

Cash Flow Streams for Project Components

Table 1: Cash Flow Stream for Pasakha Access Road and Alay Land Custom Station subprojects

(Nu million)

Year	Cost					Benefit					
	Capital Cost		Maintenance Cost			Vehicle Operating Cost Saving	Time Saving	Congestion Time Saving	Maintenance Saving on Existing Roads	Total Benefit	Net Benefit
	Alay Land Custom Station	Pasakha Access Road	Alay Land Custom Station	Pasakha Access Road	Total Cost						
2014			-	-	-	-	-	-	-	-	-
2015		289.23	-	-	289.23	-	-	-	-	-	(289.23)
2016		289.23	-	-	289.23	-	-	-	-	-	(289.23)
2017	35.28		-	-	35.28	-	-	-	-	-	(35.28)
2018			0.04	0.31	0.35	62.28	17.74	7.20	12.12	99.33	98.97
2019			0.04	0.31	0.35	64.48	18.33	8.18	12.12	103.11	102.75
2020			0.05	0.31	0.35	66.76	18.94	9.31	12.12	107.12	106.76
2021			0.05	0.31	0.36	67.94	19.25	9.86	12.12	109.16	108.81
2022			0.05	0.31	0.36	69.13	19.58	10.44	12.12	111.26	110.91
2023			0.05	3.31	3.36	70.35	19.91	11.05	12.12	113.43	110.07
2024			0.05	0.31	0.36	71.59	20.24	11.70	12.12	115.65	115.29
2025			0.05	0.31	0.36	72.85	20.58	12.39	12.12	117.94	117.58
2026			0.05	0.31	0.36	74.14	20.93	13.12	12.12	120.30	119.94
2027			0.05	0.31	0.36	75.44	21.28	13.89	12.12	122.73	122.37
2028			0.05	0.31	0.36	76.77	21.63	14.71	12.12	125.23	124.87
2029			0.05	3.31	3.36	78.12	22.00	15.57	12.12	127.81	124.45
2030			0.06	0.31	0.36	79.50	22.37	16.49	12.12	130.47	130.11
2031			0.06	0.31	0.37	80.89	22.74	17.46	12.12	133.22	132.85
2032			0.06	0.31	0.37	82.32	23.13	18.49	12.12	136.05	135.68
2033			0.06	0.31	0.37	83.76	23.51	19.58	12.12	138.97	138.60
2034			0.06	0.31	0.37	85.23	23.91	20.73	12.12	141.99	141.62
2035			0.06	3.31	3.37	86.73	24.31	21.95	12.12	145.11	141.74
2036			0.06	0.31	0.37	88.25	24.72	23.25	12.12	148.33	147.96
2037	(10.58)	(173.54)	0.06	0.31	(183.75)	89.80	25.13	24.61	12.12	151.67	335.41
EIRR										14.5%	
NPV @ 12%										100.18	

() = negative value, EIRR = economic internal rate of return, NPV = net present value.

Source: Asian Development Bank estimates.

Table 2: Cash Flow Stream for Mini Dry Port and Phuentsholing Bypass Road subprojects

(Nu million)

Year	Cost					Benefit							Net Benefit	
	Capital Cost		Maintenance Cost			Mini Dry Port			Phuentsholing Bypass Road					
	Mini Dry Port	Bypass Road	Mini Dry Port	Bypass Road	Total Cost	Idle Time Saving	Reduction in Losses of Perishable Goods	Vehicle Operating Cost and Time Saving	Vehicle Operating Cost Saving	Time Saving	Congestion Time Saving	Total Benefit		
2014		10.58		-	10.58	-	-	-	-	-	-		(10.58)	
2015	5.15	44.29		-	49.43	-	-	-	-	-	-		(49.43)	
2016	69.97	116.32		-	186.29	-	-	-	-	-	-		(186.29)	
2017	83.64	170.52		-	254.16	-	-	-	-	-	-		(254.16)	
2018		87.91	12.03	-	99.93	13.99	22.67	2.74	-	-	-	39.40	(60.54)	
2019		-	13.15	0.71	13.86	16.30	23.57	2.83	2.96	2.02	46.16	93.84	79.98	
2020		-	14.43	0.71	15.14	19.00	24.50	2.92	3.06	2.09	52.49	104.06	88.92	
2021		-	15.60	0.71	16.32	22.14	25.47	3.02	3.16	2.16	55.58	111.53	95.21	
2022		-	16.89	0.71	17.60	23.60	25.99	3.07	3.21	2.20	58.85	116.92	99.32	
2023		-	18.72	0.71	19.43	25.16	26.51	3.12	3.27	2.23	62.32	122.61	103.18	
2024		-	20.24	0.71	20.95	26.82	27.05	3.17	3.32	2.27	65.99	128.62	107.67	
2025		-	21.90	0.71	22.61	28.59	27.60	3.23	3.38	2.31	69.87	134.98	112.37	
2026		-	23.69	7.63	31.32	30.48	28.16	3.28	3.44	2.35	73.99	141.69	110.37	
2027		-	25.65	0.71	26.36	32.49	28.73	3.33	3.49	2.39	78.34	148.78	122.42	
2028		-	28.47	0.71	29.18	34.64	29.32	3.39	3.55	2.43	82.95	156.28	127.10	
2029		-	30.80	0.71	31.51	36.93	29.91	3.45	3.61	2.47	87.84	164.20	132.70	
2030		-	33.47	0.71	34.18	39.36	30.52	3.51	3.67	2.51	93.01	172.58	138.40	
2031		-	36.24	0.71	36.95	41.96	31.14	3.56	3.73	2.55	98.48	181.44	144.49	
2032		-	39.25	0.71	39.96	44.74	31.78	3.62	3.80	2.59	104.28	190.81	150.85	
2033		-	43.62	0.71	44.33	47.69	32.43	3.69	3.86	2.64	110.42	200.72	156.39	
2034		-	47.21	7.63	54.84	50.84	33.09	3.75	3.93	2.68	116.92	211.21	156.37	
2035		-	51.12	0.71	51.83	54.20	33.76	3.81	3.99	2.73	123.81	222.30	170.46	
2036		-	55.38	0.71	56.09	57.78	34.45	3.87	4.06	2.77	131.10	234.03	177.94	
2037	(47.63)	(118.19)	60.01	0.71	(105.09)	61.59	35.16	3.94	4.13	2.82	138.81	246.45	351.54	
													EIRR	14.9%
													NPV @ 12%	103.43

() = negative value, EIRR = economic internal rate of return, NPV = net present value.
Source: Asian Development Bank estimates.

Table 3: Cash Flow Stream for Nganglam–Dewathang section of Southern East–West Highway Subproject

(Nu million)

Year	Cost			Benefit						Net Benefit
	Capital Cost	Maintenance Cost	Total Cost	Local Traffic		Generated Benefit	Diverted Traffic			
				VOC Saving	Time Saving		VOC	Time Saving	Benefit	
2014	0.00		0.00							0.00
2015	111.13		111.13							(111.13)
2016	555.66		555.66							(555.66)
2017	889.06		889.06							(889.06)
2018	666.79	11.66	678.45	17.19	75.17	10.46	131.12	8.39	242.33	(436.12)
2019		11.66	11.66	18.57	84.19	11.30	141.61	9.40	265.06	253.40
2020		11.66	11.66	20.05	94.30	12.20	152.93	10.52	290.01	278.35
2021		11.66	11.66	21.66	105.61	13.17	165.17	11.79	317.40	305.74
2022		11.66	11.66	23.39	115.12	14.23	178.38	12.85	343.97	332.31
2023		11.66	11.66	25.26	125.48	15.37	192.65	14.01	372.77	361.10
2024		11.66	11.66	27.28	136.77	16.60	208.06	15.27	403.98	392.32
2025	113.29	11.66	124.95	29.47	149.08	17.92	224.71	16.64	437.82	312.87
2026		11.66	11.66	31.82	162.50	19.36	242.69	18.14	474.50	462.84
2027		11.66	11.66	33.73	172.25	20.52	257.25	19.23	502.98	491.31
2028		11.66	11.66	35.76	182.58	21.75	272.68	20.38	533.15	521.49
2029		11.66	11.66	37.90	193.54	23.06	289.04	21.60	565.14	553.48
2030		11.66	11.66	40.18	205.15	24.44	306.39	22.90	599.05	587.39
2031		11.66	11.66	42.59	217.46	25.91	324.77	24.27	634.99	623.33
2032		11.66	11.66	44.72	228.33	27.20	341.01	25.49	666.74	655.08
2033	113.29	11.66	124.95	46.95	239.75	28.56	358.06	26.76	700.08	575.13
2034		11.66	11.66	49.30	251.74	29.99	375.96	28.10	735.09	723.42
2035		11.66	11.66	51.77	264.32	31.49	394.76	29.50	771.84	760.18
2036		11.66	11.66	54.35	277.54	33.06	414.50	30.98	810.43	798.77
2037	(555.66)	11.66	(544.00)	57.07	291.42	34.72	435.22	32.53	850.95	1394.95
									EIRR	15.8%
									NPV @ 12%	485.46

() = negative value, EIRR = economic internal rate of return, NPV = net present value.

Source: Asian Development Bank estimates.