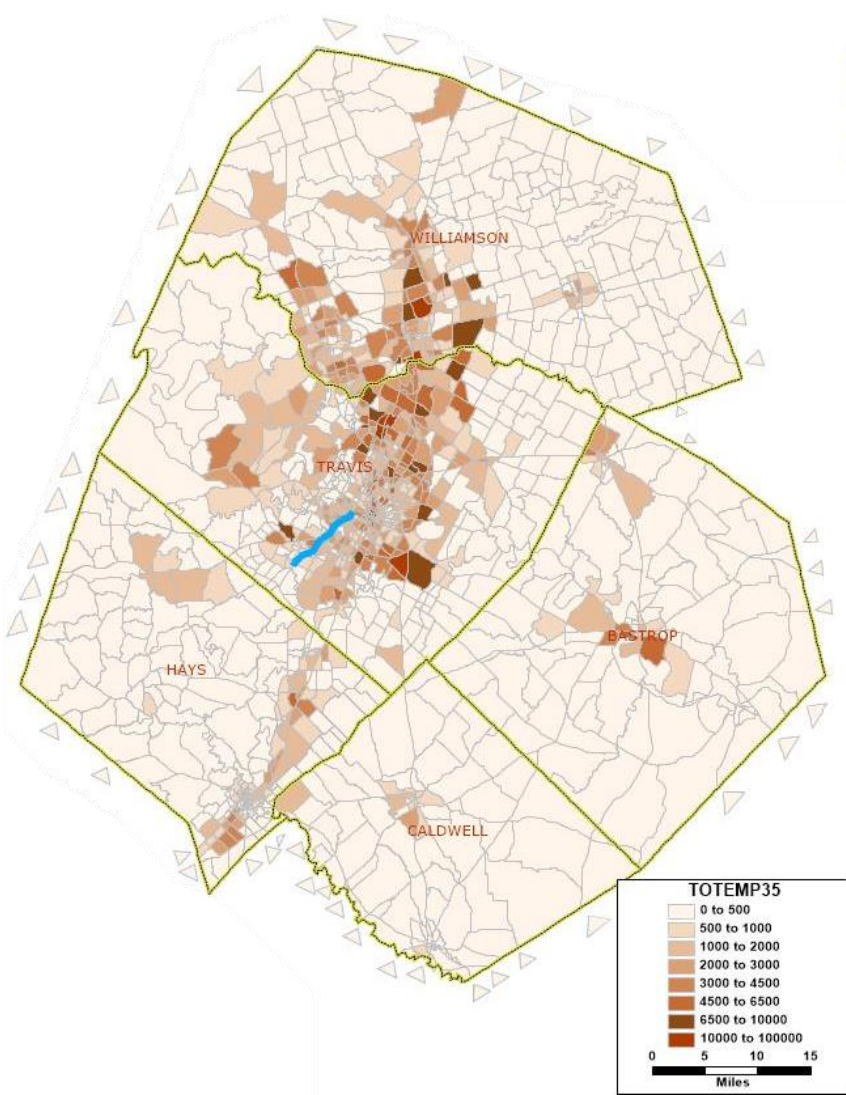


**2035 CAMPO Model**

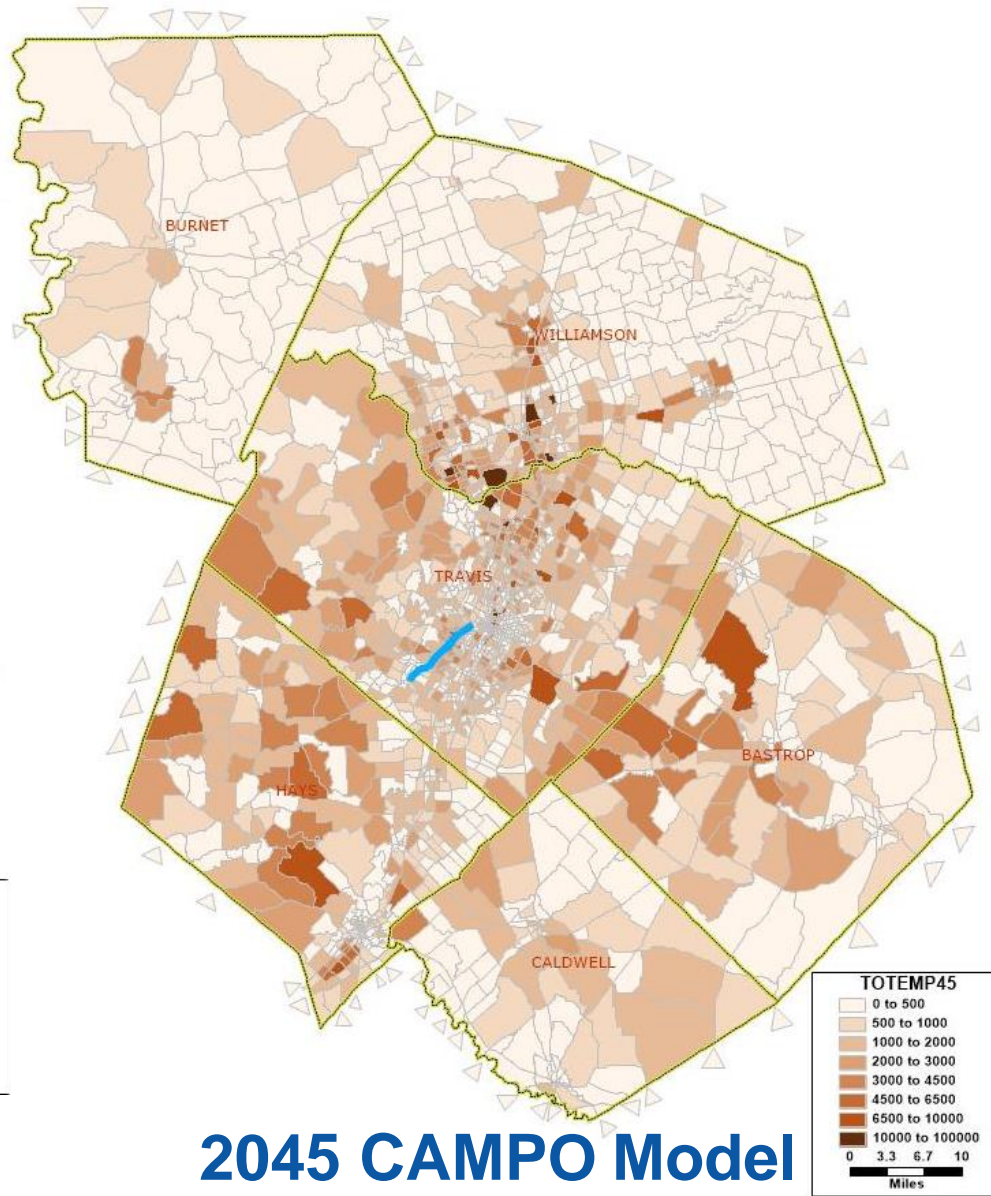


**2045 CAMPO Model**

*The CAMPO 2045 Model uses current local government land use codes to project future population and employment densities.*



**2035 CAMPO Model**



**2045 CAMPO Model**

## Key Takeaways:

- Decentralized working trend; People are working farther from the city center

*The CAMPO 2045 Model uses current local government land use codes to project future population and employment densities.*

- **New projects and roadway improvements added to CAMPO Regional Transportation Plan**
- **Major projects impacting travel times:**
  - I-35 HOV Lanes
  - Loop 360 Improvements

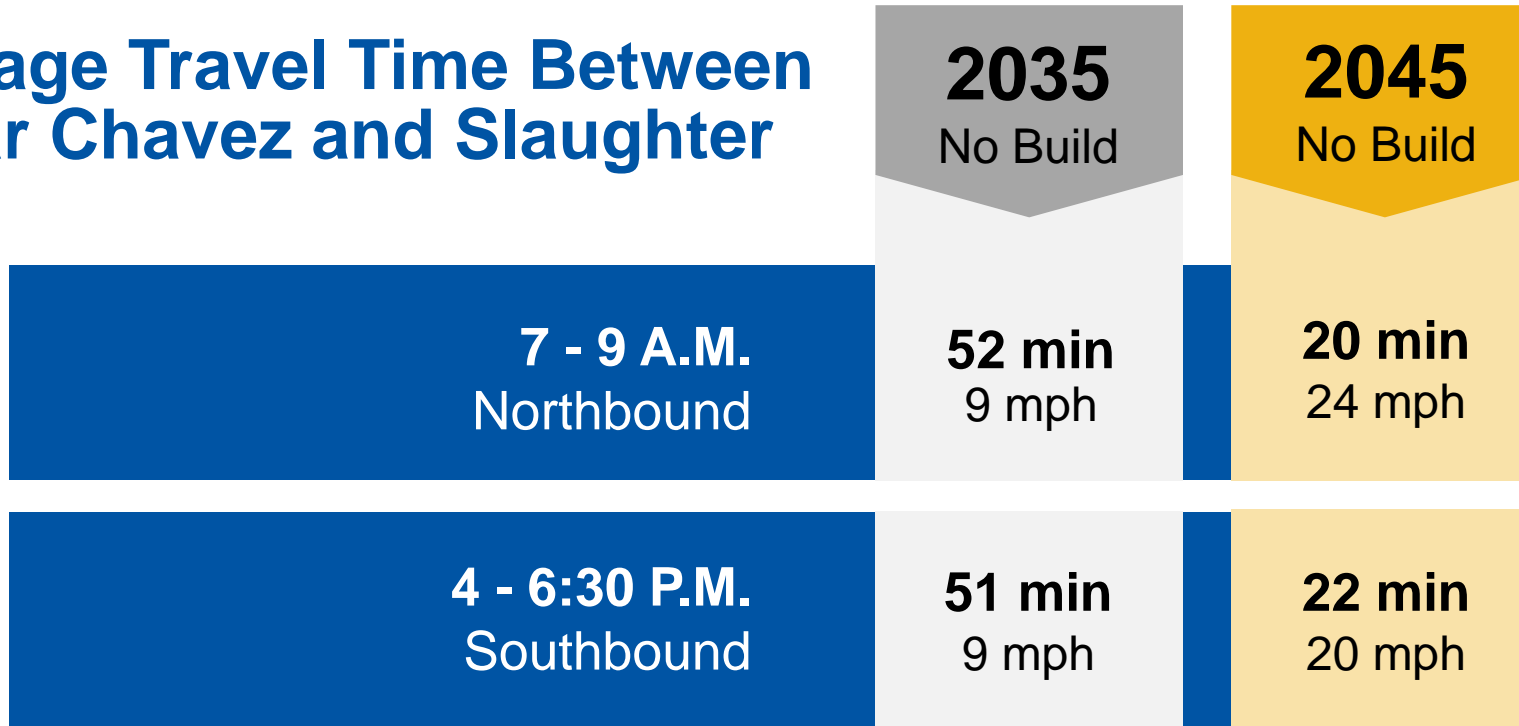


**Key Takeaways:**

- Additional regional highway improvements reduce growth of traffic on MoPac

# 2035 vs 2045 No Build Comparison

## Average Travel Time Between Cesar Chavez and Slaughter



Source: CDM Smith, September 2014\*, using CAMPO 2035 Travel Demand Model\*\*; CDM Smith, June 2022, using CAMPO 2045 Travel Demand Model.

### Key Takeaways:

- Projected travel time along the corridor has decreased using the 2045 model
- The most significant cause of the decrease in modeled travel time is the CAMPO projected decentralized population and employment demographic trends
- The current CAMPO traffic model uses best available data and is updated regularly



## A DECADE OF UPDATES

Updates to traffic modeling take time due to the amount of work to be recalculated.



## TRAFFIC MODELING

The most significant model differences results from CAMPO's observed and projected decentralized demographic growth patterns. They are subject to adjustments every five years. Use of the CAMPO model as a starting point is required.



## NEW NO BUILD PROJECTIONS

It is projected that it will take 20+ minutes to travel between Cesar Chavez St. and Slaughter Ln. in 2045.

# 2045 Model Data



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# About the Study Traffic Forecast Model

01

**Required to use CAMPO 2045 model as starting point**

02

**The model is refined to for greater corridor accuracy**

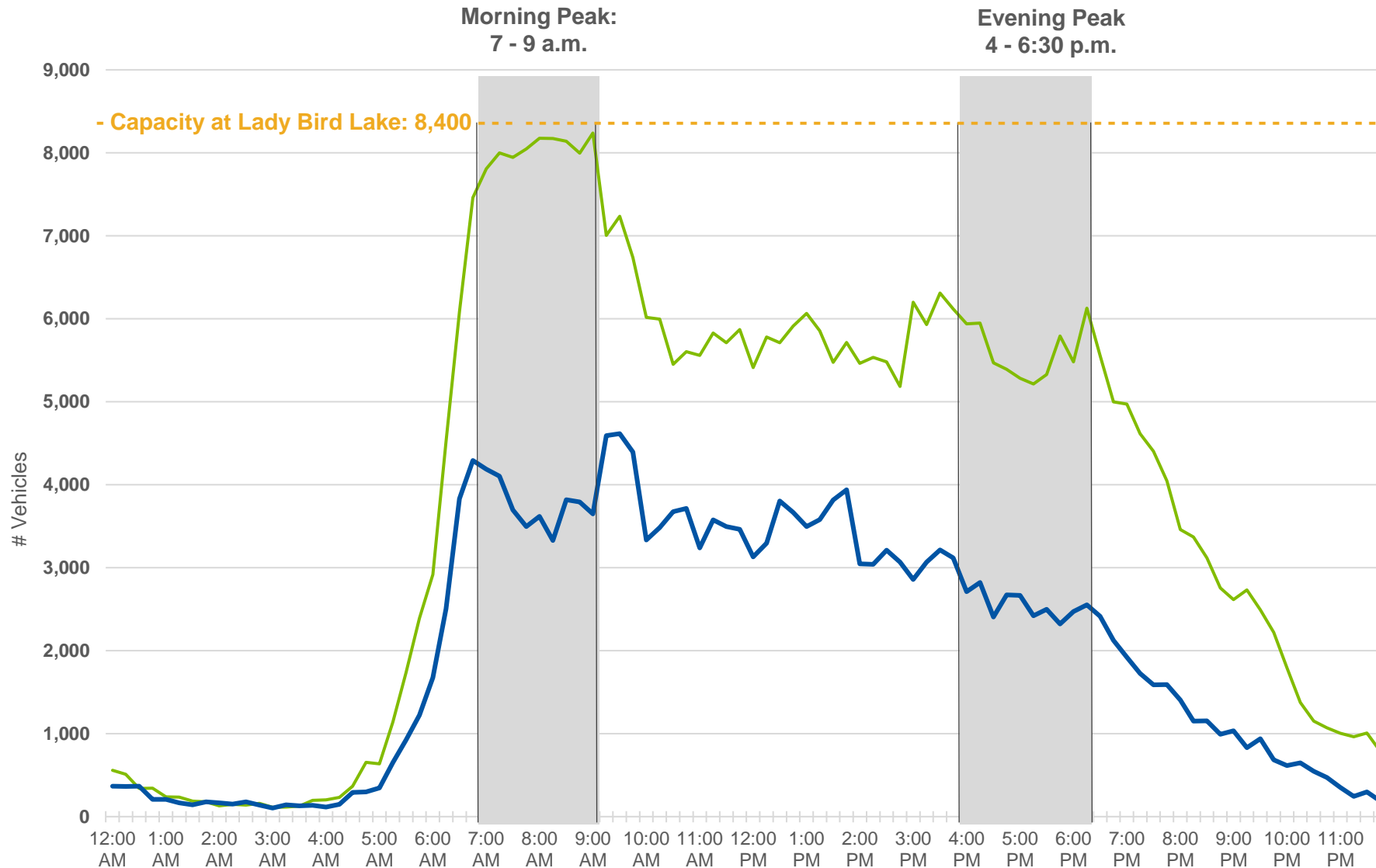
03

**Corridor base year calibration is 2018**

04

**Used to reevaluate all prior technical traffic studies**

# Baseline Northbound Flow Rates (2018)



## Key Takeaways:

- Congestion on northbound MoPac at Lady Bird Lake peaks in the morning, then remains relatively consistent throughout the day
- Congestion on northbound Mopac at US 290 slowly peaks in the morning, then decreases through the day

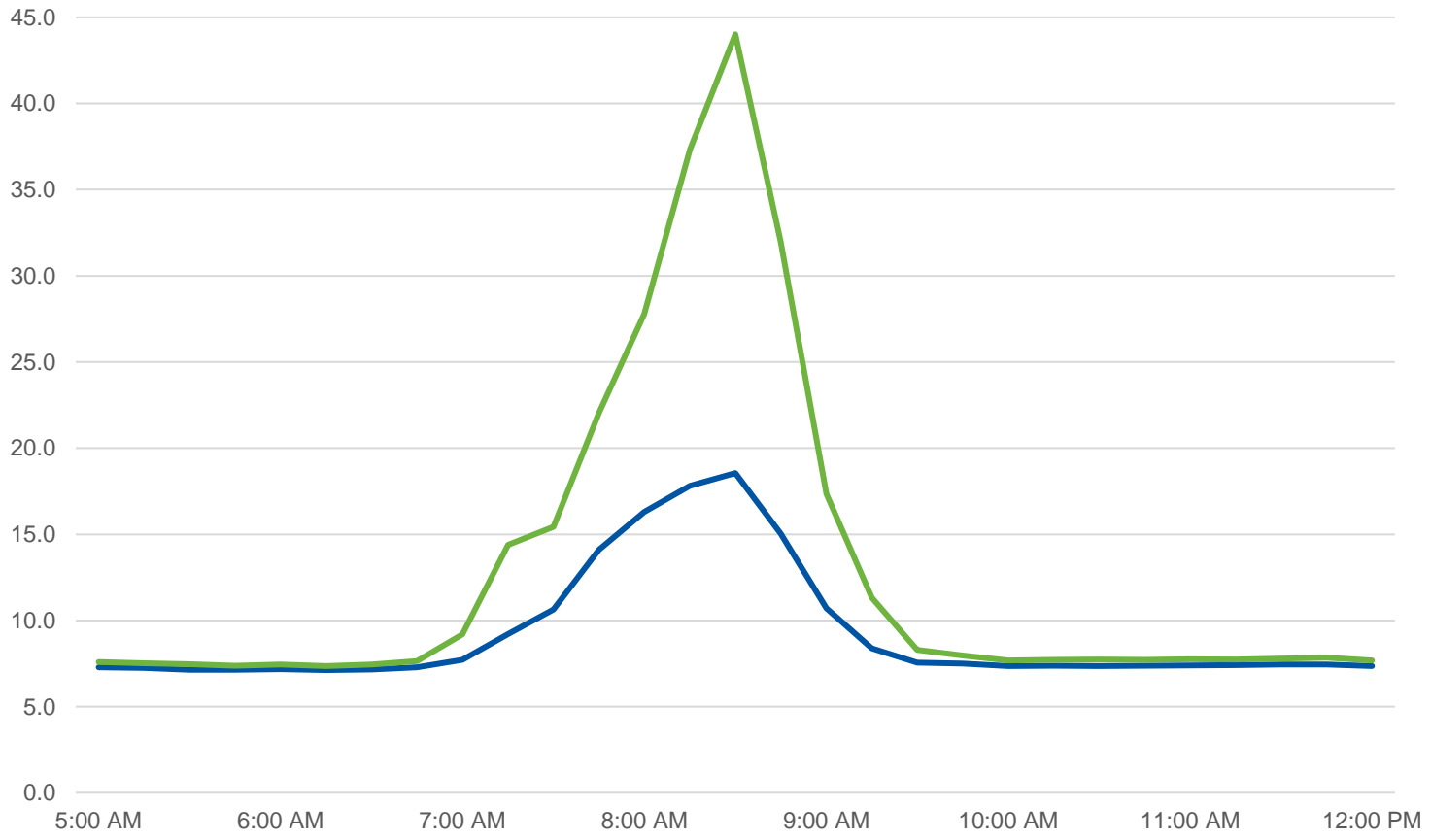


## Northbound Mopac Expressway

### Travel Time (minutes) from Slaughter Lane to Enfield Road

**Planning Time**  
 represents the total travel time that should be planned when an adequate buffer time is included to reach a destination on-time 95 percent of the time.

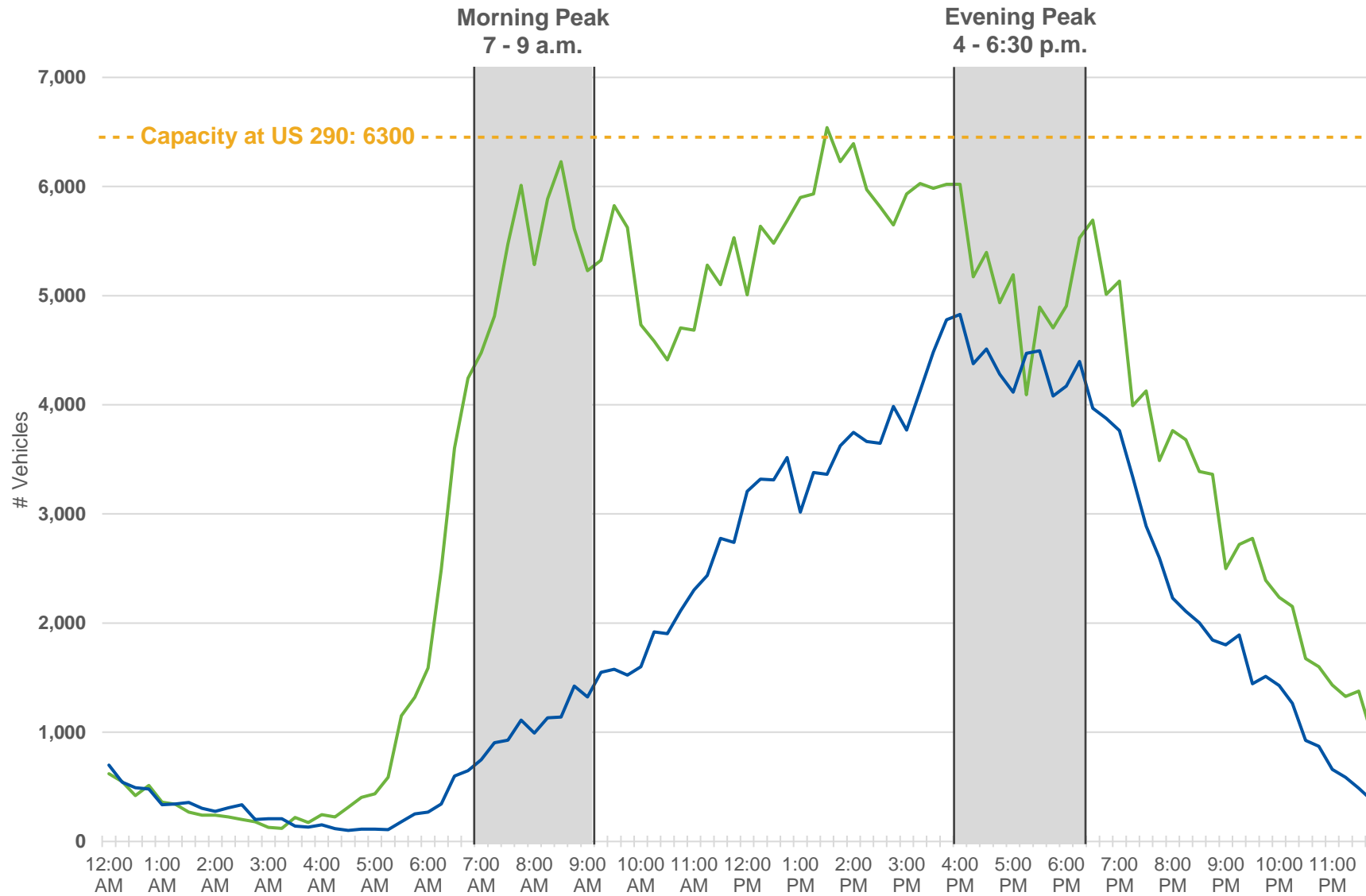
**Average Time**  
 represents the average time required to traverse the corridor.



**Key Takeaways:**

- To ensure an on-time arrival, drivers must plan significantly more time than an average trip takes

# Baseline Southbound Flow Rates (2018)



## Key Takeaways:

- Southbound traffic flow at Lady Bird Lake is relatively consistent throughout the day
- Southbound traffic flow at US 290 peaks in the evening

## Southbound Mopac Expressway

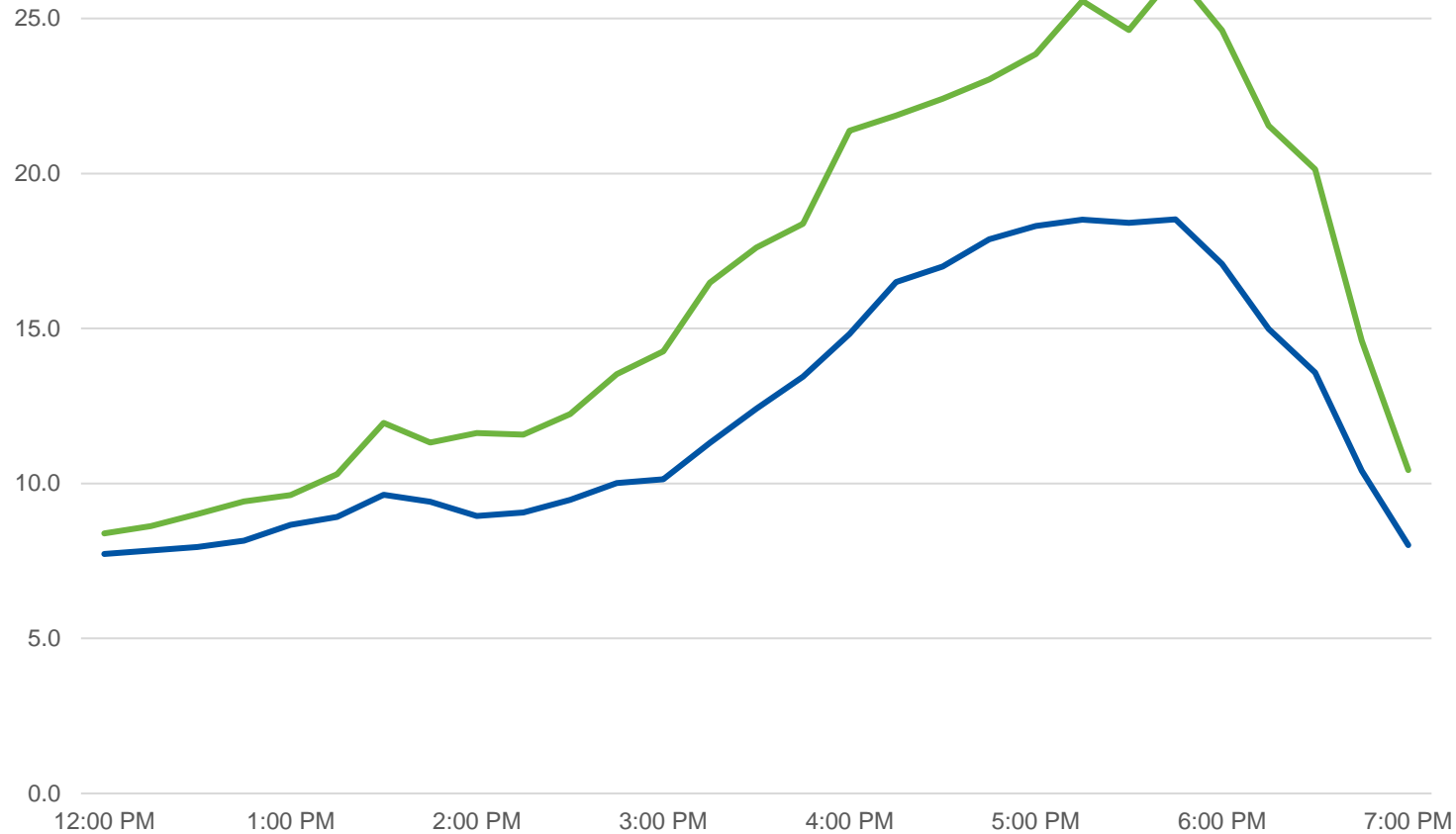
### Travel Time (minutes) from Enfield Road to Slaughter Lane

#### Planning Time

represents the total travel time that should be planned when an adequate buffer time is included to reach a destination on-time 95 percent of the time.

#### Average Time

represents the average time required to traverse the corridor.



#### Key Takeaways:

- To ensure on-time arrival, drivers must plan significantly more time than an average trip takes



# 2045 Model No Build Peak Travel Time Data

## Average Travel Time Between Cesar Chavez and Slaughter




**Key Takeaways:**


- Travel time is projected to increase
- Travel could take 30%-42% longer than now, and approximately three times as long as free flow speed.

Sources: 2018 measured data from 2018 INRIX Data; 2022 measured data from INRIX, May 2022; 2045 Corridor Forecast Model


Difference between 2018 and 2022 travel time during AM period is due to greater variability in timing of commuter trips and work-from-home availability. During afternoon, however, commuter trips in addition to non-work trips resulted in congestion experienced during pre-covid travel. This pattern of commuter traffic diffused during morning hours is observed for other corridors in the region and across the state.



**RELATIVE DIFFERENCES**  
Overall modeled travel time differences are reduced but continue to show increases to travel times throughout the corridor.



**COMPLEX CONCEPT**  
Travel time is not as simple as how long it takes to traverse a corridor. Need and ability to predict on time arrival are greatly impacted by congestion.



**TRAVEL TIME**  
In 2045 projected travel could take 30%-42% longer than now, and approximately three times as long as free flow speed.

# Evaluation Process



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## PROJECT PURPOSE

### *What we are trying to do*

- Provide an opportunity for reliable travel times
- Improve operational efficiency
- Create a dependable and consistent route for transit
- Facilitate reliable emergency response

## PROJECT NEED

### *What problems need to be addressed*

- Current and forecasted congestion levels are creating unreliable travel times
- Under the No-Build Alternative (Do Nothing), it could take 30% - 42% more time to travel between Cesar Chavez Street and Slaughter Lane by 2045
- Emergency response times are impacted by traffic congestion
- Forecasted population and employment growth in Travis and Hays counties

## PROJECT GOALS AND OBJECTIVES

- Provide consistency with local and regional plans
- Be constructible while minimizing impacts to the natural and human environment
- Reduce congestion delays and provide travel time savings for all roadway users
- Avoid and minimize impacts to water quality
- Deliver relief in a timely manner
- Facilitate congestion management
- Increase opportunities for transit and ridesharing
- Increase opportunities for pedestrians and bicyclists

### Key Takeaways:

- The developed Purpose and Need drives the project and remains highly relevant.

## EVALUATION CRITERIA DEVELOPED WITH THE PUBLIC

### Open House #1

November 7, 2013  
130 Survey respondents  
70 Public comments

### Open House #2

April 29, 2014  
67 Survey respondents  
64 Public comments

### Open House #3

February 26, 2015  
317 Survey respondents  
253 Public comments

### Open House #4

November 10, 2015  
78 Survey respondents  
1535 Public comments

### Open House #5

November 22, 2021 -  
January 7, 2022  
540 Public comments

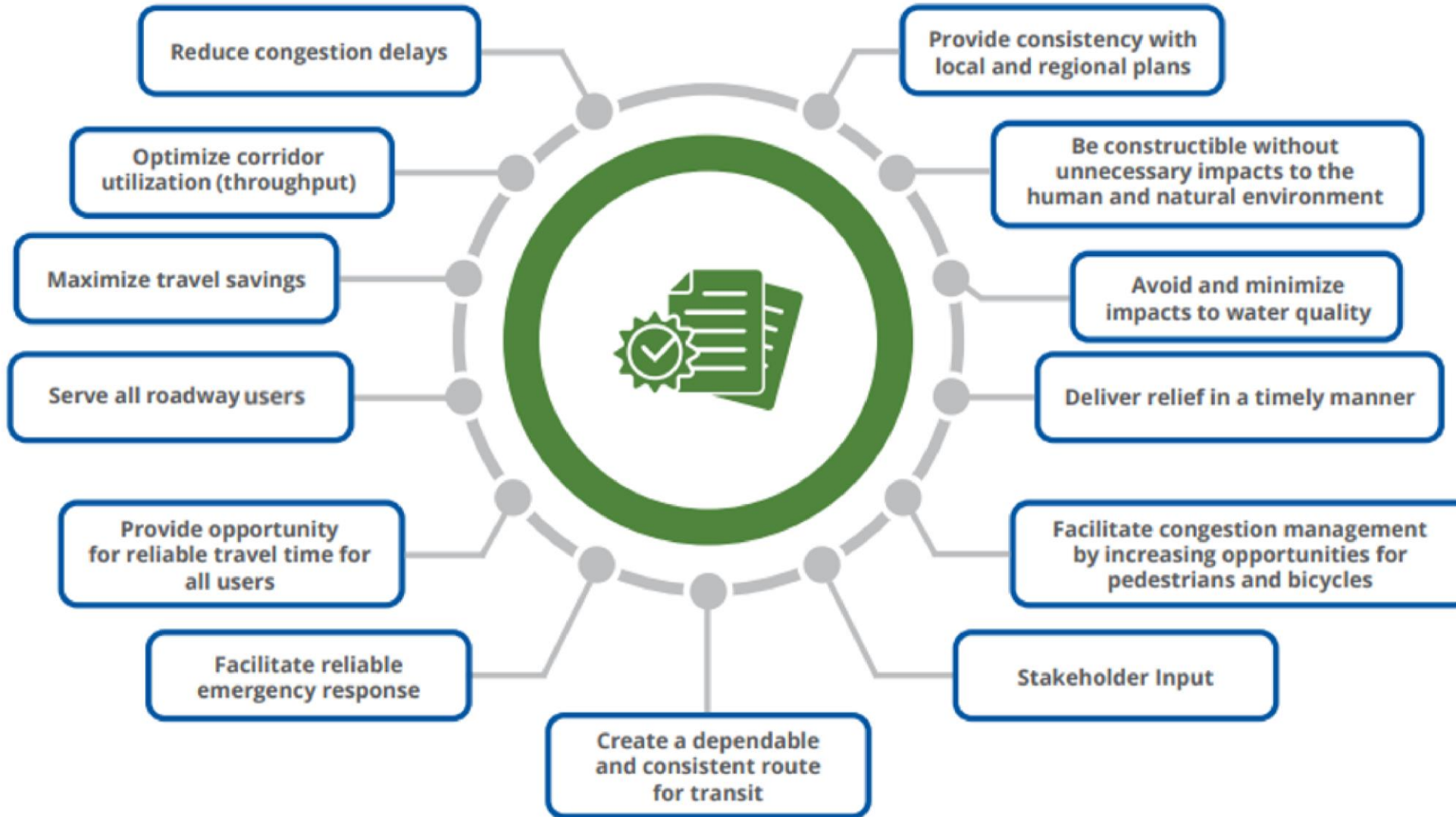
- **Included in the initial purpose and need, goals of Open House #1**
  - Provide opportunity for reliable travel time for users
  - Reduce congestion delays
  - Stakeholder input
- **Developed from input from OH# 1 and presented in OH# 2**
  - Provide consistency with local and regional plans
  - Facilitate reliable emergency response
  - Optimize corridor utilization (throughput)
  - Create a dependable and consistent route for transit
  - Facilitate congestion management by increasing opportunities for pedestrians and bicycles
  - Be constructible without unnecessary impacts to the human and natural environment
- **Developed from input from OH# 2 and presented in OH# 3 – first evaluation matrices presented with all criteria developed**
  - Deliver relief in a timely manner
  - Maximize travel savings
  - Serve all roadway users
  - Avoid and minimize impacts to water quality

## Key Takeaways:

- The Purpose, Need, Goals, Objectives, and Evaluation criteria were developed and refined through an intensive public involvement process.



# Evaluation Criteria



## Key Takeaways:

- Travel times and time savings are only 1 of 13 considerations in project alternative evaluations.



## BACK TO BASICS

The developed Purpose and Need drives the project and remains highly relevant.



## DEVELOPED TOGETHER

The Purpose, Need, Goals, Objectives, and Evaluation criteria were developed and refined through an intensive public involvement process.



## MORE THAN NUMBERS

Travel times and time savings are only 1 of 13 considerations in project alternative evaluations.

# Build Alternative Traffic Evaluation



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# Build Alternatives Evaluation: Community Benefits

	Reduce Congestion Delay Corridor Annual Vehicles Hours of Delay Savings in \$* (weekdays)	Optimize Corridor Utilization Corridor Daily increase in Throughput (vehicle-miles-traveled) versus No-Build (weekdays)
No Build	0	0
Express Lanes	\$9.3 M	117,000
HOV	\$5.2 M	52,000
Transit Only	\$0.4 M	2,000

**Key Takeaways:**

- Express Lanes offer the most time savings to the corridor
- Express Lanes offer the most increase to throughput of vehicles

*\*Based on 2020 Value of Time of \$20.17 for Austin area, Source: Urban Mobility Report, Texas A&M Transportation Institute*



# Build Alternatives Evaluation: Individual Vehicle Benefits

		7 – 9 A.M. Northbound Peak Period	4 – 6:30 P.M. Southbound Peak Period
2018 Baseline		14 min	13 min
No Build		20 min	22 min
Express Lanes	General-Purpose Lanes	15 min	17 min
	Express Lane(s)	8 min	8 min
HOV	General-Purpose Lanes	18 min	19 min
	HOV Lane(s)	8 min	7 min
Transit Only	General-Purpose Lanes	20 min	22 min
	Transit Lane(s)	8 min	8 min

**Key Takeaways:**

- Express Lanes provide the greatest savings to all users of the corridor



# Build Alternatives Evaluation: Individual Vehicle Benefits

## Time Savings

	General-Purpose Lanes			Alternative Lanes		
	7 – 9 A.M. Northbound Peak Period	4 – 6:30 P.M. Southbound Peak Period	Yearly savings w/ 5-day work week*	7 – 9 A.M. Northbound Peak Period	4 – 6:30 A.M. Southbound Peak Period	Yearly savings w/ 5-day work week*
No Build	N/A	N/A	N/A	N/A	N/A	N/A
Express Lanes	5 min	5 min	43 hrs	12 min	14 min	113 hrs
HOV	2 min	3 min	22 hrs	12 min	15 min	117 hrs
Transit Only	0 min	0 min	0 hrs	12 min	14 min	113 hrs

### Key Takeaways:

- Alternative lane users could save over 100 hours of time each year with any of the build alternatives.
- Express Lanes provide the greatest savings to general-purpose lane users.

\*Based on 260 working days per year.

# Build Alternatives Evaluation: Individual Vehicle Benefits

## Percentage Time Savings

	General-Purpose Lanes			Alternative Lanes		
	7 – 9 A.M. Northbound Peak Period	4 – 6:30 P.M. Southbound Peak Period	Yearly savings w/ 5-day work week*	7 – 9 A.M. Northbound Peak Period	4 – 6:30 P.M. Southbound Peak Period	Yearly savings w/ 5-day work week*
No Build	N/A	N/A	N/A	N/A	N/A	N/A
Express Lanes	25%	23%	24%	60%	64%	62%
HOV	10%	14%	12%	60%	68%	64%
Transit Only	0%	0%	0%	60%	64%	62%

\*Based on 260 working days per year.

### Key Takeaways:

- Alternative lane users could save over 60% of time each year with any of the build alternatives.
- Express Lanes provide the greatest savings to general-purpose lane users.

⊖ Good   
 ✓ Better   
 ★ Best

## Criteria

	Express Lanes	HOV	Transit Only
Reduce congestion delays	★	✓	⊖
Optimize corridor utilization (throughput)	★	✓	⊖
Maximize travel time savings	★	✓	⊖
Serve all roadway users	★	✓	⊖
Provide opportunity for reliable travel time for all users	★	✓	⊖
Facilitate reliable emergency response	✓	★	⊖
Create dependable and consistent route for transit	⊖	✓	★
Provide consistency with local and regional plans	★	✓	⊖





## WHY NOT HOV?

HOV provide similar travel times but benefit fewer users. Travel times are also less reliable since they are not actively managed.



## COMMUNITY IMPACT

Express lanes benefit the general-purpose lanes the most.



## BENEFITS ALL

Express lanes provide the most benefit to all user types (Single Occupancy/High Occupancy(HOV)/Transit) and users in in the corridor.

# Alternative Lane(s) Operational Configuration Option Traffic Evaluation



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**1A**

**One Alternative Lane with Downtown Direct Connection**

**1B**

**One Alternative Lane without Downtown Direct Connection**

**2A**

**Two Alternative Lanes with Downtown Direct Connection**

**2B**

**Two Alternative Lane without Downtown Direct Connection**

**2C**

**Two Alternative Lanes with Elevated Ramps Near Barton Skyway**

**3**

**City of Austin Proposal**

# Optional Configuration Development

**OPERATIONAL CONFIGURATIONS** were developed to evaluate concepts for downtown connectivity. These included both one and two alternative lane options to facilitate evaluation of one and two alternative lanes for the entire corridor.

1A, 2A

These options include elevated sections over Lady Bird Lake and ramps directly connecting the alternative lane(s) to E. Cesar Chavez Street closer to Austin High School entrance. While this has safety and congestion benefits due to eliminating merging and lane changes, public comments received at Open House 3, 4, and 5 comments did not support elevated lanes over Lady Bird Lake and raised concerns about connectivity so close to the Austin High School.

1B, 2B

These options removed the elevated direct connection which requires lane changes and reduces operational efficiency and safety due to lane mergers but does allow the Cesar Chavez connection to be further west away from Austin High School.

3

Developed from input from the City of Austin, the option moved the elevated ramps south near Barton Skyway and includes collector distributors to maintain direction connection at grade across Lady Bird Lake. These added collector distributors require wider bridges and additional right-of-way through Zilker Park. OH 3, 4, and 5 comments did not support additional right-of-way through Zilker Park.

2C

Includes elevated ramps near Barton Skyway to improve access to downtown and safety by reducing merging and lane changes while placing the elevated structures without additional right-of-way through Zilker Park.



# Operational Configuration Options Evaluation: Community Benefits

	Reduce Congestion Delay Corridor Annual Vehicles Hours of Delay Savings in \$* (weekdays)	Optimize Corridor Utilization Corridor Daily increase in Throughput (vehicle-miles-traveled) versus No-Build (weekdays)
<b>No Build</b>	0	0
<b>1A</b>	\$7.5 M	91,000
<b>1B</b>	\$6.5 M	99,000
<b>2A</b>	\$8.5 M	118,000
<b>2B</b>	\$6.5 M	113,000
<b>2C</b>	\$9.3 M	117,000
<b>3</b>	\$12.3 M	108,000

**Key Takeaways:**

- Alternatives and Options with two lanes offer greater corridor utilization.

\*Based on 2020 Value of Time of \$20.17 for Austin area, Source: Urban Mobility Report, Texas A&M Transportation Institute



# Operational Configuration Options Evaluation: Individual Vehicle Benefits

		7 – 9 A.M. Northbound Peak Period	4 – 6:30 P.M. Northbound Peak Period
2018 Baseline		14 min	13 min
No Build		20 min	22 min
1A	General-Purpose Lanes	17 min	18 min
	Express Lane(s)	8 min	8 min
1B	General-Purpose Lanes	17 min	18 min
	Express Lane(s)	8 min	8 min
2A	General-Purpose Lanes	16 min	16 min
	Express Lane(s)	8 min	8 min
2B	General-Purpose Lanes	16 min	17 min
	Express Lane(s)	8 min	8 min
2C	General-Purpose Lanes	16 min	17 min
	Express Lane(s)	8 min	8 min
3	General-Purpose Lanes	16 min	15 min
	Express Lane(s)	9 min	9 min

**Key Takeaways:**

- Operational Configuration Options offer similar travel times
- Travel time is only one consideration in evaluation of the options



# Operational Configuration Options Evaluation: Individual Vehicle Benefits

Time Savings	General-Purpose Lanes			Alternative Lanes		
	7 – 9 A.M. Northbound Peak Period	4:30 – 6 P.M. Southbound Peak Period	Yearly savings w/ 5-day work week	7 – 9 A.M. Northbound Peak Period	4:30 – 6 P.M. Southbound Peak Period	Yearly savings w/ 5-day work week
No Build	N/A	N/A	N/A	N/A	N/A	N/A
1A	3 min	4 min	30 hrs	12 min	14 min	113 hrs
1B	3 min	4 min	30 hrs	12 min	14 min	113 hrs
2A	4 min	6 min	43 hrs	12 min	14 min	113 hrs
2B	4 min	5 min	39 hrs	12 min	14 min	113 hrs
2C	5 min	5 min	43 hrs	12 min	14 min	113 hrs
3	4 min	7 min	48 hrs	11 min	13 min	104 hrs

**Key Takeaways:**

- General-purpose users benefit with any of the operational configuration options
- Alternative lane users could save over 100 hours of time each year with any of the build alternatives.

\*Based on 260 working days per year.



# Operational Configuration Options Evaluation: Individual Vehicle Benefits


Percentage Time Savings	General-Purpose Lanes			Alternative Lanes		
	7 – 9 A.M. Northbound Peak Period	7 – 9 A.M. Northbound Peak Period	Yearly savings w/ 5-day work week	7 – 9 A.M. Northbound Peak Period	7 – 9 A.M. Northbound Peak Period	Yearly savings w/ 5-day work week
No Build	N/A	N/A	N/A	N/A	N/A	N/A
1A	15%	18%	16%	60%	64%	62%
1B	15%	18%	16%	60%	64%	62%
2A	20%	27%	23%	60%	64%	62%
2B	20%	23%	21%	60%	64%	62%
2C	25%	23%	24%	60%	64%	62%
3	20%	32%	26%	55%	59%	57%

**Key Takeaways:**


- General-purpose users benefit with any of the operational configuration options

\*Based on 260 working days per year.

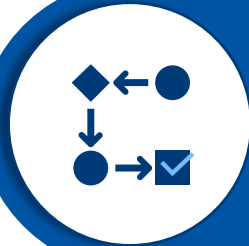




**BENEFITS ALL**  
All operational configuration options show benefits to both general-purpose and alternative lane drivers.



**BIGGER PICTURE**  
Travel time is one factor in the overall evaluation of operational configuration options. Community developed criteria and input will be used in the overall evaluation.



**FOLLOW THROUGH**  
Updating each step of the process with data is an important part of the process; it preserves the integrity of the final EA.

# Next Steps



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# Anticipated Next Steps

- **Technical Working Groups**
- **Finalize Operational Configuration Options Evaluation**
- **Open House #6**
- **Technical Working Groups**
- **Draft EA Submittal**
- **Public Hearing**

# Thank You

Visit [MoPacSouth.com](http://MoPacSouth.com)  
for past materials and  
more information  
about the ongoing  
Environmental Study



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