

# The Real Finances of the Knik Arm Bridge

## Summary

In contrast to KABATA's predictions of surpluses, this analysis projects a minimum \$2.5 Billion shortfall for the state in covering the cost of the proposed Bridge before the final contractor payment in 2050. The shortfall between when the Bridge would open in 2016 and 2035 is \$1.1 Billion, or an average of \$55 million a year. That is about what Anchorage and Mat Su have both received on average over the last ten years in federal and state dollars for all road and pedestrian projects.

KABATA goes out to 2075 to project a huge surplus. In reality, the project is so far "Under Water" in the early years it can never pay for the \$672 million Phase 2 costs, so the Bridge will never pay off

Last month an independent study was released that documents that Wilbur Smith Associates, the traffic and toll consultant the Knik Arm Bridge and Toll Authority (KABATA) relies on for its financial plan, has a national track record of overestimating toll revenue by 2.27 times the actual revenue received in the first five years a facility is open. This finding is consistent with Wilbur Smith Associates (WSA) projecting more than twice the Bridge traffic by 2035 compared to the traffic counts modeled by Ch2MHill based on population estimates by Scott Goldsmith of UAA's ISER.

The huge expected toll shortfall projected in this realistic estimate makes any state guarantee on a Bridge contract or any commitment to continually replenish the \$150 Million line of credit that KABATA is seeking from the legislature, to be a serious financial commitment of at least \$2.5 Billion in State funds.

## ANALYSIS

### Common Assumptions between the KABATA estimate<sup>1</sup> and this **Realistic** estimate:

- Phase 1 Bridge cost of \$713 M and same amount Bridge costs including O&M, tolling operations, capital expenditures, and administrative costs. With having to capitalize interest to pay for the toll shortfall and other bond issuance costs the total cost is \$1,086,152,719 plus a cumulative \$170 million in cumulative KABATA administrative costs until Phase 1 is paid off in 2050.
- Passage of HB 158-9 or SB 79-80 that provides an additional \$150 million "Reserve Fund" to the project and a state guarantee on a KABATA estimated 36 years of availability payments of a cumulative \$2.98 Billion for Phase 1 since KABATA obligations would become "obligations of the state."
- Same deal structure, that is a private partner putting in \$79 million equity and receiving net cash flow for 36 years estimated to be \$920 million in KABATA estimate or \$767 million in this realistic estimate
- Same amount of senior debt and capital accretion bonds and same debt schedule to pay off those bonds and same 6.426% in total true interest cost
- One way car toll of \$5 and \$18 commercial vehicle in Year 1 with tolls rising 2.5% per year to a one way car toll of \$12.16 and a \$43.79 commercial toll in Year 36. So a commuter driving a car 200 days a year between Anchorage and Mat Su would pay \$2000 in Year 1 and \$4832 in Year 36.

### **Three Differing Assumptions between the KABATA estimate and this *Realistic* estimate**

The three following changes drive a \$2.5 Billion increase in the cost to the state of the guarantee to backstop the toll shortfall and meet the cumulative availability payments to the contractor that KABATA estimates at \$2.98 Billion for Phase 1.

#### **1. Loss of Federal Loans and Grants, Add \$340 Million to State Cost**

KABATA has been turned down for an over \$300 Million federal TIFIA loan in 2007, 2010, and 2011 and at least two different TIGER grants for over \$40 Million. Both programs are highly competitive with 10-20 times more money applied for than available. KABATA on 12/30/11 again sent in a preliminary application for a \$308 million TIFIA loan. *KABATA's financial plan includes receipt of these funds.*

The \$308 million TIFIA loan is particularly valuable to making the financial plan work since TIFIA loans bear a low interest rate and do not require repayment to start until five years after the Bridge opens.

*Projects that win federal loans and grants usually show: private sector risk taking, flat as opposed to ballooning annual payments to the concessionaire, and a project which solves significant existing congestion problems.* KABATA's application *fails* each of these key attributes and in addition shows the contractor taking out equity before the federal loan payments start which appears to contradict federal program guidelines.

Politically, the Knik Arm Bridge is *even more challenged*. In his 2011 infrastructure program speech to Congress, the President pledged "no more "Bridges to Nowhere." Last month Senator Coburn (R-OK) highlighted the recent release by the Federal Highway Administration (FHWA) of \$15 Million in right of way money to KABATA, and the Senator rated the project # 6 in his list of Top 100 in his "Wastebook" of federal spending.

Do you believe that any Federal Administration will provide over \$353 Million in Federal Loans or Grants to the "Bridge to Nowhere"?

#### **2. *Realistic* Toll Forecast, Add \$2.3 Billion to State Cost**

Revenue forecasts are based on population and employment projections, which in turn, drive trip and toll projections.

KABATA uses a Mat Su population or household forecast for 2030 that is 30% higher than the state demographer's December 2010 forecast or Scott Goldsmith's Institute of Social and Economic Research's (ISER's) 2009 forecast used for the Highway to Highway project<sup>2</sup>. Also, Wilbur Smith Associates, KABATA's traffic consultant, changed its traffic model between 2007 and 2011 so the same population number now generates 9% more trips and lowered the number of people per household from 2.7 from the 2010 Census to 2.5 in 2035 to appear to be consistent with ISER numbers. The result is higher toll revenue projections than realistic.

In doing the Highway to Highway traffic forecast, CH2M HILL, using Scott Goldsmith's population and employment data, projected 17,700 trips a day on the Bridge in 2035. KABATA's financial plan is based on a traffic forecast of 36,000 trips in 2035, more than double. Another forecast where the state Department of Transportation modeled ISER data (falsely labeled AMATS/ISER in the Anchorage Metropolitan Transportation Plan) said there would be 36,600 trips a day in 2035 but that forecast assumed no toll thereby inflating trip numbers.

Since KABATA's population forecast is an outlier and tolls reduce demand, a projected 18,000 daily trips in 2035 paying the higher \$8.19 one way auto toll used in KABATA's pro forma seems the best, conservative, *realistic* estimate of toll revenue. It also makes sense to use the 18,000 figure for 2035 since that is about the maximum traffic that a restricted 2 lane highway can serve and KABATA's financial plan included only the cost of a 2 lane Bridge.

A *realistic* toll estimate reduces cumulative toll revenue 2016-2050 by half from \$4.525 Billion to \$2.263 Billion.

### 3. Lower Profit to Private Partner, Subtract \$153 Million from State Cost

KABATA's financial plan projects that they will pay out a total of \$920 Million (labeled as net cash flow) to the winning bidder for their \$79 M equity in the project.

This 12% cumulative rate of return is excessive given that the state guarantee (subject to annual legislative appropriation) largely removes the financing risk to the project and leaves the concessionaire with only the customary construction cost risk. The state has traditionally paid no more than 10% when it asks the contractor to front project costs and competition among the three bidding teams and is likely to reduce this return on equity to 10%.

With typical Savings accounts paying less than 1% interest rates, does it make sense to give the P3 contractor 12%? Not if their annual payments are guaranteed by the State of Alaska.

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## CONCLUSIONS

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Totaling the above three items adds an additional \$2.5 billion to be paid out by the state over 36 years for Phase 1, which breaks down to be *\$1.1 Billion* or an average of \$55 million/year between 2016-2035 and \$1.4 Billion in the years between 2036-2051. (3) *None of this additional amount would be covered by toll revenue.*

It is unclear how much of that \$2.5 Billion would come out of state transportation funds for Anchorage which historically has received 28% of federal and state transportation funds or the Mat-Su which in recent years has received about the same amount of state and federal transportation dollars.

The Anchorage Metropolitan Transportation Plan (MTP) assumes KABATA's estimates of toll revenue and Bridge costs are accurate and further assumes that KABATA will receive over \$300 Million in federal loans it has been turned down on to date. Most importantly, the MTP stated assumption is that *if* there is a toll shortfall that doesn't meet contracted availability payments, and the state must make good on its guarantee, that those funds will not decrease the amount going to Anchorage or Mat-Su or affect the overall state transportation budget.

So, to summarize this paper to **one critical question:** If as here estimated, the state must make up \$1.1 Billion in toll shortfall revenues between 2016 to 2035 to meet contractor payments, **how much of that amount will come from Anchorage's or Mat-Su's federal and state transportation funding?**

Even though there are predicted cutbacks in federal funding, including earmarks, the Anchorage 2035 MTP Update counts on the ratio of state funding to federal funding actually increasing from 18% state money historically to 56% state money in the 2035 MTP Update.

## RECENT DEVELOPMENTS ADD TO BRIDGE RISKS & COSTS

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Three recent developments will likely add to the cost of the project.

### 1. Bridge Span has increased from 8,200' to 9,200'

In response to U.S. Army Corps of Engineering concerns about the effect of the Bridge on additional siltation challenges in Cook Inlet, in November KABATA signed an agreement with the Corps to increase the Bridge span to 9,200'. While this will reduce a rock-constructed causeway by 1000', it also will require 4 more expensive additional Bridge pilings and spans. Using a rough estimate of the 35% design costs from the TIFIA application, an additional \$15 million will be required which is not included in the \$713 million Bridge cost which is an unchanged number from the earlier KABATA financial plan showing a 8,200' bridge.

### 2. KABATA's Financial Plan still assumes 2 lanes of cost, 4 lanes of revenue

Phase 2 had been defined as the expansion of the Bridge and approaches from 2 lanes to 4 lanes and adding the Anchorage connection to the Ingra-Gambell couplet. KABATA estimates the cost of Phase 2 at \$673 Million.

Generally, a restricted access highway at around 18,000 trips a day needs to move to 4 lanes to accommodate any increase in traffic; for example, the Glenn Hwy traffic at Eklutna flats, the dividing line between Mat Su and Anchorage, is now about 28,000 trips a day.

The AMATS Technical Advisory Committee in August, 2011 heard my presentation that the KABATA Pro Forma Financial Plan submitted in February, 2011 to the federal government for a TIFIA loan had assumed 4-6 lanes of toll revenue in its toll projection to 2051 but its financial plan included only the cost of a 2 lane Bridge and northern approach roads.

The December, 2011 TIFIA preliminary grant application also includes the revenue from 18,700 trips a day in 2022 rising to 30,300 trips a day in 2030 when they estimate Phase 2 will be implemented at a cost of \$672 million that is not included in this realistic or KABATA estimate. For those eight years between 2022-2030, how is it possible to include the revenue from 4 lanes while including only the cost of 2 lanes on the Bridge and the northern approach roads to connect with Knik Goose Bay Road?

In order to count the revenue from over 18,000 trips a day, the financial plan has to include the cost of 4 lanes from downtown Anchorage to Knik Goose Bay Road.

### 3. National Track Record of KABATA's consultant Wilbur Smith Associates: Revenue projections 127% greater than actual Toll Revenues

Drawing on a 2006 study of the National Transportation Research Board (a division of the National Academy of Sciences) and adding updated information from recent toll facilities, an independent economist last month documented that the track record of Wilbur Smith Associates (WSA) on US projects is to overestimate revenue by 2.27 times in the first five years a toll facility is open to project. That is, WSA projected 127% **more** revenue than **actual** performance.<sup>3</sup>

The 2012 study "*Wilbur Smith Associates' Traffic and Revenue Forecast: Plenty of Room for Error*" was developed by Terry Maynard, a retired federal economist. The WSA track record is slightly better

than the industry in projecting the first year revenue of projects and worse than industry averages after five years and later.

Maynard made the WSA's work on the Knik Arm Bridge one of his two "case studies" of questionable forecasting methodology and of the use of overly optimistic population data.

Two toll road projects that WSA provided the toll projections for have now gone bankrupt (the Greenville, SC Southern Connector and the San Diego Freeway) and two more have had changes in ownership and/or debt restructuring when insufficient toll revenues took revenue below required minimum bond cover ratios (the San Joaquin Hills Toll Road, CA and the Pocahontas Parkway, VA).

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Note: Revisions from earlier posts of this paper reflect slight number changes between the Citigroup 10/17/2011 financial plan for KABATA's TIGER loan application and the 12/16/2011 Citigroup financial plan for KABATA's TIFIA loan application. Also included in this revision is discussion of the January 29, 2012 Maynard paper on the Wilbur Smith Associates' national track record.

Endnotes:

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<sup>1</sup>KABATA cost estimate numbers are from the Citigroup financial plan done 12/16/11 for KABATA's TIFIA preliminary federal loan application, see <http://knikarmbridge.com/TIFIA/2011/12-2011-KABATA-Model-PABs.pdf>

<sup>2</sup> The history of this project's use of population estimates does not inspire confidence in KABATA's revenue forecasts which are based on their consultant trip and toll forecasts. In 2007, Scott Goldsmith of ISER estimated that 204,400 people would live in the Mat Su in 2030. KABATA then hired the Insight Research Corporation of Dallas, Texas to come up with the number of 250,700 for the Mat Su in 2030, see p. 26 of <http://www.knikarmbridge.com/documents/IndependentEconomicOverviewandDevelopmentForecast07022007.pdf>.

<sup>3</sup> The full study is available at <http://www.scribd.com/doc/79582705/RCA-Study-Wilbur-Smith-Traffic-and-Revenue-Forecasts-012712>. The 2006 NTRB of the National Academies of Science toll study is at [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_syn\\_364.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_364.pdf).

Two media stories summarize the poor track record of the traffic and toll projection industry; see <http://www.tollroadsnews.com/node/5726> and [http://www.denverpost.com/tollroads/ci\\_3876477](http://www.denverpost.com/tollroads/ci_3876477)