

**Appendix B**  
**Alignment Estimate Matrix**

# Gravina Island Access Engineer's Construction Cost Matrix February 2009



Category	F1		F3		F3v		C3a		C3b		C4		C3-4		D1		G2		G3		G4		G4v	
	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost	Length or Sq Ft	Cost
<b>ROADWAY</b>																								
MAINLINE ROADWAY CONSTRUCTION SUBTOTAL <sup>3</sup>	37,132	\$ 30,913,400	30,974	\$ 21,273,147	30,974	\$ 51,655,147	12,500	\$ 10,322,800	9,500	\$ 19,420,100	11,000	\$ 17,110,600	9,888	\$ 10,841,800	8,400	\$ 13,710,300	21,675	\$ 9,417,188	10,180	\$ 5,782,171	0	\$ -	0	\$ -
Mainline Pavement		\$ 6,477,620		\$ 5,867,160		\$ 6,034,000		\$ 444,350		\$ 519,250		\$ 442,890		\$ 444,350		\$ 877,750		\$ 2,448,245		\$ 662,214.66		\$ 0		\$ 0
Seley Road Widening <sup>4</sup>	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000	4,230	\$ 3,537,000
Airport Access Road Paving <sup>2</sup>	4,300	\$ 518,520	4,300	\$ 518,520	4,300	\$ 518,520		\$ -		\$ -		\$ -		\$ -		\$ -	4,300	\$ 518,520	4,300	\$ 518,520		\$ -		\$ -
ROADWAY CONTINGENCY (15% of Construction Subtotal)		\$ 6,300,000		\$ 4,700,000		\$ 9,300,000		\$ 2,200,000		\$ 3,600,000		\$ 3,200,000		\$ 2,300,000		\$ 2,800,000		\$ 2,400,000		\$ 1,600,000		\$ 600,000		\$ 600,000
<b>ROADWAY CONSTRUCTION SUBTOTAL</b>		<b>\$ 47,746,540</b>		<b>\$ 35,895,827</b>		<b>\$ 71,044,667</b>		<b>\$ 16,504,150</b>		<b>\$ 27,076,350</b>		<b>\$ 24,290,490</b>		<b>\$ 17,123,150</b>		<b>\$ 20,925,050</b>		<b>\$ 18,320,953</b>		<b>\$ 12,099,906</b>		<b>\$ 4,137,000</b>		<b>\$ 4,137,000</b>
<b>STRUCTURES<sup>5</sup></b>																								
Government Creek Widening (Sta 141+50 to Sta 145+00)	4,200	\$ 750,000	4,200	\$ 750,000																				
Gravina Creek Widening (Sta 197+40 to Sta 198+20)	960	\$ 250,000	960	\$ 250,000																				
West Channel Bridge	126,331	\$ 100,522,043	126,639	\$ 101,941,289	88,150	\$ 84,465,586																		
East Channel Bridge	174,250	\$ 138,651,369	101,731	\$ 81,890,960	87,125	\$ 100,075,025																		
Tongass Narrows Bridge							348,500	\$ 335,028,528	217,813	\$ 239,759,046	256,250	\$ 311,551,467	214,738	\$ 164,222,006	184,500	\$ 195,605,978								
Airport Creek Bridge	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000	4,325	\$ 600,000
Dredging for West Channel				\$ 13,097,530		\$ 13,097,530																		
<b>STRUCTURE CONSTRUCTION SUBTOTAL</b>		<b>\$ 240,773,412</b>		<b>\$ 198,529,779</b>		<b>\$ 198,238,141</b>		<b>\$ 335,628,528</b>		<b>\$ 240,359,046</b>		<b>\$ 312,151,467</b>		<b>\$ 164,822,006</b>		<b>\$ 196,205,978</b>		<b>\$ 600,000</b>		<b>\$ 600,000</b>		<b>\$ 600,000</b>		<b>\$ 600,000</b>
<b>MOBILIZATION &amp; DEMOBILIZATION</b> (10% of Roadway and Structure Total)		\$ 28,900,000		\$ 23,500,000		\$ 27,000,000		\$ 35,300,000		\$ 26,800,000		\$ 33,700,000		\$ 18,200,000		\$ 21,800,000		\$ 1,900,000		\$ 1,300,000		\$ 500,000		\$ 500,000
Two New Ferries and Two New Docks																	\$ 41,664,650	\$ 42,036,670	\$ 40,014,910					
Enhanced Passenger Waiting and Baggage Handling Facility																	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000		
Ferry Heavy Freight Terminal and 3/4-acre Staging Area																	\$ 5,800,000	\$ 5,800,000	\$ 5,800,000	\$ 5,800,000	\$ 5,800,000			
<b>SEGMENT CONSTRUCTION SUBTOTAL</b>		<b>\$ 317,419,952</b>		<b>\$ 257,925,606</b>		<b>\$ 296,282,808</b>		<b>\$ 387,432,678</b>		<b>\$ 294,235,396</b>		<b>\$ 370,141,957</b>		<b>\$ 200,145,156</b>		<b>\$ 238,931,028</b>		<b>\$ 69,785,603</b>		<b>\$ 63,336,576</b>		<b>\$ 52,551,910</b>		<b>\$ 12,537,000</b>
<b>CONSTRUCTION ADMINISTRATION</b> (5% of Segment Construction Subtotal)		\$ 15,880,000		\$ 12,900,000		\$ 14,820,000		\$ 19,380,000		\$ 14,720,000		\$ 18,510,000		\$ 10,010,000		\$ 11,950,000		\$ 3,490,000		\$ 3,170,000		\$ 2,630,000		\$ 630,000
<b>DESIGN</b> (7% of Segment Construction Subtotal)		\$ 22,220,000		\$ 18,060,000		\$ 20,740,000		\$ 27,130,000		\$ 20,600,000		\$ 25,910,000		\$ 14,020,000		\$ 16,730,000		\$ 4,890,000		\$ 4,440,000		\$ 3,680,000		\$ 880,000
<b>PROJECT CONSTRUCTION &amp; DEVELOPMENT SUBTOTAL</b> (Segment Subtotals plus CA and Design)		<b>\$ 355,519,952</b>		<b>\$ 288,885,606</b>		<b>\$ 331,842,808</b>		<b>\$ 433,942,678</b>		<b>\$ 329,555,396</b>		<b>\$ 414,561,957</b>		<b>\$ 224,175,156</b>		<b>\$ 267,611,028</b>		<b>\$ 78,165,603</b>		<b>\$ 70,946,576</b>		<b>\$ 58,861,910</b>		<b>\$ 14,047,000</b>
<b>UTILITIES</b>		\$ 100,000		\$ 100,000		\$ 100,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000		\$ 1,000,000
<b>RIGHT-OF-WAY</b>		\$ 1,730,000		\$ 220,000		\$ 270,000		\$ 5,700,000		\$ 4,980,000		\$ 4,510,000		\$ 3,810,000		\$ 8,140,000		\$ 1,000,000		\$ 500,000		\$ 500,000		\$ 500,000
ICAP (5.0% of Total)		\$ 17,870,000		\$ 14,470,000		\$ 16,620,000		\$ 22,040,000		\$ 16,780,000		\$ 21,010,000		\$ 11,450,000		\$ 13,840,000		\$ 4,010,000		\$ 3,650,000		\$ 3,020,000		\$ 780,000
<b>GRAND TOTAL</b>		<b>\$ 375,219,952</b>		<b>\$ 303,675,606</b>		<b>\$ 348,832,808</b>		<b>\$ 462,682,678</b>		<b>\$ 352,315,396</b>		<b>\$ 441,081,957</b>		<b>\$ 240,435,156</b>		<b>\$ 290,591,028</b>		<b>\$ 84,175,603</b>		<b>\$ 76,596,576</b>		<b>\$ 63,381,910</b>		<b>\$ 16,327,000</b>

- Notes:**
- Parking garage costs are not included in the above estimates. This cost is common to all alternatives at \$13.1 million.
  - The Airport Access Road is being constructed under the airport runway expansion project, via a tunnel, to the intersection with the Gravina Island Highway at approximately sta 138+00. The costs associated with the Airport Access Road are only for base and pavement for the existing 24-foot wide gravel roadway (STA -17+00 to STA -60+00).
  - Mainline Roadway Construction Subtotal includes all roadway construction costs for each alternative as described in the engineers estimates report (from Revilla Island to Ketchikan Airport Terminal), except for asphalt pavement.
  - The Seley Road costs are to upgrade the existing logging road between the Airport Creek bridge and the north Airport reserve (and G2 intersection) to match the existing 36-foot wide gravel Lewis Reef Road
  - All structure costs include 20% contingency.

w/o Waiting and Freight	\$ 7,300,000	\$ 7,300,000	\$ 7,300,000	\$ 7,300,000
	\$ 76,875,603	\$ 69,296,576	\$ 56,081,910	\$ 9,027,000

ALTERNATIVE	M1	M2	I1
Construction Cost	\$316,600,000	\$348,800,000	\$340,900,000
Construction Admin (5%)	\$15,830,000	\$17,440,000	\$20,500,000
Design (7%)	\$23,270,100	\$25,636,800	\$31,500,000
Utilities	\$1,000,000	\$1,000,000	\$500,000
Right-of-Way	\$200,000	\$200,000	\$7,500,000
ICAP (5%)	\$17,845,000	\$19,653,840	\$16,100,000
<b>GRAND TOTAL:</b>	<b>\$374,745,100</b>	<b>\$412,730,640</b>	<b>\$417,000,000</b>