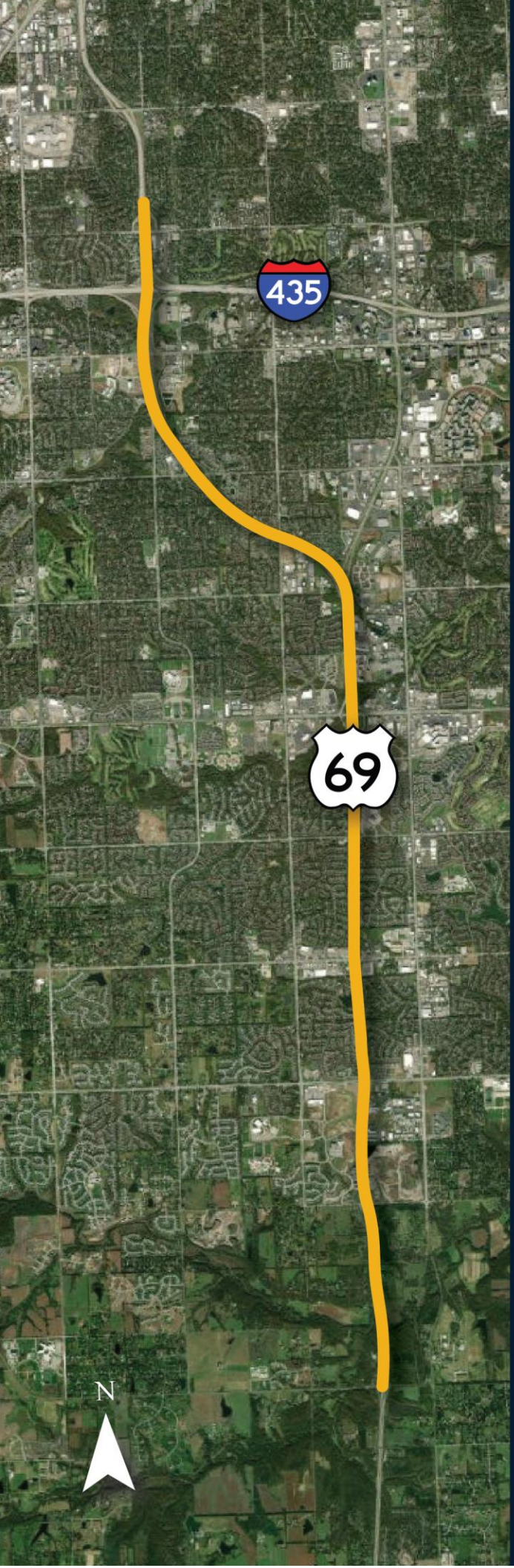



69 EXPRESS

## U.S. 69 Modernization & Expansion Project

# Phase II Report - Executive Summary

DRAFT

June 2021

## Problem Statement

The Kansas Department of Transportation (KDOT), along with the Kansas Turnpike Authority (KTA) and the City of Overland Park, initiated in October 2020 an in-depth study of how best to improve public safety, reduce congestion and increase travel time predictability along U.S. 69.

The U.S. 69 Modernization and Expansion Project - branded as the 69Express Project for public communication purposes - was launched in recognition of the conditions and challenges along U.S. 69 between 179th and 103rd Streets. This is one of the state's busiest highways, with heavy congestion peaking during rush hours. The corridor also has other challenges:

- Crash rates in the corridor are significantly above the statewide average.
- Existing pavement and bridges, about 50 years old, are due for replacement.
- Congestion is growing significantly; peak travel times are expected to triple in the next 20 years, with a trip through the entire corridor taking 30 minutes or more.

Previous studies (*see Appendix - Previous Studies*) forecast growing U.S. 69 congestion will create significantly slower traffic, reduce emergency response times, decrease community quality of life and impair future economic growth. Ultimately, safety and congestion improvements will depend upon design and funding decisions to be made during the Project through the process and schedule shown below (*see Figure 1*).

***Figure 1: Potential Project Schedule***

## Study Process

The Project was initiated to determine how best to improve safety and relieve congestion within the study area including evaluating strategies to widen U.S. 69 to six lanes (three lanes in each direction) and modify interchanges that connect U.S. 69 to the local street network. One aspect being examined is whether tolling the new lane (also called an express toll lane) provides additional long-term safety, traffic flow and trip time reliability benefits. The existing "free lanes" would remain toll-free. Examination of the express toll lanes alternative is a new option available to KDOT and local communities by the provisions of KSA 68,20-120, enacted by the Kansas Legislature in 2019.

Major study elements currently underway include the:

- Environmental Assessment, or EA, which evaluates the impacts that proposed improvement alternatives will have on the natural and man-made environment and the degree to which each fulfills the Project's Purpose & Need;
- Traffic and Safety Analysis of existing and future conditions on U.S. 69 and connecting arterial roads;
- Preliminary Engineering of added-capacity alternatives, evaluating their potential ROW and utility impacts and other issues to support a potential design-build procurement phase of the Project;
- Level II toll study including an in-depth traffic and revenue study to assess the feasibility of a potential express toll lanes alternative; and
- Stakeholder Engagement and extensive public outreach with residents, businesses, travelers and others; the effort includes a broad range of tactics, including: public meetings; project website; social media; online surveys; presentations (in-person and/or virtual); newsletters; and other engagement and communication tools.

## Improvement Alternatives

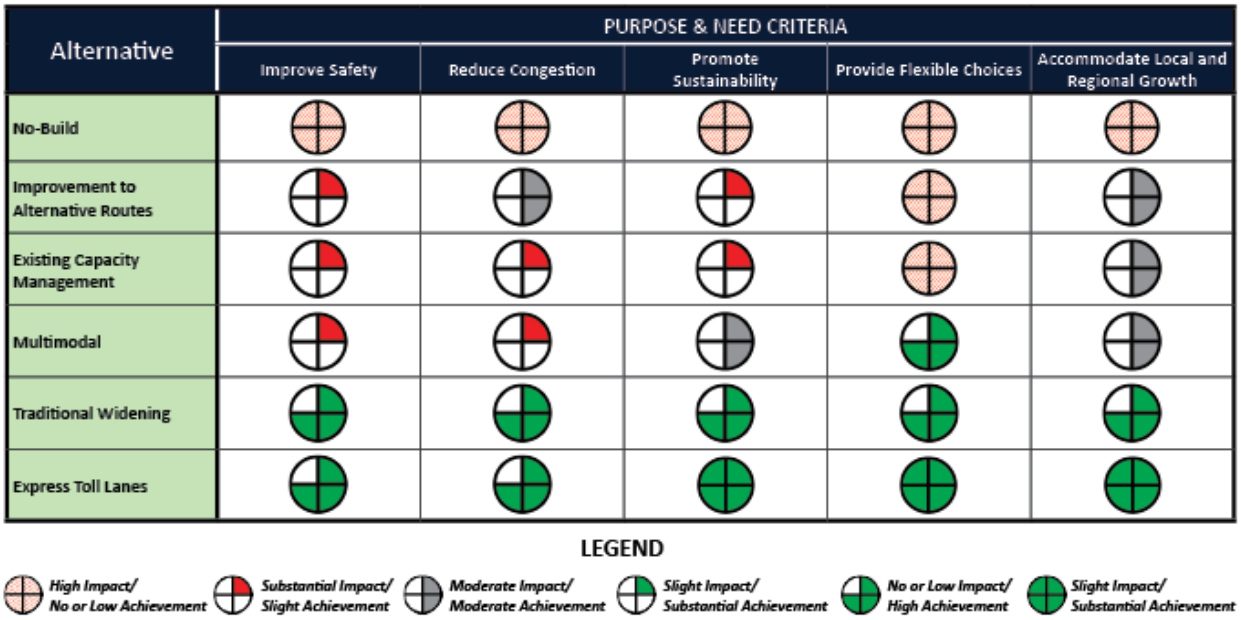
The Project Team developed a set of six potential improvement strategies for evaluation through extensive collaboration with local and regional public- and private-sector stakeholders. Improvement alternatives included:

- **No-Build** - No capacity improvements on U.S. 69 would be implemented, only ongoing rehabilitation and maintenance would occur. All other alternatives were compared against the No-Build alternative to ensure that any preferred alternative represents an improvement over current conditions.
- **Improve Alternate Routes** - This strategy would make improvements to Metcalf Avenue and Antioch, Switzer and Quivira Roads through signal coordination, arterial capacity additions and transit improvements.

- **Manage Existing Capacity** - This approach would use a combination of technology and policy incentives to improve safety and reduce bottlenecks. This approach would employ Transportation Systems Management Strategies (such as ramp metering and queue warning systems) with Traffic Demand Management Strategies (relying on policies to promote carpooling, for example).
- **Improve Multimodal Options** - This option would include ways to increase the effectiveness of transit and other multimodal and personal mobility choices by improving roadways or shoulders for better multimodal connections; increasing the number and frequency of transit routes; and providing better bike and pedestrian facilities along with park-and-ride lots.
- **Add Capacity - Traditional Widening** - This alternative would add one new general-purpose lane in each direction. At some locations, this approach would require separate parallel lanes, called collector-distributor roads, outside the primary six lanes of U.S. 69 in either direction. (These would be similar to what drivers encounter on I-435 between Roe and Nall Avenues, where collector-distributor roads on either side of I-435 move traffic to and from the arterial roads.) The U.S. 69 interchanges at Blue Valley Parkway and at I-435 would be reconfigured. Improvements to local interchanges and supporting cross streets would be made and existing pavement and bridges would be reconstructed.
- **Add Capacity - Express Toll Lanes** - This strategy would add one new lane in each direction as an express toll lane with defined entrance and exit locations. Traffic would be balanced across express toll and general-purpose lanes through congestion management techniques such as lane pricing. In some locations auxiliary lanes would be required between interchanges to improve operations for traffic entering and existing the roadway. The U.S. 69 interchanges at Blue Valley Parkway and at I-435 would be reconfigured. Improvements to local interchanges and supporting cross streets would be made and existing pavement and bridges would be reconstructed.

These alternatives were screened against the Project's Purpose and Need criteria. The Traditional Widening Alternative and Express Toll Lane Alternative were carried forward for additional analysis based on their ability to enhance safety and reduce congestion along the U.S. 69 corridor while promoting sustainability, providing flexible choices, and accommodating local and regional growth (see *Figure 2*). The No Build Alternative also was carried through as a basis of comparison for evaluating the alternatives. They will continue to be evaluated through the federal NEPA process which will involve ongoing consultation with the public. The Environmental Assessment and the identified Preferred Alternative will undergo federal review through early 2022.

***Figure 2: Purpose and Need Screening Matrix***




## Capacity Alternatives

Exhibits illustrating the anticipated configuration of each of the two capacity alternatives can be found in *Appendix – U.S. 69 Concept Exhibits*. The Express Toll Lanes alternative has a generally smaller project footprint which has advantages over the Traditional Widening alternative including:

- Lower construction costs;
- Lesser impacts on surrounding properties including parks and businesses;
- Lesser environmental impacts;
- Lower ongoing maintenance costs; and
- Potential for fewer construction phases and disruptions to travelers on U.S. 69.

The Project Team will continue the environmental analysis of the improvement alternatives, identify right of way needs and necessary utility relocations and support development of permit applications from appropriate permitting agencies.

## Comparative Traffic Analysis

An analysis of future traffic operations was conducted to compare anticipated operations of a similar facility with and without inclusion of express lanes, and to assist the project team with developing the proposed lane configuration for the

express toll lanes alternative (*see Appendix - U.S. 69 Expansion Project Highway Capacity Software Analysis Technical Memorandum*).

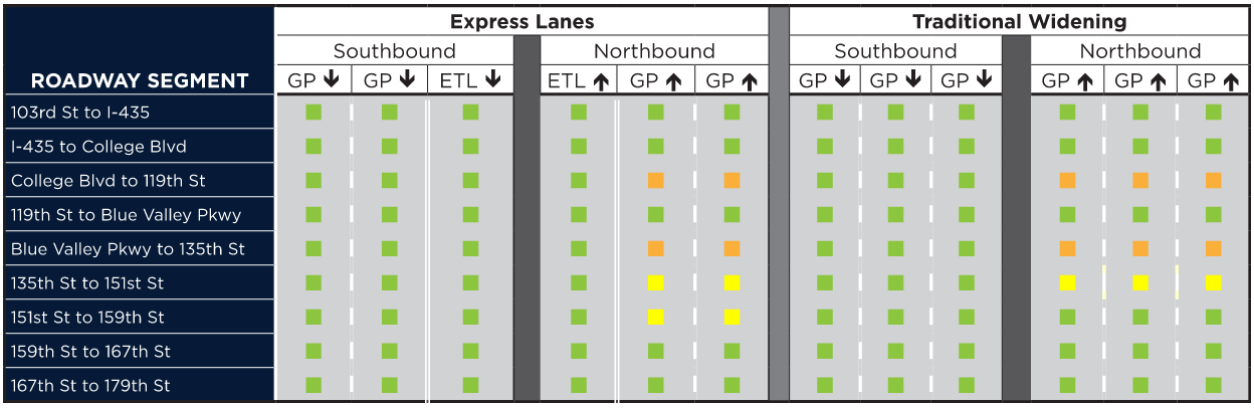
Two future build alternatives were analyzed for 2050 AM and PM peak hours using the Highway Capacity Software (HCS) Version 7.9 Freeway Facilities module:

- General Purpose (GP) plus Auxiliary Lane Widening Alternative (GP+Aux.) – This alternative would add one additional general-purpose lane in each direction for a total of 3 GP lanes in each direction on U.S. 69 plus an auxiliary lane between interchanges at high congestion locations.
- Express Toll Lane (ETL) plus Auxiliary Lane Widening Alternative (ETL+Aux.) - This alternative would add one additional ETL in each direction and maintain the two existing general purpose (GP) lanes on U.S. 69 plus an auxiliary lane between interchanges at high congestion locations.

Results from the HCS analysis summarized in Tables 1 and 2 illustrate that:

- Both alternatives improve operations over future No Build conditions;
- The ETL+Aux alternative provides sufficient future operations by providing an option for a higher-speed, reliable trip in the express lanes while still providing improved operations in the general-purpose lanes; and
- The GP+Aux alternative experiences congestion in all lanes and therefore does not provide an option for a higher-speed, reliable trip. Additional improvements such as collector-distributor roads or other improvements are needed in order to provide a similar reliable trip.

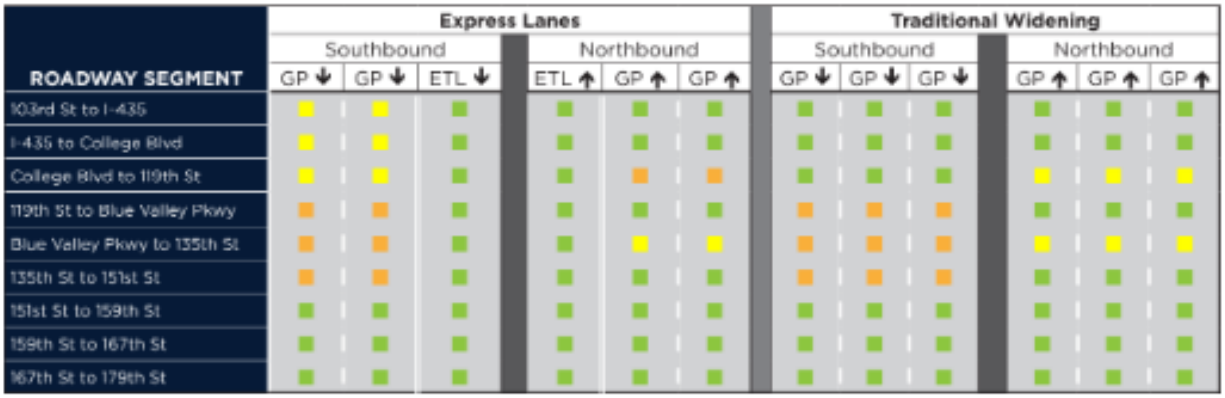
***Table 1: 2050 Build, AM Peak Hour - Traffic Operations Comparison of Build Alternatives***




***Source: Highway Capacity Software***

| Level of Congestion |
|---|
| No Congestion |
| Minor Congestion |
| Moderate Congestion |
| Severe Congestion |

***Table 2: 2050 Build, PM Peak Hour - Traffic Operations Comparison of Build Alternatives***




***Source: Highway Capacity Software***

| Level of Congestion | |
|---|---|
| No Congestion | |
| Minor Congestion | |
| Moderate Congestion | |
| Severe Congestion | |

## Local Contribution

Foundational principles of the Eisenhower Legacy (IKE) Transportation Program, enacted by the Kansas Legislature in 2020, include leveraging partnerships and providing more options for Kansans and resources for communities.

One strategy available to communities to help advance their priority projects is to provide a local contribution – a familiar strategy for Overland Park. Over the past 20 years, Overland Park has provided local contributions of approximately $60 million, or roughly 7% of the construction cost, towards projects on U.S. 69 and I-435. Continuing that partnership on future U.S. 69 improvements at a similar level would require a local contribution of $20 million for a project with a construction value of $300 million.

Examples of local contribution options that could advance the $300 million project as a single construction project on the earliest possible schedule include:

1. Traditional Widening - $20 million upfront cash contribution
2. Traditional Widening – Installment payments of $2.2 million per year for 10 years ($22 million total)
3. Express Toll Lanes – Reimbursement of $20 million present value over time using net toll revenues A detailed traffic and revenue analysis was conducted to determine whether express toll lane are a viable mechanism for generating Overland Park's local contribution and found that it was.

**Traffic and Revenue**

The 69Express Project Team conducted a Level II Traffic and Toll Revenue Study for the proposed tolled express lanes (*see Appendix - U.S. 69 Express Lanes Level 2 Traffic and Toll Revenue Study*). The goal was to develop traffic and revenue ("T&R") forecasts for the proposed U.S. 69 express lanes that would be used to analyze the financial feasibility of the project.

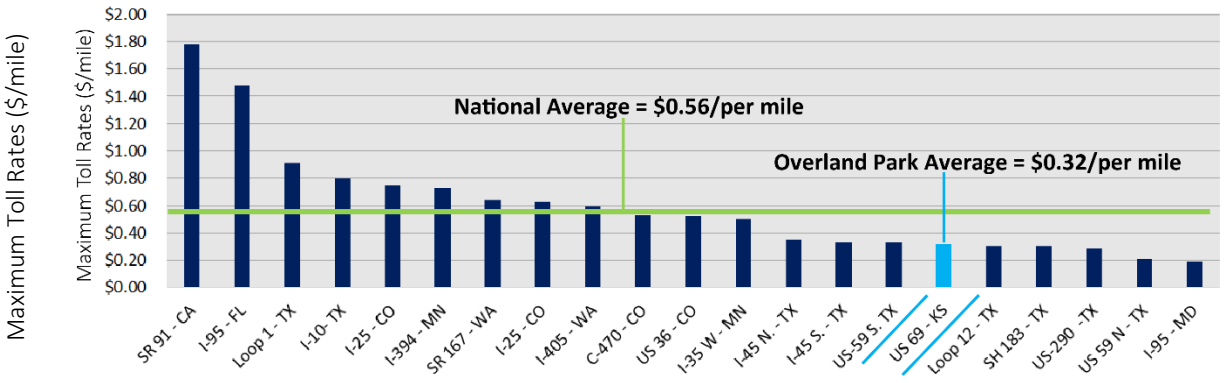
The Project Team collected traffic data along the corridor and within the project study area to understand the historical and current traffic profiles and travel demand patterns that will drive the future demand for the proposed tolled express lanes:

- Traffic counts were collected along US 69 and several screen lines from various sources to establish baseline traffic patterns;
- Origin-Destination (O-D) data obtained to capture the corridor trip characteristics;
- Stated-preference (SP) surveys were conducted to investigate U.S. 69 traveler willingness-to-pay characteristics and other preferences affecting proposed express lane use.

The team developed two scenarios forecasting regional growth. A forecast based on the adopted regional growth model from the Mid-America Regional Council (MARC) and a conservative growth forecast developed through an independent demographic analysis. This produced two traffic and gross revenue forecasts representing the likely range of potential toll revenue generation. It also performed a traffic and toll revenue sensitivity assessment to evaluate key parameters that may affect the future toll revenue potential of the proposed express lanes and to determine whether express toll lanes would be feasible for U.S. 69.

Accounting for the planned regional growth and using results from the Stated-Preference survey, toll rates for potential express lanes on U.S. 69 were developed. The rate structure was developed in alignment with KDOT's objectives of improving congestion across all lanes and ensuring trip reliability. Rates were not developed to maximize revenue potential. As a result, the Project Team concluded that the proposed toll rates would cover the cost to collect tolls and manage congestion at a cost that compared favorably with peer and national average rates (see *Figure 3*).

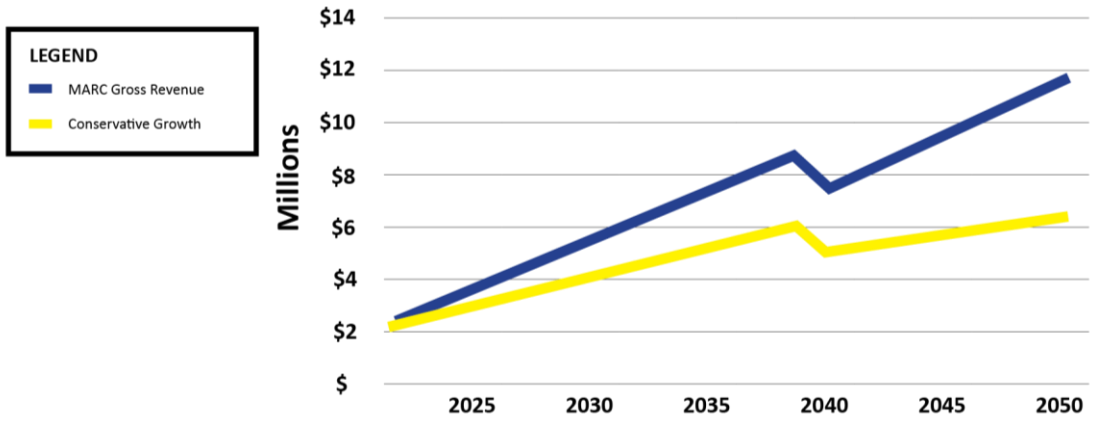
***Figure 3: Comparison of Proposed Rate with Peer and National Average Rates***




## Funding and Feasibility

Applying these anticipated toll rates and considering forecasted traffic for U.S. 69 for the two growth scenarios, it is anticipated that the project could generate annual gross revenues as shown below (see *Figure 4*). The brief decline in revenues shown in the year 2040 reflect planned local road network improvements that are estimated to result in some short-term diversion of traffic from U.S. 69.

***Figure 4: Comparison of Annual Gross Revenue by Growth Scenario***




## Feasibility and Funding

The Project Team examined the feasibility and funding implications of the ETL alternative for the purpose of forecasting project costs and net revenue potential.

It did so under the two growth scenarios discussed above - the regionally accepted Mid-America Regional Council growth forecast and a more conservative growth forecast.

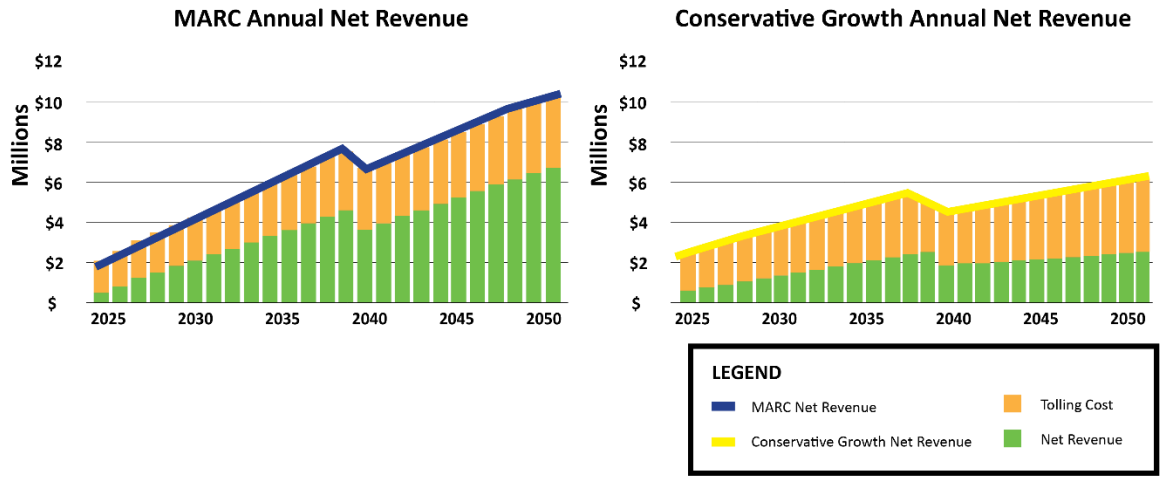
**Express Toll Lanes are a viable option for generating a local contribution for the project under both growth scenarios.**

Beginning with the gross revenue forecasts for each scenario, net revenues were determined by accounting for the anticipated costs of operating the Express Toll lanes (see *Figure 5*).

These include:

- Accounting for uncollectable revenues, referred to as "leakage"
- Costs for operating and maintaining the roadside toll collection system; and
- Costs for processing toll transactions and collecting toll revenue.

***Figure 5: Comparison of ETL Revenue for Regionally Adopted and Conservative Growth Projections***

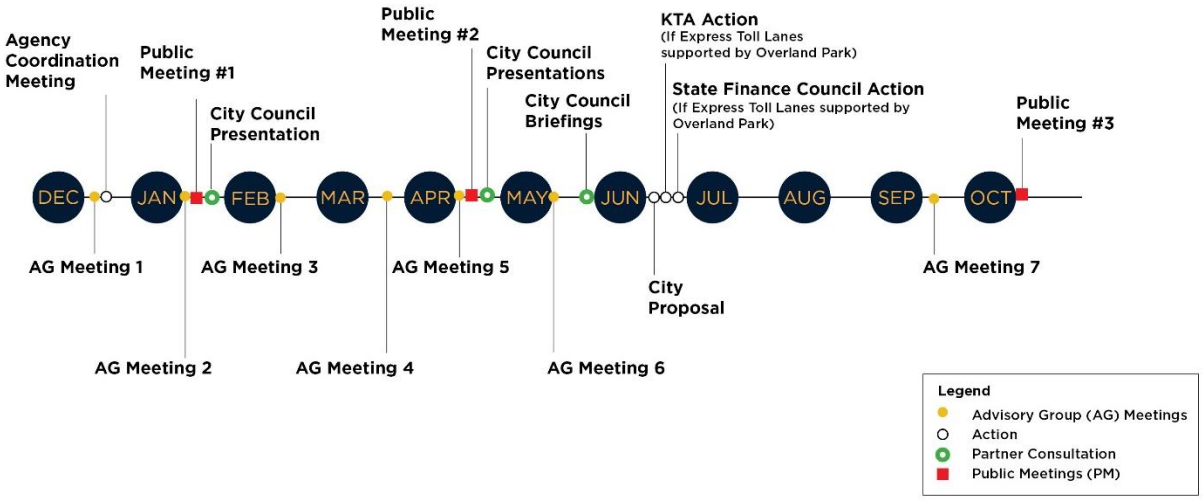



Based on the annual net revenue forecasts, it is anticipated that cumulative net revenues from Express Toll Lanes on U.S. 69 could generate the equivalent of $20 million present value by the years 2037- 2042. This revenue would be available for use as Overland Park's local contribution as previously noted.

## Stakeholder Engagement

An extensive public engagement campaign was initiated at Project start to ensure the community had significant opportunities to provide input and feedback on U.S. 69 corridor needs and preferences as technical work proceeded (see *Figure 6*).

***Figure 6: Stakeholder Engagement Events Timeline: 2020-2021***




*Click here or on the image above to view background materials related to stakeholder engagement activities.*

Initially, the Project Team conducted one-on-one interviews with community leaders to get their perspectives on U.S. 69's impact on community quality of life and economic vitality as well as input into forming a large, diverse Project Advisory Group (PAG) representative of the Project Area and its interests. The PAG's formation and early operation also were informed by a statistically valid community survey and community focus group (*see Appendix - U.S. 69 Stakeholder Engagement Summary*).

Since then, the Project Team has created a dialog with the community through several means that have resulted in excellent levels of community response (see *Figure 7*). Outreach efforts included:

- Implementing the Public Involvement Management Application (PIMA), a robust web-based interactive public involvement platform that enables stakeholders to comment or ask questions of the Project Team in real time;
- Developing and implementing a project-specific website, Facebook, Twitter and other social media pages and platforms;
- Conducting six Advisory Group meetings;
- Holding two rounds of Virtual Public Meetings and Virtual Public Open Houses;
- Providing multiple community presentations and engagement opportunities.

Additionally, following the second public meeting and open house, and using the technical information developed for the options under consideration, a second round of community surveys and focus groups was conducted in May of 2021. Input from these statistically valid surveys of more than 1,250 participants were generally supportive of the Express Toll Lane alternative.

*Figure 7: Summary of Stakeholder Engagement*


## Appendices

1. U.S. 69 Expansion Project Alternatives Screening
2. U.S. 69 Expansion Project Highway Capacity Software Analysis Technical Memorandum
3. U.S. 69 Concept Exhibits: Express Toll Lane and Traditional Widening Alternatives
4. U.S. 69 Express Toll Lanes Concept of Operations
5. U.S. 69 Express Lanes Level 2 Traffic and Toll Revenue Study
6. U.S. 69 Express Toll Lanes Funding & Feasibility Report
7. U.S. 69 Stakeholder Engagement Summary
8. U.S. 69 Highway Corridor Survey Findings Report (May 2021)
9. Previous U.S. 69 Reports (links only)
   a. U.S. 69 Project Improvements - Environmental Screening (2020)
   b. U.S. 69 Pre-Planning Analysis (2020)
   c. U.S. 69 Corridor Study Phase 1 Report (2018)
   d. 167th Street and U.S. 69 Break-In-Access Request (2016)
   e. 159th Street and U.S. 69 Break-In-Access Request (2006)
   f. Break/Modification in Access Study on I-435 and U.S. 69 in Overland Park (2004)
   g. U.S. 69 Initial Corridor Screening Evaluation (1998)