

# US 69 PRE-PLANNING ANALYSIS

COMMITTEE OF THE WHOLE  
March 16, 2020

# US 69 PRE-PLANNING ANALYSIS

## Purpose

- Present Findings of Analysis
- Consider Authorizing the Mayor to Provide a Letter of Support to KDOT to Advance a Phase 2 Detailed Tolling Feasibility Study

# US 69 PRE-PLANNING ANALYSIS

## How Did We Get Here?



- US 69 Partnership with KDOT
  - KDOT \$375M - City \$61M
- Improvement Needs
  - US 69 Corridor Study (2016)
  - Advocacy Efforts
- New Tolling Authority & Process (HB 2369)

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## Phase 1 Tolling Feasibility

### ➤ Determine High-Level Feasibility

- *Is it physically practical?*
- *Is there sufficient traffic?*
- *Will it cover the costs?*
- *Will it meet the goals?*

### ➤ Answer Two Basic Questions

- *How much gross toll revenue can express toll lanes generate?*
- *Are revenues sufficient to support construction, maintenance, and/or operations of US 69*

### ➤ Determine if further consideration is warranted

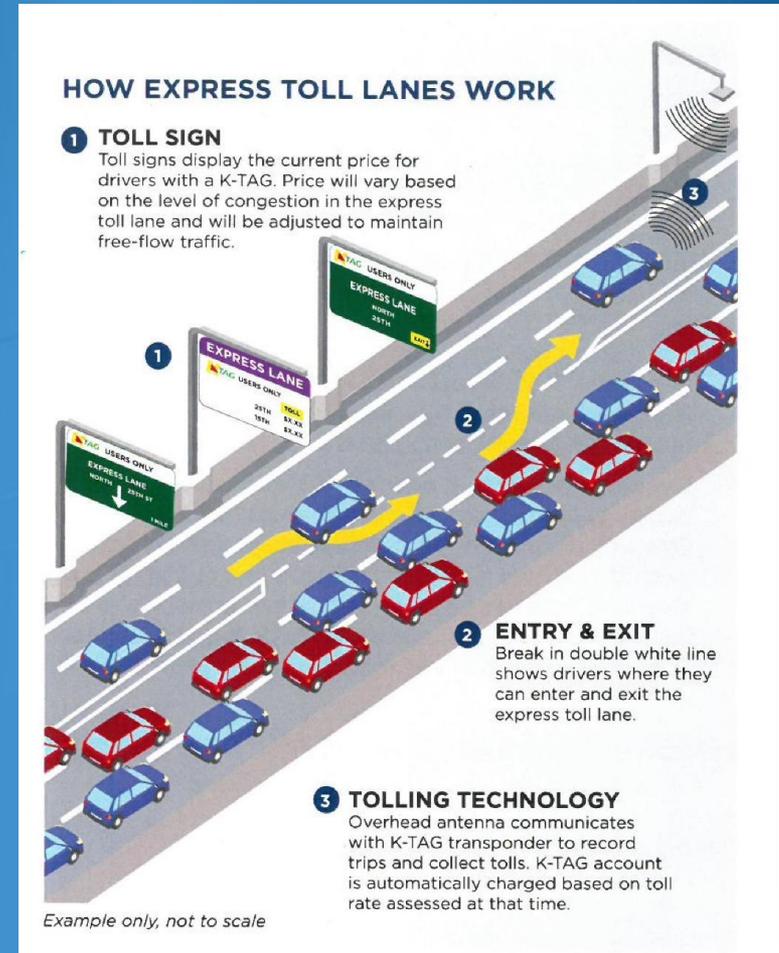


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## What are Express Toll Lanes?

- Adjacent To Toll-free Lanes
- Only Express Lanes Tolled
- Pricing Used To Ensure Desired Operation In Express Lanes
- Tolls Collected Electronically

<https://www.youtube.com/watch?v=2AxSexpqHlU&authuser=0>

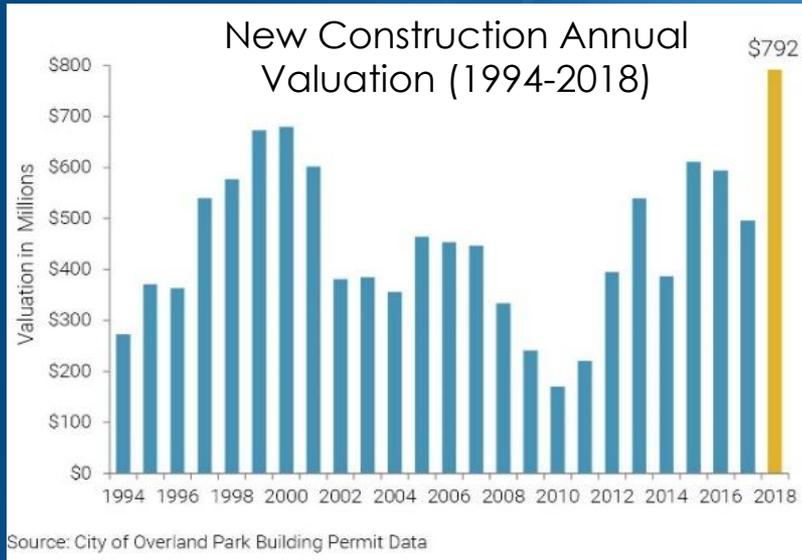


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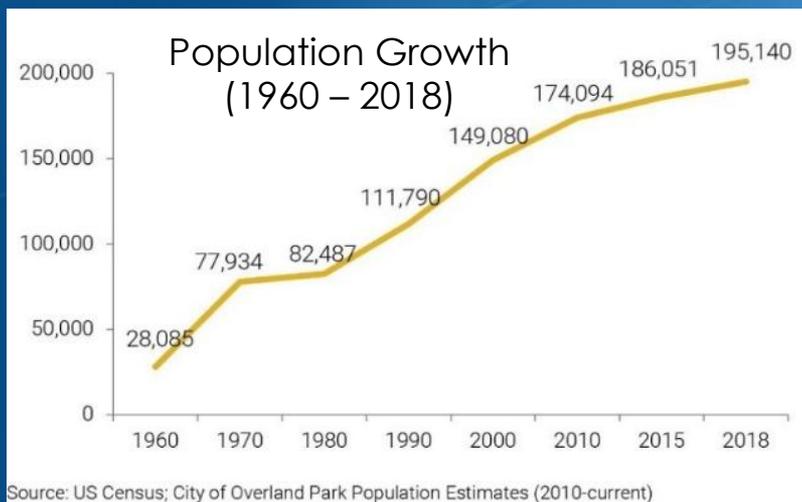
ABOVE AND BEYOND. BY DESIGN.

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## Why Consider Express Lanes?

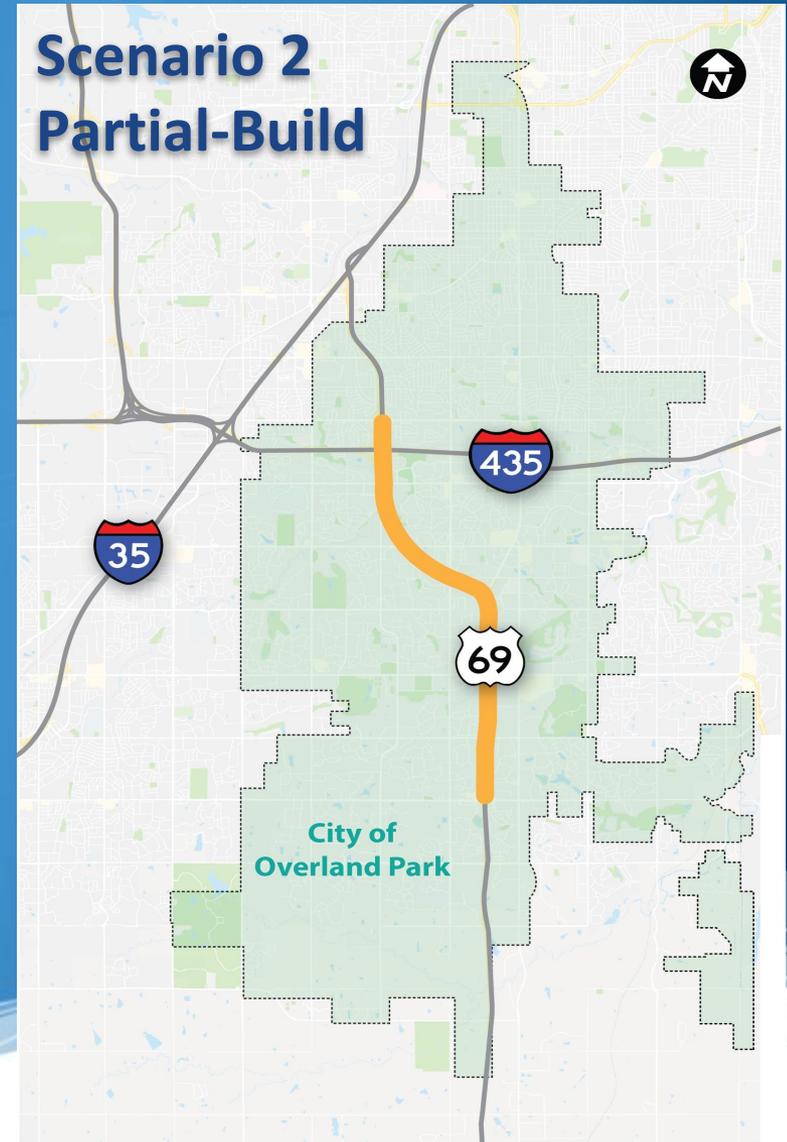
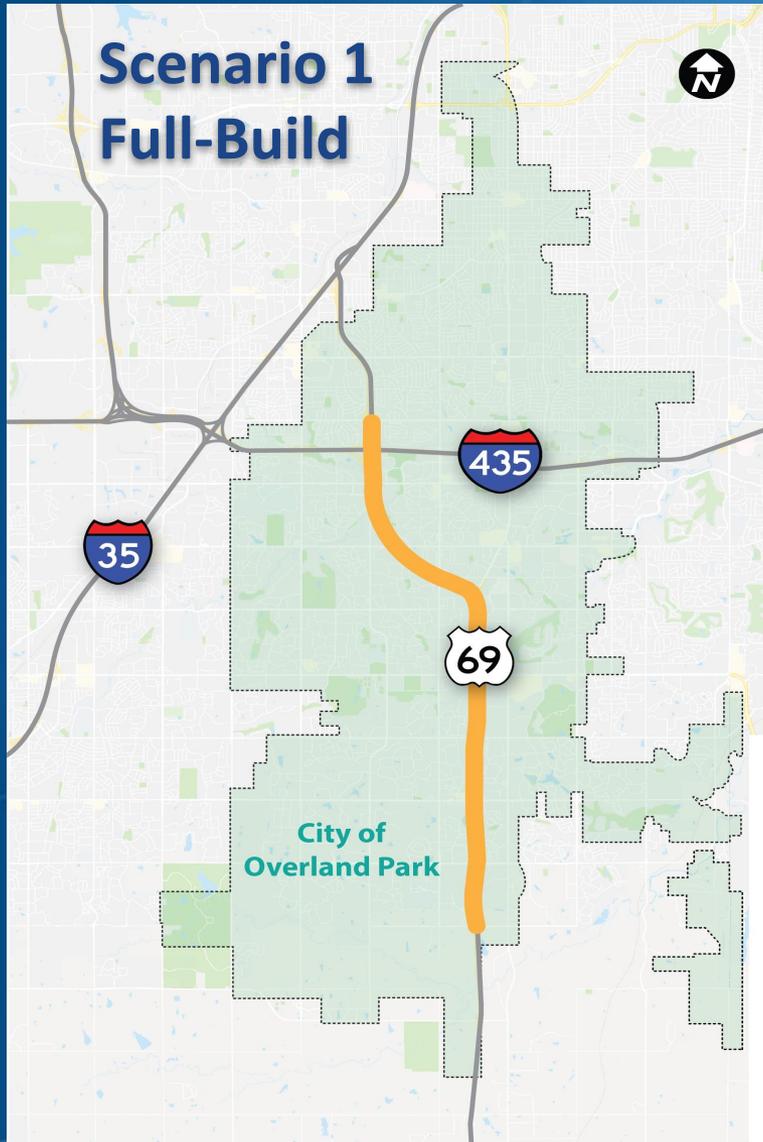


- Corridor safety
- Trip reliability
- Corridor sustainability
- Mobility
- Revenue generation
- Promotion of transit and/or multi-occupant trips
- Technology



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## Scenarios Considered



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## Assumptions

<b>Number of Lanes</b>	One express toll lane in each direction
<b>Permitted Users</b>	Passenger cars, transit vehicles, and emergency responders Commercial trucks and cars with trailers prohibited
<b>Toll-Free/Tolled Usage</b>	All passenger vehicles pay the full toll rate No discount for HOV Transit and emergency vehicles permitted toll-free
<b>Toll Collection</b>	Tolls collected through electronic toll collection (ETC) only All vehicles must have a K-TAG or similar, interoperable transponder Cash and video license plate tolling not accepted
<b>Maximum Volume in Express Toll Lanes</b>	Traffic managed through variable pricing to target LOS C or better operations in the express toll lane
<b>Toll Rates</b>	\$0.30 - \$0.40 / mile during peak demand periods \$0.01 - \$0.10 / mile during off-peak periods
<b>Value of Time</b>	Value of time corresponding to median household income of ~\$81,000 (Johnson County, KS). Sources: US Census
<b>Revenue Adjustments</b>	Revenue projections assume uncollected revenue (leakage) of 5%
<b>Annualization Factors</b>	Traffic and revenue annualized using 300 equivalent weekdays

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## Assumptions

### Toll Systems & Toll Collection Costs

Toll Transaction Processing Costs – \$0.07/Electronic Transaction

Toll Systems Maintenance – \$10k/year/gantry

Toll Systems Replacement Reserve - 75% of initial capital cost every 10 years

### Express Lane Roadway Costs

Includes costs for only the tolled express lanes, not the general purpose lanes

Roadway Maintenance - Years 1-10, Cost = \$6000/lane-mile/year

Roadway Maintenance - Years 10+, Cost = \$20,000/lane-mile/year

Roadway Replacement Reserve - Years 1-10 = \$0/year

Roadway Replacement Reserve - Years 10+ = Variable % of initial roadway capital cost; 0.05%-0.75%/year

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## Preliminary Results

### Net Revenue Comparison 30-years, 2025-2055

	<b>Scenario 1 Full-Build</b>	<b>Scenario 2 Partial-Build</b>
<b>Gross Revenue</b>	<b>\$504M</b>	<b>\$435M</b>
Toll Operations	-\$133M	-\$104M
Toll Systems Maintenance	-\$18M	-\$11M
Toll Systems R&R	-\$80M	-\$53M
Roadway Maintenance	-\$16M	-\$10M
Roadway R&R	-\$19M	-\$14M
<b>Net Revenue</b>	<b>+\$238M</b>	<b>+\$243M</b>

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## Conclusions

- Express Toll Lanes Are Feasible From An Engineering Perspective
- Both Scenarios 1 & 2 Are Net Revenue Positive And Can Support O&M
- Scenario 2 Has Higher Anticipated Net Revenues And Is A More Viable Express Toll Lane Project
- Although Net Revenues Are Positive, They Are Low In First 10 Years.
- Several Factors Indicate That Financial Results May Be More Favorable With Further Study.

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## Next Steps

### Phase 1 - Sketch-Level Feasibility

Toll Plan
Traffic & Revenue Forecast
Cost Estimates (Construction & Tolling)
Financial Analysis (net revenue, debt, equity)
Feasibility Analysis

### Phase 2 - Conceptual Feasibility

Improvement alternatives & modal considerations	Toll Policy, Governance & Concept of Operations
Data collection, operations analysis, Break-in-Access	Refined feasibility analysis
<b>Stakeholder engagement &amp; willingness to pay</b>	Funding/Financing strategy
Preliminary Engineering	Risk analysis and project delivery options analysis
Comprehensive traffic & revenue modeling	Environmental Approval

Questions?

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