

Appendix-K

Economic Analysis - Cost & Benefit Flow

Beneficiarios (Beneficiarios No.1 & No.2)

Código	Nombre	Valores * Dólares											
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AA	283	125	101	101	101	101	101	101	101	101	101	101	101
AC	284	125	101	101	101	101	101	101	101	101	101	101	101
AD	171	171	171	171	171	171	171	171	171	171	171	171	171
AE	549	549	549	549	549	549	549	549	549	549	549	549	549
AF	282	282	282	282	282	282	282	282	282	282	282	282	282
AG	234	234	234	234	234	234	234	234	234	234	234	234	234
AH	240	240	240	240	240	240	240	240	240	240	240	240	240
AI	325	325	325	325	325	325	325	325	325	325	325	325	325
AJ	528	700	122	4	5	6	7	8	244	488	610	712	854
AK	308	308	308	308	308	308	308	308	308	308	308	308	308
AL	465	465	465	465	465	465	465	465	465	465	465	465	465
AM	213	213	213	213	213	213	213	213	213	213	213	213	213
AN	101	101	101	101	101	101	101	101	101	101	101	101	101
AO	477	799	322	0	0	0	0	0	0	0	0	0	0
AP	412	710	298	0	0	0	0	0	0	0	0	0	0
AQ	164	164	164	164	164	164	164	164	164	164	164	164	164
AH	140	140	140	140	140	140	140	140	140	140	140	140	140
BI	255	255	255	255	255	255	255	255	255	255	255	255	255
BJ	508	614	106	0	0	0	0	0	0	0	0	0	0
BK	238	238	238	238	238	238	238	238	238	238	238	238	238
BL	379	379	379	379	379	379	379	379	379	379	379	379	379
BM	314	314	314	314	314	314	314	314	314	314	314	314	314
BN	264	935	671	0	0	0	0	0	0	0	0	0	0
BO	199	846	647	1	2	2	3	4	647	1294	1941	2508	2588
BP	362	362	362	362	362	362	362	362	362	362	362	362	362
BQ	73	73	73	73	73	73	73	73	73	73	73	73	73
BR	188	188	188	188	188	188	188	188	188	188	188	188	188
BS	298	780	453	0	0	0	0	0	0	0	0	0	0
BT	174	174	174	174	174	174	174	174	174	174	174	174	174
BV	515	515	515	515	515	515	515	515	515	515	515	515	515
BW	698	1291	609	0	0	0	0	0	0	0	0	0	0
BX	63	63	63	63	63	63	63	63	63	63	63	63	63
BY	241	241	241	241	241	241	241	241	241	241	241	241	241
BZ	237	237	237	237	237	237	237	237	237	237	237	237	237
CA	513	513	513	513	513	513	513	513	513	513	513	513	513
CB	278	278	278	278	278	278	278	278	278	278	278	278	278
CC	89	89	89	89	89	89	89	89	89	89	89	89	89
CD	626	635	9	0	0	0	0	0	0	0	0	0	0
CE	337	862	523	0	0	0	0	0	0	0	0	0	0
CF	452	747	295	0	0	0	0	0	0	0	0	0	0
CG	185	185	185	185	185	185	185	185	185	185	185	185	185
CH	561	561	561	561	561	561	561	561	561	561	561	561	561
CI	429	429	429	429	429	429	429	429	429	429	429	429	429
CJ	272	773	501	1	2	2	3	4	501	1002	1503	2004	2508
CK	387	688	271	0	0	0	0	0	0	0	0	0	0
CL	96	96	96	96	96	96	96	96	96	96	96	96	96
CM	472	472	472	472	472	472	472	472	472	472	472	472	472
CN	331	331	331	331	331	331	331	331	331	331	331	331	331
CO	289	289	289	289	289	289	289	289	289	289	289	289	289
CP	174	174	174	174	174	174	174	174	174	174	174	174	174
CQ	459	459	459	459	459	459	459	459	459	459	459	459	459
CR	74	74	74	74	74	74	74	74	74	74	74	74	74
CS	115	115	115	115	115	115	115	115	115	115	115	115	115
CT	368	627	367	2	4	5	6	7	618	1236	1854	2472	3090
CU	301	301	301	301	301	301	301	301	301	301	301	301	301
CV	442	442	442	442	442	442	442	442	442	442	442	442	442
CW	483	362	79	0	0	0	0	0	0	0	0	0	0
CX	186	186	186	186	186	186	186	186	186	186	186	186	186
CY	327	327	327	327	327	327	327	327	327	327	327	327	327
CZ	376	376	376	376	376	376	376	376	376	376	376	376	376
DA	335	335	335	335	335	335	335	335	335	335	335	335	335

Nota: Hacia el Beneficiario No.1 & No.2

Economic Analysis

(No. 1 Kurizampa & No. 2 Chamkar Zam)

Discount Rate 0.1500

Cost (NPV)	163.34	IRR
Benefit (NPV)	117.29	
B.NPV-C.NPV	-46.06	
B/C Rate	0.718	

0.11564

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	NET PRESENT VALUE			
					(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	6.264	0.000	1.000	6.26	6.26	0.00	0.00
2	2000	113.688	0.000	0.870	98.86	105.12	0.00	0.00
3	2001	72.930	0.000	0.756	55.15	160.27	0.00	0.00
4	2002	1.908	0.000	0.658	1.25	161.52	0.00	0.00
5	2003	0.140	20.696	0.572	0.08	161.60	11.83	11.83
6	2004	0.140	21.329	0.497	0.07	161.67	10.60	22.44
7	2005	0.140	21.980	0.432	0.06	161.73	9.50	31.94
8	2006	0.140	23.131	0.376	0.05	161.79	8.70	40.64
9	2007	0.823	24.342	0.327	0.27	162.06	7.96	48.59
10	2008	0.140	25.617	0.284	0.04	162.09	7.28	55.88
11	2009	2.149	26.958	0.247	0.53	162.63	6.66	62.54
12	2010	0.140	28.370	0.215	0.03	162.66	6.10	68.64
13	2011	0.140	29.699	0.187	0.03	162.68	5.55	74.19
14	2012	0.823	31.091	0.163	0.13	162.82	5.05	79.24
15	2013	0.140	32.548	0.141	0.02	162.84	4.60	83.84
16	2014	0.140	34.073	0.123	0.02	162.85	4.19	88.03
17	2015	0.140	35.670	0.107	0.01	162.87	3.81	91.84
18	2016	2.149	36.264	0.093	0.20	163.07	3.37	95.21
19	2017	0.823	36.868	0.081	0.07	163.13	2.98	98.19
20	2018	0.140	37.482	0.070	0.01	163.14	2.63	100.82
21	2019	0.140	38.106	0.061	0.01	163.15	2.33	103.15
22	2020	0.140	38.740	0.053	0.01	163.16	2.06	105.21
23	2021	0.140	39.361	0.046	0.01	163.17	1.82	107.03
24	2022	0.823	39.992	0.040	0.03	163.20	1.61	108.63
25	2023	2.149	40.634	0.035	0.08	163.27	1.42	110.05
26	2024	0.140	41.285	0.030	0.00	163.28	1.25	111.31
27	2025	0.140	41.947	0.026	0.00	163.28	1.11	112.42
28	2026	0.140	42.620	0.023	0.00	163.29	0.98	113.40
29	2027	0.823	43.303	0.020	0.02	163.30	0.86	114.26
30	2028	0.140	43.998	0.017	0.00	163.30	0.76	115.02
31	2029	0.140	44.703	0.015	0.00	163.31	0.68	115.70
32	2030	2.149	45.420	0.013	0.03	163.34	0.60	116.30
33	2031	0.140	46.148	0.011	0.00	163.34	0.53	116.82
34	2032	0.823	46.888	0.010	0.01	163.34	0.47	117.29
35	2033	0.140	47.640	0.009	0.00	163.35	0.41	117.70

Economic Analysis

(No. 1 Kurizampa & No. 2 Chamkar Zam)

(Cost * 0.9)

Discount Rate 0.1500

Cost (NPV)	147.19	IRR
Benefit (NPV)	117.29	
B.NPV-C.NPV	-29.90	
B/C Rate	0.797	

0.12581

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	NET PRESENT VALUE			
					(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	5.638	0.000	1.000	5.64	5.64	0.00	0.00
2	2000	102.319	0.000	0.870	88.97	94.61	0.00	0.00
3	2001	65.637	0.000	0.756	49.63	144.24	0.00	0.00
4	2002	1.717	0.000	0.658	1.13	145.37	0.00	0.00
5	2003	0.140	20.696	0.572	0.08	145.45	11.83	11.83
6	2004	0.140	21.329	0.497	0.07	145.52	10.60	22.44
7	2005	0.140	21.980	0.432	0.06	145.58	9.50	31.94
8	2006	0.140	23.131	0.376	0.05	145.63	8.70	40.64
9	2007	0.823	24.342	0.327	0.27	145.90	7.96	48.59
10	2008	0.140	25.617	0.284	0.04	145.94	7.28	55.88
11	2009	2.149	26.958	0.247	0.53	146.47	6.66	62.54
12	2010	0.140	28.370	0.215	0.03	146.50	6.10	68.64
13	2011	0.140	29.699	0.187	0.03	146.53	5.55	74.19
14	2012	0.823	31.091	0.163	0.13	146.66	5.05	79.24
15	2013	0.140	32.548	0.141	0.02	146.68	4.60	83.84
16	2014	0.140	34.073	0.123	0.02	146.70	4.19	88.03
17	2015	0.140	35.670	0.107	0.01	146.72	3.81	91.84
18	2016	2.149	36.264	0.093	0.20	146.92	3.37	95.21
19	2017	0.823	36.868	0.081	0.07	146.98	2.98	98.19
20	2018	0.140	37.482	0.070	0.01	146.99	2.63	100.82
21	2019	0.140	38.106	0.061	0.01	147.00	2.33	103.15
22	2020	0.140	38.740	0.053	0.01	147.01	2.06	105.21
23	2021	0.140	39.361	0.046	0.01	147.01	1.82	107.03
24	2022	0.823	39.992	0.040	0.03	147.05	1.61	108.63
25	2023	2.149	40.634	0.035	0.08	147.12	1.42	110.05
26	2024	0.140	41.285	0.030	0.00	147.13	1.25	111.31
27	2025	0.140	41.947	0.026	0.00	147.13	1.11	112.42
28	2026	0.140	42.620	0.023	0.00	147.13	0.98	113.40
29	2027	0.823	43.303	0.020	0.02	147.15	0.86	114.26
30	2028	0.140	43.998	0.017	0.00	147.15	0.76	115.02
31	2029	0.140	44.703	0.015	0.00	147.15	0.68	115.70
32	2030	2.149	45.420	0.013	0.03	147.18	0.60	116.30
33	2031	0.140	46.148	0.011	0.00	147.18	0.53	116.82
34	2032	0.823	46.888	0.010	0.01	147.19	0.47	117.29
35	2033	0.140	47.640	0.009	0.00	147.19	0.41	117.70

Economic Analysis

(No. 1 Kurizampa & No. 2 Chamkar Zam)

(Cost * I.I)

Discount Rate **0.1500**

Cost (NPV)	179.50	IRR	0.106865
Benefit (NPV)	117.29		
B.NPV-C.NPV	-62.21		
B/C Rate	0.653		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE		
						Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	6.890	0.000	1.000	6.89	6.89	0.00	0.00
2	2000	125.057	0.000	0.870	108.75	115.64	0.00	0.00
3	2001	80.223	0.000	0.756	60.66	176.30	0.00	0.00
4	2002	2.099	0.000	0.658	1.38	177.68	0.00	0.00
5	2003	0.140	20.696	0.572	0.08	177.76	11.83	11.83
6	2004	0.140	21.329	0.497	0.07	177.83	10.60	22.44
7	2005	0.140	21.980	0.432	0.06	177.89	9.50	31.94
8	2006	0.140	23.131	0.376	0.05	177.94	8.70	40.64
9	2007	0.823	24.342	0.327	0.27	178.21	7.96	48.59
10	2008	0.140	25.617	0.284	0.04	178.25	7.28	55.88
11	2009	2.149	26.958	0.247	0.53	178.78	6.66	62.54
12	2010	0.140	28.370	0.215	0.03	178.81	6.10	68.64
13	2011	0.140	29.699	0.187	0.03	178.83	5.55	74.19
14	2012	0.823	31.091	0.163	0.13	178.97	5.05	79.24
15	2013	0.140	32.548	0.141	0.02	178.99	4.60	83.84
16	2014	0.140	34.073	0.123	0.02	179.01	4.19	88.03
17	2015	0.140	35.670	0.107	0.01	179.02	3.81	91.84
18	2016	2.149	36.264	0.093	0.20	179.22	3.37	95.21
19	2017	0.823	36.868	0.081	0.07	179.29	2.98	98.19
20	2018	0.140	37.482	0.070	0.01	179.30	2.63	100.82
21	2019	0.140	38.106	0.061	0.01	179.30	2.33	103.15
22	2020	0.140	38.740	0.053	0.01	179.31	2.06	105.21
23	2021	0.140	39.361	0.046	0.01	179.32	1.82	107.03
24	2022	0.823	39.992	0.040	0.03	179.35	1.61	108.63
25	2023	2.149	40.634	0.035	0.08	179.43	1.42	110.05
26	2024	0.140	41.285	0.030	0.00	179.43	1.25	111.31
27	2025	0.140	41.947	0.026	0.00	179.43	1.11	112.42
28	2026	0.140	42.620	0.023	0.00	179.44	0.98	113.40
29	2027	0.823	43.303	0.020	0.02	179.45	0.86	114.26
30	2028	0.140	43.998	0.017	0.00	179.46	0.76	115.02
31	2029	0.140	44.703	0.015	0.00	179.46	0.68	115.70
32	2030	2.149	45.420	0.013	0.03	179.49	0.60	116.30
33	2031	0.140	46.148	0.011	0.00	179.49	0.53	116.82
34	2032	0.823	46.888	0.010	0.01	179.50	0.47	117.29
35	2033	0.140	47.640	0.009	0.00	179.50	0.41	117.70

Economic Analysis

(No. 1 Kurizampa & No. 2 Chamkar Zan)

(Two years delay)

Discount Rate 0.1500

Cost (NPV)	123.51	IRR
Benefit (NPV)	95.63	
B.NPV-C.NPV	-27.89	
B/C Rate	0.774	

0.122635

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE	
						Accumulated	(E) Benefit (BxC) Accumulated
1	1999	0.000	0.000	1.000	0.00	0.00	0.00
2	2000	0.000	0.000	0.870	0.00	0.00	0.00
3	2001	6.264	0.000	0.756	4.74	4.74	0.00
4	2002	113.688	0.000	0.658	74.75	79.49	0.00
5	2003	72.930	0.000	0.572	41.70	121.19	0.00
6	2004	1.903	0.000	0.497	0.95	122.13	0.00
7	2005	0.140	21.980	0.432	0.06	122.20	9.50
8	2006	0.140	23.131	0.376	0.05	122.25	8.70
9	2007	0.140	24.342	0.327	0.05	122.29	7.96
10	2008	0.140	25.617	0.284	0.04	122.33	7.28
11	2009	0.823	26.958	0.247	0.20	122.54	6.66
12	2010	0.140	28.370	0.215	0.03	122.57	6.10
13	2011	2.149	29.699	0.187	0.40	122.97	5.55
14	2012	0.140	31.091	0.163	0.02	122.99	5.05
15	2013	0.140	32.548	0.141	0.02	123.01	4.60
16	2014	0.823	34.073	0.123	0.10	123.11	4.19
17	2015	0.140	35.670	0.107	0.01	123.13	3.81
18	2016	0.140	36.264	0.093	0.01	123.14	3.37
19	2017	0.140	36.868	0.081	0.01	123.15	2.98
20	2018	2.149	37.482	0.070	0.15	123.30	2.63
21	2019	0.823	38.106	0.061	0.05	123.35	2.33
22	2020	0.140	38.740	0.053	0.01	123.36	2.06
23	2021	0.140	39.361	0.046	0.01	123.37	1.82
24	2022	0.140	39.992	0.040	0.01	123.37	1.61
25	2023	0.140	40.634	0.035	0.00	123.38	1.42
26	2024	0.823	41.285	0.030	0.03	123.40	1.25
27	2025	2.149	41.947	0.026	0.06	123.46	1.11
28	2026	0.140	42.620	0.023	0.00	123.46	0.98
29	2027	0.140	43.303	0.020	0.00	123.47	0.86
30	2028	0.140	43.998	0.017	0.00	123.47	0.76
31	2029	0.823	44.703	0.015	0.01	123.48	0.68
32	2030	0.140	45.420	0.013	0.00	123.48	0.60
33	2031	0.140	46.148	0.011	0.00	123.48	0.53
34	2032	2.149	46.888	0.010	0.02	123.50	0.47
35	2033	0.140	47.640	0.009	0.00	123.51	0.41
36	2034	0.823	48.404	0.008	0.01	123.51	0.36
37	2035	0.140	49.180	0.007	0.00	123.51	0.32

Benefit (Benefit No. & No.)

Unit Part	Distance		Traffic Volume (Average M.V.)										Volume										Benefit									
	Wm	Wm	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022				
AA	70	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AB	283	596	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AC	171	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AD	547	860	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AE	482	795	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AF	234	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AG	210	523	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AH	325	408	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AI	578	700	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AJ	308	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AK	465	465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AL	213	526	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AM	101	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AN	477	793	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AO	412	710	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AP	164	164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AQ	160	453	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AR	255	338	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AS	508	614	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AT	236	236	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AU	379	379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AV	314	425	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AW	264	264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AX	199	199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AY	362	362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
AZ	73	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BA	188	188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BB	203	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BC	374	374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BD	515	515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BE	878	889	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BF	513	824	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BG	241	332	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BH	237	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BI	313	313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BJ	278	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BK	80	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BL	628	628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BM	337	337	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BN	452	452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BO	183	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BP	561	561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BQ	420	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BR	346	346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BS	272	272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BT	387	387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BV	96	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BW	472	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BX	331	331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BY	289	289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
BZ	174	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CA	490	490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CB	74	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CC	215	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CD	301	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CE	308	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CF	301	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CG	442	442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CH	483	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CI	186	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CJ	327	327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CK	376	376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
CL	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: Heavy Vehicle V/C = 7.033 No./Km

Economic Analysis

(No. 3 Bjee & No. 4 Wachy Zam)

Discount Rate	0.1500	Cost (NPV)	129.56	IRR	0.28215
		Benefit (NPV)	291.49		
		B.NPV-C.NPV	161.93		
		B/C Rate	2.250		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	NET PRESENT VALUE			
					(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	6.264	0.000	1.000	6.26	6.26	0.00	0.00
2	2000	8.586	0.000	0.870	7.47	13.73	0.00	0.00
3	2001	90.999	0.000	0.756	68.81	82.54	0.00	0.00
4	2002	69.096	0.000	0.658	45.43	127.97	0.00	0.00
5	2003	0.140	51.909	0.572	0.08	128.05	29.68	29.68
6	2004	0.140	53.718	0.497	0.07	128.12	26.71	56.39
7	2005	0.140	55.590	0.432	0.06	128.18	24.03	80.42
8	2006	0.140	58.256	0.376	0.05	128.23	21.90	102.32
9	2007	0.568	61.049	0.327	0.19	128.42	19.96	122.28
10	2008	0.140	63.977	0.284	0.04	128.46	18.19	140.46
11	2009	1.984	67.045	0.247	0.49	128.95	16.57	157.04
12	2010	0.140	70.260	0.215	0.03	128.98	15.10	172.14
13	2011	0.140	72.934	0.187	0.03	129.01	13.63	185.77
14	2012	0.568	75.711	0.163	0.09	129.10	12.31	198.08
15	2013	0.140	78.593	0.141	0.02	129.12	11.11	209.18
16	2014	0.140	81.584	0.123	0.02	129.13	10.03	219.21
17	2015	0.140	84.690	0.107	0.01	129.15	9.05	228.26
18	2016	1.984	86.704	0.093	0.18	129.33	8.06	236.32
19	2017	0.568	88.766	0.081	0.05	129.38	7.17	243.49
20	2018	0.140	90.877	0.070	0.01	129.39	6.39	249.87
21	2019	0.140	93.038	0.061	0.01	129.40	5.68	255.56
22	2020	0.140	95.250	0.053	0.01	129.41	5.06	260.62
23	2021	0.140	97.515	0.046	0.01	129.41	4.51	265.12
24	2022	0.568	99.833	0.040	0.02	129.43	4.01	269.14
25	2023	1.984	102.206	0.035	0.07	129.50	3.57	272.71
26	2024	0.140	104.636	0.030	0.00	129.51	3.18	275.88
27	2025	0.140	107.124	0.026	0.00	129.51	2.83	278.71
28	2026	0.140	109.671	0.023	0.00	129.52	2.52	281.23
29	2027	0.568	112.278	0.020	0.04	129.53	2.24	283.48
30	2028	0.140	114.947	0.017	0.00	129.53	2.00	285.47
31	2029	0.140	117.680	0.015	0.00	129.53	1.78	287.25
32	2030	1.984	120.478	0.013	0.03	129.56	1.58	288.83
33	2031	0.140	123.342	0.011	0.00	129.56	1.41	290.24
34	2032	0.568	126.275	0.010	0.01	129.56	1.25	291.49
35	2033	0.140	129.277	0.009	0.00	129.57	1.12	292.61

Economic Analysis

(No. 3 Bjee & No. 4 Wachy Zam)

(Cost * 0.9)

Discount Rate 0.1500

Cost (NPV)	116.77	IRR	0.30525
Benefit (NPV)	291.49		
B.NPV-C.NPV	174.73		
B/C Rate	2.496		

YEAR		COST (A)	BENEFIT (B)	NET PRESENT VALUE				
				(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	5.638	0.000	1.000	5.64	5.64	0.00	0.00
2	2000	7.727	0.000	0.870	6.72	12.36	0.00	0.00
3	2001	81.899	0.000	0.756	61.93	74.28	0.00	0.00
4	2002	62.186	0.000	0.658	40.89	115.17	0.00	0.00
5	2003	0.140	51.909	0.572	0.08	115.25	29.68	29.68
6	2004	0.140	53.718	0.497	0.07	115.32	26.71	56.39
7	2005	0.140	55.590	0.432	0.06	115.38	24.03	80.42
8	2006	0.140	58.256	0.376	0.05	115.44	21.90	102.32
9	2007	0.568	61.049	0.327	0.19	115.62	19.96	122.28
10	2008	0.140	63.977	0.284	0.04	115.66	18.19	140.46
11	2009	1.984	67.045	0.247	0.49	116.15	16.57	157.04
12	2010	0.140	70.260	0.215	0.03	116.18	15.10	172.14
13	2011	0.140	72.934	0.187	0.03	116.21	13.63	185.77
14	2012	0.568	75.711	0.163	0.09	116.30	12.31	198.08
15	2013	0.140	78.593	0.141	0.02	116.32	11.11	209.18
16	2014	0.140	81.584	0.123	0.02	116.34	10.03	219.21
17	2015	0.140	84.690	0.107	0.01	116.35	9.05	228.26
18	2016	1.984	86.704	0.093	0.18	116.54	8.06	236.32
19	2017	0.568	88.766	0.081	0.05	116.58	7.17	243.49
20	2018	0.140	90.877	0.070	0.01	116.59	6.39	249.87
21	2019	0.140	93.038	0.061	0.01	116.60	5.68	255.56
22	2020	0.140	95.250	0.053	0.01	116.61	5.06	260.62
23	2021	0.140	97.515	0.046	0.01	116.61	4.51	265.12
24	2022	0.568	99.833	0.040	0.02	116.61	4.01	269.14
25	2023	1.984	102.206	0.035	0.07	116.71	3.57	272.71
26	2024	0.140	104.636	0.030	0.00	116.71	3.18	275.88
27	2025	0.140	107.124	0.026	0.00	116.71	2.83	278.71
28	2026	0.140	109.671	0.023	0.00	116.72	2.52	281.23
29	2027	0.568	112.278	0.020	0.01	116.73	2.24	283.48
30	2028	0.140	114.947	0.017	0.00	116.73	2.00	285.47
31	2029	0.140	117.680	0.015	0.00	116.73	1.78	287.25
32	2030	1.984	120.478	0.013	0.03	116.76	1.58	288.83
33	2031	0.140	123.342	0.011	0.00	116.76	1.41	290.24
34	2032	0.568	126.275	0.010	0.01	116.77	1.25	291.49
35	2033	0.140	129.277	0.009	0.00	116.77	1.12	292.61

Economic Analysis

(No. 3 Bjee & No. 4 Wachy Zam)

(Cost * 1.1)

Discount Rate

Cost (NPV)	142.36	IRR	<input type="text" value="0.26268"/>
Benefit (NPV)	291.49		
B.NPV-C.NPV	149.13		
B/C Rate	2.048		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	NET PRESENT VALUE			
					(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	6.890	0.000	1.000	6.89	6.89	0.00	0.00
2	2000	9.445	0.000	0.870	8.21	15.10	0.00	0.00
3	2001	100.099	0.000	0.756	75.69	90.79	0.00	0.00
4	2002	76.006	0.000	0.658	49.97	140.77	0.00	0.00
5	2003	0.140	51.909	0.572	0.08	140.85	29.68	29.68
6	2004	0.140	53.718	0.497	0.07	140.92	26.71	56.39
7	2005	0.140	55.590	0.432	0.06	140.98	24.03	80.42
8	2006	0.140	58.256	0.376	0.05	141.03	21.90	102.32
9	2007	0.568	61.049	0.327	0.19	141.22	19.96	122.28
10	2008	0.140	63.977	0.284	0.04	141.26	18.19	140.46
11	2009	1.984	67.045	0.247	0.49	141.75	16.57	157.04
12	2010	0.140	70.260	0.215	0.03	141.78	15.10	172.14
13	2011	0.140	72.934	0.187	0.03	141.80	13.63	185.77
14	2012	0.568	75.711	0.163	0.09	141.89	12.31	198.08
15	2013	0.140	78.593	0.141	0.02	141.91	11.11	209.18
16	2014	0.140	81.584	0.123	0.02	141.93	10.03	219.21
17	2015	0.140	84.690	0.107	0.01	141.95	9.05	228.26
18	2016	1.984	86.704	0.093	0.18	142.13	8.06	236.32
19	2017	0.568	88.766	0.081	0.05	142.18	7.17	243.49
20	2018	0.140	90.877	0.070	0.01	142.19	6.39	249.87
21	2019	0.140	93.038	0.061	0.01	142.20	5.68	255.56
22	2020	0.140	95.250	0.053	0.01	142.20	5.06	260.62
23	2021	0.140	97.515	0.046	0.01	142.21	4.51	265.12
24	2022	0.568	99.833	0.040	0.02	142.23	4.01	269.14
25	2023	1.984	102.206	0.035	0.07	142.30	3.57	272.71
26	2024	0.140	104.636	0.030	0.00	142.31	3.18	275.88
27	2025	0.140	107.124	0.026	0.00	142.31	2.83	278.71
28	2026	0.140	109.671	0.023	0.00	142.31	2.52	281.23
29	2027	0.568	112.278	0.020	0.01	142.32	2.24	283.48
30	2028	0.140	114.947	0.017	0.00	142.33	2.00	285.47
31	2029	0.140	117.680	0.015	0.00	142.33	1.78	287.25
32	2030	1.984	120.478	0.013	0.03	142.35	1.58	288.83
33	2031	0.140	123.342	0.011	0.00	142.36	1.41	290.24
34	2032	0.568	126.275	0.010	0.01	142.36	1.25	291.49
35	2033	0.140	129.277	0.009	0.00	142.36	1.12	292.61

Economic Analysis

(No. 3 Bjee & No. 4 Wachy Zan)

(Two yeras delay)

Discount Rate	0.1500	Cost (NPV)	97.97	IRR	0.29965
		Benefit (NPV)	237.22		
		B.NPV-C.NPV	139.25		
		B/C Rate	2.421		

YEAR		COST	BENEFIT	NET PRESENT VALUE					
		(A)	(B)	(C)	(D) Cost	Accumulated		(E) Benefit	Accumulated
				Discount Rate (r= 15.0 %)	(AxC)			(BxC)	
1	1999	0.000	0.000	1.000	0.00	0.00	0.00	0.00	0.00
2	2000	0.000	0.000	0.870	0.00	0.00	0.00	0.00	0.00
3	2001	6.264	0.000	0.756	4.74	4.74	0.00	0.00	0.00
4	2002	8.586	0.000	0.658	5.65	10.38	0.00	0.00	0.00
5	2003	90.999	0.000	0.572	52.03	62.41	0.00	0.00	0.00
6	2004	69.096	0.000	0.497	34.35	96.76	0.00	0.00	0.00
7	2005	0.140	55.590	0.432	0.06	96.82	24.03	24.03	24.03
8	2006	0.140	58.256	0.376	0.05	96.88	21.90	45.93	45.93
9	2007	0.140	61.049	0.327	0.05	96.92	19.96	65.89	65.89
10	2008	0.140	63.977	0.284	0.04	96.96	18.19	84.08	84.08
11	2009	0.568	67.045	0.247	0.14	97.10	16.57	100.65	100.65
12	2010	0.140	70.260	0.215	0.03	97.13	15.10	115.75	115.75
13	2011	1.984	72.934	0.187	0.37	97.50	13.63	129.38	129.38
14	2012	0.140	75.711	0.163	0.02	97.53	12.31	141.69	141.69
15	2013	0.140	78.593	0.141	0.02	97.55	11.11	152.80	152.80
16	2014	0.568	81.584	0.123	0.07	97.62	10.03	162.82	162.82
17	2015	0.140	84.690	0.107	0.01	97.63	9.05	171.87	171.87
18	2016	0.140	86.704	0.093	0.01	97.64	8.06	179.93	179.93
19	2017	0.140	88.766	0.081	0.01	97.66	7.17	187.10	187.10
20	2018	1.984	90.877	0.070	0.14	97.79	6.39	193.49	193.49
21	2019	0.568	93.038	0.061	0.03	97.83	5.68	199.17	199.17
22	2020	0.140	95.250	0.053	0.01	97.84	5.06	204.23	204.23
23	2021	0.140	97.515	0.046	0.01	97.84	4.51	208.74	208.74
24	2022	0.140	99.833	0.040	0.01	97.85	4.01	212.75	212.75
25	2023	0.140	102.206	0.035	0.00	97.85	3.57	216.32	216.32
26	2024	0.568	104.636	0.030	0.02	97.87	3.18	219.50	219.50
27	2025	1.984	107.124	0.026	0.05	97.92	2.83	222.33	222.33
28	2026	0.140	109.671	0.023	0.00	97.93	2.52	224.85	224.85
29	2027	0.140	112.278	0.020	0.00	97.93	2.24	227.09	227.09
30	2028	0.140	114.947	0.017	0.00	97.93	2.00	229.09	229.09
31	2029	0.568	117.680	0.015	0.01	97.94	1.78	230.86	230.86
32	2030	0.140	120.478	0.013	0.00	97.94	1.58	232.45	232.45
33	2031	0.140	123.342	0.011	0.00	97.94	1.41	233.85	233.85
34	2032	1.984	126.275	0.010	0.02	97.96	1.25	235.11	235.11
35	2033	0.140	129.277	0.009	0.00	97.97	1.12	236.22	236.22
36	2034	0.568	132.350	0.008	0.00	97.97	0.99	237.22	237.22
37	2035	0.140	135.497	0.007	0.00	97.97	0.88	238.10	238.10

Benefit (Bridger No.5)

CO-13 Part	Distances		Traffic Volume (Heavy V.)										Traffic Volume (Dist)										Distances									
	Wt	Wt/No	1997	2000	2005	2010	2015	2020	2025	2030	1997	2000	2005	2010	2015	2020	2025	2030	1997	2000	2005	2010	2015	2020	2025	2030						
AB	70	70	0	63	125	152	191	231	259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AC	283	283	0	8	16	19	24	29	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AD	171	171	0	4	8	10	12	15	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AE	547	547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AF	482	482	0	4	8	10	12	15	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AG	234	234	0	6	12	14	18	22	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AH	210	210	0	8	16	19	24	30	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AI	325	325	0	4	8	9	12	14	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AJ	578	578	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AV100	308	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
AV400	465	465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DC	213	213	0	3	6	7	9	10	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	101	101	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	477	477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	412	412	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DG	164	164	0	1	2	3	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DH	140	140	0	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DI	255	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DJ	508	508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DK	238	238	0	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	379	379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	314	314	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	264	264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	199	199	0	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	362	362	0	1	2	4	5	6	7	8	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10						
DL	73	73	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	188	188	0	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	205	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	451	451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	515	515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	578	578	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	513	513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	65	65	0	6	12	14	18	22	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	241	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	337	337	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	452	452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	185	185	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	561	561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	420	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	346	346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	272	272	0	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	387	387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	96	96	0	20	30	47	59	72	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	472	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	331	331	0	3	6	7	9	11	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	289	289	0	3	6	7	9	10	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	419	419	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	450	450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	74	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	215	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	118	118	0	1	2	3	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	368	368	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	301	301	0	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	442	442	0	1	2	3	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	483	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	186	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	327	327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	376	376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
DL	255	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Total	164	164	325	388	491	591	650	650	650	717	852	1058	1328	1608	1918	2288	2718	3228	3818	4508	5308	6208	7208	8308	9508	10808						

Note: Heavy Vehicle V/C = 7/93 Nu/Km

Discount Rate	0.1500	Cost (NPV)	169.35	IRR	0.06219
		Benefit (NPV)	66.94		
		B.NPV-C.NPV	-102.40		
		B/C Rate	0.395		

YEAR	COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE			
					Accumulated	(E) Benefit (BxC) Accumulated		
1	1999	8.353	0.000	1.000	8.35	8.35	0.00	0.00
2	2000	79.723	0.000	0.870	69.32	77.68	0.00	0.00
3	2001	117.438	0.000	0.756	88.80	166.48	0.00	0.00
4	2002	0.954	0.000	0.658	0.63	167.10	0.00	0.00
5	2003	0.175	0.175	0.572	0.10	167.20	7.04	7.04
6	2004	0.175	0.175	0.497	0.09	167.29	6.35	13.39
7	2005	0.175	0.175	0.432	0.08	167.37	5.73	19.12
8	2006	0.175	0.175	0.376	0.07	167.43	5.19	24.30
9	2007	0.762	0.175	0.327	0.25	167.68	4.69	29.00
10	2008	0.175	0.175	0.284	0.05	167.73	4.25	33.25
11	2009	3.033	0.175	0.247	0.75	168.48	3.85	37.09
12	2010	0.175	0.175	0.215	0.04	168.52	3.48	40.58
13	2011	0.175	0.175	0.187	0.03	168.55	3.13	43.71
14	2012	0.762	0.175	0.163	0.12	168.68	2.81	46.52
15	2013	0.175	0.175	0.141	0.02	168.70	2.53	49.05
16	2014	0.175	0.175	0.123	0.02	168.72	2.27	51.32
17	2015	0.175	0.175	0.107	0.02	168.74	2.04	53.36
18	2016	3.033	0.175	0.093	0.28	169.02	1.80	55.16
19	2017	0.762	0.175	0.081	0.06	169.08	1.59	56.75
20	2018	0.175	0.175	0.070	0.01	169.10	1.40	58.16
21	2019	0.175	0.175	0.061	0.01	169.11	1.24	59.40
22	2020	0.175	0.175	0.053	0.01	169.12	1.10	60.49
23	2021	0.175	0.175	0.046	0.01	169.12	0.97	61.46
24	2022	0.762	0.175	0.040	0.03	169.16	0.86	62.31
25	2023	3.033	0.175	0.035	0.11	169.26	0.76	63.07
26	2024	0.175	0.175	0.030	0.01	169.27	0.67	63.74
27	2025	0.175	0.175	0.026	0.00	169.27	0.59	64.33
28	2026	0.175	0.175	0.023	0.00	169.28	0.52	64.86
29	2027	0.762	0.175	0.020	0.02	169.29	0.46	65.32
30	2028	0.175	0.175	0.017	0.00	169.29	0.41	65.73
31	2029	0.175	0.175	0.015	0.00	169.30	0.36	66.09
32	2030	3.033	0.175	0.013	0.04	169.34	0.32	66.41
33	2031	0.175	0.175	0.011	0.00	169.34	0.28	66.69
34	2032	0.762	0.175	0.010	0.01	169.35	0.25	66.94
35	2033	0.175	0.175	0.009	0.00	169.35	0.22	67.16

Economic Analysis (No. 5 Mangdichu)

(Cost * 0.9)

Discount Rate	0.1500	Cost (NPV)	152.63	IRR	0.07015
		Benefit (NPV)	66.91		
		B.NPV-C.NPV	-85.69		
		B/C Rate	0.439		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE		
						Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	7.518	0.000	1.000	7.52	7.52	0.00	0.00
2	2000	71.751	0.000	0.870	62.39	69.91	0.00	0.00
3	2001	105.694	0.000	0.756	79.92	149.83	0.00	0.00
4	2002	0.859	0.000	0.658	0.56	150.39	0.00	0.00
5	2003	0.175	12.313	0.572	0.10	150.49	7.04	7.04
6	2004	0.175	12.773	0.497	0.09	150.58	6.35	13.39
7	2005	0.175	13.250	0.432	0.08	150.66	5.73	19.12
8	2006	0.175	13.794	0.376	0.07	150.72	5.19	24.30
9	2007	0.762	14.359	0.327	0.25	150.97	4.69	29.00
10	2008	0.175	14.948	0.284	0.05	151.02	4.25	33.25
11	2009	3.033	15.562	0.247	0.75	151.77	3.85	37.09
12	2010	0.175	16.200	0.215	0.04	151.81	3.48	40.58
13	2011	0.175	16.742	0.187	0.03	151.84	3.13	43.71
14	2012	0.762	17.303	0.163	0.12	151.97	2.81	46.52
15	2013	0.175	17.882	0.141	0.02	151.99	2.53	49.05
16	2014	0.175	18.481	0.123	0.02	152.01	2.27	51.32
17	2015	0.175	19.100	0.107	0.02	152.03	2.04	53.36
18	2016	3.033	19.393	0.093	0.28	152.31	1.80	55.16
19	2017	0.762	19.690	0.081	0.06	152.37	1.59	56.75
20	2018	0.175	19.992	0.070	0.01	152.39	1.40	58.16
21	2019	0.175	20.299	0.061	0.01	152.40	1.24	59.40
22	2020	0.175	20.610	0.053	0.01	152.41	1.10	60.49
23	2021	0.175	20.957	0.046	0.01	152.41	0.97	61.46
24	2022	0.762	21.309	0.040	0.03	152.44	0.86	62.31
25	2023	3.033	21.668	0.035	0.11	152.55	0.76	63.07
26	2024	0.175	22.033	0.030	0.01	152.56	0.67	63.74
27	2025	0.175	22.403	0.026	0.00	152.56	0.59	64.33
28	2026	0.175	22.780	0.023	0.00	152.56	0.52	64.86
29	2027	0.762	23.163	0.020	0.02	152.58	0.46	65.32
30	2028	0.175	23.553	0.017	0.00	152.58	0.41	65.73
31	2029	0.175	23.949	0.015	0.00	152.59	0.36	66.09
32	2030	3.033	24.352	0.013	0.04	152.63	0.32	66.41
33	2031	0.175	24.762	0.011	0.00	152.63	0.28	66.69
34	2032	0.762	25.179	0.010	0.01	152.63	0.25	66.94
35	2033	0.175	25.602	0.009	0.00	152.64	0.22	67.16

Economic Analysis

(No. 5 Mangdichu)

(Cost * 1.1)

Discount Rate **0.1500**

Cost (NPV)	186.06	IRR	0.055275
Benefit (NPV)	66.94		
B.NPV-C.NPV	-119.11		
B/C Rate	0.360		

YEAR		COST	BENEFIT	NET PRESENT VALUE				
		(A)	(B)	(C)	(D) Cost	(E) Benefit		
				Discount Rate	(AxC)	Accumulated	(BxC)	Accumulated
				(r= 15.0 %)				
1	1999	9.188	0.000	1.000	9.19	9.19	0.00	0.00
2	2000	87.695	0.000	0.870	76.26	85.45	0.00	0.00
3	2001	129.182	0.000	0.756	97.68	183.13	0.00	0.00
4	2002	1.049	0.000	0.658	0.69	183.82	0.00	0.00
5	2003	0.175	12.313	0.572	0.10	183.92	7.04	7.04
6	2004	0.175	12.773	0.497	0.09	184.00	6.35	13.39
7	2005	0.175	13.250	0.432	0.08	184.08	5.73	19.12
8	2006	0.175	13.794	0.376	0.07	184.14	5.19	24.30
9	2007	0.762	14.359	0.327	0.25	184.39	4.69	29.00
10	2008	0.175	14.948	0.284	0.05	184.44	4.25	33.25
11	2009	3.033	15.562	0.247	0.75	185.19	3.85	37.09
12	2010	0.175	16.200	0.215	0.04	185.23	3.48	40.58
13	2011	0.175	16.742	0.187	0.03	185.26	3.13	43.71
14	2012	0.762	17.303	0.163	0.12	185.39	2.81	46.52
15	2013	0.175	17.882	0.141	0.02	185.41	2.53	49.05
16	2014	0.175	18.481	0.123	0.02	185.43	2.27	51.32
17	2015	0.175	19.100	0.107	0.02	185.45	2.04	53.36
18	2016	3.033	19.393	0.093	0.28	185.73	1.80	55.16
19	2017	0.762	19.690	0.081	0.06	185.79	1.59	56.75
20	2018	0.175	19.992	0.070	0.01	185.81	1.40	58.16
21	2019	0.175	20.299	0.061	0.01	185.82	1.24	59.40
22	2020	0.175	20.610	0.053	0.01	185.83	1.10	60.49
23	2021	0.175	20.957	0.046	0.01	185.84	0.97	61.46
24	2022	0.762	21.309	0.040	0.03	185.87	0.86	62.31
25	2023	3.033	21.668	0.035	0.11	185.97	0.76	63.07
26	2024	0.175	22.033	0.030	0.01	185.98	0.67	63.74
27	2025	0.175	22.403	0.026	0.00	185.98	0.59	64.33
28	2026	0.175	22.780	0.023	0.00	185.99	0.52	64.86
29	2027	0.762	23.163	0.020	0.02	186.00	0.46	65.32
30	2028	0.175	23.553	0.017	0.00	186.00	0.41	65.73
31	2029	0.175	23.949	0.015	0.00	186.01	0.36	66.09
32	2030	3.033	24.352	0.013	0.04	186.05	0.32	66.41
33	2031	0.175	24.762	0.011	0.00	186.05	0.28	66.69
34	2032	0.762	25.179	0.010	0.01	186.06	0.25	66.94
35	2033	0.175	25.602	0.009	0.00	186.06	0.22	67.16

Economic Analysis

(No. 5 Mangdichu)

(Two years delay)

Discount Rate 0.1500

Cost (NPV)	128.05	IRR	0.06626
Benefit (NPV)	53.95		
B.NPV-C.NPV	-74.10		
B/C Rate	0.421		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE		
						Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	0.000	0.000	1.000	0.00	0.00	0.00	0.00
2	2000	0.000	0.000	0.870	0.00	0.00	0.00	0.00
3	2001	8.353	0.000	0.756	6.32	6.32	0.00	0.00
4	2002	79.723	0.000	0.658	52.42	58.74	0.00	0.00
5	2003	117.438	0.000	0.572	67.15	125.88	0.00	0.00
6	2004	0.954	0.000	0.497	0.47	126.36	0.00	0.00
7	2005	0.175	13.250	0.432	0.08	126.43	5.73	5.73
8	2006	0.175	13.794	0.376	0.07	126.50	5.19	10.91
9	2007	0.175	14.359	0.327	0.06	126.55	4.69	15.61
10	2008	0.175	14.948	0.284	0.05	126.60	4.25	19.86
11	2009	0.762	15.562	0.247	0.19	126.79	3.85	23.70
12	2010	0.175	16.200	0.215	0.04	126.83	3.48	27.19
13	2011	3.033	16.742	0.187	0.57	127.40	3.13	30.32
14	2012	0.175	17.303	0.163	0.03	127.42	2.81	33.13
15	2013	0.175	17.882	0.141	0.02	127.45	2.53	35.65
16	2014	0.762	18.481	0.123	0.09	127.54	2.27	37.93
17	2015	0.175	19.100	0.107	0.02	127.56	2.04	39.97
18	2016	0.175	19.393	0.093	0.02	127.58	1.80	41.77
19	2017	0.175	19.690	0.081	0.01	127.59	1.59	43.36
20	2018	3.033	19.992	0.070	0.21	127.81	1.40	44.76
21	2019	0.762	20.299	0.061	0.05	127.85	1.24	46.01
22	2020	0.175	20.610	0.053	0.01	127.86	1.10	47.10
23	2021	0.175	20.957	0.046	0.01	127.87	0.97	48.07
24	2022	0.175	21.309	0.040	0.01	127.88	0.86	48.92
25	2023	0.175	21.668	0.035	0.01	127.88	0.76	49.68
26	2024	0.762	22.033	0.030	0.02	127.91	0.67	50.35
27	2025	3.033	22.403	0.026	0.08	127.99	0.59	50.94
28	2026	0.175	22.789	0.023	0.00	127.99	0.52	51.47
29	2027	0.175	23.163	0.020	0.00	127.99	0.46	51.93
30	2028	0.175	23.553	0.017	0.00	128.00	0.41	52.34
31	2029	0.762	23.949	0.015	0.01	128.01	0.36	52.70
32	2030	0.175	24.352	0.013	0.00	128.01	0.32	53.02
33	2031	0.175	24.762	0.011	0.00	128.01	0.28	53.30
34	2032	3.033	25.179	0.010	0.03	128.04	0.25	53.55
35	2033	0.175	25.602	0.009	0.00	128.04	0.22	53.77
36	2034	0.762	23.671	0.008	0.01	128.05	0.18	53.95
37	2035	0.175	24.069	0.007	0.00	128.05	0.16	54.11

Benefit (All Bridges)

City/Town District	Yearly Traffic Volume (Heavy V.)			Yearly Traffic Volume (Heavy V.)			Yearly Traffic Volume (Heavy V.)			Yearly Traffic Volume (Heavy V.)			Yearly Traffic Volume (Heavy V.)			Yearly Traffic Volume (Heavy V.)			Total
	1997	2003	2010	1997	2003	2010	1997	2003	2010	1997	2003	2010	1997	2003	2010	1997	2003	2010	
AJ	71	125	191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD	8	16	19	24	29	33	12	24	28	36	43	49	166	220	263	381	399	439	459
AE	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AF	547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AG	482	4	8	10	12	15	6	0	0	0	0	0	0	0	0	0	0	0	0
AH	234	6	12	14	18	22	6	12	15	18	21	25	97	187	233	281	352	392	432
AI	210	8	16	19	24	30	12	24	28	36	43	49	166	220	263	381	399	439	459
AJ	325	4	8	9	12	14	6	12	15	18	21	25	97	187	233	281	352	392	432
AJ	578	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
AJ	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BC	213	3	6	7	9	10	4	8	10	12	14	16	51	62	75	93	103	119	139
BD	101	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
BE	477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF	412	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BG	164	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BH	146	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BI	255	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BJ	508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BK	238	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BL	379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BM	314	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BN	264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BO	682	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
BP	73	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
BQ	188	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
BR	295	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BS	374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BT	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BV	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BW	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BX	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BY	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BZ	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CA	626	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CB	152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CC	152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CD	185	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
CE	561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CG	546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CH	367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CI	96	20	39	47	59	72	30	60	72	84	96	108	352	422	492	562	632	702	772
CJ	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CK	331	3	6	7	9	11	12	0	0	0	0	0	0	0	0	0	0	0	0
CL	269	3	6	7	9	11	12	0	0	0	0	0	0	0	0	0	0	0	0
CM	174	7	13	16	19	22	24	10	19	24	28	33	106	126	146	166	186	206	226
CN	450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CO	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CP	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CQ	113	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
CR	368	2	4	5	6	7	3	6	7	9	10	12	42	84	105	136	167	198	229
CS	301	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
CT	442	1	2	2	3	3	4	11	31	31	31	31	68	136	204	290	397	529	687
CU	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CV	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CW	327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CX	376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CY	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	164	325	491	591	729	879	324	648	777	936	1107	1296	4130	4922	5815	7048	8260	9682	11292

Note 1: Column of "Without" Traffic Volume (Heavy V.) shows only the traffic volume having a speed in the posted direction.
 Note 2: Differences of (Traffic V. - Distance/Year) = [{"Without"} Traffic Volume (Heavy V.)] - [{"Distance/Year"}]
 Note 3: Heavy Vehicle VOG = 7.933 Nt/Km

Economic Analysis (All Bridges)

Discount Rate	0.1500	Cost (NPV)	461.72	IRR	0.0344
		Benefit (NPV)	239.22		
		B.NPV-C.NPV	-222.50		
		B/C Rate	0.518		

YEAR		COST (A)	BENEFIT (B)	(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	NET PRESENT VALUE		
						Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	20.883	0.000	1.000	20.88	20.88	0.00	0.00
2	2000	201.996	0.000	0.870	175.65	196.53	0.00	0.00
3	2001	280.652	0.000	0.756	212.21	408.74	0.00	0.00
4	2002	71.958	0.000	0.658	47.31	456.06	0.00	0.00
5	2003	0.455	42.941	0.572	0.26	456.32	24.55	24.55
6	2004	0.455	44.425	0.497	0.23	456.54	22.09	46.64
7	2005	0.455	45.960	0.432	0.20	456.74	19.87	66.51
8	2006	0.455	48.158	0.376	0.17	456.91	18.10	84.61
9	2007	2.153	50.460	0.327	0.70	457.62	16.50	101.11
10	2008	0.455	52.873	0.284	0.13	457.75	15.03	116.14
11	2009	7.166	55.401	0.247	1.77	459.52	13.69	129.83
12	2010	0.455	58.050	0.215	0.10	459.61	12.48	142.31
13	2011	0.455	60.221	0.187	0.09	459.70	11.26	153.57
14	2012	2.153	62.474	0.163	0.35	460.05	10.15	163.72
15	2013	0.455	64.811	0.141	0.06	460.11	9.16	172.88
16	2014	0.455	67.235	0.123	0.06	460.17	8.26	181.14
17	2015	0.455	69.750	0.107	0.05	460.22	7.45	188.60
18	2016	7.166	71.195	0.093	0.67	460.88	6.62	195.21
19	2017	2.153	72.670	0.081	0.17	461.06	5.87	201.08
20	2018	0.455	74.175	0.070	0.03	461.09	5.21	206.30
21	2019	0.455	75.712	0.061	0.03	461.12	4.63	210.92
22	2020	0.455	77.280	0.053	0.02	461.14	4.11	215.03
23	2021	0.455	78.580	0.046	0.02	461.16	3.63	218.66
24	2022	2.153	79.902	0.040	0.09	461.25	3.21	221.87
25	2023	7.166	81.247	0.035	0.25	461.50	2.84	224.71
26	2024	0.455	82.614	0.030	0.01	461.51	2.51	227.22
27	2025	0.455	84.004	0.026	0.01	461.53	2.22	229.43
28	2026	0.455	85.417	0.023	0.01	461.54	1.96	231.40
29	2027	2.153	86.855	0.020	0.04	461.58	1.73	233.13
30	2028	0.455	88.316	0.017	0.01	461.59	1.53	234.67
31	2029	0.455	89.802	0.015	0.01	461.59	1.36	236.02
32	2030	7.166	91.313	0.013	0.09	461.69	1.20	237.22
33	2031	0.455	92.849	0.011	0.01	461.69	1.06	238.28
34	2032	2.153	94.411	0.010	0.02	461.72	0.94	239.22
35	2033	0.455	96.000	0.009	0.00	461.72	0.83	240.05

Benefit (No. 1 - None)

Pair	Without Traffic Volume Heavy V.3										With Traffic Volume Heavy V.3									
	1997	2003	2010	2015	2020	2025	2030	2035	2040	2045	1997	2003	2010	2015	2020	2025	2030	2035	2040	2045
AB	281	128	182	191	231	290	0	0	0	0	912	1825	2167	2737	3707	5761	0	0	0	0
AC	8	16	19	24	29	33	11	22	27	34	41	46	0	0	0	0	0	0	0	0
AD	171	4	8	10	12	15	18	0	0	0	0	0	0	0	0	0	0	0	0	0
AE	347	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AF	482	4	8	10	12	15	17	6	11	14	17	21	24	2914	3302	234972	449304	562440	674976	6483721
AG	234	6	12	14	18	22	24	0	0	0	0	0	0	2339	2793	194000	362900	4655949	580199	7351499
AH	334	3	6	19	24	30	33	11	22	27	34	42	46	524	1044	179	1972	1834	1963	316976
AI	526	3	4	5	6	8	8	3	6	7	8	10	11	466	932	1165	1398	1633	1863	134692
AJ	326	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AK	465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL	213	3	6	7	9	10	11	4	8	10	13	14	15	258	515	661	773	858	940	748652
AM	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AN	477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AO	412	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AP	164	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
AQ	140	1	2	2	3	3	4	1	3	3	4	4	4	56	113	113	169	169	226	163309
AR	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AS	508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AT	238	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
AU	314	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AW	199	1	2	2	3	3	4	1	3	3	4	4	4	80	160	160	241	321	321	232214
AX	362	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0
AY	73	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0
AZ	148	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
BA	295	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BB	374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BC	515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BD	578	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BE	513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF	63	0	12	14	18	22	24	0	0	0	0	0	0	0	0	0	0	0	0	0
BG	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BI	513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BJ	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BK	497	4	8	9	12	15	16	0	0	0	0	0	0	0	0	0	0	0	0	0
BL	329	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BM	452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BN	445	2	4	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0
BO	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BP	446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BQ	322	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
BR	387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BS	36	20	39	47	56	62	69	0	0	0	0	0	0	0	0	0	0	0	0	0
BT	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BU	331	3	6	7	9	10	11	12	0	0	0	0	0	0	0	0	0	0	0	0
BV	269	7	13	16	19	22	24	0	0	0	0	0	0	0	0	0	0	0	0	0
BW	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BX	450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BY	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BZ	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CA	115	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
CB	368	2	4	5	6	7	8	3	6	7	8	10	11	297	593	742	890	1038	1184	85842
CC	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CD	442	1	2	2	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
CE	483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF	19400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CG	327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CH	376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CI	233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note 1: Columns of "Without" Traffic Volume Heavy V.3 shows only O/D pair traffic volumes having a concern in the project bridges.
 Note 2: Differences of (Traffic V * Distance(Km)) = "Without" Traffic Volume Heavy V.3] - (With Traffic Volume Heavy V.3] * Distance(Km)
 Note 3: Heavy Vehicle VWC = 7.633 No/Km

Economic Analysis

(No.1 ~ No.4)

Discount Rate **0.1500**

Cost (NPV)	292.37	IRR
Benefit (NPV)	149.29	
B.NPV-C.NPV	-143.08	
B/C Rate	0.511	

0.083001

YEAR		COST	BENEFIT	NET PRESENT VALUE				
		(A)	(B)	(C)	(D) Cost	(E) Benefit		
				Discount Rate	(AxC)	Accumulated	(BxC)	Accumulated
				(r= 15.0%)				
1	1999	12.530	0.000	1.000	12.53	12.53	0.00	0.00
2	2000	122.273	0.000	0.870	106.32	118.85	0.00	0.00
3	2001	163.214	0.000	0.756	123.41	242.27	0.00	0.00
4	2002	71.004	0.000	0.658	46.69	288.95	0.00	0.00
5	2003	0.280	26.722	0.572	0.16	289.11	15.28	15.28
6	2004	0.280	27.669	0.497	0.14	289.25	13.76	29.03
7	2005	0.280	28.650	0.432	0.12	289.37	12.39	41.42
8	2006	0.280	30.007	0.376	0.11	289.48	11.28	52.70
9	2007	1.391	31.429	0.327	0.45	289.93	10.27	62.98
10	2008	0.280	32.917	0.284	0.08	290.01	9.36	72.33
11	2009	4.133	34.477	0.247	1.02	291.04	8.52	80.86
12	2010	0.280	36.110	0.215	0.06	291.10	7.76	88.62
13	2011	0.280	37.494	0.187	0.05	291.15	7.01	95.62
14	2012	1.391	38.931	0.163	0.23	291.37	6.33	101.95
15	2013	0.280	40.423	0.141	0.04	291.41	5.71	107.66
16	2014	0.280	41.972	0.123	0.03	291.45	5.16	112.82
17	2015	0.280	43.580	0.107	0.03	291.48	4.66	117.48
18	2016	4.133	44.550	0.093	0.38	291.86	4.14	121.62
19	2017	1.391	45.541	0.081	0.11	291.97	3.68	125.30
20	2018	0.280	46.555	0.070	0.02	291.99	3.27	128.57
21	2019	0.280	47.591	0.061	0.02	292.01	2.91	131.48
22	2020	0.280	48.650	0.053	0.01	292.03	2.58	134.06
23	2021	0.280	49.469	0.046	0.01	292.04	2.29	136.35
24	2022	1.391	50.301	0.040	0.06	292.09	2.02	138.37
25	2023	4.133	51.147	0.035	0.14	292.24	1.79	140.16
26	2024	0.280	52.008	0.030	0.01	292.25	1.58	141.74
27	2025	0.280	52.883	0.026	0.01	292.26	1.40	143.13
28	2026	0.280	53.773	0.023	0.01	292.26	1.24	144.37
29	2027	1.391	54.677	0.020	0.03	292.29	1.09	145.46
30	2028	0.280	55.597	0.017	0.00	292.29	0.97	146.43
31	2029	0.280	56.533	0.015	0.00	292.30	0.85	147.28
32	2030	4.133	57.484	0.013	0.05	292.35	0.75	148.04
33	2031	0.280	58.451	0.011	0.00	292.36	0.67	148.70
34	2032	1.391	59.435	0.010	0.01	292.37	0.59	149.29
35	2033	0.280	60.435	0.009	0.00	292.37	0.52	149.81

Economic Analysis

(No.1 & No.2 & No.5)

Discount Rate	0.1500	Cost (NPV)	332.15	IRR	0.017422
		Benefit (NPV)	66.35		
		B.NPV-C.NPV	-265.80		
		B/C Rate	0.200		

YEAR		COST (A)	BENEFIT (B)	NET PRESENT VALUE				
				(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated
1	1999	14.617	0.000	1.000	14.62	14.62	0.00	0.00
2	2000	193.411	0.000	0.870	168.18	182.80	0.00	0.00
3	2001	189.654	0.000	0.756	143.41	326.21	0.00	0.00
4	2002	2.862	0.000	0.658	1.88	328.09	0.00	0.00
5	2003	0.315	11.947	0.572	0.18	328.27	6.83	6.83
6	2004	0.315	12.318	0.497	0.16	328.42	6.12	12.95
7	2005	0.315	12.700	0.432	0.14	328.56	5.49	18.45
8	2006	0.315	13.342	0.376	0.12	328.68	5.02	23.46
9	2007	1.585	14.016	0.327	0.52	329.20	4.58	28.04
10	2008	0.315	14.724	0.284	0.09	329.29	4.19	32.23
11	2009	5.182	15.468	0.247	1.28	330.57	3.82	36.05
12	2010	0.315	16.250	0.215	0.07	330.64	3.49	39.54
13	2011	0.315	16.848	0.187	0.06	330.69	3.15	42.69
14	2012	1.585	17.469	0.163	0.26	330.95	2.84	45.53
15	2013	0.315	18.112	0.141	0.04	331.00	2.56	48.09
16	2014	0.315	18.779	0.123	0.04	331.04	2.31	50.40
17	2015	0.315	19.470	0.107	0.03	331.07	2.08	52.48
18	2016	5.182	19.778	0.093	0.48	331.55	1.84	54.32
19	2017	1.585	20.091	0.081	0.13	331.68	1.62	55.94
20	2018	0.315	20.409	0.070	0.02	331.70	1.43	57.38
21	2019	0.315	20.732	0.061	0.02	331.72	1.27	58.64
22	2020	0.315	21.060	0.053	0.02	331.74	1.12	59.76
23	2021	0.315	21.414	0.046	0.01	331.75	0.99	60.75
24	2022	1.585	21.775	0.040	0.06	331.81	0.87	61.63
25	2023	5.182	22.141	0.035	0.18	332.00	0.77	62.40
26	2024	0.315	22.514	0.030	0.01	332.01	0.68	63.08
27	2025	0.315	22.892	0.026	0.01	332.01	0.60	63.69
28	2026	0.315	23.278	0.023	0.01	332.02	0.53	64.22
29	2027	1.585	23.669	0.020	0.03	332.05	0.47	64.70
30	2028	0.315	24.067	0.017	0.01	332.06	0.42	65.11
31	2029	0.315	24.472	0.015	0.00	332.06	0.37	65.48
32	2030	5.182	24.884	0.013	0.07	332.13	0.33	65.81
33	2031	0.315	25.303	0.011	0.00	332.13	0.29	66.10
34	2032	1.585	25.729	0.010	0.02	332.15	0.26	66.35
35	2033	0.315	26.161	0.009	0.00	332.15	0.23	66.58

Economic Analysis

(No.3 & No.4 & No.5)

Discount Rate 0.1500

Cost (NPV)	306.47	IRR	0.070247
Benefit (NPV)	135.35		
B.NPV-C.NPV	-171.12		
B/C Rate	0.442		

YEAR	COST (A)	BENEFIT (B)	NET PRESENT VALUE					
			(C) Discount Rate (r= 15.0 %)	(D) Cost (AxC)	Accumulated	(E) Benefit (BxC)	Accumulated	
1	1999	14.617	0.000	1.000	14.62	14.62	0.00	0.00
2	2000	88.309	0.000	0.870	76.79	91.41	0.00	0.00
3	2001	218.437	0.000	0.756	165.17	256.58	0.00	0.00
4	2002	70.050	0.000	0.658	46.06	302.64	0.00	0.00
5	2003	0.315	24.308	0.572	0.18	302.82	13.90	13.90
6	2004	0.315	25.077	0.497	0.16	302.97	12.47	26.37
7	2005	0.315	25.870	0.432	0.14	303.11	11.18	37.55
8	2006	0.315	27.179	0.376	0.12	303.23	10.22	47.77
9	2007	1.330	28.554	0.327	0.43	303.66	9.33	57.10
10	2008	0.315	29.998	0.284	0.09	303.75	8.53	65.63
11	2009	5.017	31.516	0.247	1.24	304.99	7.79	73.42
12	2010	0.315	33.110	0.215	0.07	305.06	7.12	80.54
13	2011	0.315	34.296	0.187	0.05	305.12	6.41	86.95
14	2012	1.330	35.524	0.163	0.22	305.33	5.77	92.72
15	2013	0.315	36.797	0.141	0.04	305.38	5.20	97.92
16	2014	0.315	38.115	0.123	0.04	305.42	4.68	102.60
17	2015	0.315	39.480	0.107	0.03	305.45	4.22	106.82
18	2016	5.017	40.251	0.093	0.47	305.92	3.74	110.56
19	2017	1.330	41.038	0.081	0.11	306.03	3.32	113.88
20	2018	0.315	41.839	0.070	0.02	306.05	2.94	116.82
21	2019	0.315	42.657	0.061	0.02	306.07	2.61	119.43
22	2020	0.315	43.490	0.053	0.02	306.08	2.31	121.74
23	2021	0.315	44.222	0.046	0.01	306.10	2.04	123.78
24	2022	1.330	44.966	0.040	0.05	306.15	1.81	125.59
25	2023	5.017	45.722	0.035	0.18	306.33	1.60	127.18
26	2024	0.315	46.492	0.030	0.01	306.34	1.41	128.60
27	2025	0.315	47.274	0.026	0.01	306.34	1.25	129.84
28	2026	0.315	48.069	0.023	0.01	306.35	1.10	130.95
29	2027	1.330	48.878	0.020	0.03	306.38	0.98	131.93
30	2028	0.315	49.701	0.017	0.01	306.38	0.86	132.79
31	2029	0.315	50.537	0.015	0.00	306.39	0.76	133.55
32	2030	5.017	51.387	0.013	0.07	306.45	0.67	134.23
33	2031	0.315	52.252	0.011	0.00	306.46	0.60	134.82
34	2032	1.330	53.131	0.010	0.01	306.47	0.53	135.35
35	2033	0.315	54.025	0.009	0.00	306.47	0.47	135.82

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