



MOPAC SOUTH ENVIRONMENTAL STUDY OVERVIEW OF TRAFFIC MODEL DATA

Downtown Street Grid

The Central Texas Regional Mobility Authority (Mobility Authority) and the Texas Department of Transportation (TxDOT) are working with local partners to conduct an Environmental Study to determine the best alternative for improving mobility and safety on approximately eight miles of MoPac from Cesar Chavez Street to Slaughter Lane. Based on the study's Purpose and Need, the Express Lanes Alternative was identified as the study's Recommended Build Alternative. To further refine this Alternative and evaluate how each of several operational configurations could impact travel times within the downtown area, the project team conducted a local dynamic traffic assignment (DTA) study.

The DTA allows us to evaluate how each operational configuration impacts the downtown street grid by simulating changes in traveler route selection to take advantage of decreased travel times or avoid increased travel times as changes are made in a transportation network. The year 2020 was selected as an approximate date for the project's opening year. The DTA analyzed four concepts in addition to the No Build Alternative.

- **1 Express Lane + downtown DC:** Includes one Express Lane in each direction, and a one-lane, elevated direct connect ramp in each direction, from Cesar Chavez.
- **1 Express Lane without downtown DC:** Includes one Express Lane in each direction. Traffic with a destination in downtown Austin will exit the Express Lanes south of Lady Bird Lake into the left-most existing general purpose lane and weave through the other general purpose lanes to access the existing exit to Cesar Chavez. Southbound traffic leaving downtown will enter the general purpose lanes using the existing entrance from Cesar Chavez Street and weave through the other general purpose lanes to access an Express Lane entrance south of Lady Bird Lake.
- **2 Express Lanes + downtown DC:** Includes two Express Lanes in each direction, and a one-lane, elevated direct connect ramp in each direction, from Cesar Chavez.
- **2 Express Lanes without downtown DC:** Includes two Express Lanes in each direction. Access to and from the downtown area will function similarly to the 1 Express Lane without downtown DC configuration.

No-Build, or Do Nothing: This option assumes that no improvements would be constructed and reflects anticipated travel times in the area. This is included as a baseline for comparison.

As part of the overall Study efforts, the team is analyzing additional configurations not included in the DTA, described below:

2 Express Lanes + Elevated Ramps near Barton Skyway: Includes two Express Lanes in each direction and adds elevated ramps near Barton Skyway but would not result in elevated bridges over Zilker Park or Lady Bird Lake. These ramps will enable drivers who have a destination in downtown Austin to exit the Express Lanes into the right-most general purpose lane south of the river, eliminating the weave condition created by the removal of a direct connection to downtown. It will function similarly for drivers heading southbound from downtown; they will enter into the right-most general purpose lane to access an Express Lane ramp near Barton Skyway. This operational configuration was not directly included in DTA analysis. For the purposes of the DTA analysis, this configuration would function similarly to the 2 Express Lanes without downtown DC configuration.

The project team is also working with the City of Austin to refine an operational configuration presented for further study by the City. Impacts to parkland and operational concerns may prevent the Mobility Authority from advancing this operational concept further as part of the environmental study. Work on the concept is still underway so it has not been evaluated as part of this analysis.

SUMMARY OF RESULTS: DYNAMIC TRAFFIC ASSIGNMENT STUDY

The DTA shows that the addition of Express Lanes on MoPac would not adversely affect congestion on Austin's downtown street grid as a whole. This is true for any of the operational configurations evaluated. All operational configuration options studied either presented an overall improvement or resulted in overall negligible changes in travel times within the downtown network.

AM peak period:

- All configurations present an average savings of at least 2.5 minutes in the model area over the Do Nothing alternative.
- Travel times on each of the major downtown arterial streets modeled (eastbound Cesar Chavez, 5th St., northbound Lamar Blvd. and northbound 1st St./Lavaca St.) would remain within one minute of the Do Nothing option, regardless of the Express Lane configuration.

PM peak period:

- All configurations present an average savings of at least 8.2 minutes in the model area over the Do Nothing alternative.
- All Express Lane configurations would provide better travel times on each of the major downtown arterial streets (westbound Cesar Chavez, 6th St., southbound Lamar Blvd., southbound 1st St./Guadalupe St.) modeled, as compared to the Do Nothing alternative.

BACKGROUND

This summary is designed to provide a snapshot of the results of a dynamic traffic assignment study (DTA) funded by the Central Texas Regional Mobility Authority (Mobility Authority) and the Capital Area Metropolitan Planning Organization (CAMPO). DTA models like this one, developed by the University of Texas at Austin Center for Transportation Research (CTR), are used in transportation planning to evaluate the impact of future changes in transportation facilities on the performance of a region’s transportation system. DTA models assume that a traveler will select the route that presents the shortest travel time.

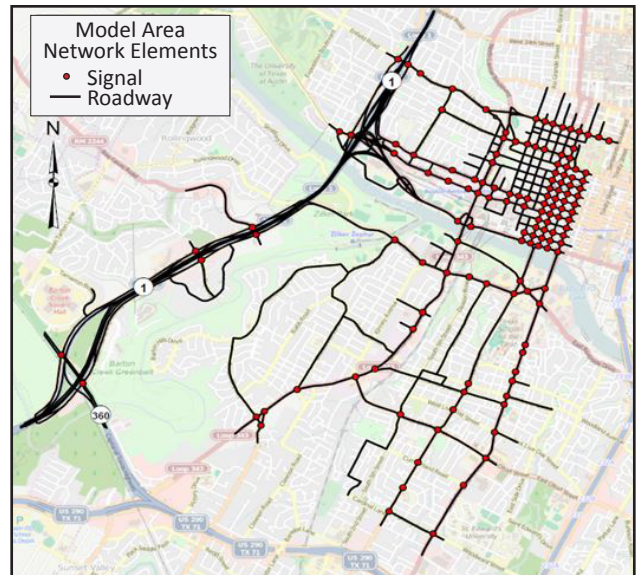
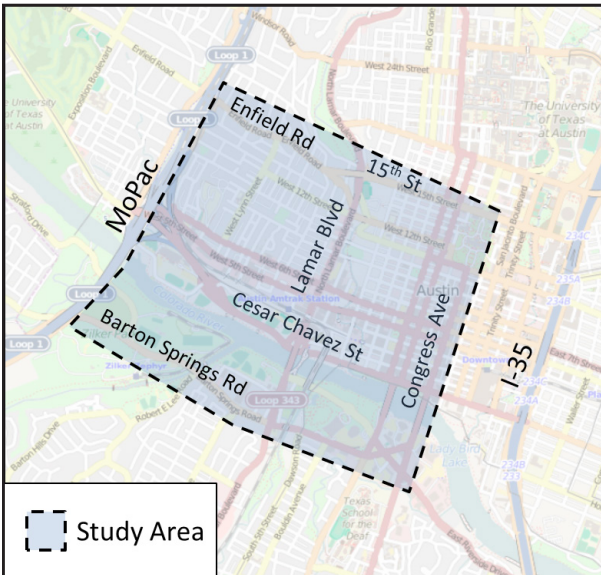
Because of this, DTA models simulate changes in traveler route selection to take advantage of decreased travel times or avoid increased travel times as changes are made in a transportation network. The advantage of the DTA is that the study allows us to evaluate how well each operational configuration meets the needs of the downtown street grid. The results of this analysis supplement and add additional clarity to the ongoing study of six Express Lane operational configuration options under consideration and should be considered in the context of the overall analysis.

DTA STUDY OVERVIEW

- **Study objective:** Analyze traffic impacts on Cesar Chavez Street and the downtown area as a result of adding Express Lane(s) in various configurations to MoPac between Cesar Chavez Street and Slaughter Lane.
- **Times analyzed:** Analysis included both morning (6 - 9 a.m.) and afternoon (3:30 - 6:30 p.m.) peak period travel demand.
- **Forecasted year:** The data is based on travel forecasts for the year 2020.

Downtown study area: Smaller than the model area, the study area is defined by MoPac to the west, Enfield Road/15th Street to the north, Congress Avenue to the east, and Barton Springs Road to the south. Street-level travel time evaluations were restricted to the major streets in this zone.

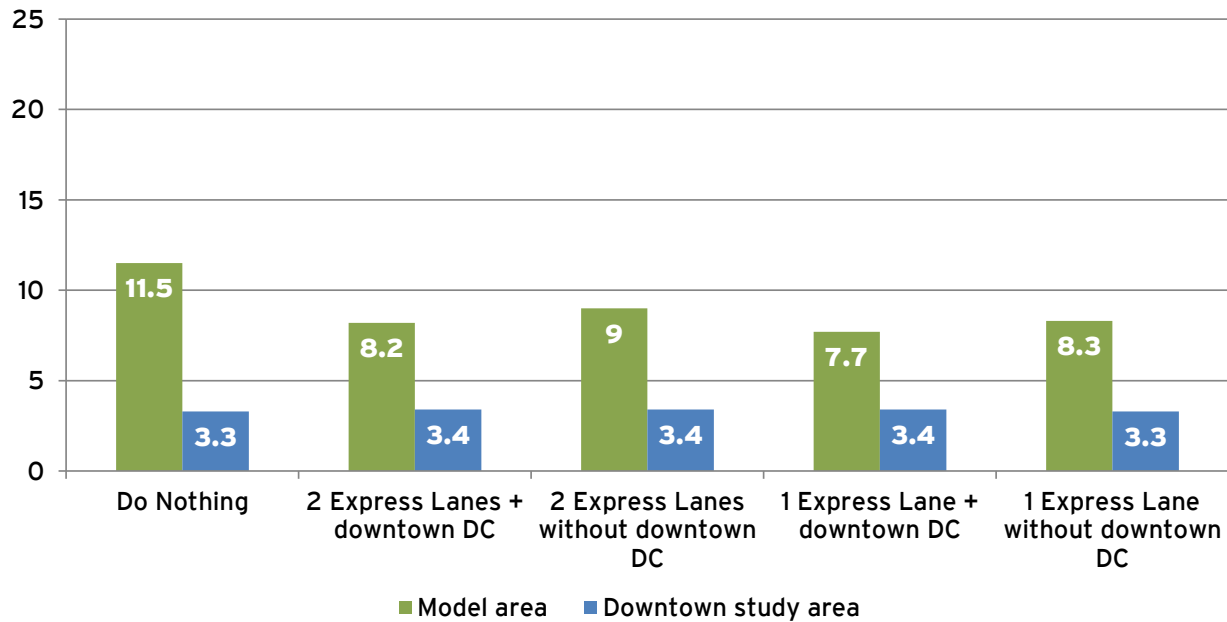
Model area: To properly analyze the impacts of the MoPac South Express Lanes on the study area, the limits of the model area extend beyond the boundaries of the area under study. The model area extends from the area north of SH 71 to Enfield Road/15th Street, and from MoPac to Congress Avenue. Along MoPac, the model extends just south of Loop 360 to include the entrances and exits between the proposed Express Lanes and the general purpose lanes south of Cesar Chavez Street.



SUMMARY OF RESULTS

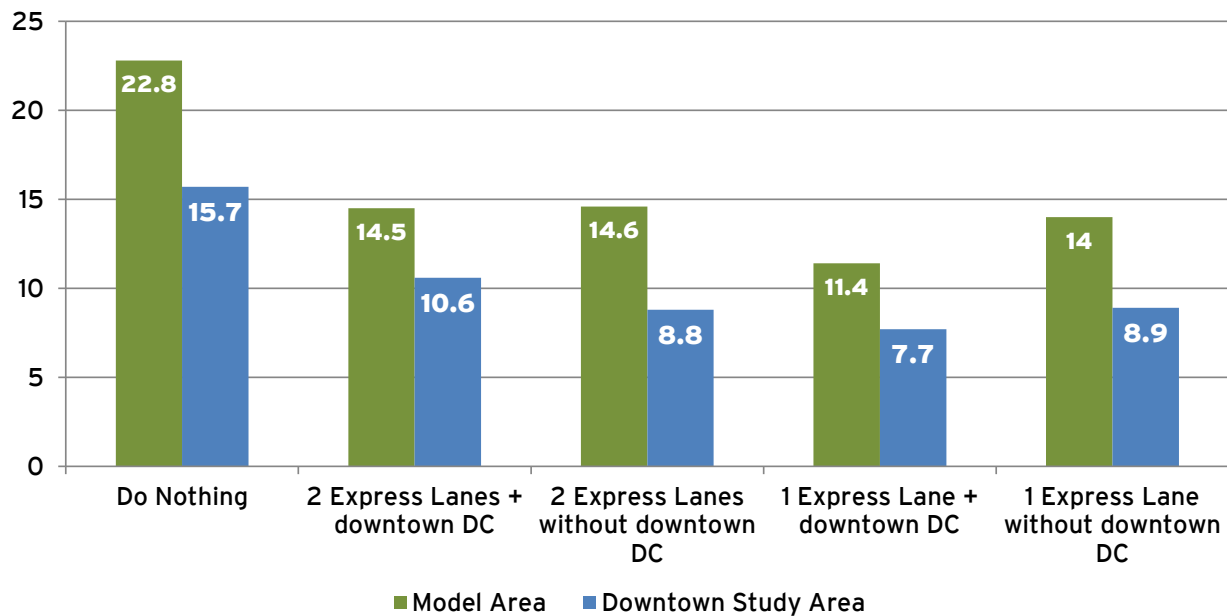
The DTA shows that the addition of Express Lanes on MoPac would not adversely affect congestion on Austin’s downtown street grid as a whole. This is true for any of the operational configurations evaluated. All operational configuration options studied either presented an overall improvement or resulted in overall negligible changes in travel times within the downtown network.

2020 AVERAGE MORNING PEAK PERIOD TRAVEL TIMES (IN MINUTES)



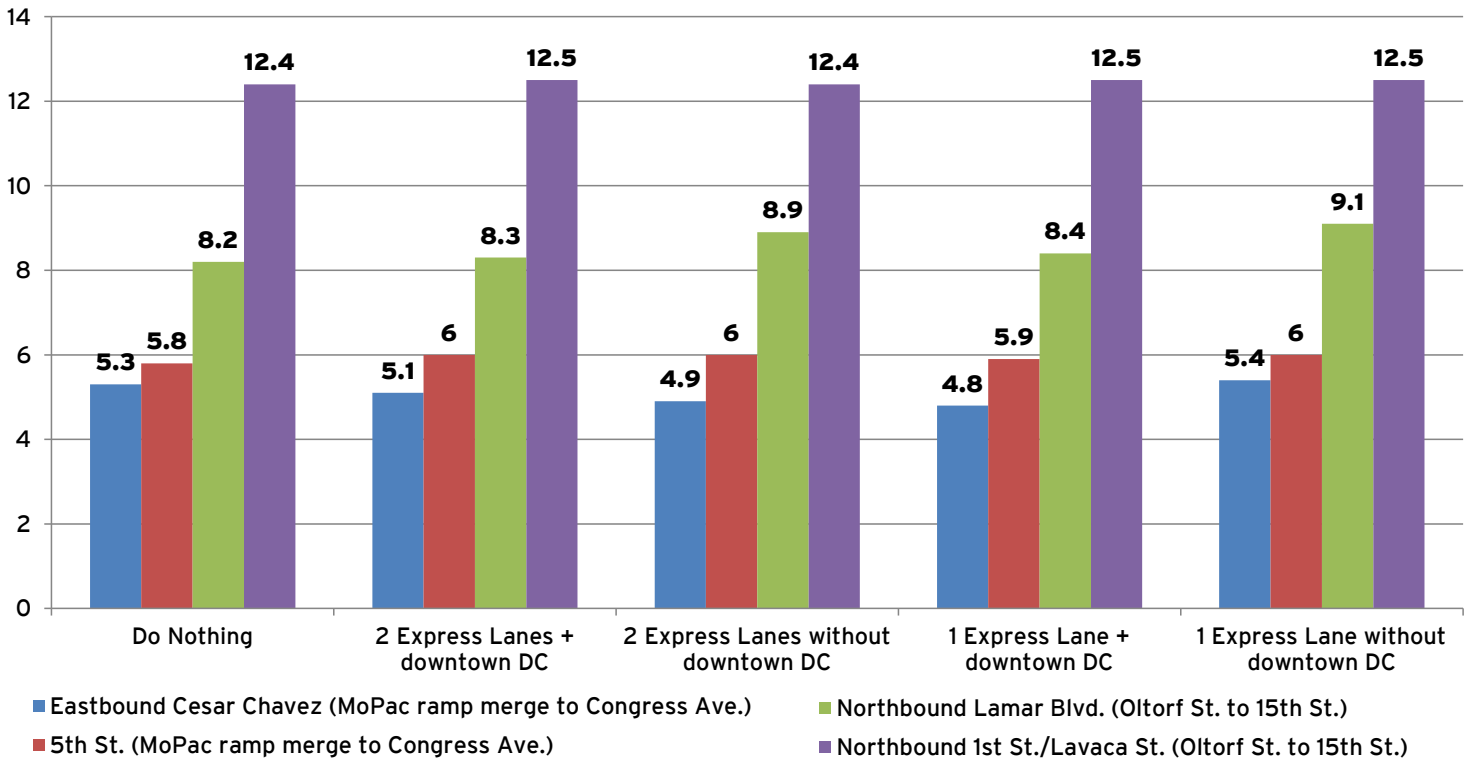
- **Model area:** All modeled configurations present an average of at least 2.5 minutes saved over the Do Nothing alternative. When comparing the configuration options, minor time savings - about 30 seconds - are associated with the 1 Express Lane + downtown DC configuration.
- **Downtown study area:** All modeled configurations present average travel times within six seconds of the Do Nothing alternative.

2020 AVERAGE AFTERNOON PEAK PERIOD TRAVEL TIMES (IN MINUTES)



- **Model area:** All modeled configurations present an average of at least 8.2 minutes saved over the Do Nothing alternative. When comparing the configuration options, two and a half minutes of time savings are associated with the 1 Express Lane + downtown DC configuration.
- **Downtown study area:** All modeled configurations present an average of at least five minutes saved over the Do Nothing alternative.

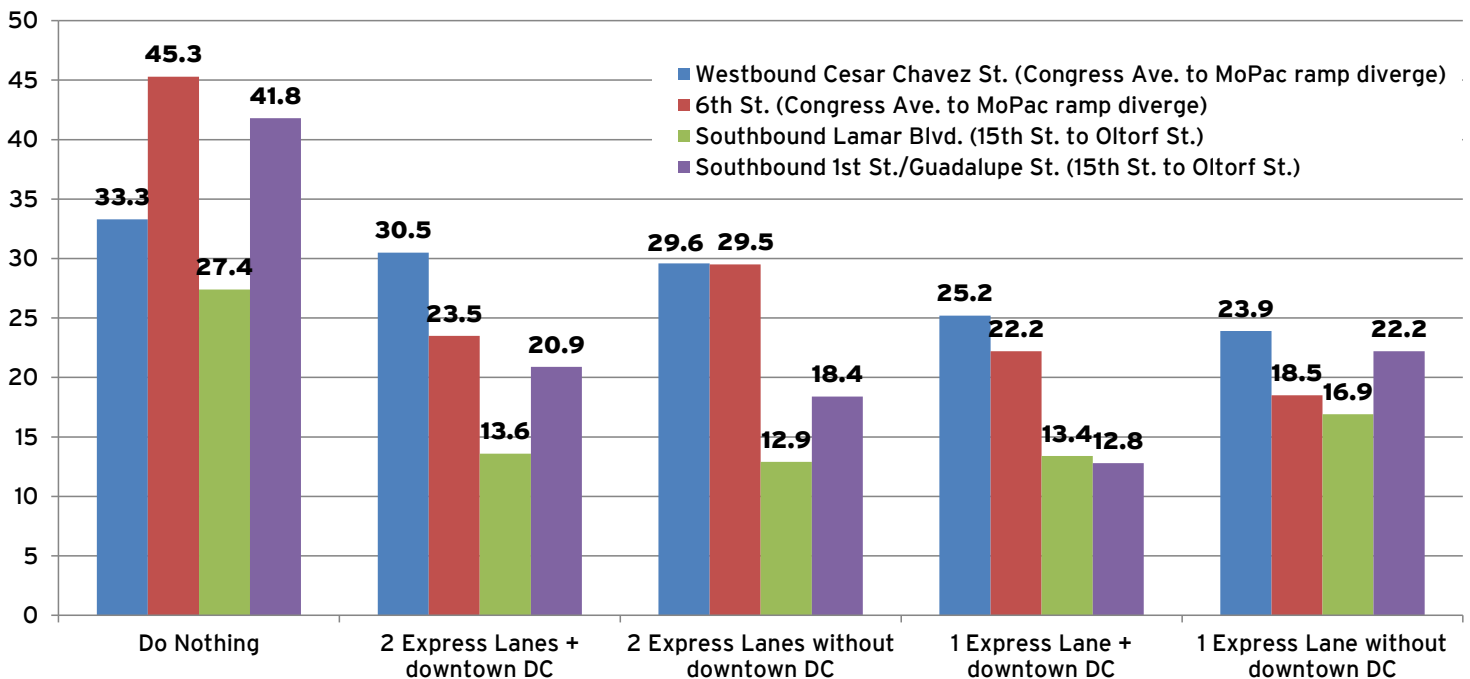
2020 MORNING PEAK PERIOD TRAVEL TIMES (IN MINUTES)



Results: Modeled configurations present travel times on all routes within one minute of the Do Nothing alternative.

- Eastbound Cesar Chavez: **Within 30 seconds** of the Do Nothing alternative.
- 5th St.: **Within 12 seconds** of the Do Nothing alternative.
- Northbound Lamar Blvd.: **Within 54 seconds** of the Do Nothing alternative.
- Northbound 1st St./Lavaca St.: **Within six seconds** of the Do Nothing alternative.

2020 AFTERNOON PEAK PERIOD TRAVEL TIMES (IN MINUTES)



Results: All modeled configurations present lower peak period travel times when compared to the Do Nothing alternative.

- Westbound Cesar Chavez: As much as **9.4 minutes saved** over the Do Nothing alternative.
- 6th St.: As much as **26.8 minutes saved** over the Do Nothing alternative.
- Southbound Lamar Blvd.: As much as **14.5 minutes saved** over the Do Nothing alternative.
- Southbound 1st St./Guadalupe St.: As much as **29 minutes saved** over the Do Nothing alternative.