



Traffic & Revenue Forecasts



Traffic & Revenue Study Overview

- Steer Davies Gleave (SDG) prepared an investment grade traffic and revenue study for the LSIORB Project.
- The study included:
 - Analysis of existing conditions
 - Traffic count data
 - Travel times
 - Trip patterns
 - Review of land use activity
 - Travel survey
 - Traffic and revenue forecasting

Existing Bridge Crossing Traffic

I-45	
Year	Daily Traffic
2004	113,000
2007	130,000
2008	123,000
2010	122,900
2011	122,000
Design Capacity ¹	
	105,000

I-44	
Year	Daily Traffic
2002	87,800
2004	81,500
2007	88,800
2010	81,900
2011	98,600
2012	98,200
Design Capacity ²	
	90,000

US 81	
Year	Daily Traffic
2002	16,600
2004	19,200
2008	14,800
2010	21,900
2012	24,100
Design Capacity ²	
	24,000



Note: Daily Design Capacity from KIPDA travel demand model

Source: Steer Davies Gleave, KYTC, and the Traffic Group

Existing Conditions: Travel Speeds

- Delays occur at the merges of the highways
- PM peak experiences greater delays than in the AM peak



Source: Steer Davies Gleave

Economic Growth

- Economic Development and Research Group (EDR Group) conducted an independent economic review of the study area and developed their own forecasts
- Steer Davies Gleave (SDG) further developed an econometric model to forecast aggregate river crossing traffic
 - This model produced lower river crossing growth rates than the EDR Group forecasts fed through the Metropolitan Planning Organization (MPO) model
 - SDG used its growth rates for aggregate river crossing traffic

2011 – 2030 Forecasted River Growth Rates (per annum)

EDR Group Socioeconomic Forecasts Input to the MPO model	2.35%
SDG Econometric Model	1.24%

Travel Survey

- Steer Davies Gleave designed a travel survey to:
 - Understand the profile of current bridge users and their existing behaviors
 - Test quantitatively how they will respond to the introduction of tolls
- An adaptive questionnaire was designed and coded for use as an internet-based survey
- The survey was hosted by a market research firm (Crescent Research), who utilized a pre-recruited panel of respondents across the area
- The survey was undertaken in December 2012 and 1,001 responses were obtained

43. SP4 Please select the most appealing option

<p>A free route with local roads including traffic signals</p> 	<p>A new tolled bridge with access ramps designed to ensure no congestion</p> 
<p>Expected time: 5 minutes more than a typical trip</p> <p>Cost: Free</p>	<p>Expected time: 5 minutes less than a typical trip</p> <p>Cost: \$1.00</p>
<p><input type="radio"/></p>	<p><input type="radio"/></p>

Toll Rate Structure

Toll rates will vary by vehicle class and by collection type.

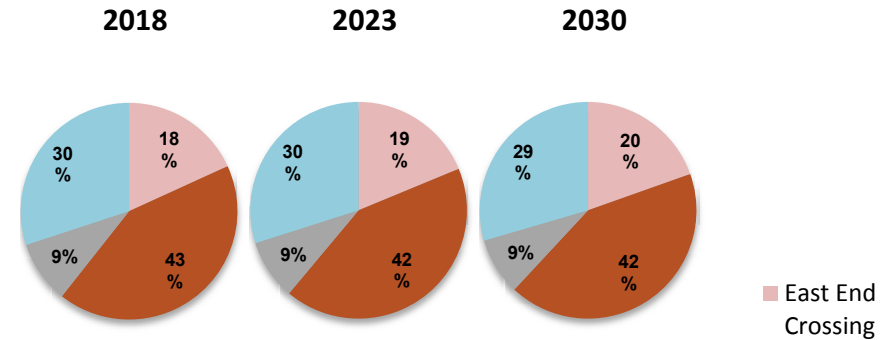
Toll Rates in 2017 \$			
	2-Axle Vehicles	Medium Trucks	Heavy Trucks
Frequency Discount Program	\$1.00	N/A	N/A
Transponder	\$2.00	\$5.00	\$10.00
Registered Vehicle (Video Capture)	\$3.00	\$6.00	\$11.00
Non-registered Vehicle (Video Capture)	\$4.00	\$7.00	\$12.00

Toll rates are assumed to increase by 2.5% annually.

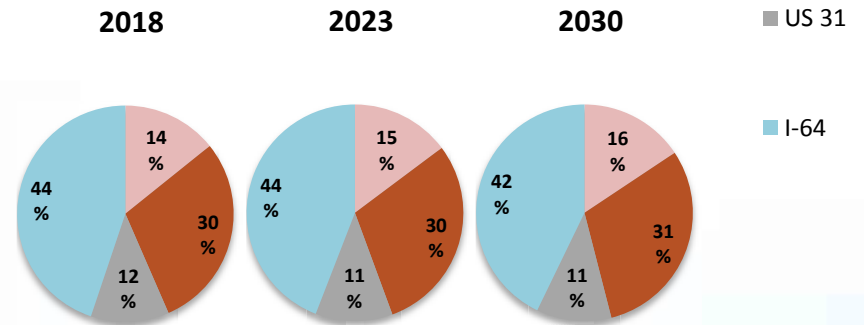
River Crossing Traffic Forecasts

River Crossing Daily Traffic				
River Crossing	2012	2018	2023	2030
East End Crossing		36,007	38,979	44,920
I-65	121,975	74,501	78,350	87,071
US 31	24,143	29,334	30,100	31,925
I-64	78,159	110,476	113,670	120,743
Total Crossing Traffic	224,277	250,318	261,099	284,659
Annual Total Traffic Growth Rate (2012 - 2030): 1.3%				

River Crossing Shares – No Toll



River Crossing Shares – With Toll



River Crossing Daily Traffic Forecasts

The Downtown Crossing accounts for roughly 2/3 of total crossing revenue

		Downtown Crossing					East End Crossing				
Year	Collection Type	Auto	Medium Truck	Heavy Truck	Total Traffic	Revenue	Auto	Medium Truck	Heavy Truck	Total Traffic	Revenue
2018	Discount	31,088			31,088	\$31,865	13,292			13,292	\$13,625
	Transponder	14,589	1,427	3,381	19,397	\$71,872	7,300	553	2,099	9,952	\$39,312
	Pre-registered Video	2,515	211	705	3,431	\$16,978	1,432	77	315	1,823	\$8,424
	Other Video	15,090	1,268	4,228	20,585	\$122,968	8,590	462	1,888	10,940	\$61,759
	Total	63,282	2,906	8,313	74,501	\$243,682	30,614	1,092	4,302	36,007	\$123,120
2023	Discount	32,428			32,428	\$37,606	14,462			14,462	\$16,771
	Transponder	20,329	1,721	4,157	26,207	\$105,339	10,593	661	2,487	13,742	\$57,249
	Pre-registered Video	2,048	180	588	2,816	\$15,884	1,207	68	264	1,539	\$8,042
	Other Video	12,287	1,081	3,530	16,899	\$114,902	7,245	406	1,585	9,236	\$58,963
	Total	67,092	2,983	8,275	78,350	\$273,731	33,507	1,136	4,336	38,979	\$141,026
2030	Discount	35,760			35,760	\$49,295	16,843			16,843	\$23,218
	Transponder	27,460	2,145	5,031	34,636	\$159,841	15,048	791	2,863	18,702	\$86,410
	Pre-registered Video	1,724	162	497	2,382	\$15,998	1,058	59	222	1,339	\$8,227
	Other Video	10,343	970	2,980	14,293	\$115,690	6,350	356	1,329	8,036	\$60,441
	Total	75,286	3,277	8,507	87,071	\$340,824	39,299	1,207	4,414	44,920	\$178,296



Downtown Crossing versus Alternate Routes

The Downtown Crossing provides time savings compared to both alternate routes and operating cost savings compared to I-64.



East End Crossing versus Alternate Routes

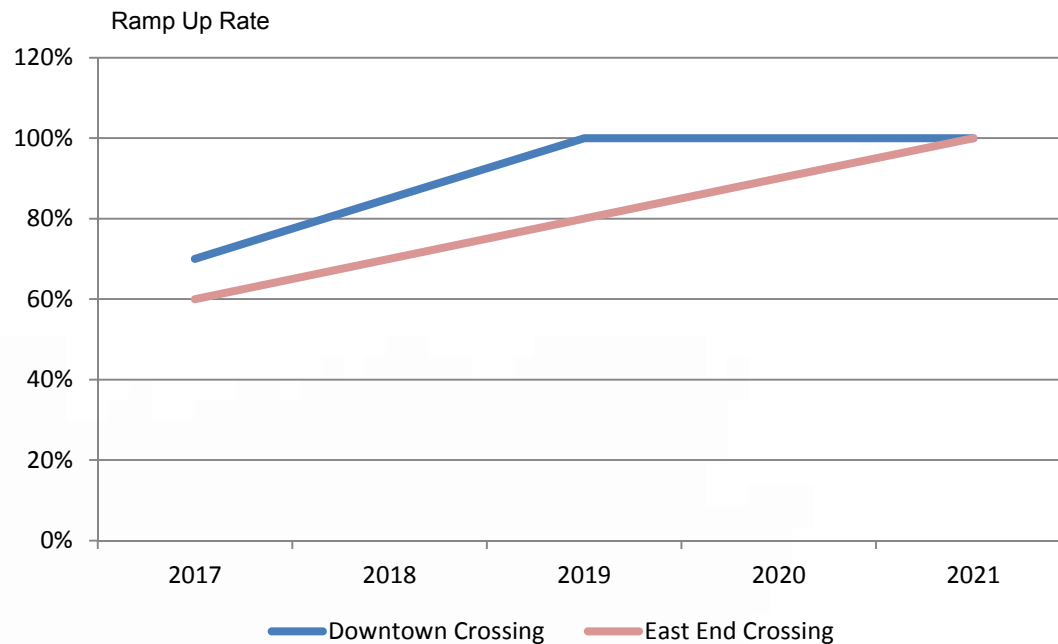
The East End Crossing provides substantial time and distance savings compared to the alternate routes.



Ramp Up

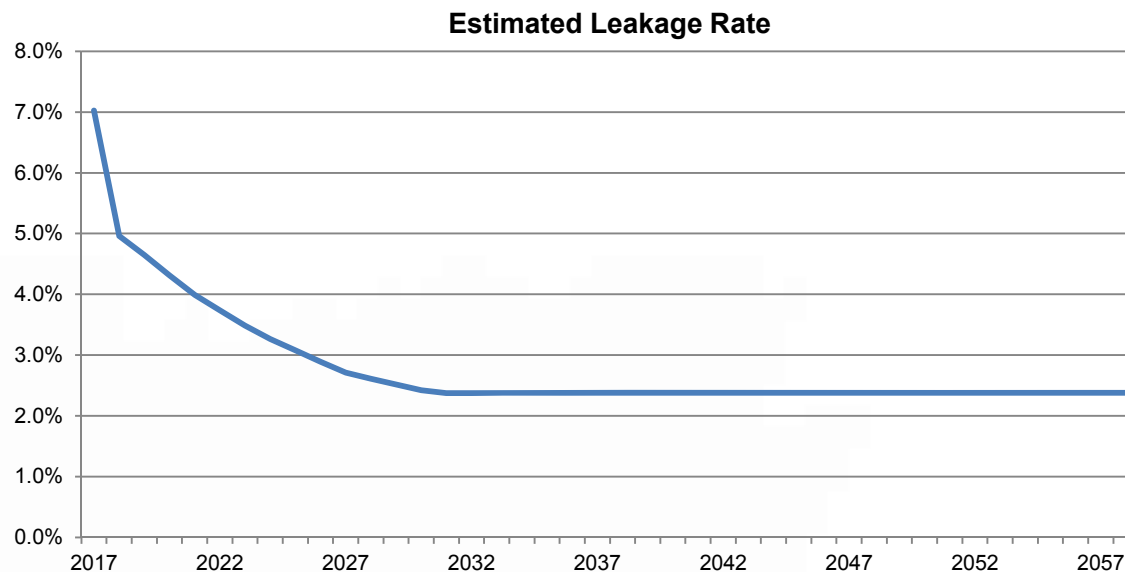
Ramp-up application

- Downtown Crossing: a mature corridor hence rapid user familiarization
- East End Crossing: new facility hence longer and slower ramp up



Estimated Leakage

- Atkins performed a leakage analysis
- Three types of leakage account for revenue reduction
 - **System leakage:** result from technical issues such as bad images, no transponder reads, no images, etc.
 - **Commercial or non-system leakage:** result from unsuccessful DMV lookups, returned mail, etc.
 - **Non-payment leakage:** result from customers that opt for not making payment on invoices, notices, or by not replenishing pre-paid accounts



Estimated Traffic & Revenue

Annual Traffic & Revenue projections (net of leakage)

Transactions ('000s)				
FY	2-Axle Vehicle	Medium Trucks	Heavy Trucks	Total
2017	9,137	412	1,311	10,860
2018	20,984	921	2,898	24,803
2019	25,816	1,107	3,433	30,356
2020	28,603	1,215	3,757	33,575
2021	29,976	1,256	3,889	35,122
2025	32,509	1,319	3,984	37,811
2030	35,731	1,403	4,060	41,193
2040	41,582	1,622	4,689	47,892
2050	45,365	1,766	5,115	52,246
2055	47,337	1,841	5,337	54,515

Nominal Revenues (\$'000s)				
FY	2-Axle Vehicle	Medium Trucks	Heavy Trucks	Total
2017	17,495	2,274	14,072	33,841
2018	41,746	5,271	32,234	79,252
2019	52,498	6,492	39,168	98,158
2020	59,104	7,287	43,858	110,248
2021	63,042	7,708	46,471	117,222
2025	73,226	8,846	52,209	134,281
2030	88,434	10,534	59,723	158,691
2040	131,580	15,589	88,318	235,486
2050	183,811	21,726	123,320	328,857
2055	217,039	25,624	145,580	388,243

Transaction Growth (per annum)

2018	128.40%
2019	22.39%
2020	10.60%
2021	4.61%
2021 - 2025	1.86%
2025 - 2030	1.73%
2030 - 2040	1.52%
2040 - 2050	0.87%
2050 - 2055	0.85%

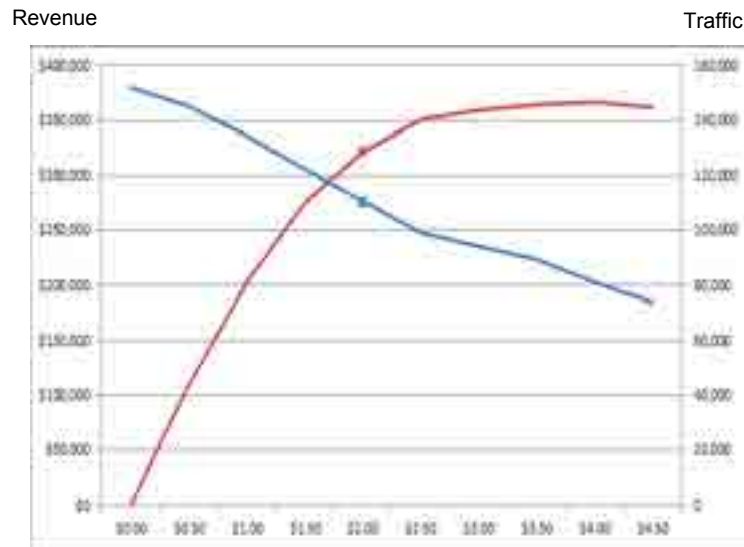
Revenue Growth (per annum)

2018	134.19%
2019	23.86%
2020	12.32%
2021	6.33%
2021 - 2025	3.46%
2025 - 2030	3.40%
2030 - 2040	4.03%
2040 - 2050	3.40%
2050 - 2055	3.38%

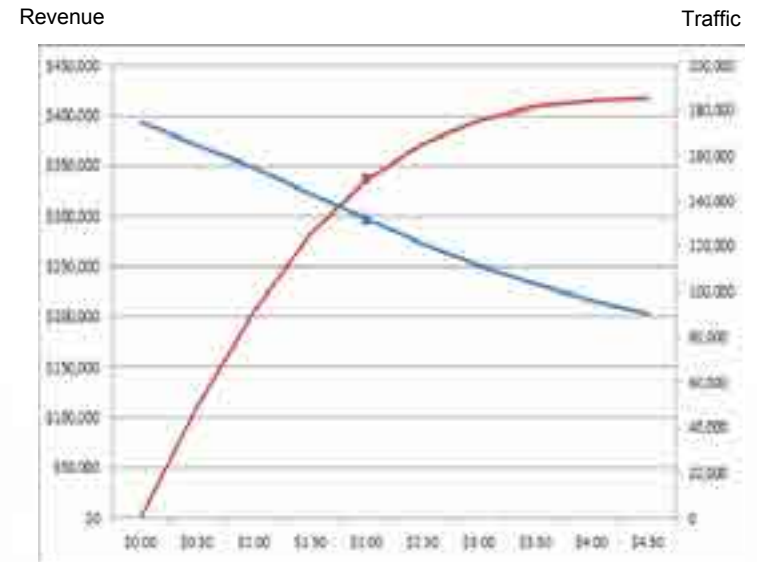
Toll Sensitivity Curves

The \$2 base toll rate is below the revenue maximizing point

2018



2030



— Revenue (Daily)

— Traffic (Daily)

Toll Rates and Revenue in 2017 \$



Frequently Asked Questions

- Q: Why are these forecasts different from the environmental study's traffic forecasts?
- A: The purpose of the investment grade study is to provide potential investors with confidence in the forecasts. Thus, the study necessarily includes more conservative assumptions than those in the environmental study. The investment grade study also benefits from newer data collection and a more refined representation of the types of toll collection and relative toll rates.
- Q: Why are the forecasts of future I-65 crossing traffic lower than current levels?
- A: There are a few factors that produce the lower I-65 traffic volumes: 1) the opening of the East End Crossing pulls traffic away from I-65, 2) the introduction of tolls to I-65 traffic diverts traffic from I-65, and 3) the conservative assumptions result in low total cross-river traffic growth.
- Q: What are the revenue impacts if toll rates are not increased annually?
- A: The toll sensitivity tests show that toll rates lower than those included in the study result in less revenue than forecast. Thus, if the toll rates are not increased at 2.5% annually, toll revenue will be lower than forecast.