

TABLES

Table VIII-1 Conversion Factors for Economic Evaluation

A. Conversion Rates		Item	Rate	Remarks
1	Standard Conversion Rate (SCR)		0.99	Calculated from figures of 1994-1998 foreign trade (refer to Table VIII-2).
2	Transfer payment (Tra-p)		0.90	Sales tax/5-15 % ; Average 10%.
3	Opportunity Cost of Land (OC Land)		0.90	10% of vacancy of land to be assumed.
4	Opportunity Cost of Labor (OC Labor)		0.97	Unemployment of 1994-98, average=3.0 % (refer to Table VIII-3).
B. Formula of the Conversion from "Financial" to "Economic" for Local Currency Portion at Border Price.				
1	General Property & Construction Material and Equipment and Income&Profit:			
	General Property&Material and Income&Profit x SCR x Tra-p		0.891	
2	Labour			
	Labor cost x SCR x OC Labor x Tra-p		0.865	
3	Land Acquisition & Building:			
	Land acquisition & Building Cost x SCR x OC Land x Tra-p		0.802	
4,5	Administration/Engineering :			
	Administration/Engineering x SCR x Tra-p		0.891	
6	Physical contingency :			
	Physical contingency x SCR x Tra-p		0.891	

Table VIII-2 STANDARD CONVERSION RATE (SCR)

	Unit: RM million					
	1994	1995	1996	1997	1998	Average
Export	153,921	184,987	197,026	220,891	286,756	
Import	155,921	194,345	197,280	220,936	228,309	
Export Duties	1,158	853	1,041	1,053	623	
Import Duties	5,615	5,622	6,132	6,524	3,866	
SCR	0.99	0.99	0.99	0.99	0.99	0.99
I+di	161,536	199,967	203,412	227,460	232,175	
E-de	152,763	184,134	195,985	219,838	286,133	

Source : Bank Negara Malaysia, Monthly Statistical Bukketinn, April, 1999.

Note : $SCR = (I+E) / \{ (I+di) + (E - de) \}$

Table VIII-3 Labour Force and Employment

Unit : 1,000

	1994	1995	1996	1997	Ratio in 1997	Average annual increase rate (%)	1998(E)
Total Labour Force	7,834	8,257	8,641	9,038		14.1	9,007
Employment	7,603	8,024	8,417	8,805	1.00	14.2	8,563
Agriculture, forestry and fishing	1,477	1,542	1,505	1,495	0.17	12.4	1,414
Mining and quarrying	38	38	39	39	0.00	12.5	39
Manufacturing	1,892	2,061	2,221	2,391	0.27	15.5	2,321
Construction	598	711	802	874	0.10	17.9	757
Finance, insurance, business service, and real estate	352	375	391	406	0.05	14.1	416
Transport, storage and communication	366	399	419	436	0.05	14.6	442
Government services	868	870	871	873	0.10	12.3	875
Other services	1,948	2,046	2,169	2,282	0.26	14.4	2,300
Unemployment	231	233	225	233		12.4	443
Unemployment rate (%)	2.9	2.8	2.6	2.6		2.7 *	3.9
Population				21,666			22,180

Source : Economic Report, Ministry of Finance.
 Mid-term review of the seventh Malaysia Plan, 1996-2000, Economic Planning Unit.
 Note : 2.7* is an average during the period of 1994-1997.

Table VIII-4 (1/2) Balance of Road Re-pavement Cost to Inundated Area (Present)

	Inundated Road Area (ha)	Road Re-pavement Cost per Ha (RM 1000.)	Balance of Re-pavement Cost (RM 1,000)
Sg.Petani			
Air Mendidid (5 yr)	0.03	1,000	6
Air Mendidid (100 yr)	0.17	1,000	32
Line G (5 yr)	0.00	1,000	0
Line G (100 yr)	0.07	1,000	13
Melaka			
Ayer Salak (5 yr)	1.11	1,000	211
Ayer Salak (100 yr)	1.43	1,000	272
Popok Mangga (5 yr)	0.21	1,000	41
Popok Mangga (100 yr)	0.66	1,000	126

Source: Re-pavement Cost from resources of PWD District Office.

Note: The balance of re-pavement cost : Inundated Area x Re-pavement Cost x (1/3-1/7).

Table VIII-4 (2/2) Balance of Road Re-pavement Cost to Inundated Area (2020)

	Inundated Road Area (ha)	Road Re-pavement Cost per Ha (RM 1000.)	Annual Balance of Re-pavement Cost (RM 1,000)
Sg. Petani			
Air Mendidid (5 yr)	0.19	1,000	36
Air Mendidid (100 yr)	0.31	1,000	59
Line G (5 yr)	0.00	1,000	0
Line G (100 yr)	0.44	1,000	84
Melaka			
Ayer Salak (5 yr)	0.34	1,000	65
Ayer Salak (100 yr)	0.39	1,000	74
Popok Mangga (5 yr)	0.55	1,000	106
Popok Mangga (100 yr)	0.76	1,000	145

Source: Re-pavement Cost from resources of PWD District Office.

Note: The annual balance of re-pavement cost : Inundated Area x Re-pavement Cost x (1/3-1/7).

Table VIII-5 Vehicle Operation Cost by Travel Speed.

Unit : cent per kilometer/hour

Travel Speed (kph)	Motor-cycle	Sedan	Bus	Lorry
5	11.3	36.7	183.0	239.7
10	10.7	35.0	145.7	191.2
15	9.9	33.7	115.2	151.1
20	9.1	32.0	94.9	124.4
25	8.7	30.9	81.4	106.7
30	8.2	30.3	71.1	93.3
35	7.9	29.0	66.2	86.7
40	7.7	28.5	62.8	82.4
45	7.7	28.0	59.4	77.9
50	7.9	28.0	55.9	73.3
55	7.9	28.5	54.2	71.1
60	8.1	29.0	56.0	73.5
65	8.2	30.3	57.6	76.6
70	8.6	31.5	59.4	77.9
75	9.0	32.5	61.0	80.0
80	9.4	33.7	62.8	82.4

Source : The Study of Computerised Area Traffic Control System in Penang
Remarks : Calculated to the year of 1999 by the price index.

Table VIII-6 (1/2) Number of Vehicle Passing thorough Sungai Petani F/S area

Re: Sg.Air Mendidih

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle per day	24,189	41,454	982	7,700	74,325
Composition Share (%)	32.5	55.8	1.3	10.4	100.0

Re: Line G

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle per day	10,547	15,080	545	4,113	30,285
Composition Share (%)	34.8	49.8	1.8	13.6	100.0

Source : National Traffic Census, Kuala Muda, April 1999, PWD, State of Kedah, and JICA.

Table VIII-6 (2/2) Number of Vehicles Passing thorough Melaka F/S area

Re: Sg.Ayer Salak

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle number per day	13,123	22,667	574	4,768	41,132
Composition Share (%)	31.9	55.1	1.4	11.6	100.0

Re: Prt.Popok Manga

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle number per day	13,542	42,744	677	4,264	61,227
Composition Share (%)	22.1	69.8	1.1	7.0	100.0

Source : Traffic Census, November 1998, PWD, State of Melaka, and JICA.

Table VIII-7 (1/2) Number of Vehicle Occupied in Sungai Petani F/S area

Re: Sg. Air Mendidih

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle	1,938	1,239	0	0	3,177
Composition Share (%)	61.0	39.0	0.0	0.0	100.0

Re: Line G

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle	2,058	1,029	0	0	3,087
Composition Share (%)	66.7	33.3	0.0	0.0	100.0

Source : DID/Sg. Petani, and JICA.

Table VIII-7 (2/2) Number of Vehicle Occupied in Melaka F/S area

Re: Sg. Ayer Salak

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle	170	105	0	0	275
Composition Share (%)	61.8	38.2	0.0	0.0	100.0

Re: Prt. Popok Mangga

Item	Motor-cycle	Sedan	Bus	Lorry	Total
Vehicle	200	120	25	0	345
Composition Share (%)	58.0	34.8	7.2	0.0	100.0

Source : DID/Melaka, and JICA.

Table VIII-8 (1/2) Operation Cost of Vehicle (Present)

	Moter-cycle	Sedan	Bus	Lorry	Total
(a) Number of Vehicle Passing through F/S Area (per 15 hours)					
Sg.Petani					
Sg.Air Mendidih	31,941	46,410	982	7,700	87,033
Line G	18,779	19,196	545	4,113	42,633
Melaka					
Sg.Ayer Salak	12,803	23,087	574	4,768	41,232
Pokok Mangga	14,342	43,224	702	4,264	62,532
(b) Balance of Operation Cost (cent per hour)	1.8	3.0	38.9	50.9	
(c) Affected hours of Traffic (hour)					
Sg.Petani					
Sg.Air Mendidih (5 yr)	6	6	6	6	
Sg.Air Mendidih (100 yr)	8.5	8.5	8.5	8.5	
Line G (5 yr)	2	2	2	2	
Line G (100 yr)	4	4	4	4	
Melaka					
Ayer Salak (5 yr)	11	11	11	11	
Ayer Salak (100 yr)	15.5	15.5	15.5	15.5	
Pokok Mangga (5 yr)	10.5	10.5	10.5	10.5	
Pokok Mangga (100 yr)	28.0	28	28	28	
(d) Vehicle Number per Road (ha) in F/S Area					
Sg.Air Mendidih (Road Area : 59 ha)	541	787	17	131	1,475
Line G (36 ha)	522	533	15	114	1,184
Ayer Salak (35 ha)	366	660	16	136	1,178
Pokok Mangga (27)	531	1601	26	158	2316
(e) Vehicle Number per Inundated Road (5 yr)					
Sg.Air Mendidih (Inundated Area : 0.03 ha)	16	24	0	4	44
Line G (Inundated Area : 0.00 ha)	0	0	0	0	
Ayer Salak (Inundated Area : (1.11) ha)	406	732	18	151	1,308
Pokok Mangga (Inundated Area : (0.21) ha)	112	336	5	33	486
(e') Vehicle Number per Inundated Road (100 yr)					
Sg.Air Mendidih (Inundated Area : 0.17 ha)	92	134	3	22	251
Line G (Inundated Area : 0.07 ha)	37	37	1	8	83
Ayer Salak (Inundated Area : (1.43) ha)	523	943	23	195	1,685
Pokok Mangga (Inundated Area : (0.66) ha)	351	1,057	17	104	1,529
(f) Traffic Damage (RM 1,000)					
Sg.Petani					
Sg.Air Mendidih (5 yr)	0.000	0.000	0.000	0.001	0.00
Sg.Air Mendidih (100 yr)	0.001	0.002	0.001	0.006	0.01
Line G (5 yr)	0.000	0.000	0.000	0.000	0.00
Line G (100 yr)	0.000	0.000	0.000	0.001	0.00
Melaka					
Ayer Salak (5 yr)	0.007	0.021	0.007	0.073	0.1
Ayer Salak (100 yr)	0.010	0.029	0.009	0.102	0.2
Pokok Mangga (5 yr)	0.001	0.007	0.001	0.012	0.0
Pokok Mangga (100 yr)	0.012	0.059	0.012	0.099	0.2

Note: (1) (a) = Number of Vehicle Passing through + Number of Vehicle x 4 (Resident in F/S area is assumed to go out twice a day by vehicle).
(2) Operation speed is assumed to be slow down from 60kph to 20kph (refer to Table VIII-5).
(3) Number of Vehicle is correspond to the change of road area.
(4) Traffic Damage (RM 1,000) = (b) x (c) x (e) / 15/100/1000 .

Table VIII-8 (2/2) Operation Cost of Vehicle (2020)

	Moter-cycle	Sedan	Bus	Lorry	Total
(a) Number of Vehicle Passing through F/S Area (per 15 hours)					
Sg.Petani					
Sg.Air Mendidih	31,941	46,410	982	7,700	87,033
Line G	18,779	19,196	545	4,113	42,633
Melaka					
Sg.Ayer Salak	12,803	23,087	574	4,768	41,232
Pokok Mangga	14,342	43,224	702	4,264	62,532
	1.8	3.0	38.9	50.9	
(b) Balance of Operation Cost (cent per hour)					
(c) Affected hours of Traffic (hour)					
Sg.Petani					
Sg.Air Mendidih (5 yr)	7.5	7.5	7.5	7.5	
Sg.Air Mendidih (100 yr)	9	9	9	9	
Line G (5 yr)	4	4	4	4	
Line G (100 yr)	9	9	9	9	
Melaka					
Ayer Salak (5 yr)	15	15	15	15	
Ayer Salak (100 yr)	21.5	21.5	21.5	21.5	
Pokok Mangga (5 yr)	18.0	18	18	18	
Pokok Mangga (100 yr)	38.5	38.5	38.5	38.5	
(d) Vehicle Number per Road (ha) in F/S Area					
Sg.Air Mendidih (Road Area : 59 ha)	541	787	17	131	1,475
Line G (36 ha)	522	533	15	114	1,184
Ayer Salak (35 ha)	366	660	16	136	1,178
Pokok Mangga (27)	531	1601	26	158	2316
(e) Vehicle Number per Inundated Road (5 yr)					
Sg.Air Mendidih (Inundated Area : 0.19 ha)	103	149	3	25	280
Line G (Inundated Area : 0.00 ha)	0	0	0	0	0
Ayer Salak (Inundated Area : (0.34) ha)	124	224	6	46	401
Pokok Mangga (Inundated Area : (0.55) ha)	292	880	14	87	1,274
(e)' Vehicle Number per Inundated Road (100 yr)					
Sg.Air Mendidih (Inundated Area : 0.31 ha)	168	244	5	40	457
Line G (Inundated Area : 0.44 ha)	230	235	7	50	521
Ayer Salak (Inundated Area : (0.39) ha)	143	2,302	57	475	2,977
Pokok Mangga (Inundated Area : (0.76) ha)	404	1,217	20	120	1,760
(f) Traffic Damage (RM 1,000)					
Sg.Petani					
Sg.Air Mendidih (5 yr)	0.001	0.002	0.001	0.006	0.01
Sg.Air Mendidih (100 yr)	0.002	0.004	0.001	0.012	0.02
Line G (5 yr)	0.000	0.000	0.000	0.000	0.00
Line G (100 yr)	0.002	0.004	0.002	0.015	0.02
Melaka					
Ayer Salak (5 yr)	0.003	0.069	0.022	0.242	0.3
Ayer Salak (100 yr)	0.004	0.099	0.032	0.347	0.5
Pokok Mangga (5 yr)	0.006	0.032	0.007	0.053	0.1
Pokok Mangga (100 yr)	0.019	0.094	0.020	0.157	0.3

Note: (1) (a) = Number of Vehicle Passing through + Number of Vehicle x 4 (Resident in F/S area is assumed to go out twice a day by vehicle).
(2) Operation speed is assumed to be slow down from 60kph to 20kph (refer to Table VIII-5).
(3) Number of Vehicle is correspond to the change of road area.
(4) Traffic Damage (RM 1,000) = (b) x (c) x (e) /15/100/1000 .

Table VIII-9 (1/2) Time Cost of Vehicle (Present)

	Re: 5 Year Return Period															
	Sungai Patani				Line G				Melaka							
	Sg.Air Mendidih		Sg.Ayer Salak		Sg.Ayer Salak		Pokok Mangga		Sg.Ayer Salak		Pokok Mangga					
	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	
(a) Number of Vehicle per Day(15hrs) in F/S Area	31,941	46,410	982	7,700	87,033	18,779	19,196	545	4,113	42,633	12,803	23,087	574	4,768	41,232	
(b) Persons per Vehicle	1	4	30	1	36	1	4	30	1	36	1	4	30	1	36	
(c) Persons on/in vehicle	31,941	185,640	29,460	7,700	254,741	18,779	76,784	16,350	4,113	116,026	12,803	92,348	17,220	4,768	127,139	
(d) Raod Area in F/S Area(ha)	59	59	59	59	59	36	36	36	36	36	35	35	35	35	35	
(e) Persons/Road Area (ha)	541	3,146	499	131	4,318	522	2,133	454	114	3,223	366	2,639	492	136	3,633	
(f) Time Loss by Inundation (hrs)	6	6	6	6	6	2.0	2.0	2.0	2.0	2.0	11.0	11.0	11.0	11.0	11.0	
(g) Inundared Road Area(ha) Per Capita GRDP/ Day	0.03	0.03	0.03	0.03	0.03	0.000	0.000	0.000	0.000	0.000	1.11	1.11	1.11	1.11	1.11	
(h) (RM)	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	35.0	35.0	35.0	35.0	35.0	
(i) Time Cost (RM 1,000)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	3.1	0.6	0.2	4.3	
Re: 100 Year Return Period																
	Sungai Patani				Line G				Melaka							
	Sg.Air Mendidih		Sg.Ayer Salak		Sg.Ayer Salak		Pokok Mangga		Sg.Ayer Salak		Pokok Mangga					
	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	
(a) Number of Vehicle per Day(15hrs) in F/S Area	31,941	46,410	982	7,700	87,033	18,779	19,196	545	4,113	42,633	12,803	23,087	574	4,768	41,232	
(b) Persons per Vehicle	1	4	30	1	36	1	4	30	1	36	1	4	30	1	36	
(c) Persons on/in vehicle	31,941	185,640	29,460	7,700	254,741	18,779	76,784	16,350	4,113	116,026	12,803	92,348	17,220	4,768	127,139	
(d) Raod Area in F/S Area(ha)	59	59	59	59	59	36	36	36	36	36	35	35	35	35	35	
(e) Persons/Road Area (ha)	541	3,146	499	131	4,318	522	2,133	454	114	3,223	366	2,639	492	136	3,633	
(f) Time Loss by Inundation (hrs)	8.5	8.5	8.5	8.5	8.5	4.0	4.0	4.0	4.0	4.0	15.0	15.0	15.0	15.0	15.0	
(g) Inundared Road Area(ha) Per Capita GRDP/ Day	0.17	0.17	0.17	0.17	0.17	0.07	0.07	0.07	0.07	0.07	1.43	1.43	1.43	1.43	1.43	
(h) (RM)	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	35.0	35.0	35.0	35.0	35.0	
(i) Time Cost (RM 1,000)	0.1	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1	0.8	5.5	1.0	0.3	7.6	

Source : Per Capita GRDP(RM 8,896/Kedah, RM12,785/Melaka) ; Mid-Term Review of Seventh Malaysia Plan 1996-2000.

Note : Damage Amount =(e) x (f) x (g) x (h) /15/24/1000.

Table VIII-9 (2/2) Time Cost of Vehicle (2020)

	Sungai Patani												Melaka											
	Sg.Air Mendidih						Line G						Sg.Ayer Salak						Popok Mangga					
	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total				
(a) Number of Vehicle per Day(15hrs) in F/S Area	31,941	46,410	982	7,700	87,033	18,779	19,196	545	4,113	42,633	12,803	23,087	574	4,768	41,232	14,342	43,224	702	4,264	62,532				
(b) Persons per Vehicle	1	4	30	1	1	1	4	30	1	1	1	4	30	1	1	1	4	30	1	1				
(c) Persons on/in vehicle	31,941	185,640	29,460	7,700	254,741	18,779	76,784	16,350	4,113	116,026	12,803	92,348	17,220	4,768	127,139	14,342	172,896	21,060	4,264	212,562				
(d) Raod Area in F/S Area(ha)	59	59	59	59	59	36	36	36	36	36	35	35	35	35	35	27	27	27	27	27				
(e) Persons/Road Area (ha)	541	3,146	499	131	4,318	522	2,133	454	114	3,223	366	2,639	492	136	3,633	531	6,404	780	158	7,873				
(f) Time Loss by Inundation (hrs)	7.5	7.5	7.5	7.5	7.5	4.0	4.0	4.0	4.0	4.0	15.0	15.0	15.0	15.0	18.0	18.0	18.0	18.0	18.0	18.0				
(g) Inundared Road Area(ha) Per Capita GRDP/ Day	0.19	0.19	0.19	0.19	0.19	0.000	0.000	0.000	0.000	0.000	0.34	0.34	0.34	0.34	0.55	0.55	0.55	0.55	0.55	0.55				
(h) (RM)	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0				
(i) Time Cost (RM 1,000)	0.1	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	1.3	0.2	0.1	1.8	0.5	6.2	0.8	0.2	7.6				
Re: 100 Year Return Period																								
	Sungai Patani												Melaka											
	Sg.Air Mendidih						Line G						Sg.Ayer Salak						Popok Mangga					
	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total	Motor-Cycle	Sedan	Bus	Lorry	Total				
(a) Number of Vehicle per Day(15hrs) in F/S Area	31,941	46,410	982	7,700	87,033	18,779	19,196	545	4,113	42,633	12,803	23,087	574	4,768	41,232	14,342	43,224	702	4,264	62,532				
(b) Persons per Vehicle	1	4	30	1	1	1	4	30	1	1	1	4	30	1	1	1	4	30	1	1				
(c) Persons on/in vehicle	31,941	185,640	29,460	7,700	254,741	18,779	76,784	16,350	4,113	116,026	12,803	92,348	17,220	4,768	127,139	14,342	172,896	21,060	4,264	212,562				
(d) Raod Area in F/S Area(ha)	59	59	59	59	59	36	36	36	36	36	35	35	35	35	35	27	27	27	27	27				
(e) Persons/Road Area (ha)	541	3,146	499	131	4,318	522	2,133	454	114	3,223	366	2,639	492	136	3,633	531	6,404	780	158	7,873				
(f) Time Loss by Inundation (hrs)	9.0	9.0	9.0	9.0	9.0	0.44	0.44	0.44	0.44	0.44	21.0	21.0	21.0	21.0	29.5	29.5	29.5	29.5	29.5	29.5				
(g) Inundared Road Area(ha) Per Capita GRDP/ Day	0.31	0.31	0.31	0.31	0.31	0.44	0.44	0.44	0.44	0.44	0.39	0.39	0.39	0.39	0.76	0.76	0.76	0.76	0.76	0.76				
(h) (RM)	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0				
(i) Time Cost (RM 1,000)	0.1	0.6	0.1	0.0	0.8	0.1	0.6	0.1	0.0	0.9	0.3	2.1	0.4	0.1	2.9	1.6	18.7	2.3	0.5	23.0				

Source : Per Capita GRDP(RM 8,896/Kedah, RM12,785/Melaka) ; Mid-1term Review of Seventh Malaysia Plan 1996-2000.

Note : Damage Amount =(e) x (f) x (g) x (h) /15/24/1000.

Table VIII-10 (1/2) Number of Property in Inundated Area (Present)

	F/S Area	Household	Commerce	Industry	Institution	Road
Re: Sungai Petani						
(1) Sg. Air Mendidih						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	14.40	5.04	0.00	2.40		0.03
(e) Number in Inundated Area	288	53	0	8		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	19.21	5.70	0.00	3.69		0.17
(e)' Number in Inundated Area	384	60	0	12.30		
(2) Line G						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	4.35	0.00	4.50	0.00		0.00
(e) Number in Inundated Area	87	0	5	0		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	15.77	0.00	4.96	0.20		0.07
(e)' Number in Inundated Area	315	0	6	1		
Re: Melaka						
(1) Sg. Ayar Salak						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	104.25	0.00	2.70	0.00		1.11
(e) Number in Inundated Area	2,085	0	3	0.00		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	125.10	0.00	3.88	0.00		1.43
(e)' Number in Inundated Area	2,502	0	4	0.00		
(2) Pokok Mangga						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	74.90	3.90	0.90	2.40		0.21
(e) Number in Inundated Area	1,498	41	1	8		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	114.95	13.94	1.23	3.32		0.66
(e)' Number in Inundated Area	2,299	147	1	11		

Remark:

Respective average site area is assumed by the hearing to developers, factory owners in the industrial estate, Valuation and Property Service Department, and Municipal Council.

Table VIII-10 (2/2) Number of Property in Inundated Area (2020)

	F/S Area	Household	Commerce	Industry	Institution	Road
Re: Sungai Petani						
(1) Sg. Air Mendidih						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	34.65	14.44	0.00	0.90		0.19
(e) Number in Inundated Area	693	152	0	3		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	42.39	19.71	0.00	4.04		0.31
(e)' Number in Inundated Area	848	207	0	13.47		
(2) Line G						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	31.95	1.14	6.30	0.00		0.00
(e) Number in Inundated Area	639	12	7	0.00		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	37.50	2.19	7.20	0.00		0.44
(e)' Number in Inundated Area	750	23	8	0		
Re: Melaka						
(1) Sg. Ayar Salak						
<u>5 year return period</u>						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	301.50	4.09	107.10	0.00		0.34
(e) Number in Inundated Area	6,030	43	119	0		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	347.50	4.94	139.50	0.00		0.39
(e)' Number in Inundated Area	6,950	52	155	0.00		
(2) Pokok Mangga						
(a) Site Area for Item (m ²)	500	950	9,000	3,000		
(d) Inundated Area (ha)	245.80	15.58	0.00	2.70		0.55
(e) Number in Inundated Area	4,916	164	0	9		
<u>100 year return period</u>						
(a)' Site Area for Item (m ²)	500	950	9,000	3,000		
(d)' Inundated Area (ha)	302.50	17.35	0.50	3.37		0.76
(e)' Number in Inundated Area	6,050	183	1	11.22		

Remark:

Respective average site area is assumed by the hearing to developers, factory owners in the industrial estate, Valuation and Property Service Department, and Municipal Council.

Table VIII-11 (1/3) Damage Amount by Occurrence Probability (Present)

Re : Sg. Air Meandith (Sungai Petani)
(Without)-(With)

(1) 5-Year Return Period			
No.	Water Depth (m)	Number of Buildings	
		Resident	Indust.
1	0.0-0.50	0	0
2	0.50-1.0	0	0
3	1.0-1.5	288	53
4	1.5-2.0	0	0
5	2.0-3.0	0	0
Total		288	53

Re : Line G (Sungai Petani)
(Without)-(With)

(1) 5-Year Return Period			
No.	Water Depth (m)	Number of Buildings	
		Resident	Indust.
1	0.0-0.50	0	0
2	0.50-1.0	0	0
3	1.0-1.5	87	5
4	1.5-2.0	0	0
5	2.0-3.0	0	0
Total		87	5

Re : Number
Re : Sg. Ayer Salak (Melaka)
(Without)-(With)

(1) 5-Year Return Period			
No.	Water Depth (m)	Number of Buildings	
		Resident	Indust.
1	0.0-0.50	0	0
2	0.50-1.0	2,085	3
3	1.0-1.5	0	0
4	1.5-2.0	0	0
5	2.0-3.0	0	0
Total		2,085	3

Re : Popok Mangga (Melaka)
(Without)-(With)

(1) 5-Year Return Period			
No.	Water Depth (m)	Number of Buildings	
		Resident	Indust.
1	0.0-0.50	1,498	41
2	0.50-1.0	0	0
3	1.0-1.5	0	0
4	1.5-2.0	0	0
5	2.0-3.0	0	0
Total		1,498	41

Re: Damage Rate and Appraisal Value
(1) 5-Year Return Period

No.	Water Depth (m)	Appraisal of Building (RM/Buil.)			Appraisal of HH Effects (RM/HH)		
		Resident	Commerce	Indust.	Resident	Commerce	Indust.
1	0.0-0.50	0.035	0.035	0.035	0.057	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.096	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.119	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.135	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.336	0.208	0.336

(1) 5-Year Return Period

No.	Water Depth (m)	Appraisal of Building (RM/Buil.)			Appraisal of HH Effects (RM/HH)		
		Resident	Commerce	Indust.	Resident	Commerce	Indust.
1	0.0-0.50	0.035	0.035	0.035	0.057	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.096	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.119	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.135	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.336	0.208	0.336

Re: Damage Rate and Appraisal Value
(1) 5-Year Return Period

No.	Water Depth (m)	Appraisal of Building (RM/Buil.)			Appraisal of HH Effects (RM/HH)		
		Resident	Commerce	Indust.	Resident	Commerce	Indust.
1	0.0-0.50	0.035	0.035	0.035	0.057	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.096	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.119	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.135	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.336	0.208	0.336

(1) 5-Year Return Period

No.	Water Depth (m)	Appraisal of Building (RM/Buil.)			Appraisal of HH Effects (RM/HH)		
		Resident	Commerce	Indust.	Resident	Commerce	Indust.
1	0.0-0.50	0.035	0.035	0.035	0.057	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.096	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.119	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.135	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.336	0.208	0.336

Table VIII-11 (2/3) Damage Amount by Occurrence Probability (Present)

Re: Damage Amount

Water Depth (m)		Damage Amount of Building			Damage Amount of HHE			G.Total
		Resident	Commerce	Inst.	Resident	Commerce	Inst.	
1	0.0-0.50	0	0	0	0	0	0	0
2	0.50-1.0	0	0	0	0	0	0	0
3	1.0-1.5	1,565	576	87	2,228	397	356	3,017
4	1.5-2.0	0	0	0	0	0	0	0
5	2.0-3.0	0	0	0	0	0	0	0
Total		1,565	576	87	2,228	397	356	3,017

Water Depth (m)		Damage Amount of Building			Damage Amount of HHE			G.Total
		Resident	Commerce	Inst.	Resident	Commerce	Inst.	
1	0.0-0.50	0	0	0	0	0	0	0
2	0.50-1.0	0	0	0	0	0	0	0
3	1.0-1.5	475	163	0	638	97	90	857
4	1.5-2.0	0	0	0	0	0	0	0
5	2.0-3.0	0	0	0	0	0	0	0
Total		475	163	0	638	97	90	857

Re: Damage Amount

Water Depth (m)		Damage Amount of Building			Damage Amount of HHE			G.Total
		Resident	Commerce	Inst.	Resident	Commerce	Inst.	
1	0.0-0.50	0	0	0	0	0	0	0
2	0.50-1.0	6,502	72	0	6,574	1,377	46	8,209
3	1.0-1.5	0	0	0	0	0	0	0.0
4	1.5-2.0	0	0	0	0	0	0	0
5	2.0-3.0	0	0	0	0	0	0	0
Total		6,502	72	0	6,574	1,377	46	8,209

Water Depth (m)		Damage Amount of Building			Damage Amount of HHE			G.Total
		Resident	Commerce	Inst.	Resident	Commerce	Inst.	
1	0.0-0.50	4,672	329	19	5,069	1,666	126	6,923
2	0.50-1.0	0	0	0	0	0	0	0
3	1.0-1.5	0	0	0	0	0	0	0.0
4	1.5-2.0	0	0	0	0	0	0	0
5	2.0-3.0	0	0	0	0	0	0	0
Total		4,672	329	19	5,069	1,666	126	6,923

Table VIII-11 (3/3) Damage Amount by Occurrence Probability (Present)

Re : Damage Amount														
(1) 5-Year Return Period														
Appraisal value			56,044			Appraisal value			151,470					
Business Activities and Traffic														
Household income			Commerce			Industry			G.Total			Traffic		
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount
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	0	0	0	0
288	0.001	5	53	0.001	2	0	0.001	0	7	0	0	0	0	3,024
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	0	0	0	0
288	5	53	2	0	0	0	0	0	0	0	0	0	0	3,024
(1) 5-Year Return Period														
Appraisal value			56,044			Appraisal value			151,470					
Business Activities and Traffic														
Household income			Commerce			Industry			G.Total			Traffic		
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount
0	0	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0
87	0.001	1	0	0.001	0	5	0.001	1	1	0	0	0	0	859
0	0	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0
87	1	0	0	0	0	5	0	1	0	0	0	0	0	859
Re : Damage Amount														
(1) 5-Year Return Period														
Appraisal value			56,044			Appraisal value			151,470					
Business Activities and Traffic														
Household income			Commerce			Industry			G.Total			Traffic		
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,085	0.001	34	0	0.001	0	3	0.001	0	34	4	0	0	0	8,247
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	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,085	34	0	0	0	0	3	0	0	4	0	0	0	0	8,247
(1) 5-Year Return Period														
Appraisal value			56,044			Appraisal value			151,470					
Business Activities and Traffic														
Household income			Commerce			Industry			G.Total			Traffic		
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount
1,498	0.001	37	41	0.001	3	1	0.001	0	40	2	0	0	0	6,964
0	0.001	0	0	0.001	0	0	0.001	0	0	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0	0	0
1,498	37	41	3	0	0	1	0	0	2	0	0	0	0	6,964

Table VIII-12 (1/3) Damage Amount by Occurrence Probability (2020)

Re: Number
Re: Sg. Air Mendidih (Sungai Petani)
(Without)-(With)

No.		Appraisal of Building (RM/Buil.)		Appraisal of HH Effects (RM/HHE)					
		89,100	178,200	534,600	1,782,000	11,583	46,483	125,631	26,730
Water Depth (m)	No.	Damage Rate of Buildings		Damage Rate of HH Effects					
		Resident	Commer	Indust.	Inst.	Resident	Commer	Indust.	Inst.
1	0.0-0.50	0.035	0.035	0.035	0.035	0.057	0.066	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.045	0.096	0.121	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.061	0.119	0.144	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.068	0.135	0.161	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.112	0.336	0.208	0.208	0.336
Total		693	152	0	3	848			

Re: Lme G (Sungai Petani)
(Without)-(With)

No.		Appraisal of Building (RM/Buil.)		Appraisal of HH Effects (RM/HHE)					
		89,100	178,200	534,600	1,782,000	11,583	46,483	125,631	26,730
Water Depth (m)	No.	Damage Rate of Buildings		Damage Rate of HH Effects					
		Resident	Commer	Indust.	Inst.	Resident	Commer	Indust.	Inst.
1	0.0-0.50	0.035	0.035	0.035	0.035	0.057	0.066	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.045	0.096	0.121	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.061	0.119	0.144	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.068	0.135	0.161	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.112	0.336	0.208	0.208	0.336
Total		639	12	7	0	658			

Re: Number
Re: Sg. Ayer Salak (Melaka)
(Without)-(With)

No.		Appraisal of Building (RM/Buil.)		Appraisal of HH Effects (RM/HHE)					
		89,100	178,200	534,600	1,782,000	11,583	46,483	125,631	26,730
Water Depth (m)	No.	Damage Rate of Buildings		Damage Rate of HH Effects					
		Resident	Commer	Indust.	Inst.	Resident	Commer	Indust.	Inst.
1	0.0-0.50	0.035	0.035	0.035	0.035	0.057	0.066	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.045	0.096	0.121	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.061	0.119	0.144	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.068	0.135	0.161	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.112	0.336	0.208	0.208	0.336
Total		6,030	43	119	0	6,192			

Re: Popok Mangga (Melaka)
(Without)-(With)

No.		Appraisal of Building (RM/Buil.)		Appraisal of HH Effects (RM/HHE)					
		89,100	178,200	534,600	1,782,000	11,583	46,483	125,631	26,730
Water Depth (m)	No.	Damage Rate of Buildings		Damage Rate of HH Effects					
		Resident	Commer	Indust.	Inst.	Resident	Commer	Indust.	Inst.
1	0.0-0.50	0.035	0.035	0.035	0.035	0.057	0.066	0.066	0.057
2	0.50-1.0	0.045	0.045	0.045	0.045	0.096	0.121	0.121	0.096
3	1.0-1.5	0.061	0.061	0.061	0.061	0.119	0.144	0.144	0.119
4	1.5-2.0	0.068	0.068	0.068	0.068	0.135	0.161	0.161	0.135
5	2.0-3.0	0.112	0.112	0.112	0.112	0.336	0.208	0.208	0.336
Total		4,916	164	0	9	5,088			

Table VIII-12 (2/3) Damage Amount by Occurrence Probability

Re: Damage Amount

(1) 5-Year Return Period		Damage Amount of Building			Damage Amount of HHE			Damage Infra.	G: Total
Water Depth (ft)	Resident	Commerce	Inst.	Total	Resident	Commerce	Inst.		
1 0.0-0.50	0	0	0	0	0	0	0	0	
2 0.50-1.0	0	0	0	0	0	0	0	0	
3 1.0-1.5	3,767	1,652	0	5,447	955	1,017	8	1,981	
4 1.5-2.0	0	0	0	0	0	0	0	0	
5 2.0-3.0	0	0	0	0	0	0	0	0	
Total	3,767	1,652	0	5,447	955	1,017	8	1,981	

(1) 5-Year Return Period		Damage Amount of Building			Damage Amount of HHE			Damage Infra.	G: Total
Water Depth (ft)	Resident	Commerce	Inst.	Total	Resident	Commerce	Inst.		
1 0.0-0.50	0	0	0	0	0	0	0	0	
2 0.50-1.0	0	0	0	0	0	0	0	0	
3 1.0-1.5	3,473	129	228	3,831	880	80	127	1,086	
4 1.5-2.0	0	0	0	0	0	0	0	0	
5 2.0-3.0	0	0	0	0	0	0	0	0	
Total	3,473	129	228	3,831	880	80	127	1,086	

Re: Damage Amount

(1) 5-Year Return Period		Damage Amount of Building			Damage Amount of HHE			Damage Infra.	G: Total
Water Depth (ft)	Resident	Commerce	Inst.	Total	Resident	Commerce	Inst.		
1 0.0-0.50	0	0	0	0	0	0	0	0	
2 0.50-1.0	0	0	0	0	0	0	0	0	
3 1.0-1.5	32,774	521	4,326	37,621	9,431	288	2,407	12,126	
4 1.5-2.0	0	0	0	0	0	0	0	0	
5 2.0-3.0	0	0	0	0	0	0	0	0	
Total	32,774	521	4,326	37,621	9,431	288	2,407	12,126	

(1) 5-Year Return Period		Damage Amount of Building			Damage Amount of HHE			Damage Infra.	G: Total
Water Depth (ft)	Resident	Commerce	Inst.	Total	Resident	Commerce	Inst.		
1 0.0-0.50	0	0	0	0	0	0	0	0	
2 0.50-1.0	19,711	1,312	68	21,091	5,466	920	22	6,409	
3 1.0-1.5	0	0	0	0	0	0	0	0	
4 1.5-2.0	0	0	0	0	0	0	0	0	
5 2.0-3.0	0	0	0	0	0	0	0	0	
Total	19,711	1,312	68	21,091	5,466	920	22	6,409	

Table VIII-12 (3/3) Damage Amount by Occurrence Probability

Re : Damage Amount												
(1) 5-Year Return Period												
Appraisal value			Appraisal value			Appraisal value			Appraisal value			
20,493			56,044			151,470			151,470			
Business Activities and Traffic												
Household income			Commerce			Industry			G.Total			
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Grand Total
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
693	0.001	10	152	0.001	6	152	0.001	16	31	0	0	7,495
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
693	0	10	152	0	6	152	0	16	31	0	0	7,495

Re : Damage Amount												
(1) 5-Year Return Period												
Appraisal value			Appraisal value			Appraisal value			Appraisal value			
20,493			56,044			151,470			151,470			
Business Activities and Traffic												
Household income			Commerce			Industry			G.Total			
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Grand Total
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
639	0.001	9	12	0.001	0	7	0.001	1	10	0	0	4,927
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
639	0	9	12	0	0	7	0	1	10	0	0	4,927

Re : Damage Amount												
(1) 5-Year Return Period												
Appraisal value			Appraisal value			Appraisal value			Appraisal value			
20,493			56,044			151,470			151,470			
Business Activities and Traffic												
Household income			Commerce			Industry			G.Total			
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Grand Total
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
6,030	0.001	85	43	0.001	2	81	0.001	8	95	5	5	49,910
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
6,030	0	85	43	0	2	81	0	8	95	5	5	49,910

Re : Damage Amount												
(1) 5-Year Return Period												
Appraisal value			Appraisal value			Appraisal value			Appraisal value			
20,493			56,044			151,470			151,470			
Business Activities and Traffic												
Household income			Commerce			Industry			G.Total			
Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Number	Damage rate	Damage Amount	Grand Total
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
4,916	0.001	121	164	0.001	11	0	0.001	0	132	2	2	27,741
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
0	0	0	0	0.000	0	0	0.000	0	0	0	0	0
4,916	0	121	164	0	11	0	0	0	132	2	2	27,741