Knik Arm Bridge
Preliminary Traffic and Toll Revenue Study

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Wilbur Smith Associates

Knik Arm Bridge Preliminary Traffic and Toll Revenue Study

Prepared for

Knik Arm Bridge & Toll Authority

Prepared by

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November 2005

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November 29, 2005

Mr. George Wuerch
Chairman
Knik Arm Bridge and Toll Authority
550 West 7th Avenue, Suite 1850
Anchorage, Alaska 99501

Re: Knik Arm Bridge Preliminary Traffic and Toll Revenue Study

Dear Mr. Wuerch:

Wilbur Smith Associates (WSA) is pleased to provide Knik Arm Bridge and Toll Authority (KABATA) this letter report discussing the methodologies and a summary of findings of the preliminary traffic and toll revenue study for the proposed Knik Arm Bridge. This preliminary study is intended to aid the planning process. A comprehensive level analysis will be required to support potential project financing.

PROJECT DESCRIPTION

The proposed Knik Arm Bridge will connect Point MacKenzie in the Matanuska-Susitna Borough (MatSu Borough) to the City of Anchorage across Knik Arm. Figure 1 shows the project location. A crossing of the Knik Arm has been discussed for many years for a variety of reasons. Historically with no connection across the Knik Arm, growth in the Region has been northeasterly along the east side of Knik Arm as well as along the Parks Highway in Wasilla. Growth in the Point MacKenzie area has not been realized. The proposed Knik Arm Bridge would allow residents in the Anchorage area a new choice for residential living with reasonable commute times to the Anchorage city center. In addition the bridge will create opportunities for land-uses such as industrial or office.

KABATA is in the process of conducting a Draft Environmental Impact Statement (EIS) with the assistance of HDR, their Environmental Engineering Consultant (EEC). HDR started the process by creating a project traffic model that combined the two traffic models that cover the MatSu Borough and the Anchorage Borough. The project traffic model was calibrated to Year 2000 traffic counts. This 2000 traffic model represents the base year model from which the future year 2030 traffic models were developed.

A number of tools were employed in the development of the future year 2030 traffic models and form the starting point for WSA's analysis. Under KABATA's direction, Northern Economics, Inc. conducted

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LOCATION MAP

FIGURE 1

a household survey to gauge the level of interest people in both the Anchorage and MatSu Boroughs have in moving to the Point MacKenzie area if the proposed Knik Arm Bridge was constructed. HDR also used the Institute of Social and Economic Research (ISER) from the University of Alaska to develop socioeconomic forecasts of population and employment for the State of Alaska, as well as both the MatSu and Anchorage Boroughs for two different scenarios. The first scenario assumed the construction of the Knik Arm Bridge and the other did not. Using ISER's forecast which took into account the results from the household survey, HDR took the population and employment data and placed it into traffic analysis zones (TAZs) based upon constraints that exist in the developing area such as zoning laws and land ownership characteristics. Once the TAZs were populated with the new socioeconomic data the trip generation was re-run by the planning agency responsible for each traffic model and new trip tables were created.

The future-year trip tables that were created were then merged into the project traffic model's TAZ structure. At this point the trip table reflected future-year traffic but the road network only incorporated the Long Range Transportation Plan (LRTP) for the Anchorage Borough. The MatSu Borough which will be heavily affected by the proposed Knik Arm Bridge did not have a LRTP that included the assumption of the Knik Arm Bridge. HDR then ran traffic assignments with the future-year trip table and the existing road network in the MatSu Borough to highlight future year capacity issues in the Borough if the Knik Arm Bridge is built. From this analysis a recommended LRTP with the Knik Arm Bridge was created. This recommended LRTP was incorporated into the project traffic model.

The approaches for the Knik Arm Bridge on the Anchorage side of Knik Arm and how the bridge would connect to the existing Anchorage infrastructure was also an issue during the development of the traffic model. Many different approaches were analyzed but the Ingra/Gambell is the most likely alignment at the time of this analysis.

The combination of the upgrade to the road network, creation of the future-year trip table and Ingra/Gambell alignment developed the final future-year project traffic model used by WSA for this preliminary traffic and toll revenue analysis.

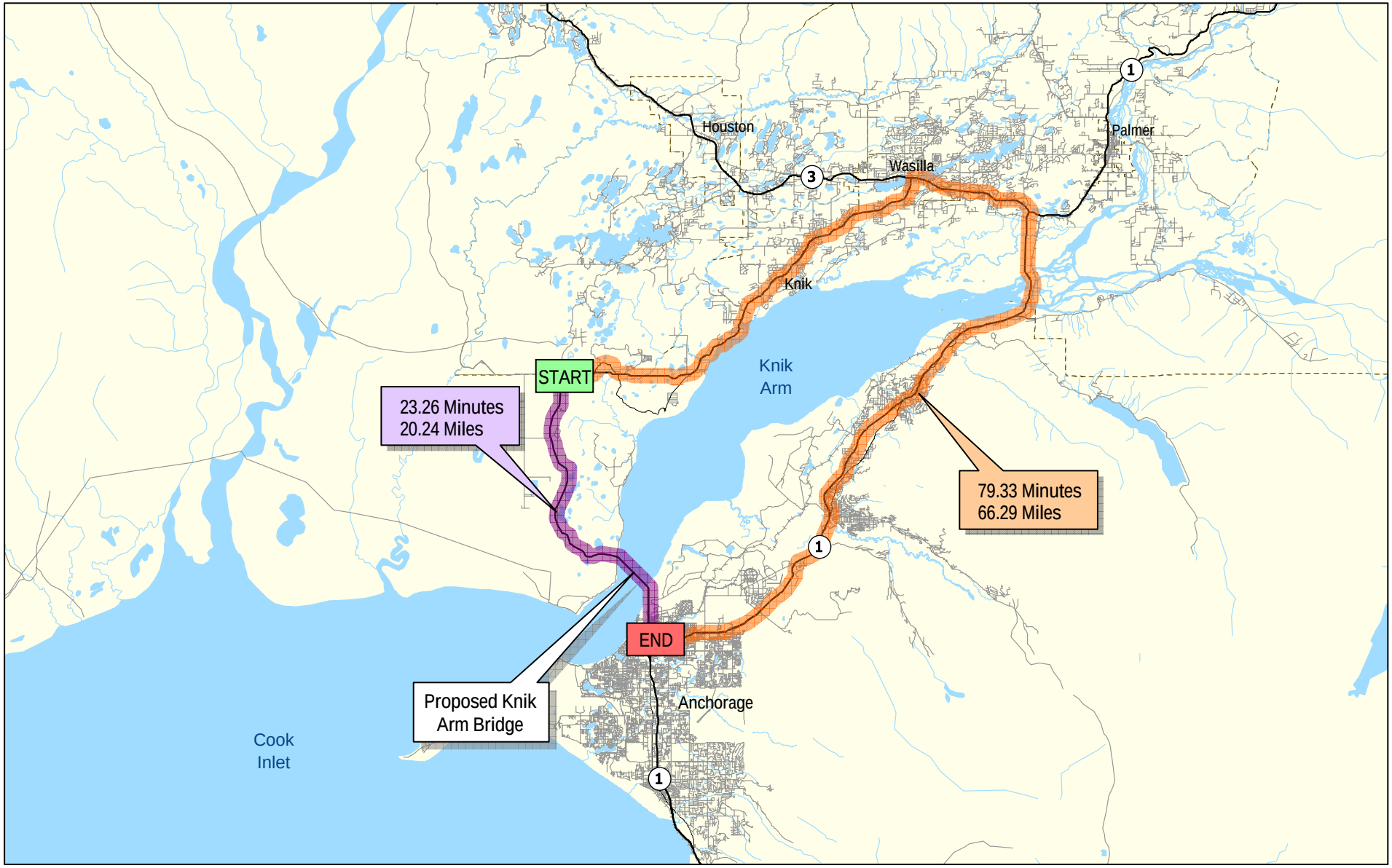
STUDY METHODOLOGY

This preliminary traffic and toll revenue analysis began with the QA/QC of the base (Year 2000) and the future (Year 2030) project traffic model developed by HDR and provided the land-use and growth assumptions for this analysis. Route reconnaissance and familiarization of the study area that was undertaken by WSA staff in April 2005 verified the road network assumptions implicit in the traffic model. The development assumptions made by HDR and other consultants to KABATA were accepted to mesh all studies currently being conducted. WSA did not conduct an independent socioeconomic review of the area beyond confirming the general legitimacy of the socioeconomic projections used. A comprehensive traffic and toll revenue study more advanced than this preliminary study would employ an independent economist and stated preference surveys to determine development forecasts and willingness to pay curves should a bond issuance be sought.

After acceptance of the base and future-year traffic models, a traffic model representing the opening year of 2010 was developed by WSA through interpolation of the trip tables. Using this traffic model a series of toll sensitivity tests were run to determine the optimal toll rate. These tests were run for toll rates ranging from $1.00 to $10.00 dollars. These sensitivity tests were run using WSA's proprietary toll algorithms that determine diversion between the toll-free and tolled scenarios of a proposed facility to competing routes based upon a number of factors including toll rate, motorists' value of time, vehicle operating costs, travel time comparisons for competing routes, time savings as well as other criteria. After preliminary analysis it was evident that competing routes to the bridge were not viable for motorists in the new development in the Point MacKenzie area that wished to travel to and from the City of Anchorage. Figures 2 through 4 show travel time and mileage based upon congested speeds from various points in the MatSu Borough to a representative point in Anchorage. Figure 2 represents trips starting at the turn of Point MacKenzie Road. The time savings for trips to Anchorage are significant with 56 minutes saved by taking the bridge route rather than the combination of Knik Goose Bay Road, the Parks Highway and the Glen Highway. In addition, over 46 miles in travel distance are saved as well. Figure 3 is the most extreme case and is representative of the center of development assumed by the traffic model. Over 80 minutes and almost 70 miles are saved by taking the Knik Arm Bridge. Figure 4 displays two alternate routes from the Parks Highway near the Town of Houston to Anchorage. The route that includes the Knik Arm Bridge takes just over 80 minutes whereas the non-bridge route takes seven minutes longer. The bridge route saves almost 15 miles as well. These two route choices are the competitive with each other especially considering the user-fee that will be established on the Knik Arm Bridge movement. Figure 5 shows a current travel movement that is very popular in the region. This movement starts in Wasilla and ends in Anchorage. The Kink Arm Bridge movement takes over ten minutes longer and is approximately one mile more than the Glenn Highway route. Figure 5 displays the area from which the Knik Arm Bridge can realistically draw its patrons. Figure 4 shows that Houston is a pivot point and Figure 5 shows that Wasilla is beyond the area of influence for the bridge. However, Figures 2 and 3 illustrate the immense time and distance savings for origins or destinations within the Point MacKenzie area.

These large time savings that the Knik Arm Bridge displays for movements from the MatSu Borough to Anchorage lead to little sensitivity to toll rates as no other viable options exist for these specific travel movements in the area. This being the case, more analysis was done to determine trip chaining due to the introduction of tolls on the Knik Arm Bridge. In reality motorists do consider alternative trip routings or combine individual trips of varying purposes in response to tolls by either finding similar shopping or working areas nearby that require no toll movement or linking trips together to reduce the number of total trips taken over the tolled bridge.

First, analysis was done to determine if motorists will be more attracted to shopping/working centers in the MatSu Borough, therefore not needing to take the tolled Knik Arm Bridge. From the population center of development in the Point MacKenzie area, travel times were calculated to employment and retail centers in the MatSu Borough. Then travel times were calculated to employment and retail centers in Anchorage. These travel times were compared with the inclusion of the range of toll rates being studied applied to trips crossing Knik Arm into Anchorage. The travel times were still too large to destinations within the MatSu Borough to be more attractive to motorists than a trip over the tolled Knik Arm Bridge.



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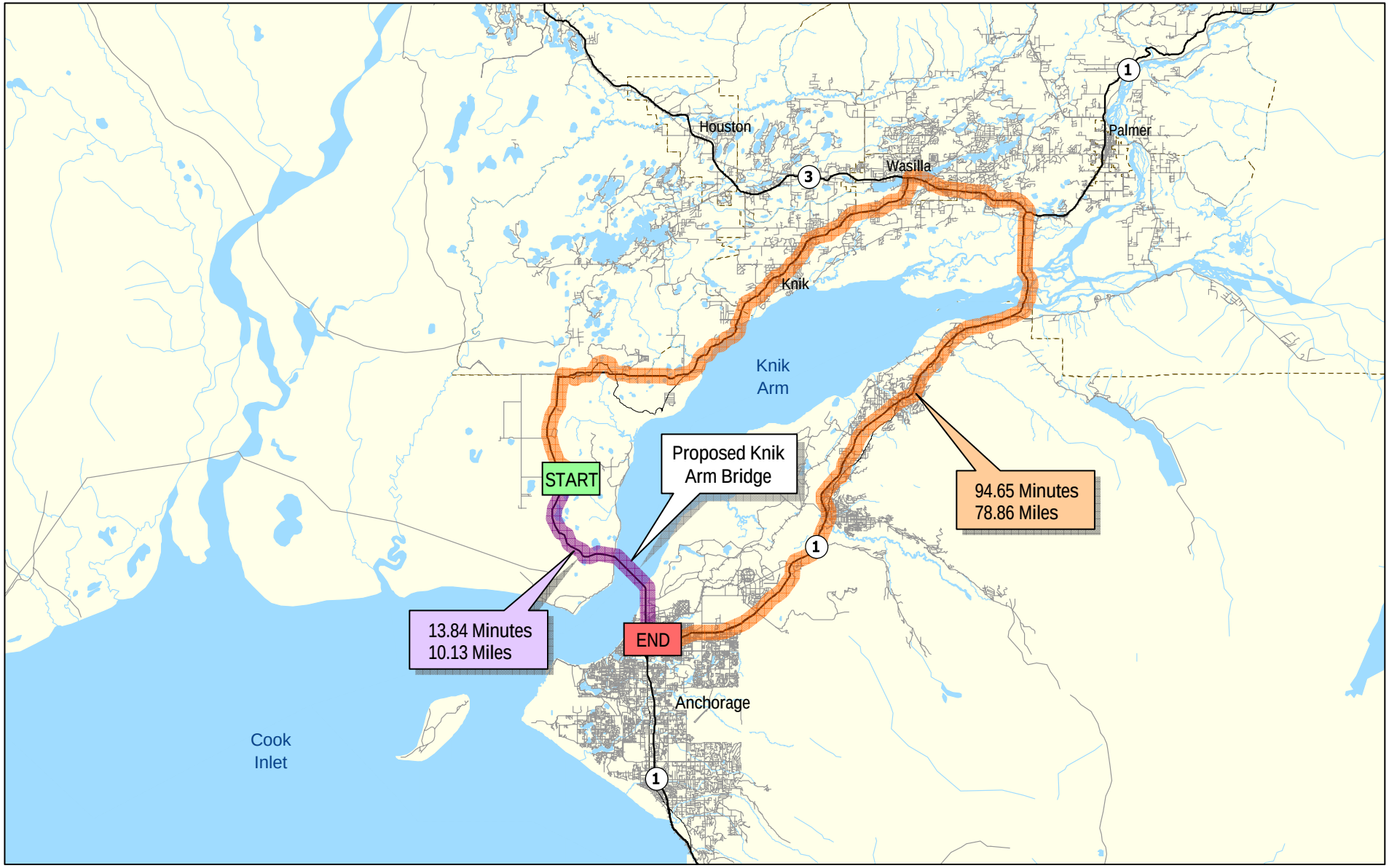
TRAVEL TIME / DISTANCE COMPARISON

FIGURE 2



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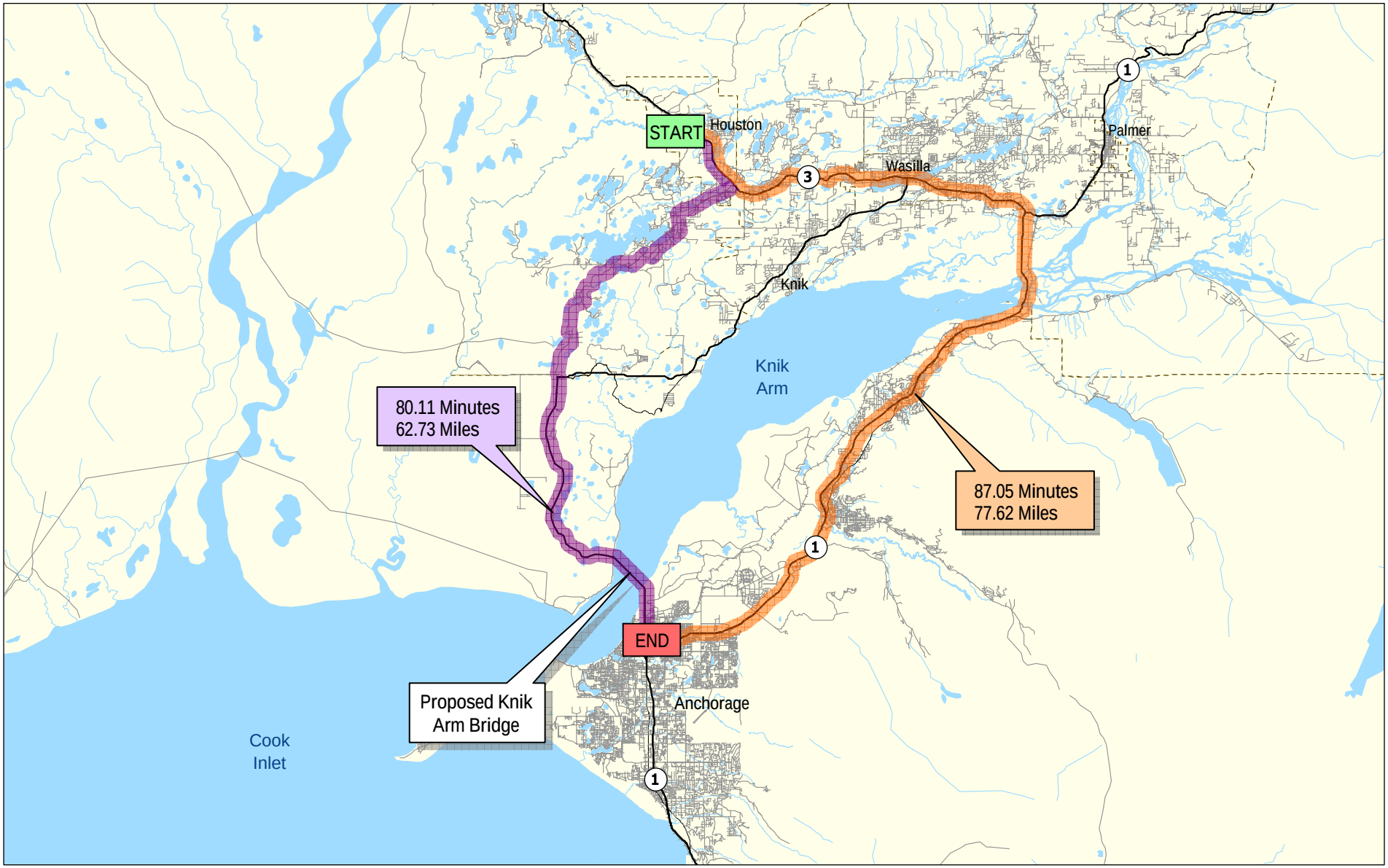
TRAVEL TIME / DISTANCE COMPARISON

FIGURE 3



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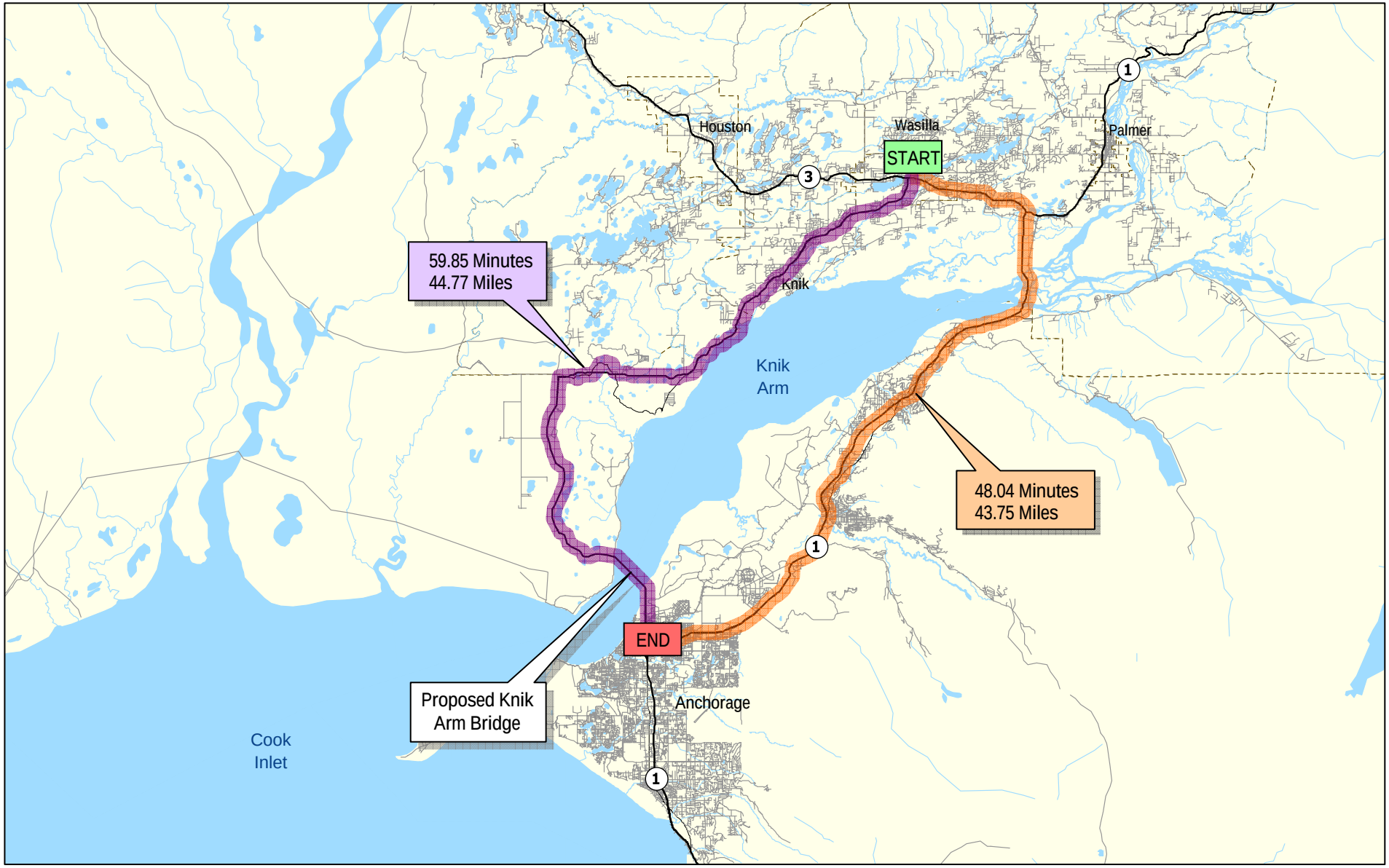
TRAVEL TIME / DISTANCE COMPARISON

FIGURE 4



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TRAVEL TIME / DISTANCE COMPARISON

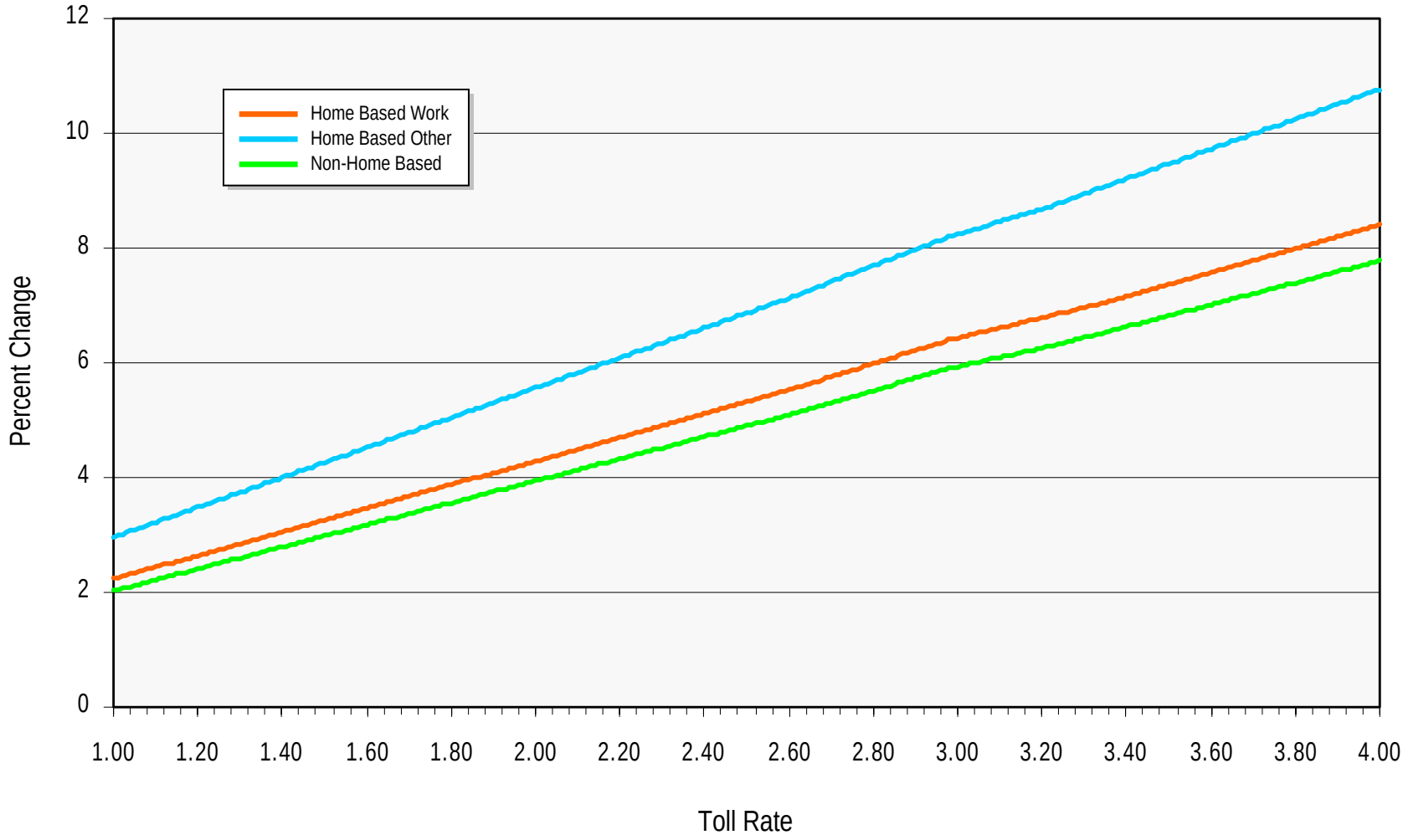
FIGURE 5

Analysis was then undertaken to determine trip reduction/linking characteristics due to the sensitivity of tolls. Trip dampening was used based upon the Stated Preference Survey conducted for the Tacoma-Narrows Bridge. In the survey, information was gathered from motorists relating to limiting the number of trips over the toll bridge based upon a certain toll rate. The trips were further categorized by purpose. This survey was used in the analysis for the proposed Knik Arm Bridge by calibrating the value of time and vehicle operating costs for the Anchorage area. Figure 6 shows the percent of trip reduction by purpose as toll rates vary from $1.00 to $4.00 dollars.

Trips with the purpose of Home Based Work (HBW) show sensitivity due to the rise in popularity of telecommuting and flexible time schedules that allow fewer trips to be made per week to and from work. Non-Home Based (NHB) show the least sensitivity because of the perceived importance of these trips. A majority of these trips are business related and are reimbursable by the motorists' employers. Home Based Other (HBO) trips are primarily discretionary in nature and show the most sensitivity to higher levels of toll rates because of the trip chaining ability. Also these trips have no work involvement and tolls are the sole responsibility of the motorist. These curves were used in trip dampening of passenger cars only as commercial vehicles are unaffected by these purposes and the possibility of linking, reducing trips.

Using the sensitivity found in the original set of toll sensitivity assignment runs coupled with the stated preference sensitivity curves the optimal toll rates were determined. The additional information from the household survey conducted by Northern Economics, Inc provided more insight into motorists' willingness to pay. The survey concluded that representative respondents were willing to pay about $2.00 for the one-way toll on the Knik Arm Bridge. This information as well as the other sensitivity tests determined a passenger car cash toll rate of $3.00 for the opening year of 2010. This toll amount is in future-year (2010) dollars as are all dollar amounts that follow in this analysis. This $3.00 toll rate represents a compromise between what the sensitivity tests are implying and the results of the household survey. Also the $3.00 toll rate represents the toll for a passenger car paying cash.

A 20 percent discount is assumed for patrons participating in the Electronic Toll Collection (ETC) program. The ETC program allows motorists to travel at roadway speed through the toll collection point without slowing down to physically pay the toll. The toll is collected through transponders which are usually mounted on the windshield of the participating vehicle. While the ease of paying the toll is a significant reason many participate in these programs, another is the discount the ETC program offers. Toll Authorities throughout the world offer these discounts because of the lower cost of collection borne by the Authority for this collection method as compared to cash collection. These details will be discussed further in the toll operations section of this report. An (N-1) pricing scheme (N = # of axles) is also assumed for this analysis to calculate toll rates of other vehicle classifications. For example a three-axle vehicle pays twice that of the two-axle or passenger vehicle toll. A full toll schedule is shown in Table 1 with planned toll increases every ten years to essentially keep pace with inflation. Inflation for this analysis is assumed at 2.5 percent based upon historical trends in the Anchorage metropolitan area.



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TRIP DAMPENING BY PURPOSE

FIGURE 6

Table 1
Toll Rate Schedule

Toll Schedule 1
(2010 - 2019)

Class	ETC Rate	Cash Rate
2 Axle	$2.40	$3.00
3 Axle	$4.80	$6.00
4 Axle	$7.20	$9.00
5 Axle	$9.60	$12.00
6+ Axles	$12.00	$15.00

Toll Schedule 2
(2020 - 2029)

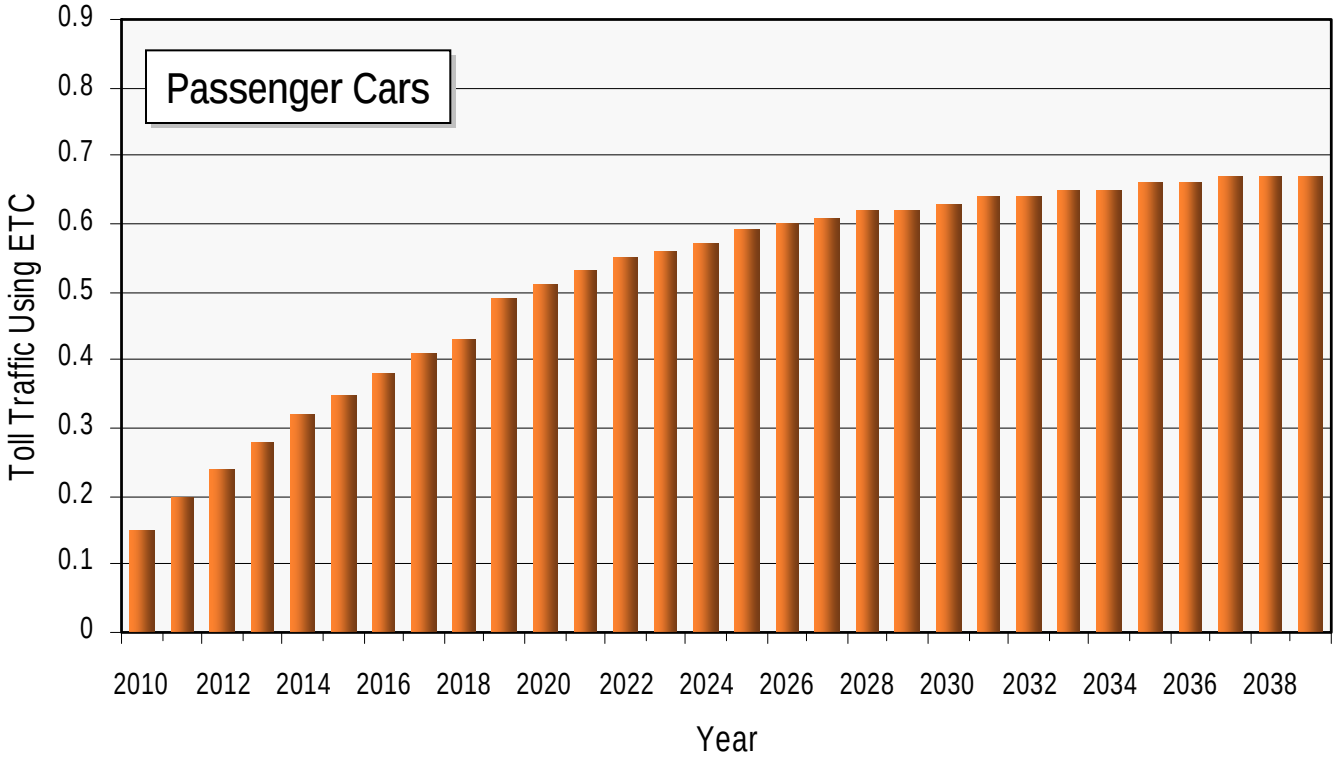
Class	ETC Rate	Cash Rate
2 Axle	$3.20	$4.00
3 Axle	$6.40	$8.00
4 Axle	$9.60	$12.00
5 Axle	$12.80	$16.00
6+ Axles	$16.00	$20.00

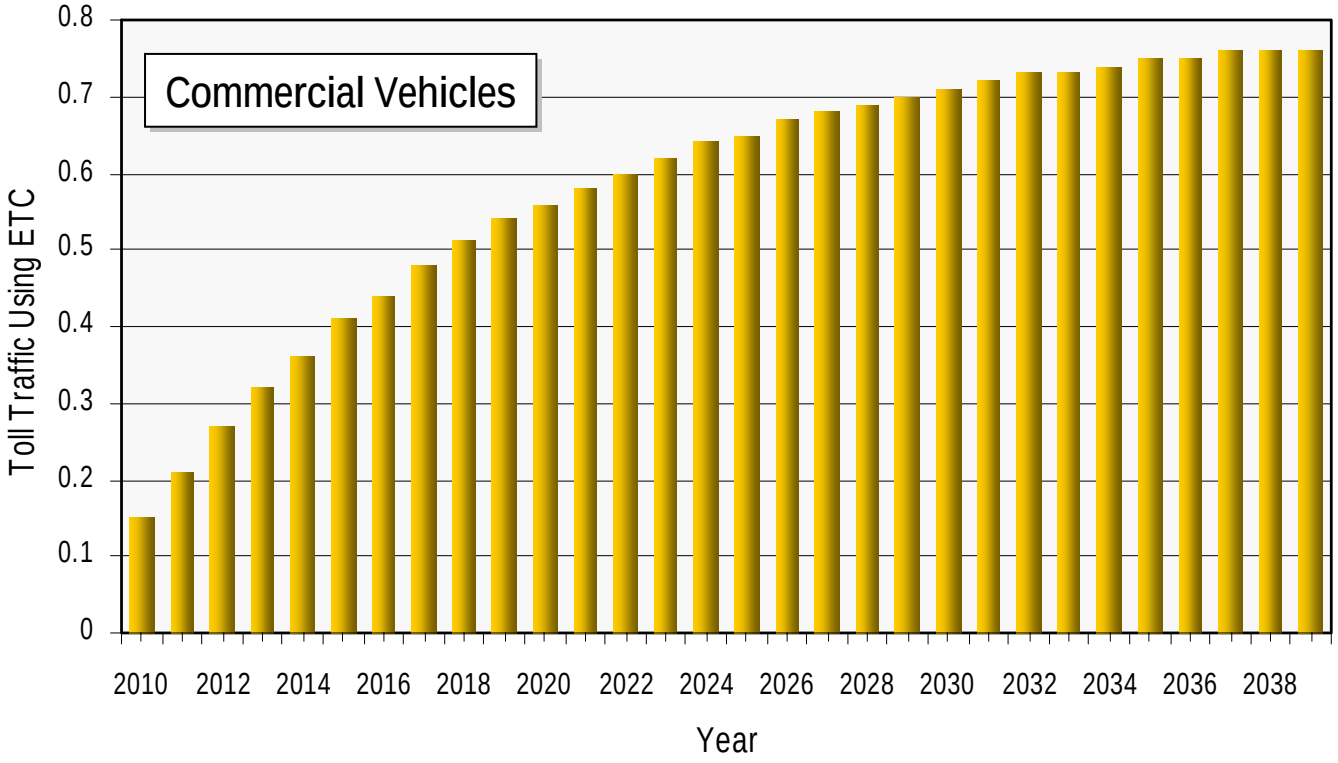
Toll Schedule 3
(2030 - 2039)

Class	ETC Rate	Cash Rate
2 Axle	$4.00	$5.00
3 Axle	$8.00	$10.00
4 Axle	$12.00	$15.00
5 Axle	$16.00	$20.00
6+ Axles	$20.00	$25.00

After determining the toll rate from the sensitivity tests and subsequent planned toll increases due to inflation, assignments were run on the future-year traffic model. Toll transactions were determined for 2030 and transactions were grown from 2010 to 2030 based upon growth rate trends from ISER's economic model. Sensitivity tests showed slight decreases in transactions in years toll rates were increased (2020 and 2030).

To calculate revenue from transactions, ETC participation curves were derived. Figure 7 shows the two different curves used for passenger cars (PC) and commercial vehicles (CV). The participation for both class of vehicles starts at 15 percent usage in 2010 and passenger cars grow to an upper limit of 70 percent while commercial vehicles grow to an upper limit of 80 percent. The curve for passenger cars shows a larger than usual increase in 2019 due to expected jump of development according to ISER


Passenger Cars
Toll Traffic Using ETC
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
Year


Commercial Vehicles
Toll Traffic Using ETC
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
Year

socioeconomic forecast. In 2019 the jump in development will bring a bundling of packages for new residents and participation of the ETC program is expected to be larger than the previous years.

Table 2 shows estimated daily transactions and annual gross toll revenue for the proposed Knik Arm Bridge for a 30-year period. The transactions and resulting revenues for the first five years of operation reflect the "ramp-up" phenomenon that typically occurs with the opening of start-up toll facilities. The ramp-up period represents the time it takes for motorists to become familiar with the new facility and road network that access it. The traffic model assumes complete knowledge of all routes available for travel. The real world has shown that it takes time for motorists to acclimate to new travel patterns. It will also take time for maps to show the crossing of Knik Arm. The opening year is heavily discounted at 50 percent and this depression of transactions is lessened by 10 percent each year there after until 100 percent of estimated traffic is realized in 2015. This five-year ramp-up period represents a conservative approach to the opening years of the bridge and could be mitigated through more aggressive marketing campaigns than are typically seen in the industry. Table 2 assumes the toll schedule from Table 1 with increases in 2020 and 2030.

Opening-year transactions are estimated to be 6,700 vehicles per day and will grow to 42,000 vehicles per day in the final year of the forecast in 2039. In 2010, gross toll revenue is estimated to be more than $86 million per year.

Figure 8 shows daily transaction and gross toll revenue trends over the forecast period. The first five years display the dampening effects of the ramp-up. In 2020 and 2030 toll rate increases are evident as transactions decrease while revenue increases.

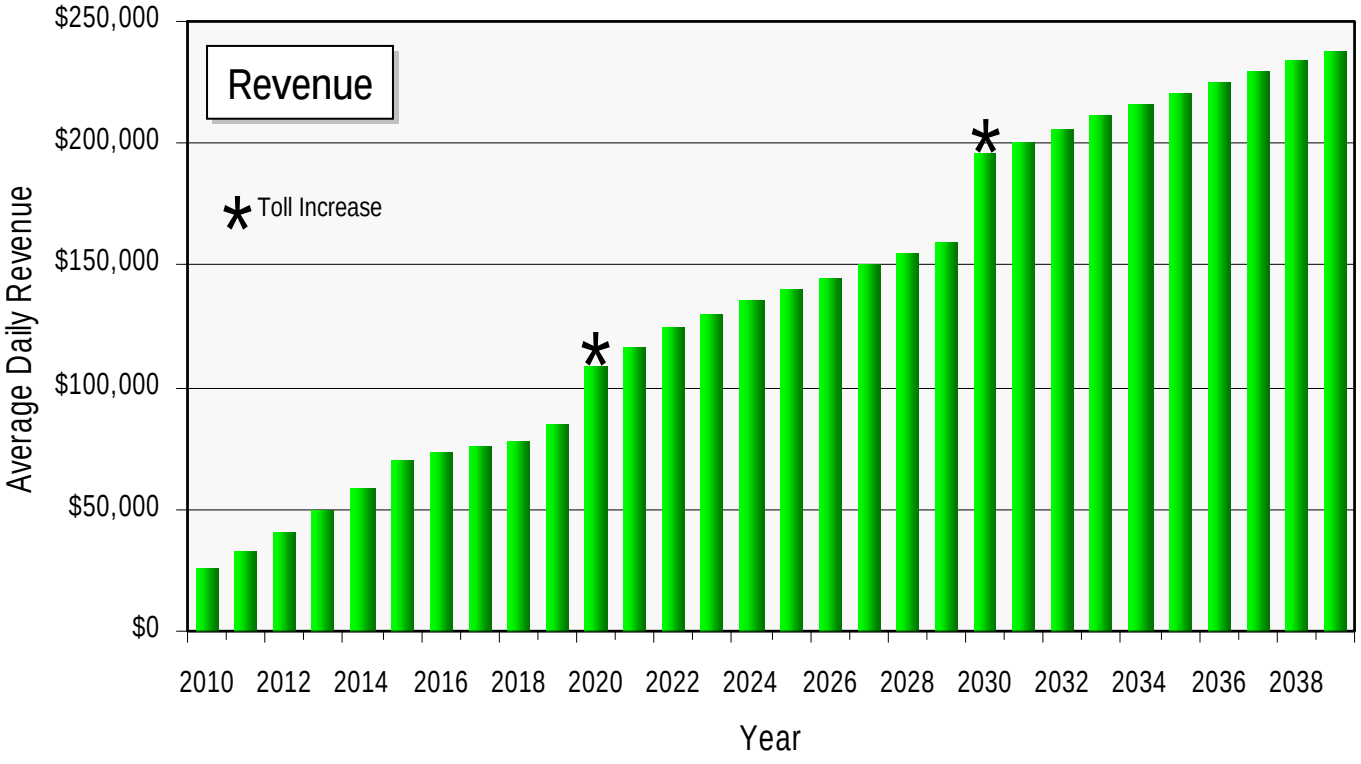
The development assumptions made by HDR were accepted at the beginning of this toll revenue analysis. HDR assumed a sizable shift of population to the Point MacKenzie area as a result of the construction of the Knik Arm Bridge. This redirection of population growth represents a reasonable forecast in the "with-bridge" scenario. There exists another population forecast that assumes the Knik Arm Bridge is not constructed. For that scenario the total population for the region stays the same, it simply occupies different areas because of the lack of connection across Knik Arm. This is the estimate of population detailed to the traffic analysis zone level in a "no-build" scenario. Assuming this forecast of population; a gross toll revenue analysis was undertaken. Table 3 shows the result of this analysis. The same assumptions of toll schedule, ETC usage and trip dampening discussed previously and used in the creation of gross toll revenue estimates shown in Table 2 were used in this analysis.

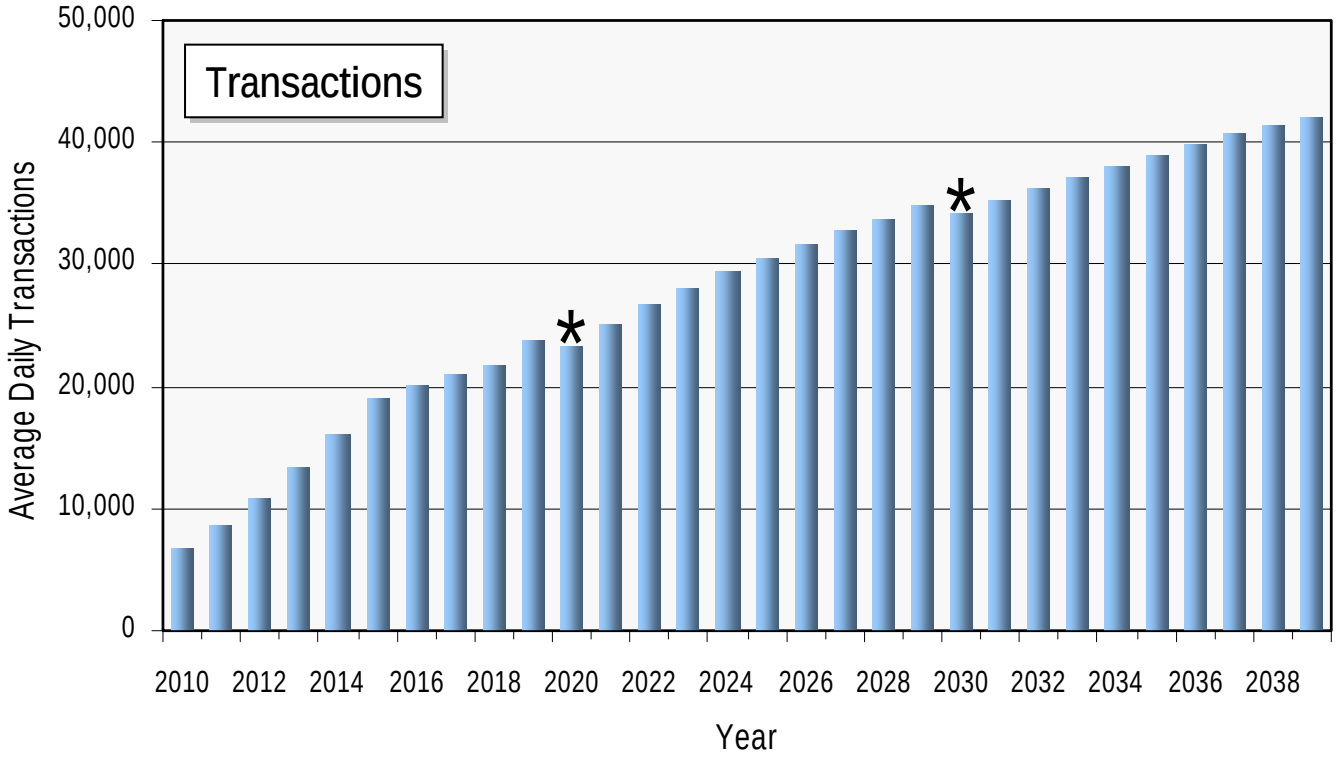
If the Knik Arm Bridge is constructed, the population forecast supporting Table 3 will not be realized. The construction of the Knik Arm Bridge will spur a redirection of population but in order to illustrate the sensitivity of the toll revenues to the location of these population centers, this analysis was undertaken. Referring back to Figures 2, 3, 4 and 5, the motorist's decision to use the proposed Knik Arm Bridge or the competing Glenn Highway to arrive at points in Anchorage depends on originating location. The population centers in the no-build scenario remains in the traditional corridors along the Parks Highway in Houston and Wasilla. Figures 4 and 5 represent the travel time comparison for those current population centers in Houston and Wasilla, respectively. These are also the major travel movements for future populations if development occurs as it has in the past with little development of

Table 2
Daily Transactions and Annual Gross Toll Revenue

	Daily Transactions									
	ETC			CASH			Total			Annual Gross
Year	PC	CV	Total	PC	CV	Total	PC	CV	Total	Toll Revenue
2010 [1]	900	100	**1,000**	5,000	700	**5,700**	5,900	800	**6,700**	**$9,310,030**
2011	1,500	200	**1,700**	6,100	800	**6,900**	7,600	1,000	**8,600**	**$11,950,359**
2012	2,300	300	**2,600**	7,300	900	**8,200**	9,600	1,200	**10,800**	**$14,851,991**
2013	3,300	500	**3,800**	8,500	1,100	**9,600**	11,800	1,600	**13,400**	**$18,097,040**
2014	4,500	700	**5,200**	9,700	1,200	**10,900**	14,200	1,900	**16,100**	**$21,622,754**
2015	5,900	900	**6,800**	10,900	1,400	**12,300**	16,800	2,300	**19,100**	**$25,415,727**
2016	6,700	1,100	**7,800**	11,000	1,300	**12,300**	17,700	2,400	**20,100**	**$26,652,069**
2017	7,500	1,200	**8,700**	11,000	1,300	**12,300**	18,500	2,500	**21,000**	**$27,700,695**
2018	8,200	1,300	**9,500**	10,900	1,300	**12,200**	19,100	2,600	**21,700**	**$28,531,174**
2019	10,300	1,500	**11,800**	10,600	1,300	**11,900**	20,900	2,800	**23,700**	**$30,781,493**
2020 [2]	11,500	1,600	**13,100**	9,000	1,200	**10,200**	20,500	2,800	**23,300**	**$39,775,657**
2021	12,800	1,800	**14,600**	9,100	1,300	**10,400**	21,900	3,100	**25,000**	**$42,578,888**
2022	14,200	2,000	**16,200**	9,300	1,300	**10,600**	23,500	3,300	**26,800**	**$45,388,798**
2023	15,300	2,100	**17,400**	9,300	1,300	**10,600**	24,600	3,400	**28,000**	**$47,499,947**
2024	16,500	2,300	**18,800**	9,300	1,300	**10,600**	25,800	3,600	**29,400**	**$49,491,766**
2025	17,500	2,500	**20,000**	9,200	1,300	**10,500**	26,700	3,800	**30,500**	**$51,338,519**
2026	18,500	2,600	**21,100**	9,200	1,300	**10,500**	27,700	3,900	**31,600**	**$53,015,222**
2027	19,500	2,800	**22,300**	9,100	1,300	**10,400**	28,600	4,100	**32,700**	**$54,762,739**
2028	20,500	2,900	**23,400**	9,100	1,300	**10,400**	29,600	4,200	**33,800**	**$56,582,949**
2029	21,400	3,100	**24,500**	9,100	1,300	**10,400**	30,500	4,400	**34,900**	**$58,251,840**
2030 [3]	21,300	3,100	**24,400**	8,600	1,200	**9,800**	29,900	4,300	**34,200**	**$71,270,020**
2031	22,200	3,200	**25,400**	8,600	1,200	**9,800**	30,800	4,400	**35,200**	**$73,264,809**
2032	23,000	3,300	**26,300**	8,600	1,200	**9,800**	31,600	4,500	**36,100**	**$75,207,296**
2033	23,900	3,400	**27,300**	8,600	1,200	**9,800**	32,500	4,600	**37,100**	**$77,088,948**
2034	24,700	3,600	**28,300**	8,600	1,200	**9,800**	33,300	4,800	**38,100**	**$78,901,282**
2035	25,500	3,700	**29,200**	8,600	1,200	**9,800**	34,100	4,900	**39,000**	**$80,635,930**
2036	26,200	3,800	**30,000**	8,600	1,200	**9,800**	34,800	5,000	**39,800**	**$82,284,697**
2037	26,900	3,900	**30,800**	8,700	1,200	**9,900**	35,600	5,100	**40,700**	**$83,839,625**
2038	27,500	4,000	**31,500**	8,700	1,200	**9,900**	36,200	5,200	**41,400**	**$85,293,052**
2039	28,100	4,000	**32,100**	8,700	1,200	**9,900**	36,800	5,200	**42,000**	**$86,637,667**

Ramp up Schedule:
2010: 50% of traffic
2011: 60% of traffic
2012: 70% of traffic
2013: 80% of traffic
2014: 90% of traffic
[1] Assumes Toll Schedule 1
[2] Assumes Toll Schedule 2
[3] Assumes Toll Schedule 3





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AVERAGE DAILY TRANSACTIONS AND REVENUE

FIGURE 8

Table 3
Daily Transactions and Annual Gross Toll Revenue

	Daily Transactions									
	ETC			CASH			Total			Annual Gross
Year	PC	CV	Total	PC	CV	Total	PC	CV	Total	Toll Revenue
2010 [1]	100	0	**100**	800	0	**800**	900	0	**900**	**$1,166,668**
2011	200	0	**200**	1,000	0	**1,000**	1,200	0	**1,200**	**$1,543,501**
2012	400	0	**400**	1,200	100	**1,300**	1,600	100	**1,700**	**$1,927,071**
2013	500	0	**500**	1,400	100	**1,500**	1,900	100	**2,000**	**$2,389,039**
2014	700	0	**700**	1,600	100	**1,700**	2,300	100	**2,400**	**$2,881,223**
2015	1,000	100	**1,100**	1,800	100	**1,900**	2,800	200	**3,000**	**$3,355,653**
2016	1,100	100	**1,200**	1,800	100	**1,900**	2,900	200	**3,100**	**$3,493,419**
2017	1,200	100	**1,300**	1,800	100	**1,900**	3,000	200	**3,200**	**$3,616,293**
2018	1,300	100	**1,400**	1,800	100	**1,900**	3,100	200	**3,300**	**$3,736,310**
2019	1,600	100	**1,700**	1,700	100	**1,800**	3,300	200	**3,500**	**$3,874,011**
2020 [2]	1,800	100	**1,900**	1,400	100	**1,500**	3,200	200	**3,400**	**$4,997,701**
2021	2,000	100	**2,100**	1,400	100	**1,500**	3,400	200	**3,600**	**$5,349,436**
2022	2,200	100	**2,300**	1,500	100	**1,600**	3,700	200	**3,900**	**$5,701,948**
2023	2,400	100	**2,500**	1,500	100	**1,600**	3,900	200	**4,100**	**$5,966,623**
2024	2,600	100	**2,700**	1,500	100	**1,600**	4,100	200	**4,300**	**$6,216,264**
2025	2,700	100	**2,800**	1,400	100	**1,500**	4,100	200	**4,300**	**$6,447,642**
2026	2,900	100	**3,000**	1,400	100	**1,500**	4,300	200	**4,500**	**$6,657,625**
2027	3,100	200	**3,300**	1,400	100	**1,500**	4,500	300	**4,800**	**$6,876,463**
2028	3,200	200	**3,400**	1,400	100	**1,500**	4,600	300	**4,900**	**$7,104,390**
2029	3,400	200	**3,600**	1,400	100	**1,500**	4,800	300	**5,100**	**$7,313,280**
2030 [3]	3,300	200	**3,500**	1,300	100	**1,400**	4,600	300	**4,900**	**$8,946,864**
2031	3,500	200	**3,700**	1,300	100	**1,400**	4,800	300	**5,100**	**$9,197,279**
2032	3,600	200	**3,800**	1,300	100	**1,400**	4,900	300	**5,200**	**$9,441,129**
2033	3,700	200	**3,900**	1,300	100	**1,400**	5,000	300	**5,300**	**$9,677,341**
2034	3,900	200	**4,100**	1,400	100	**1,500**	5,300	300	**5,600**	**$9,904,852**
2035	4,000	200	**4,200**	1,400	100	**1,500**	5,400	300	**5,700**	**$10,122,611**
2036	4,100	200	**4,300**	1,400	100	**1,500**	5,500	300	**5,800**	**$10,329,588**
2037	4,200	200	**4,400**	1,400	100	**1,500**	5,600	300	**5,900**	**$10,524,786**
2038	4,300	200	**4,500**	1,400	100	**1,500**	5,700	300	**6,000**	**$10,707,241**
2039	4,400	200	**4,600**	1,400	100	**1,500**	5,800	300	**6,100**	**$10,876,037**

Ramp up Schedule:
2010: 50% of traffic
2011: 60% of traffic
2012: 70% of traffic
2013: 80% of traffic
2014: 90% of traffic
[1] Assumes Toll Schedule 1
[2] Assumes Toll Schedule 2
[3] Assumes Toll Schedule 3

Point MacKenzie. These figures illustrate the logic of the lower gross toll revenue stream seen in Table 3.

These two gross toll revenue streams, seen in Tables 2 and 3, offer a base case and a low case scenario for the proposed Kink Arm Bridge. The location of future population centers is key to the revenue production of the Knik Arm Bridge. Again, the revenues seen in Table 3 will most likely be exceeded by the actual toll revenues should the bridge be constructed but the analysis was conducted to demonstrate the sensitivity of toll revenues to the location of future development.

TOLL OPERATIONS

The Knik Arm Bridge tolling operation will consist of one mainline toll plaza which will be located at either the North or South approach of the bridge serving traffic in both directions. As shown in Figure 9 the toll plaza will consist of 2 Express Electronic Toll Collection (ETC) lanes in both directions as well as 3 Manual/ETC lanes in both directions. The Express ETC lanes will operate unmanned and vehicles will be able to pass through the plaza at freeway speeds as long as a patron is enrolled in an ETC program and has a valid transponder installed in the vehicle. Since the Knik Arm Bridge is a two lane bridge, patrons with ETC transponders and accounts will not have to change lanes or slow down for the toll plaza, they will just pass through at free flow travel speeds. Manual/ETC lanes will be located to the right side of the Express ETC lanes and provide sufficient room so that cash paying patrons do not back up the Express lanes. The manual/ETC lanes will handle all cash paying patrons and also have equipment to handle ETC transactions in such cases that the ETC lanes become blocked or disabled.

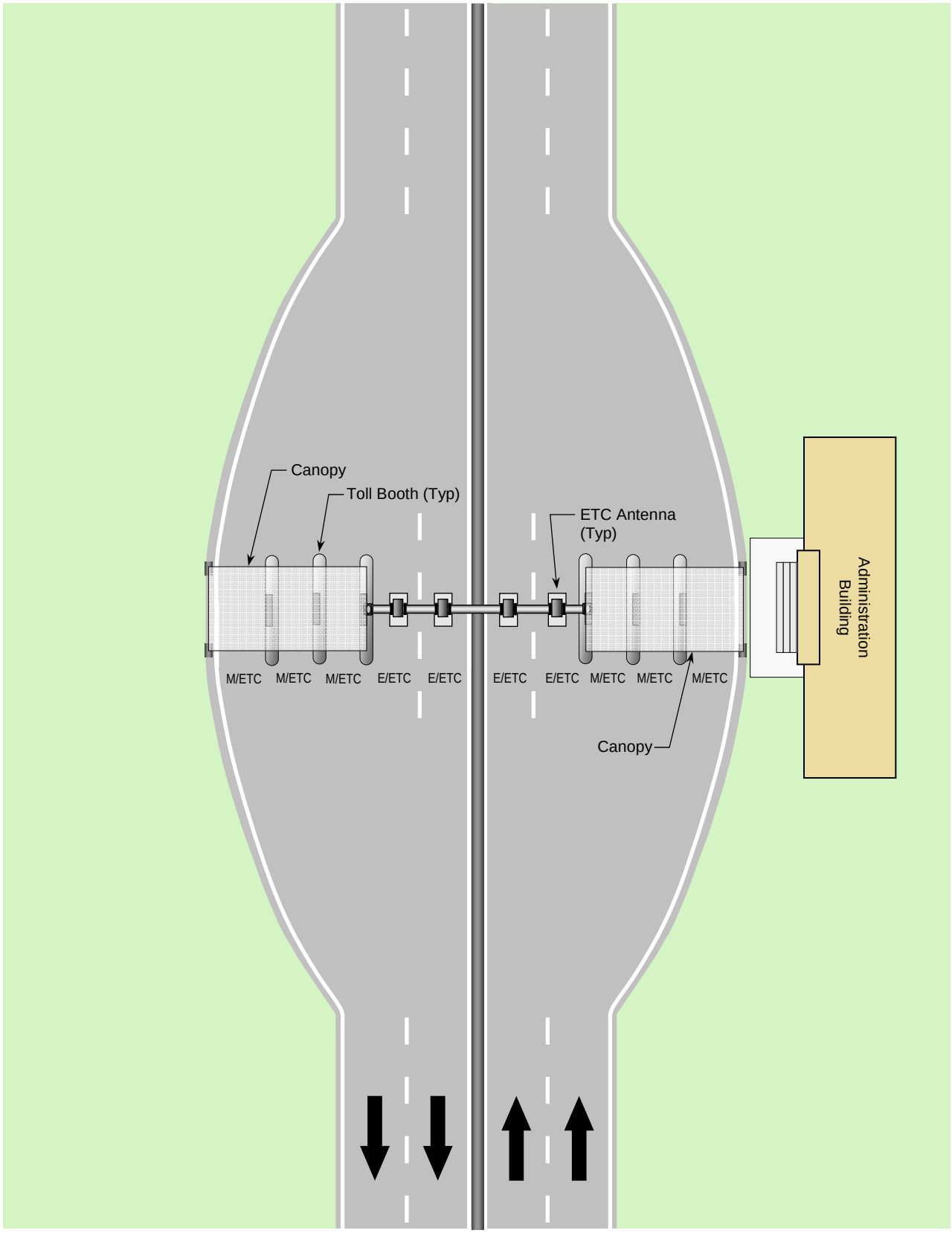
The number of lanes for the bridge mainline plaza was designed based on a number of assumptions and known technology capabilities. All lane quantities and requirements were developed based on proposed 2030 year volumes and ETC participation levels. Lane quantities and types were derived to handle the peak hour demand based on an average daily volume.

Typical processing rates for the various types of transactions were used to compute the lane requirements. Namely a rate of 1,000 commercial vehicles per hour and 1,200 passenger vehicles per hour were used for the Express ETC lanes while a rate of 300 commercial vehicles per hour and 350 passenger vehicles per hour were used for the Manual/ETC lanes.

Using these various assumptions and traffic volumes it was determined that two dedicated express ETC lanes and three Manual/ETC lanes should be sufficient to handle traffic volumes at the opening year and at the design year 2030.

Based on the design laid out in the previous sections, preliminary capital costs of $9,146,000 were estimated for the procurement and installation of a toll collection system on the Knik Arm Toll Bridge. Capital costs include all equipment necessary for a stand alone mainline toll plaza and all in lane equipment necessary to process cash and ETC transactions. It should be noted that the estimated capital costs for the toll collection system only include the system costs themselves. Civil costs such as plaza construction, administration building(s), pavement and other roadways and structures have not been included.

Preliminary operating expenses were also estimated for the Knik Arm Toll Bridge. Operational expenses include all salaries for staff as well as maintenance and ETC processing costs. Operation expenses were estimated for every year from 2010 to 2039 with the initial operating budget being approximately $2.4 million in 2010 and reaching over $11 million in 2039. All estimates are represented in future-year dollars to correspond with gross toll revenue.



TOLL PLAZA LAYOUT

FIGURE 9

MAINTENANCE AND OPERATIONS COSTS

For this planning level study, WSA developed maintenance and operations (M&O) costs for the proposed Knik Arm Bridge for a 30-year period to calculate net toll revenues available for debt service. The estimate is broken down by year and task in Table 4. Each task is footnoted to describe the maintenance or repair needed to the bridge structure. Table 5 follows the same design as Table 4 and provides cost estimates for each task. Those estimates are then totaled for each year to arrive at yearly estimates for maintenance and operations for the proposed bridge. The estimates are in future year dollars to align with the gross toll revenue forecasts provided previously in this study. These estimates are a result of WSA's bridge design division's analysis. Tables 4 and 5 illustrate the bottom-up approach to arrive at yearly cost estimates. This was combined with a macroscopic level analysis to ensure that the results were reasonable. M&O costs from the initial 30-years of existing bridge structures were compared to capital construction costs to understand how these two quantities were related. It was revealed that approximately 25 percent of initial construction costs were spent in the first 30 years for M&O costs. This figure validated the results of the bottom-up approach detailed in Tables 4 and 5.

In order to bond the resulting net toll revenues, it was necessary to hold a reserve for M&O costs by year to effectively smooth the savings needed each year and still cover the large maintenance cost that occur every fifth year. Figure 10 shows the M&O costs per year charted against the reserve needed for each year. As is evident by the Figure, in the first four years the reserve covers M&O costs by a healthy margin and the fifth year the reserve is well below the annual cost. By saving the first four years to cover the fifth year, a net toll revenue stream will emerge that will be satisfactory for bonding. Figure 11 shows the cumulative M&O costs and reserve and displays the ability for the reserve to cover the yearly M&O costs.

NET TOLL REVENUES

Using the annual estimates for maintenance and operations for the bridge structure, the estimates for toll operations by year, and gross toll revenues from Table 2, the annual net toll revenues were calculated. Table 6 shows annual gross toll revenues, the annual costs involved and the resulting net toll revenues. After covering the annual operational expenses, the toll revenues from the proposed Knik Arm Bridge will provide over $3.8 million in the first year of operation. This will grow to over $57 million in the 30th year of the forecast. Net toll revenues were not developed in the no-development scenario detailed in Table 3 because gross toll revenue streams do not cover operational expenses and therefore no net toll revenues existed for that scenario.

Table 4
Maintenance and Operations Description

Year	Task A1	A2	B	C	D	E	F	G	H	I	J	K
2010							Annual					
2011	Routine		Routine				Annual					
2012							Annual					
2013	Routine		Routine				Annual					
2014		Routine			Overlay		Annual		Patch			
2015	Routine		Routine				Annual					
2016							Annual				Minor	
2017	Routine		Routine				Annual					
2018							Annual					
2019	InDepth	InDepth	InDepth	Minor	Overlay	Replace	Annual	5%	Patch			clearing
2020							Annual	5%				
2021	Routine		Routine				Annual	5%				
2022							Annual	5%			Minor	
2023	Routine		Routine				Annual	5%				
2024		Routine		Minor	Overlay		Annual	5%	Patch			
2025	Routine		Routine				Annual	5%				
2026							Annual	5%				
2027	Routine		Routine				Annual	5%				
2028							Annual	5%			minor	
2029	InDepth	InDepth	InDepth	Minor	Overlay	Replace	Annual	5%	5%	5%		clearing
2030							Annual	5%	5%	5%		
2031	Routine		Routine				Annual	5%	5%	5%		
2032							Annual	5%	5%	5%		
2033	Routine		Routine				Annual	5%	5%	5%		
2034		Routine		Minor	Replace		Annual	5%	5%	5%	Minor	
2035	Routine		Routine				Annual	5%	5%	5%		
2036							Annual	5%	5%	5%		
2037	Routine		Routine				Annual	5%	5%	5%		
2038							Annual	5%	5%	5%		
2039	InDepth	InDepth	InDepth	Minor	Overlay	Replace	Annual	5%	5%	5%		clearing

Maintenance and Repair Assumptions for Knik Arm Bridge structure and pavement over a 30 year period

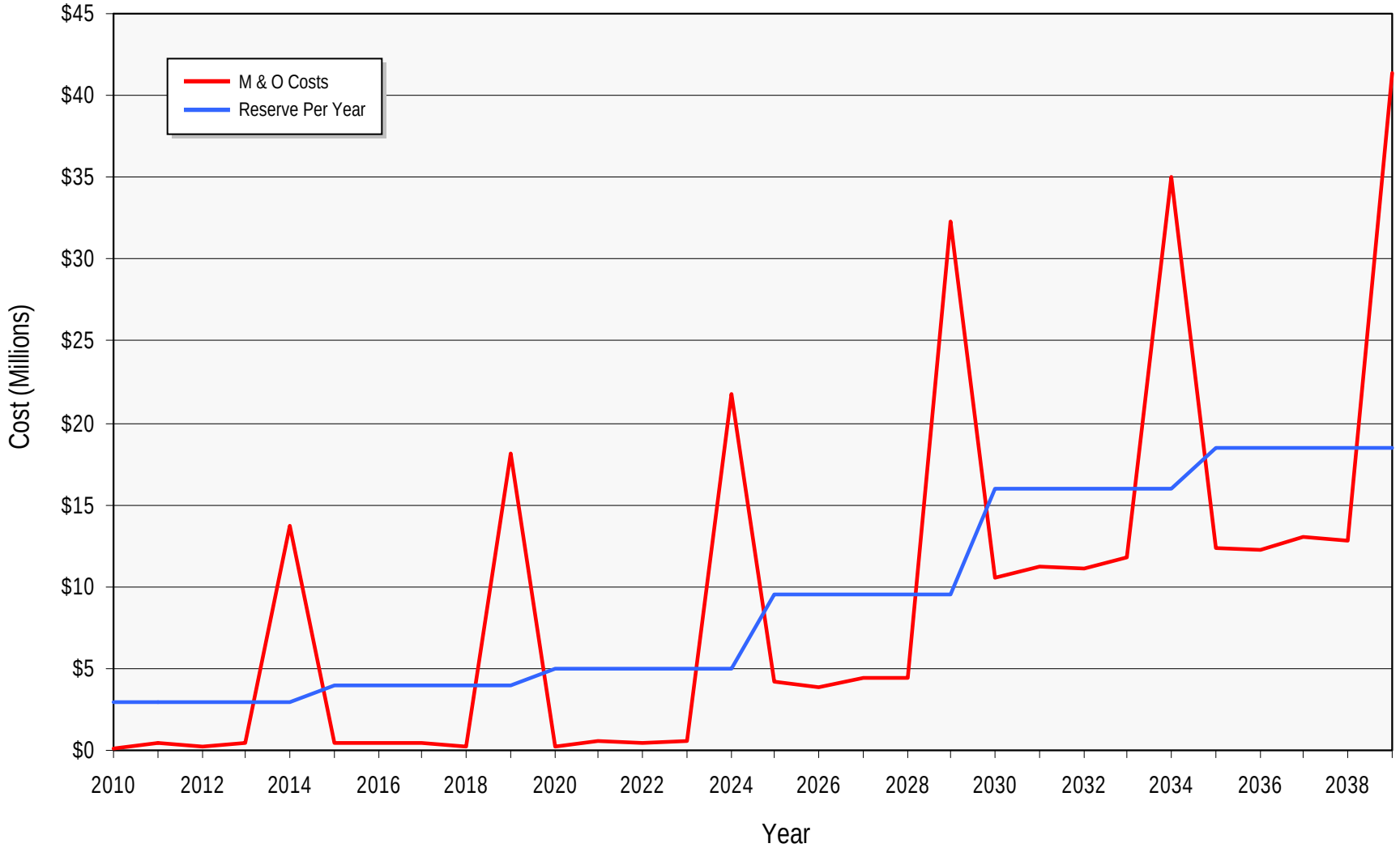
Task	M/R	
A1	M	NBIS bridge inspections above water with routine inspections at 2 year intervals and in-depth inspections at 10 year intervals
A2	M	NBIS bridge inspections below water with routine inspections at 5 year intervals and in-depth inspections at 10 year intervals
B	M	NBIS sign support inspections with routine inspections at 2 year intervals and in-depth inspections at 10 year interval
C	M	A modern R.C. bridge deck with epoxy bars will last 30 years w/o major maintenance (to the deck). Minor deck patching will be require every 5 years after the first 10 years.
D	M	The asphalt wearing surface will require overlay every 5 years and full replacement once in the 30 year life.
E	R	Bridge deck joints will need replacing on a 10 to 15 year cycle.
F	M	Pavement markings, lighting, signage, railings, fencing and drainage will be an annual expense.
G	R	Foundation piles will need repair/replacement starting at 15 -20 years (assume 5%/year for replacement after the first 10 years).
H	R	Prestressed beams will need minor crack and small repair periodically with extensive replacement starting at 20 – 25 years (assume 5% of total per year after 20 years).
I	R	Non-metallic bearings will be replaced on the same cycle as the beams
J	R	Minor roadway realignments can be expected along portions of facility.
K	M	Clear zone maintenance is assumed to be required every 10 years to cut back trees, brush, etc.

Table 5
Maintenance and Operations Costs

	Task												
Year	**A1**	**A2**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**Total**
2010							$ 166,732						$ 166,732
2011	$ 175,103		$ 56,033				170,900						402,036
2012							175,173						175,173
2013	183,967		58,870				179,552						422,389
2014		301,706			$ 12,520,812		184,041		$ 754,266				13,760,825
2015	193,281		61,850				188,642						443,772
2016							193,358				$ 237,735		431,093
2017	203,065		64,981				198,192						466,238
2018							203,147						203,147
2019	247,481	477,894	128,007	$ 512,029	14,166,149	$ 1,501,953	208,225		853,382			$ 85,338	18,180,460
2020							213,431						213,431
2021	224,146		71,727				218,767						514,640
2022							224,236				275,700		499,936
2023	254,333		94,197				229,842						578,372
2024		424,831		579,314	16,027,698		235,588	$ 3,475,886	965,524				21,708,840
2025	267,209		98,966				241,478	3,562,783					4,170,436
2026							247,514	3,651,853					3,899,367
2027	280,736		103,976				253,702	3,743,149					4,381,564
2028							260,045	3,836,728			319,727		4,416,500
2029	338,645	655,441	185,708	655,441	18,133,869	1,922,627	266,546	3,932,646	5,898,969	$ 196,632		109,240	32,295,765
2030							273,210	4,030,962	6,046,444	201,548			10,552,164
2031	309,880		114,770				280,040	4,131,736	6,197,605	206,587			11,240,618
2032							287,041	4,235,030	6,352,545	211,751			11,086,367
2033	325,568		120,581				294,217	4,340,906	6,511,358	217,045			11,809,675
2034		543,819			22,494,332		301,572	4,449,428	6,674,142	222,471	370,786		35,056,551
2035	342,050		126,685				309,112	4,560,664	6,840,996	228,033			12,407,540
2036							316,839	4,674,681	7,012,021	233,734			12,237,275
2037	359,366		133,099				324,760	4,791,548	7,187,321	239,577			13,035,671
2038							332,879	4,911,336	7,367,004	245,567			12,856,787
2039	433,494	839,020	237,722	839,020	23,212,885	2,461,125	341,201	5,034,120	7,551,179	251,706		139,837	41,341,309

Maintenance and Repair Assumptions for Knik Arm Bridge structure and pavement over a 30 year period

Task	M/R	
A1	M	NBIS bridge inspections above water with routine inspections at 2 year intervals and in-depth inspections at 10 year intervals
A2	M	NBIS bridge inspections below water with routine inspections at 5 year intervals and in-depth inspections at 10 year intervals
B	M	NBIS sign support inspections with routine inspections at 2 year intervals and in-depth inspections at 10 year interval
C	M	A modern R.C. bridge deck with epoxy bars will last 30 years w/o major maintenance (to the deck). Minor deck patching will be require every 5 years after the first 10 years.
D	M	The asphalt wearing surface will require overlay every 5 years and full replacement once in the 30 year life.
E	R	Bridge deck joints will need replacing on a 10 to 15 year cycle.
F	M	Pavement markings, lighting, signage, railings, fencing and drainage will be an annual expense.
G	R	Foundation piles will need repair/replacement starting at 15 -20 years (assume 5%/year for replacement after the first 10 years).
H	R	Prestressed beams will need minor crack and small repair periodically with extensive replacement starting at 20 – 25 years (assume 5% of total per year after 20 years).
I	R	Non-metallic bearings will be replaced on the same cycle as the beams
J	R	Minor roadway realignments can be expected along portions of facility.
K	M	Clear zone maintenance is assumed to be required every 10 years to cut back trees, brush, etc.

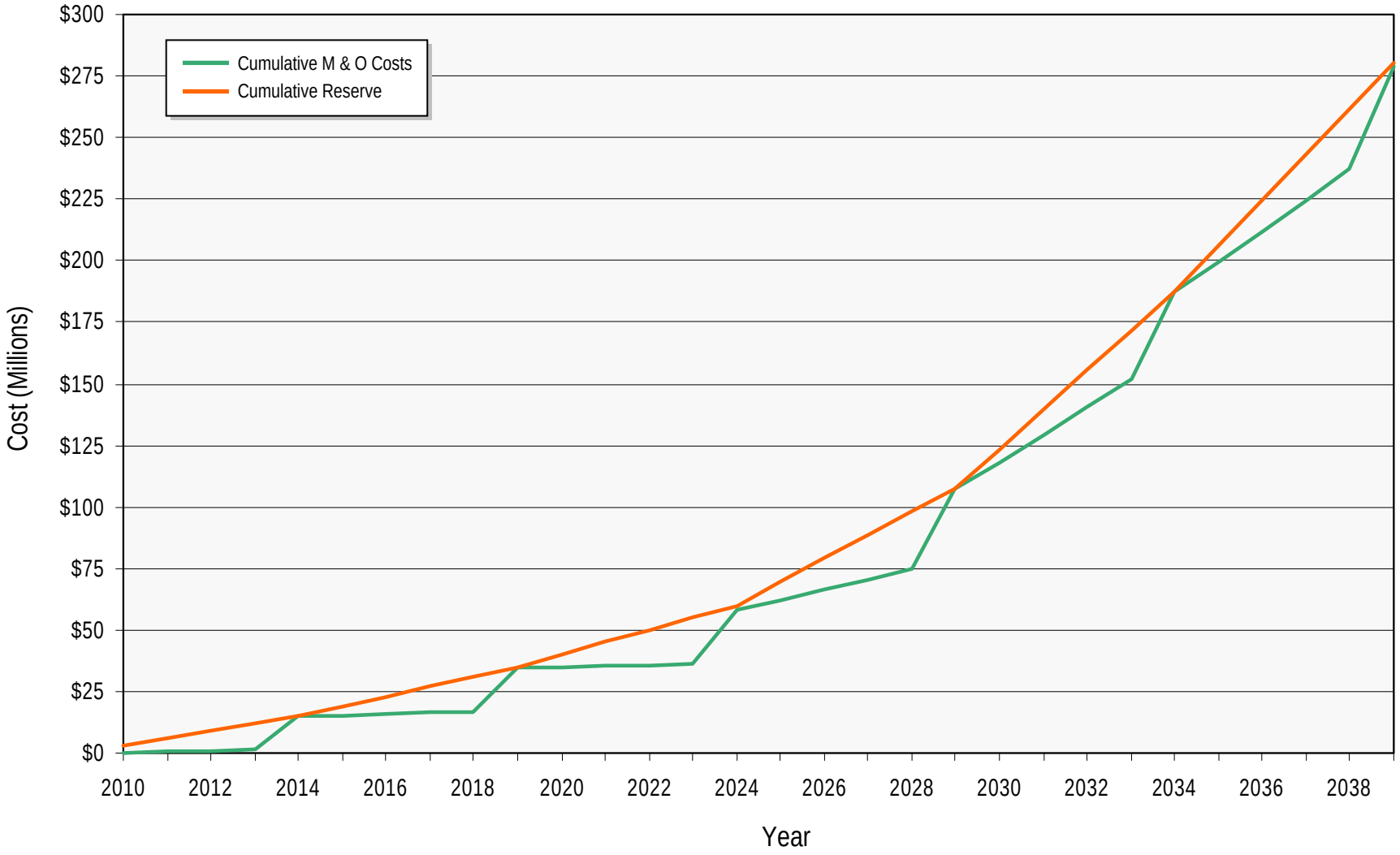


ENGINEERS
PLANNERS
ECONOMISTS

Wilbur Smith Associates

MAINTENANCE AND OPERATIONS COSTS

FIGURE 10



ENGINEERS
PLANNERS
ECONOMISTS

Wilbur Smith Associates

CUMULATIVE MAINTENANCE AND OPERATIONS COSTS

FIGURE 11

Table 6
Annual Toll Revenue and Costs

Year	Gross Toll Revenue	M & O Costs	Toll Operations Costs	Net Toll Revenue
2010 [1]	$9,310,030	$3,000,000	$2,434,127	$3,875,902
2011	11,950,359	3,000,000	2,565,958	$6,384,401
2012	14,851,991	3,000,000	2,723,861	$9,128,130
2013	18,097,040	3,000,000	2,910,582	$12,186,457
2014	21,622,754	3,000,000	3,127,006	$15,495,749
2015	25,415,727	4,000,000	3,374,306	$18,041,421
2016	26,652,069	4,000,000	3,567,393	$19,084,676
2017	27,700,695	4,000,000	3,761,659	$19,939,036
2018	28,531,174	4,000,000	3,954,215	$20,576,959
2019	30,781,493	4,000,000	4,315,885	$22,465,609
2020 [2]	39,775,657	5,000,000	4,577,588	$30,198,069
2021	42,578,888	5,000,000	4,883,703	$32,695,185
2022	45,388,798	5,000,000	5,205,607	$35,183,191
2023	47,499,947	5,000,000	5,510,589	$36,989,358
2024	49,491,766	5,000,000	5,821,424	$38,670,341
2025	51,338,519	9,500,000	6,135,753	$35,702,766
2026	53,015,222	9,500,000	6,450,750	$37,064,472
2027	54,762,739	9,500,000	6,779,259	$38,483,480
2028	56,582,949	9,500,000	7,122,606	$39,960,343
2029	58,251,840	9,500,000	7,467,708	$41,284,132
2030 [3]	71,270,020	16,000,000	7,638,714	$47,631,306
2031	73,264,809	16,000,000	7,993,592	$49,271,216
2032	75,207,296	16,000,000	8,356,906	$50,850,390
2033	77,088,948	16,000,000	8,727,436	$52,361,512
2034	78,901,282	16,000,000	9,104,616	$53,796,666
2035	80,635,930	18,500,000	9,487,828	$52,648,101
2036	82,284,697	18,500,000	9,876,410	$53,908,287
2037	83,839,625	18,500,000	10,269,653	$55,069,972
2038	85,293,052	18,500,000	10,666,806	$56,126,245
2039	86,637,667	18,500,000	11,067,077	$57,070,589

Ramp up Schedule:
2010: 50% of traffic
2011: 60% of traffic
2012: 70% of traffic
2013: 80% of traffic
2014: 90% of traffic
[1] Assumes Toll Schedule 1
[2] Assumes Toll Schedule 2
[3] Assumes Toll Schedule 3

FINANCIAL ANALYSIS

Using the stream of net toll revenues from the base case scenario, Citigroup ran financial models to determine bonding capacity for the proposed Knik Arm Bridge. Tables 7, 8, 9 and 10 show the results of this analysis. Table 7 displays the bonding capacity for the base case net toll revenues from Table 6. Gross toll revenues are in the second column; debt service reserve fund (DSRF) earnings are shown in the next column and begin to be present in 2011. The M&O and toll operations costs follow and the revenues available for debt service are then calculated. For this base case scenario, preliminary analysis shows that just over $240 million in debt can be bonded with over $197 million to cover capital construction costs and the remaining $40 million plus to support the capitalized interest fund, debt service reserve fund and the bond issuance.

Citigroup performed sensitivity tests to the base case scenario in order to develop various bonding capacities based on different development scenarios. The first sensitivity test delayed development in the area for six years by assuming 20 percent of traffic in the first year and gradually aligning to the base case scenario by reducing the amount of reduction by 10 percent each year. Therefore the second year assumed 30 percent of full estimated traffic and so forth. The seventh year of bridge operation capped the traffic at 90 percent of the base case estimate. This 90 percent factor was carried through the entire forecast thus the base case estimates were never realized. In this scenario, over $180 million can be bonded with over $150 million going to construction costs. The second sensitivity test performed held the same assumptions as the first sensitivity test but also stopped growth of transactions after 2030. In this scenario $170 million can be bonded with over $145 million going to capital construction costs.

For all scenarios, base case, sensitivity 1 and sensitivity 2, debt service coverage is at a minimum two times net debt service, meaning the forecasted revenues available for debt service are at least double that required for debt service. Other assumptions of the issuance are shown in the table as well, such as interest rates and assumed bond rating. Table 10 compares the different scenarios and variance from the base case. Sensitivity 1 allows for $40 million less to be contributed to construction costs as compared to the base case forecast. In sensitivity 2 over $50 million is lost from the capital construction fund comparing to the base case.

In developing these findings, current professional practices and procedures were used. However, there are sometimes differences between forecasted and actual results caused by events and circumstances beyond the control of the forecasters and these differences could be material.

Very truly yours,

WILBUR SMITH ASSOCIATES

Raymond P. Richard
Vice President

Table 7
Base Case - Revenues and Costs from Wilbur Smith

Knik Arm Bridge
Capacity Analysis
Series 2007

Citigroup Global Markets, Inc.

	Net Revenues					Series 2007			
Year	Toll Revenues	DSRF Earnings	O&M	Toll Operations Costs	Revenues Available For Debt Service	Total Debt Service	Capitalized Interest	Net Debt Service	Debt Service Coverage
2008					-	$ 2,282,750	$ 2,282,750	-	
2009					-	4,565,500	4,565,500	-	
2010	$ 9,310,030		$ 3,000,000	$ 2,434,127	$ 3,875,902	4,565,500	4,565,500	-	
2011	11,950,359	$ 466,355	3,000,000	2,565,958	6,850,757	4,565,500	2,282,750	$ 2,282,750	3.00x
2012	14,851,991	932,710	3,000,000	2,723,861	10,060,840	5,025,500		5,025,500	2.00x
2013	18,097,040	932,710	3,000,000	2,910,582	13,119,168	6,557,500		6,557,500	2.00x
2014	21,622,754	932,710	3,000,000	3,127,006	16,428,459	8,211,750		8,211,750	2.00x
2015	25,415,727	932,710	4,000,000	3,374,306	18,974,131	9,483,250		9,483,250	2.00x
2016	26,652,069	932,710	4,000,000	3,567,393	20,017,387	10,006,750		10,006,750	2.00x
2017	27,700,695	932,710	4,000,000	3,761,659	20,871,746	10,431,000		10,431,000	2.00x
2018	28,531,174	932,710	4,000,000	3,954,215	21,509,669	10,754,000		10,754,000	2.00x
2019	30,781,493	932,710	4,000,000	4,315,885	23,398,319	11,694,000		11,694,000	2.00x
2020	39,775,657	932,710	5,000,000	4,577,588	31,130,779	15,563,500		15,563,500	2.00x
2021	42,578,888	932,710	5,000,000	4,883,703	33,627,895	16,812,750		16,812,750	2.00x
2022	45,388,798	932,710	5,000,000	5,205,607	36,115,901	18,057,000		18,057,000	2.00x
2023	47,499,947	932,710	5,000,000	5,510,589	37,922,068	18,956,750		18,956,750	2.00x
2024	49,491,766	932,710	5,000,000	5,821,424	39,603,051	19,796,750		19,796,750	2.00x
2025	51,338,519	932,710	9,500,000	6,135,753	36,635,476	18,316,750		18,316,750	2.00x
2026	53,015,222	932,710	9,500,000	6,450,750	37,997,182	18,996,750		18,996,750	2.00x
2027	54,762,739	932,710	9,500,000	6,779,259	39,416,190	19,706,750		19,706,750	2.00x
2028	56,582,949	932,710	9,500,000	7,122,606	40,893,053	20,445,000		20,445,000	2.00x
2029	58,251,840	932,710	9,500,000	7,467,708	42,216,842	21,105,000		21,105,000	2.00x
2030	71,270,020	932,710	16,000,000	7,638,714	48,564,016	24,280,000		24,280,000	2.00x
2031	73,264,809	932,710	16,000,000	7,993,592	50,203,927	25,100,000		25,100,000	2.00x
2032	75,207,296	932,710	16,000,000	8,356,906	51,783,101	25,890,000		25,890,000	2.00x
2033	77,088,948	932,710	16,000,000	8,727,436	53,294,222	26,645,000		26,645,000	2.00x
2034	78,901,282	932,710	16,000,000	9,104,616	54,729,376	27,360,000		27,360,000	2.00x
2035	80,635,930	932,710	18,500,000	9,487,828	53,580,811	26,790,000		26,790,000	2.00x
2036	82,284,697	932,710	18,500,000	9,876,410	54,840,997	27,420,000		27,420,000	2.00x
2037	83,839,625	932,710	18,500,000	10,269,653	56,002,682	28,000,000		28,000,000	2.00x
2038	85,293,052	932,710	18,500,000	10,666,806	57,058,956	28,525,000		28,525,000	2.00x
2039	86,637,667	932,710	18,500,000	11,067,077	58,003,299	29,000,000		29,000,000	2.00x
2040	86,637,667	932,710	18,500,000	11,067,077	58,003,299	29,000,000		29,000,000	2.00x
2041	86,637,667	932,710	18,500,000	11,067,077	58,003,299	29,000,000		29,000,000	2.00x
2042	86,637,667	24,250,464	18,500,000	11,067,077	81,321,053	40,660,000		40,660,000	2.00x
		$ 52,698,123	$ 335,500,000	$ 219,080,252		$ 643,570,000	$ 13,696,500	$ 629,873,500	

Sources and Uses of Funds

Sources	**Total**
Principal Amount - Current Interest Bonds	$ 91,310,000
Principal Amount - Capital Appreciation Bonds	141,797,496
Original Issue Discount/Premium	8,658,120
Total	**$ 241,765,616.25**

Uses	
Deposit to Construction Fund (Net Funded)	$ 197,010,977
Deposit to Capitalized Interest Fund	10,174,411
Deposit to Debt Service Reserve Fund	23,317,754
Bond Insurance (175 bps)	11,262,475
Cost of Issuance	-
Total	**$ 241,765,616.25**

Assumptions: Base Case - Revenues and Costs from Wilbur Smith

1. Dated and Delivery Date of 7/1/2007
2. Capl investment rate of 4%
3. DSRF investment rate of 4%
4. Assumed BBB- underlying rating

Table 8
Sensitivity 1: Delay of Development Schedule

Knik Arm Bridge
Capacity Analysis
Series 2007

Citigroup Global Markets, Inc.

	Net Revenues					Series 2007			
Year	Toll Revenues	DSRF Earnings	O&M	Toll Operations Costs	Revenues Available For Debt Service	Total Debt Service	Capitalized Interest	Net Debt Service	Debt Service Coverage
2008					-	$ 378,375	$ 378,375	-	
2009					-	756,750	756,750	-	
2010	$ 3,724,012		$ 1,000,000	$ 2,434,127	$ 289,884	756,750	756,750	-	
2011	5,975,180	$ 364,273	3,000,000	2,565,958	773,494	756,750	378,375	$ 378,375	2.04x
2012	8,486,852	728,545	3,000,000	2,723,861	3,491,536	1,741,750		1,741,750	2.00x
2013	11,310,650	728,545	4,000,000	2,910,582	5,128,613	2,561,750		2,561,750	2.00x
2014	14,415,170	728,545	4,000,000	3,127,006	8,016,709	4,006,750		4,006,750	2.00x
2015	17,791,009	728,545	4,000,000	3,374,306	11,145,248	5,571,750		5,571,750	2.00x
2016	21,321,655	728,545	4,000,000	3,567,393	14,482,808	7,236,750		7,236,750	2.00x
2017	24,930,626	728,545	4,000,000	3,761,659	17,897,512	8,946,750		8,946,750	2.00x
2018	25,678,057	728,545	4,000,000	3,954,215	18,452,387	9,222,250		9,222,250	2.00x
2019	27,703,344	728,545	4,000,000	4,315,885	20,116,004	10,055,000		10,055,000	2.00x
2020	35,798,091	728,545	5,000,000	4,577,588	26,949,049	13,470,000		13,470,000	2.00x
2021	38,320,999	728,545	5,000,000	4,883,703	29,165,841	14,580,000		14,580,000	2.00x
2022	40,849,918	728,545	5,000,000	5,205,607	31,372,856	15,685,000		15,685,000	2.00x
2023	42,749,952	728,545	5,000,000	5,510,589	32,967,909	16,480,000		16,480,000	2.00x
2024	44,542,589	728,545	5,000,000	5,821,424	34,449,710	17,220,000		17,220,000	2.00x
2025	46,204,667	728,545	9,500,000	6,135,753	31,297,459	15,645,000		15,645,000	2.00x
2026	47,713,700	728,545	9,500,000	6,450,750	32,491,495	16,240,000		16,240,000	2.00x
2027	49,286,465	728,545	9,500,000	6,779,259	33,735,751	16,865,000		16,865,000	2.00x
2028	50,924,654	728,545	9,500,000	7,122,606	35,030,593	17,510,000		17,510,000	2.00x
2029	52,426,656	728,545	9,500,000	7,467,708	36,187,493	18,090,000		18,090,000	2.00x
2030	64,143,018	728,545	16,000,000	7,638,714	41,232,849	20,615,000		20,615,000	2.00x
2031	65,938,328	728,545	16,000,000	7,993,592	42,673,281	21,335,000		21,335,000	2.00x
2032	67,686,567	728,545	16,000,000	8,356,906	44,058,206	22,025,000		22,025,000	2.00x
2033	69,380,053	728,545	16,000,000	8,727,436	45,381,162	22,685,000		22,685,000	2.00x
2034	71,011,154	728,545	16,000,000	9,104,616	46,635,083	23,315,000		23,315,000	2.00x
2035	72,572,337	728,545	18,500,000	9,487,828	45,313,053	22,655,000		22,655,000	2.00x
2036	74,056,227	728,545	18,500,000	9,876,410	46,408,362	23,200,000		23,200,000	2.00x
2037	75,455,663	728,545	18,500,000	10,269,653	47,414,555	23,705,000		23,705,000	2.00x
2038	76,763,747	728,545	18,500,000	10,666,806	48,325,485	24,160,000		24,160,000	2.00x
2039	77,973,900	728,545	18,500,000	11,067,077	49,135,367	24,565,000		24,565,000	2.00x
2040	77,973,900	728,545	18,500,000	11,067,077	49,135,367	24,565,000		24,565,000	2.00x
2041	77,973,900	728,545	18,500,000	11,067,077	49,135,367	24,565,000		24,565,000	2.00x
2042	77,973,900	18,942,171	18,500,000	11,067,077	67,348,994	33,650,000		33,650,000	2.00x
		$ 41,162,795	$ 335,500,000	$ 219,080,252		$ 524,816,375	$ 2,270,250	$ 522,546,125	

Sources and Uses of Funds

Sources	**Total**
Principal Amount - Current Interest Bonds	$ 15,135,000
Principal Amount - Capital Appreciation Bonds	167,001,261
Original Issue Discount/Premium	1,663,741
Total	**$ 183,800,002**

Uses	
Deposit to Construction Fund (Net Funded)	$ 156,323,095
Deposit to Capitalized Interest Fund	78,994
Deposit to Debt Service Reserve Fund	18,213,626
Bond Insurance (175 bps)	9,184,287
Cost of Issuance	-
Total	**$ 183,800,002**

Assumptions: Sensitivity 1 - Gradual Traffic Ramp Up Schedule

1. Dated and Delivery Date of 7/1/2007
2. CapI investment rate of 4%
3. DSRF investment rate of 4%
4. Assumed BBB- underlying rating

Table 9
Sensitivity 2: No Growth after 2030 and Delay of Development Schedule (see Sensitivity 1)

Knik Arm Bridge
Capacity Analysis
Series 2007

Citigroup Global Markets, Inc.

	Net Revenues					Series 2007			
Year	Toll Revenues	DSRF Earnings	O&M	Toll Operations Costs	Revenues Available For Debt Service	Total Debt Service	Capitalized Interest	Net Debt Service	Debt Service Coverage
2008					-	$ 349,625	$ 349,625	-	
2009					-	699,250	699,250	-	
2010	$ 3,724,012		$ 1,000,000	$ 2,434,127	$ 289,884	699,250	699,250	-	
2011	5,975,180	$ 337,410	3,000,000	2,565,958	746,632	699,250	349,625	$ 349,625	2.14x
2012	8,486,852	674,820	3,000,000	2,723,861	3,437,811	1,714,250		1,714,250	2.01x
2013	11,310,650	674,820	4,000,000	2,910,582	5,074,888	2,534,250		2,534,250	2.00x
2014	14,415,170	674,820	4,000,000	3,127,006	7,962,984	3,979,250		3,979,250	2.00x
2015	17,791,009	674,820	4,000,000	3,374,306	11,091,523	5,544,250		5,544,250	2.00x
2016	21,321,655	674,820	4,000,000	3,567,393	14,429,083	7,209,250		7,209,250	2.00x
2017	24,930,626	674,820	4,000,000	3,761,659	17,843,787	8,919,250		8,919,250	2.00x
2018	25,678,057	674,820	4,000,000	3,954,215	18,398,662	9,198,250		9,198,250	2.00x
2019	27,703,344	674,820	4,000,000	4,315,885	20,062,280	10,030,000		10,030,000	2.00x
2020	35,798,091	674,820	5,000,000	4,577,588	26,895,324	13,445,000		13,445,000	2.00x
2021	38,320,999	674,820	5,000,000	4,883,703	29,112,117	14,555,000		14,555,000	2.00x
2022	40,849,918	674,820	5,000,000	5,205,607	31,319,132	15,655,000		15,655,000	2.00x
2023	42,749,952	674,820	5,000,000	5,510,589	32,914,184	16,455,000		16,455,000	2.00x
2024	44,542,589	674,820	5,000,000	5,821,424	34,395,985	17,195,000		17,195,000	2.00x
2025	46,204,667	674,820	9,500,000	6,135,753	31,243,735	15,620,000		15,620,000	2.00x
2026	47,713,700	674,820	9,500,000	6,450,750	32,437,771	16,215,000		16,215,000	2.00x
2027	49,286,465	674,820	9,500,000	6,779,259	33,682,026	16,840,000		16,840,000	2.00x
2028	50,924,654	674,820	9,500,000	7,122,606	34,976,868	17,485,000		17,485,000	2.00x
2029	52,426,656	674,820	9,500,000	7,467,708	36,133,769	18,065,000		18,065,000	2.00x
2030	64,143,018	674,820	16,000,000	7,638,714	41,179,125	20,585,000		20,585,000	2.00x
2031	64,143,018	674,820	16,000,000	7,993,592	40,824,246	20,410,000		20,410,000	2.00x
2032	64,143,018	674,820	16,000,000	8,356,906	40,460,933	20,230,000		20,230,000	2.00x
2033	64,143,018	674,820	16,000,000	8,727,436	40,090,402	20,040,000		20,040,000	2.00x
2034	64,143,018	674,820	16,000,000	9,104,616	39,713,223	19,855,000		19,855,000	2.00x
2035	64,143,018	674,820	18,500,000	9,487,828	36,830,010	18,410,000		18,410,000	2.00x
2036	64,143,018	674,820	18,500,000	9,876,410	36,441,428	18,220,000		18,220,000	2.00x
2037	64,143,018	674,820	18,500,000	10,269,653	36,048,185	18,020,000		18,020,000	2.00x
2038	64,143,018	674,820	18,500,000	10,666,806	35,651,032	17,825,000		17,825,000	2.00x
2039	64,143,018	674,820	18,500,000	11,067,077	35,250,761	17,625,000		17,625,000	2.00x
2040	64,143,018	674,820	18,500,000	11,067,077	35,250,761	17,625,000		17,625,000	2.00x
2041	64,143,018	674,820	18,500,000	11,067,077	35,250,761	17,625,000		17,625,000	2.00x
2042	64,143,018	17,545,332	18,500,000	11,067,077	52,121,273	26,050,000		26,050,000	2.00x
		$ 38,127,357	$ 335,500,000	$ 219,080,252		$ 465,626,125	$ 2,097,750	$ 463,528,375	

Sources and Uses of Funds

Sources	**Total**
Principal Amount - Current Interest Bonds	$ 13,985,000
Principal Amount - Capital Appreciation Bonds	155,004,902
Original Issue Discount/Premium	1,538,780
Total	**$ 170,528,681**

Uses	
Deposit to Construction Fund (Net Funded)	$ 145,441,292
Deposit to Capitalized Interest Fund	68,420
Deposit to Debt Service Reserve Fund	16,870,512
Bond Insurance (175 bps)	8,148,457
Cost of Issuance	-
Total	**$ 170,528,681**

Assumptions: Sensitivity 2 - Zero Revenue Growth after 2030 and Gradual Ramp Up

1. Dated and Delivery Date of 7/1/2007
2. Capl investment rate of 4%
3. DSRF investment rate of 4%
4. Assumed BBB- underlying rating

Table 10
Summary Matrix of Financing Scenarios

Knik Arm Bridge
Capacity Analysis
Series 2007

Citigroup Global Markets, Inc.

Summary Details

	Base Case	Sensitivity 1	Sensitivity 2
Net Revenues Available	$ 1,266,053,854	$ 1,045,639,481	$ 927,560,587
Total Debt Service	643,570,000	524,816,375	465,626,125
Net Debt Service	629,873,500	522,546,125	463,528,375
Principal Amount - Current Interest Bonds	91,310,000	15,135,000	13,985,000
Principal Amount - Capital Appreciation Bonds	141,797,496	167,001,261	155,004,902
Original Issue Discount/Premium	8,658,120	1,663,741	1,538,780
Total	$ 241,765,616	$ 183,800,002	$ 170,528,681
Deposit to Construction Fund (Net Funded)	$ 197,010,977	$ 156,323,095	$ 145,441,292

Variance from Base Case

	Sensitivity 1	Sensitivity 2
Net Revenues Available	$ (220,414,373)	$ (338,493,267)
Total Debt Service	(118,753,625)	(177,943,875)
Net Debt Service	(107,327,375)	(166,345,125)
Principal Amount - Current Interest Bonds	(76,175,000)	(77,325,000)
Principal Amount - Capital Appreciation Bonds	25,203,765	13,207,406
Original Issue Discount/Premium	(6,994,379)	(7,119,340)
Total	(57,965,614)	(71,236,935)
Deposit to Construction Fund (Net Funded)	$ (40,687,882)	$ (51,569,685)

Case Descriptions:

0
0
0

Assumptions:

1. Dated and Delivery Date of 7/1/2007
2. CapI investment rate of 4%
3. DSRF investment rate of 4%
4. Assumed BBB- underlying rating