

3.3 Present Condition of Toll Road Projects

3.3.1 Progress of the projects

Though the Trans Jawa Toll Road and Jakarta Outer Ring Road are high priority projects, progress of the projects is much delayed as land acquisition is still only 10% or less. Progress of their typical sections is shown in Table 3.3.1-1. Progress of the toll road projects in the master plan is mentioned in Chapter 3.2.1 is Table 3.3.1-2 (As of the end of March in 2009).

Table 3.3.1-1 Present Condition of Typical Toll Road Projects

Toll Road Name	Section Code	Section Name	Financial System	Investors	Present Condition
Tras Jawa Toll Road	TJ-16	Mojokerto-Surabaya (34km)	BOT	PT Marga Nujyasumo Agung	<ul style="list-style-type: none"> - Under construction (Progress 24%) - Open to traffic (year 2009:10km, year2010:Whole section) - Delayed by land acquisition (land price soars)
Jakarta Outer Ring Road	JORR-W2	Utara Kb. Jeruk-Ulujami (7km)	BOT	PT Jalantol Lingkar luar Jakarta	<ul style="list-style-type: none"> - Under land acquisition (Progress 0%) - Construction begins in 2009 - Delay by land acquisition (land price soars)

Source : JICA Study Team

Thus, the difficulty of land acquisition by rise of the land cost etc. is the main problem facing the toll road projects, and the toll road projects will not progress appropriately in the future as long as this problem is not solved.

Table 3.3.1-2(1) Progress of Toll Road Projects (As of the end of March in 2009)

Target of the PPP projects		Length (km) : by the Master Plan		Target Year: by Concession agreement		In Operation		In Process (under const. or concession)		Future Plan		Progree on March 2009													
Docu ment NO.	Code	Target Road No.	Name of Section	Investor	Fund	Operator	Toll System	Length (km)	Open Year (D/M/Y) / Target Year	Progress of the Project															
										Plan	Pre F/S	F/S PPP Book	Tende r	FC Nego.	Contra ct Nego	Contra ct Sign	D/D	Land Acquisition			Constuction Works			Open	
										25%	50%	75%	100%	25%	50%	75%	100%								
1) Trans Jawa Toll Road (Main Road)																									
	TJ-1		Tangeang-Merak	Marga Mandala Sakti	BOT	Marga Mandala	Close	73.00	03.09.1995																
	TJ-2		Jakarta-Tangerang	DOPW Jasa Marga	OECF (Japan)	Jasa Marga	Close	33.00	27.11.1984																
	TJ-3		Jakarta-Cikampek	DOPW Jasa Marga	IBRD+KFAED (Kuwait)	Jasa Marga	Close	83.00	21.09.1988																
B-12	TJ-4		Cikopo (Cikampek)-Palimanan	Lintas Marga Sedaya	BOT			116.00	2009															17.56%	
	TJ-5		Palimanan-Kanci (Cirebon)	DOPW Jasa Marga		Jasa Marga		26.30	1998																
B-1	TJ-6		Kanci-Pejagan	Semesta Marga Raya	BOT			35.00	2009																31.71%
B-13	TJ-7		Pejagan-Pemalang	Pejagan Pemalang Tol Road	BOT			57.50	2009																8.58%
B-14	TJ-8		Pemalang-Batang	Pemalang Batang Tol Road	BOT			39.00	2009																2.17%
B-15	TJ-9		Batang-Semarang	Marga Setiapuritama	BOT			75.00	2009																1.65%
	TJ-10		Semarang Seksi A & B & C	DOPW Jasa Marga	National Budget	Jasa Marga	Open	24.75	09.07.1983																
B-8	TJ-11		Semarang-Solo	Jasa Marga	BOT			75.70	2010 / 2012																9.41%
C2-1	TJ-12		Solo-Mantingan	Theiss Contractors Indonesia	PPP (Batch III)			56.10	2011																10.64%
C2-1	TJ-13		Mantingan-Ngawi	Theiss Contractors Indonesia	PPP (Batch III)			34.00																	13.41%
C2-2	TJ-14		Ngawi-Caruban-Kertosono	Theiss Contractors Indonesia	PPP (Batch III)			87.02	2011																
B-7	TJ-15		Kertosono-Mojokerto	Marga Hanurata Intrinsic	BOT			41.65	2009																18.43%
B-2	TJ-16		Mojokerto-Surabaya	Marga Nujyasumo Agung	BOT			34.05	2010 / 2011																4.5-23.65%
	TJ-17		Surabaya-Gempol	DOPW Jasa Marga	ADB+SFD (Arab Saudi)	Jasa Marga	Open/Close	49.00	26.07.1986																
B-9	TJ-18		Gempol-Pasuruan	Jasa Marga				33.75	2009																0.87%
B-20	TJ-19		Pasuruan-Probolinggo	Trans Jawa Pasro Jalan Tol	BOT			45.32	2010																0.00%
F-14	TJ-20	1	Probolinggo-Banyuwangi	Potential	PPP (Next Batch)			170.36																	
				In operation (km) =		In process (km) =																			
				289.05		900.45				1,189.50															
2) Trans Jawa Branch Toll Road (Cikampek-Bandung-Palimanan)																									
A-1	TJ-4-2		Cikampek-Padalarang	DOPW Jasa Marga		Jasa Marga		58.50	2004/2005																
	TJ-4-3		Padalarang-Cileunyi(include access road)	DOPW Jasa Marga	KFAED+SFD	Jasa Marga	Close	64.40	11.03.1991																
D-5	TJ-4-4	2	Cileunyi-Sumedang-Dawuan	Read for Tender	PPP (Batch IV)			58.50																	
				In operation (km) =		In process (km) =																			
				122.90		58.50				181.40															
3) Trans Jawa Branch Toll Road (Semarang-Serabaya)																									
F-10	TJ-10-2	3	Semarang-Demak	Potential	PPP (Next Batch)			23.99																	
	TJ-10-3		Demak-Kudus-Tuban					195.00																	
	TJ-10-4		Gresik-Tuban					75.00																	
	TJ-10-5		Surabaya-Gresik	Margabumi Matraraya	BOT	Margabumi M.	Close	20.70	08.03.1993																
				In operation (km) =		In process (km) =																			
				20.70		23.99				44.69															
4) Trans Jawa Branch Toll Road (Solo-Bawen)																									
F-11	TJ-12-2	4	Solo-Jogja	Potential	PPP (Next Batch)			40.49																	
F-12	TJ-12-3	5	Jogja-Bawen	Potential	PPP (Next Batch)			104.00																	
				In operation (km) =		In process (km) =																			
				0.00		144.49				144.49															
5) Trans Jawa Branch Toll Road (Ngawi-Babat)																									
	TJ-14-2		Ngawi-Babat					115.00																	
				In operation (km) =		In process (km) =																			
				115.00		115.00																			
6) Trans Jawa Branch Toll Road (Gempol-Malang)																									
B-3	TJ-18-2		Gempol-Pandaan	Margabumi Adhikarya	BOT			13.61	2009																73.94%
D-4	TJ-18-3	6	Pandaan-Malang	Priority	PPP (Batch IV)			37.62																	
				In operation (km) =		In process (km) =																			
				0.00		51.23				51.23															

Source : Bina Marga

Table 3.3.1-2(2) Progress of Toll Road Projects (As of the end of March in 2009)

Docu ment NO.	Code	Target Road No.	Name of Section	Investor	Fund	Operator	Toll System	Distance (km)	Open Year (D/M/Y) / Target Year	Progress of the Project														
										Plan	Pre F/S	F/S PPP Book	Tende r	FC Nego.	Contra ct Nego.	Contra ct Sign	D/D	Land Acquisition			Constuction Works			Open
																		25%	50%	75%	100%	25%	50%	
7) Jakarta-Bandung Toll Road																								
	JB-1		Jagorawi	DOPW Jasa Marga	USAID (USA)	Jasa Marga	Close	59.00	09.03.1978															
B-19	JB-2		Ciawi-Sukabumi	Trans Jabar Tol	BOT			54.00	2010															
D-8	JB-3	7	Sukabumi-Ciranjang	Priority	PPP (Batch IV)			28.00																
B-21	JB-4	8	Ciranjang-Padalarang	CA Terminated	BOT→PPP			33.00																
B-5	JB-2-2		Bogor Ring Road	Marga Sarana Jabar	BOT			11.00	2009-2015															
	JB-4-2		Cibadak-Pelabuhan Ratu					39.00																
								In operation (km) = 59.00	In process (km) = 126.00	185.00														
8) Bandung-Cilacap Toll Road																								
	BC-1		Bandung-Nagreg-Ciamis-Cilacap					150.00																
								In operation (km) = 0.00	In process (km) = 150.00	150.00														
9) Merak Area Toll Road																								
F-6	M-1	9	Cilegon-Bojonagara	Potential	PPP (Next Batch)			15.69																
	M-2		Cilegon-Teluk Banten					13.00																
	M-3		Cilegon-Labuan					65.00																
								In operation (km) = 0.00	In process (km) = 15.69	15.69														
10) Bandung Area Toll Road																								
	B-1		Paspati - Ujung Berung	JICA study				?																
F-8	B-2		Terusan Pasteur-Ujung Berung-Cileunyi	JICA study	PPP (?)			20.85																
F-9	B-3		Ujung Berung-Gede Bage-Majalaya	JICA study	PPP (?)			19.20																
D-7	B-4	10	Pasirkoja-Soreang	Priority	PPP (Batch IV)			15.00																
	B-5		Bandung-Lembang					10.00																
								In operation (km) = 0.00	In process (km) = 55.05	55.05														
11) Surabaya Area Toll Road																								
E-1	S-1		Jembatan Surabaya-Madura	Government	China Fund	O&M investor		5.4																
B-18	S-2		Wau(Aloha)-Wonokromo-Tj. Perak	Margaraya Jawa Tol	BOT			17.72	2009/2010															
A-6	S-3		SS Waru-Bandara Juanda	Citra Margatama Surabaya	BOT			12.80																
F-13	S-4	11	Bandara Juanda - Tanjung Perak	Potential	PPP (Next Batch)			23.00																
								In operation (km) = 12.80	In process (km) = 46.12	58.92														

Source : Bina Marga

Table 3.3.1-2(3) Progress of Toll Road Projects (As of the end of March in 2009)

Docu ment NO.	Code	Target Road No.	Name of Section	Investor	Fund	Operator	Toll System	Distance (km)	Open Year (D/M/Y) / Target Year	Progress of the Project																
										Plan	Pre FIS	F/S PPP Book	Tende r	FC Negot.	Contra ct Negot.	Contra ct Sign	D/D	Land Acquisition				Construction Works				Open
																		25%	50%	75%	100%	25%	50%	75%	100%	
12) Jakarta Inner Ring Road																										
	JIRR-1		Tomang-Grogol-Pluit	DOPW Jasa Marga	OECF (Japan)	Jasa Marga	Open	7.55	19.06.1996																	
	JIRR-2		Tomang-Cawang	DOPW Jasa Marga	OECF (Japan)	Jasa Marga	Open	16.00	11.01.1989																	
	JIRR-3		Ir. Wiyoto Wiyono, MSc (Cawang-Tanjung Priok)	Citra Marga NP	BOT	Citra Marga	Open	15.50	10.11.1989																	
	JIRR-4		Harbour Road(Tj. Priok-Ancol Timur)	Citra Marga NP	BOT	Citra Marga	Open	11.55	02.09.1995																	
	JIRR-5		Harbour Road(Ancol Timur-Pluit)	Citra Marga NP	BOT	Citra Marga	Open		19.06.1996																	
								<i>In operation (km) = 50.60</i>	<i>In process (km) = 0.00</i>																	
								50.60																		
13) Jakarta Outer Ring Road (JORR) I																										
B-4	JORR-W1		JORR (W1)Kebon Jerk-Penjaringan	Jakarta Lingkar Barat Satu	BOT			9.85	2008															40%		
B-16	JORR-W2		JORR (W2) Utara Kb. Jeruk-Ulujami	Jasa Marga	BOT			7.00	2010									0.00%								
A-3	JORR-W2		JORR (W2) Selatan Ulujami-Veteran	DOPW Jasa Marga		DOPW Jasa Marga	Close																			
	JORR-W2		JORR (W2) Selatan Veteran-Pd Pinang	DOPW Jasa Marga		DOPW Jasa Marga		6.20	1998																	
	JORR-S		JORR (S) Pd. Pinang-Kp. Rambutan	Marga Nurindo Bhakti	BOT	Marga Nurindo Bhakti	Close		02.09.1995																	
	JORR-S		JORR (S) Kp Rambutan-Taman Mini	DOPW Jasa Marga		DOPW Jasa Marga		14.25	1996																	
	JORR-E1		JORR (E1) Selatan Taman Mini-Hankam Raya	DOPW Jasa Marga		DOPW Jasa Marga		4.00	2001-2003																	
A-2	JORR-E1		JORR (E1) Utara Hankam Raya-Jatiasih	DOPW Jasa Marga				8.1																		
A-5	JORR-E1		JORR (E1) Utara Jatiasih-Cikunir	DOPW Jasa Marga																						
	JORR-E2		JORR (E2) Cikunir-Cakung	DOPW Jasa Marga	IBRD+KFAED(Kuwait)	Jasa Marga	Close	9.07	1991																	
A-4	JORR-E3		JORR (E3) Cakung-Cilincing	DOPW Jasa Marga				3.75																		
E-2	JORR-N		Tanjung Priok Access	Government	JICA (Japan)	O&M investor		12.1										0.00%								
								<i>In operation (km) = 45.37</i>	<i>In process (km) = 28.95</i>																	
								74.32																		
14) Jakarta Outer Ring Road (JORR) II																										
F-7	JORR11-1	12	Kamal-Teluk Naga-Batu Ceper	Potential		PPP (Next Batch)		32.00																		
C1-2	JORR11-2		Cengkareng-Batu Ceper-Kunciran	Konsorsium CMS-JM-Wika-Ni		PPP (Batch II)		15.22	2010																	
B-22	JORR11-3		Kunciran-Serpong	MargaTrans Nusantara		BOT		11.19	2010																	
C1-3	JORR11-4		Serpong-Cinere	Cinere Serpong Jaya		PPP (Batch II)		10.14																		
B-6	JORR11-5		Cinere-Cimanggis (Jagorawi)	Trans Lingkar Kita Jaya		BOT		14.70	2008									17.09%								
C1-1	JORR11-6		Cimanggis-Cibitung	Cimanggis Cibitung Tollways		PPP (Batch II)		25.39																		
B-17	JORR11-7		Cikarang (Cbitung)-Tanjung Priok	MTD CPT Expressway		BOT		34.50	2009									0.00%								
								<i>In operation (km) = 0.00</i>	<i>In process (km) = 143.14</i>																	
								143.14																		
15) Jakarta Area Feeder Toll Road																										
	JF 1		Prof. Dr. Sedyatmo (Cengkareng Airport)	DOPW Jasa Marga	National Budget	Jasa Marga	Open	14.30	01.04.1985																	
	JF 2		Jakarta-Serpong(Ulujami-Pondok Aren)	Hutama Karya		BOT		5.55																		
	JF 2		Jakarta-Serpong(Pondok Aren-Serpong)	Bintaro Serpong Damai		BOT	Bintaro SD	7.25																		
B-10	JF-3		Antasari-Depok	Cita Waspolutowa		BOT		21.55	2009									0.04%								
B-11	JF-4		Kp. Melayu-Cawang-Bekasi	Kresna Kusuma Dmyandra M		BOT		21.04	2008/2010									1.08%								
G-1	JF-5		Kemayoran-Kampung Melayu	Potencial unsolicited		PPP		9.65																		
G-2	JF-6		Duri Pulo Kampung Melayu	Potencial unsolicited		PPP		11.38																		
G-3	JF-7		Sunter-Rawa Buaya-Batu Ceper	Potencial unsolicited		PPP		22.92																		
G-4	JF-8		Sunter-Pulo Gebang-Tabelang	Potencial unsolicited		PPP		25.73																		
G-5	JF-9		Pasar Minggu-Casablanca	Potencial unsolicited		PPP		9.56																		
G-6	JF-10		Ulujami-Tana Abang	Potencial unsolicited		PPP		8.27																		
								<i>In operation (km) = 27.10</i>	<i>In process (km) = 130.10</i>																	
								157.20																		

Source : Bina Marga

Table 3.3.1-2(4) Progress of Toll Road Projects (As of the end of March in 2009)

Docu ment NO.	Code	Target Road No.	Name of Section	Investor	Fund	Operator	Toll System	Distance (km)	Open Year (D/M/Y) / Target Year	Progress of the Project											
										Plan	Pre F/S	F/S PPP Book	Tende r	FC Nego.	Contra ct Nego	Contra ct Sign	D/D	Land Acquisition			Construction Works
										25%	50%	75%	100%	25%	50%	75%	100%				
16) Trans Sumatra Toll Road (Main Road)																					
Jembatan Selat Sunda																					
D-3			Bakauheni-Terbanggi Besar (Tegineneng-Babatan)	Priority (Rank I)	PPP (Batch IV)			50.00													
F-4	TS-1	13	Bakauheni-Terbanggi Besar	Potential (Rank I)	PPP (Next Batch)			100.00													
F-3	TS-2	14	Terbanggi Besar-Menggala-Pmtg Panggang	Potential (Rank I)	PPP (Next Batch)			100.00													
	TS-3		Pmtg Panggang- Sp Indra Laya	(Batch II)				110.00													
D-2	TS-4	15	Palembang-Indralaya	Potential (Rank I)	PPP (Batch IV)			22.00													
	TS-5		Indralaya-Jambi	(Batch II)				235.00													
	TS-6		Jambi-Rengat	(Batch III)				190.00													
	TS-7		Rengat-Pekanbaru	(Batch III)				175.00													
D-10	TS-8	16	Pekanbaru-Kandis-Dumai	Potential (Rank I)	PPP (Batch IV)			135.00													
	TS-9		Dumai-Rt Prapat	(Batch III)				175.00													
	TS-10		Rt Prapat-Kisaran	(Batch II)				100.00													
F-1	TS-11	17	Tebing Tinggi-Kisaran	Potential (Rank I)	PPP (Next Batch)			60.00													
D-6	TS-12	18	Medan-Kualanamu-Tebing Tinggi	Ready for Tender (Rank I)	PPP (Batch IV)			60.00													
			(Belmera) Belawan-Tj Morawa	DOPW Jasa Marga	KFW(Germany)+KFAE	Jasa Marga	Close	42.70	15.12.1986												
D-1	TS-13	19	Medan-Binjai	Ready for Tender (Rank I)	PPP (Batch IV)			15.80													
	TS-14		Binjai-Langsa	(Rank III)				110.00													
	TS-15		Langsa-Lhoksemawe	(Rank III)				135.00													
	TS-16		Lhoksemawe-Sigli	(Rank IV)				135.00													
	TS-17		Sigli-Banda Ache	(Rank III)				75.00													
								In operation (km) = 42.7	In process (km) = 542.8	585.50											
17) Trans Sumatra Branch Toll Road (Plenmbang-Bengkulu)																					
	TS-4-2		Palembang-Muara Enlim	(Rank III)																	
	TS-4-3		Muara Enim-Lb Linggau	(Rank III)																	
	TS-4-4		Lb Linggau-Bengkulu	(Rank IV)																	
18) Trans Sumatra Branch Toll Road (Pekanbaru-Padang)																					
	TS-8-2		Pekanbaru-Bkt Tinggi	(Rank III)																	
F-2	TS-8-3	20	Bkt Tinggi-Pdg Panjang-Lbt Alung-Padang	Potential (Rank I)	PPP (Next Batch)			55.00													
								In operation (km) = 0	In process (km) = 55.00	55.00											
19) Trans Sumatra Branch Toll Road (Tebing Tinggi-Sibolga)																					
	TS-11-2		Tebing Tinggi-Sibolga	(Rank III)																	
20) Batam Island Area Toll Road																					
F-5	Batam-1	21	Batu Ampa-Mk Kuning-Bandara Hang Nadim	Potential	PPP (Next Batch)			25.00													
								In operation (km) = 0	In process (km) = 25.00	25.00											
21) Bali Island Area Toll Road																					
Jembatan Selat Bali																					
Jembatan Selat Bali-Dempasar																					
D-11	Bali-1	22	Serangan-Tanjung Benoa	Proriority	PPP (Batch IV)			7.50													
								In operation (km) = 0	In process (km) = 7.50	7.50											
22) Sulawesi Island Area Toll Road																					
D-9	Sula-1	23	Manado-Bitung	Proriority	PPP (Batch IV)			46.00													
A-7			Makasar Seksi IV	Jalan Tol Seksi Empat				11.60	27/04/2008												
			Ujung Pandang Tahap I	Bosowa Marga Nusantar	BOT	Bosowa MN		6.05	1998												
								In operation (km) = 17.65	In process (km) = 46.00	63.65											
										In Operation			In Process			Total					
(1) Total										432.65 km	1,178.66 km	1,611.3 km									
(2) Total										71.80 km	242.86 km	314.66 km									
(3) Total										123.07 km	302.19 km	425.26 km									
(4) Total										60.35 km	676.30 km	736.65 km									
Total										687.87 km	2,400.01 km	3,087.88 km									

Source : Bina Marga

3.3.2 Tender of Toll Road Development

(1) Results of the Tender

Four batches of tenders to invite private investors for toll road projects have been released by BPJT so far. The results of these tenders, Batch-1, Batch-2, Batch-3 and Batch-4, are shown respectively in Table 3.3.2-1.

There was no bidder for two toll road projects in the tender (Batch I) in June 2005. These two toll road projects were also included in the 13 toll road projects for the tender (Batch II) in Oct. 2005. However, Participants of PQ for Batch II decreased compared to Batch I. There were no participants for four projects. And finally only one project has had its contract settled. For instance, after the Medan-Binja and Clieunyi-Sumedang-Dawuan sections failed to get bidders in Batch I, the two projects were also listed on Batch II and Batch IV. Batch IV (11 projects) closed the PQ acceptance on Jan. 2008 after advertising it in Oct. 2007. There were no applicants for them.

(2) Contract Condition

Sections where CA contracted in 1997 extended contract in 2005

Jasa Marga still continues to operate 13 toll roads sections that opened before 2004 and were operated by them. A new concession contract was concluded between BPJT and Jasa Marga for these sections in July 2006. The business rights for 40 years from January 1, 2005 (partially 15 years) were given to Jasa Marga.

Moreover, the tender was released again for about 14 sections in 2005 that were interrupted because of the Asian monetary crisis, but it ended in trader selection after the tender in 1997.

Sections that were contracted with BOT before release of contract in 2007

In May 2007 BPJT announced a deprivation of the business rights of the entrepreneurs who had already been appointed for the following six sections that had been tendered in 1997.

This was a measure taken because they could not procure the necessary capital for the toll road construction. However, business rights were actually deprived for only one section (Pandaan-Malang: 30km). As for the remaining five sections, their business rights were continued by the existing enterprises. On the other hand, Pandaan-Malang was announced as one of the projects for Batch IV in October, 2007.

- Cikampek-Plimanan (114km)
- Pejangan-Pemalang (58km)
- Pemalang-Batang (39km)
- Batang-Semarang (75km)
- Kertosono-Mojokerto (41km)
- Pandaan-Malang (38km)

Table 3.3.2-1 Results of the Tender on the Toll Road Projects by BPJT

Underlined projects are included in the potential list of this study.

Items	Batch-1	Batch-2	Batch-3	Batch-4
Date of Tender	June 2005	Oct. 2005	May 2007	Oct. 2007
Target Sections of Tender	<ul style="list-style-type: none"> 1) Medan-Binjai (15.80km) 2) Depok-Antasari (22.82km) 3) Cinere-Jagorawi (14.64km) 4) Cikarang-Tanjung Priok (33.92km) 5) <u>Cileunyi-Sumedang-Dawuan (58.50km)</u> 6) Makassar Seksi IV (11.57km) 	<ul style="list-style-type: none"> 1)Tangerang/Merak-Tangerang-Teluk Naga-Sedyatmo (25.00km) 2) Tangerang/Merak-Serpong (24.81km) 3) Serpong-Cinere (12.39km) 4) Jagorawi-Jakarta/Cikampek (27.10km) 5) <u>Pasr Koja-Soreang (15.00km)</u> 6) <u>Cileunyi-Sumedang (25.00km)</u> 7) <u>Semarang-Demak (25.00km)</u> 8) <u>Medan-Kualanamu-Tb. Tinggi (60.00km)</u> 9) <u>Medan-Binjai (15.80km)</u> 10) <u>Pekan Baru-Kandis (40.00km)</u> 11) <u>Serangan-Tanjung Benoa (7.50km)</u> 12) <u>Menado-Bitung (46.00km)</u> 13) <u>Teginening-Babatan (51.00km)</u> 	<ul style="list-style-type: none"> 1) Solo-Ngawi (90.10km) 2) Ngawi-Kertosono (87.02km) 	<ul style="list-style-type: none"> 1) <u>Pasr Koja-Soreang (15.00km)</u> 2) <u>Cileunyi-Sumedang-Dawuan (58.50km)</u> 3) <u>Medan-Kualanamu-Lubuk Pakam Barat (22.00km)</u> 4) <u>Medan-Binjai (15.80km)</u> 5) <u>Pekan Baru-Kandis-Dumai (135.00km)</u> 6) <u>Serangan-Tanjung Benoa (7.50km)</u> 7) <u>Menado-Airmadidi (28.30km)</u> 8) <u>Teginening-Babatan (50.00km)</u> 9) <u>Skabumi-Ciranjang (28.00km)</u> 10) <u>Palembang-Indralaya (22.00km)</u> 11) <u>Pandaan-Malang (37.00km)</u>
Financial System	BOT	BOT	PPP	BOT
Results of Tender (Project that investors decided)	<ul style="list-style-type: none"> 2) Depok-Antasari (22.82km) 3) Cinere-Jagorawi (14.64km) 4) Cikarang-Tanjung Priok (33.92km) 6) Makassar Seksi IV (11.57km) 	<ul style="list-style-type: none"> 1)Tangerang/Merak-Tangerang-Teluk Naga-Sedyatmo (25.00km) 2) Tangerang/Merak-Serpong (24.81km) 3) Serpong-Cinere (12.39km) 4) Jagorawi-Jakarta/Cikampek (27.10km) 	<ul style="list-style-type: none"> 1) Solo-Ngawi (90.10km) 2) Ngawi-Kertosono (87.02km) 	No investor
Progress of Sections	<ul style="list-style-type: none"> 2) Depok-Antasari (LA0.04%) 3) Cinere-Jagorawi (LA17.09%) 4) Cikarang-Tanjung Priok (LA0.00%) 6) Makassar Seksi IV (Opened: April 2008) 	<ul style="list-style-type: none"> 1)Ttangerang/Merak-Tangerang-Teluk Naga-Sedyatmo (PPJT preparation) 2) Tangerang/Merak-Serpong (Financial close negotiation) 3) Serpong-Cinere (PPJT preparation) 4) Jagorawi-Jakarta/Cikampek (PPJT preparation) 	<ul style="list-style-type: none"> 1) Solo-Ngawi (PPJT preparation) 2) Ngawi-Kertosono (PPJT preparation) 	No investor

Source: Bina Marga

(3) Tender preparation

According to BPJT, the tender for O&M of the newly opened Suramadu Bridge is being prepared now. At present, the constructor will carry out repair for damages as a warranty, while routine maintenance is done by JasaMarga based on the consignment contract of O&M of Suramadu Bridge. The tender for the contract with the government for O&M for the second year onwards is being planned now.

On the other hand, regarding the sections where the investor has not been decided yet, BAPENAS are planning these projects not only through the BOT scheme, but also the PPP scheme where the government shares the land acquisition cost and part of the construction cost. This policy is shown in the PPP Book that was published in March 2009, and the contents of concrete government support are as shown in Table 3.3.2-2 Therefore, BPJT plans to advance the tender procedure according to this policy in future.

Table 3.3.2-2 Tender List of Next Batch (based on the PPP Book in 2009)

No	Section Code	Section Name	Length (km)	PPP Modality				
				A	B	C	D	E
PPP Book (Project Ready for Offer)								
1	TS-13	Medan-Binjai	15.80		●			
2	TS-12	Medan-Kualanamu-Tebing Tinggi	60.00		●			
3	TJ-4-4	Cileunyi-Sumedang-Dawuan	58.50		●			
PPP Book (Priority Projects)								
1	TS-8	Pekanbaru-Kandis-Dumai	135.00			●	●	●
2	TS-4	Palembang-Indralaya	22.00	●				
3	TS-1	Bakauheni-Terbanggi Besar (Tegineneng-Babatan)	50.00	●				
4	JB-3	Sukabumi-Ciranjang	28.00		●			●
5	B-4	Pasirkoja-Soreang	15.00		●			●
6	TJ-18-3	Pandaan-Malang	37.62	●				
7	Bali-1	Serangan-Tanjung Benoa	7.50			●	●	●
8	Sula-1	Manado-Bitung	46.00			●	●	●
PPP Book (Potential Projects)								
1	TS-11	Tebing Tinggi-Kisaran	60.00	—	—	—	—	—
2	TS-8-3	Bkt Tinggi-Pdg Panjang-Lbt Alung-Padang	55.00	—	—	—	—	—
3	TS-2	Terbanggi Besar-Menggala-Pmtg Panggang	100.00	—	—	—	—	—
4	TS-1	Bakauheni-Terbanggi Besar	100.00	—	—	—	—	—
5	Batam-1	Batu Ampa-Mk Kuning-Bandara Hang Nadim	25.00	—	—	—	—	—
6	M -1	Cilegon-Bojonagara	15.69	—	—	—	—	—
7	JORRII-1	Kamal-Teluk Naga-Batu Ceper	32.00	—	—	—	—	—
8	B-2	Terusan Pasteur-Ujung Berung-Cileunyi	20.85	—	—	—	—	—
9	B-3	Ujung Berung-Gede Bage-Majalaya	19.20	—	—	—	—	—
10	TJ-10-2	Semarang-Demak	23.99	—	—	—	—	—
11	TJ-12-2	Solo-Jogja	40.49	—	—	—	—	—
12	TJ-12-3	Jogja-Bawen	104.00	—	—	—	—	—
13	S-4	Bandara Juanda - Tanjung Perak	23.00	—	—	—	—	—
14	TJ-20	Probolinggo-Banyuwangi	170.36	—	—	—	—	—

PPP Modality A: BOT for 35 years

B: Part of construction and land acquisition will be carried out by government

C: Construction will be carried out by government

D: O&M contract with private party will be conducted upon completion of the construction

E: Concession period will be granted for 35 years

Source:PPP Book

3.3.3 Other Donor's Activities

Recently, China and South Korea have been actively supporting toll road development in Indonesia. Information of other donors' support that was obtained at the meeting with BAPPENAS is shown in Table 3.3.3 and Appendix AP5-1.

Table 3.3.3 Outline of Other Donor's Activities

Section Code	Section Name	Road Length (km)	Details	Remarks
TJ-12- TJ-14	Solo- Kertosono	177.1	Public portion of PPP scheme will be funded by South Korea Fund.	
TS-12	Medan-Kualanamu- Tebing Tinggi	60.0	Medan-Kualanamu will be funded by China loan.	
Bali-1	Serangan-Tanjung Bena	7.5	Under negotiation of IDB (Islamic Development Bank) Fund	
TJ-4-4	Cileunyi-Smedang- Dawuan	58.5	Under negotiation of China Fund	

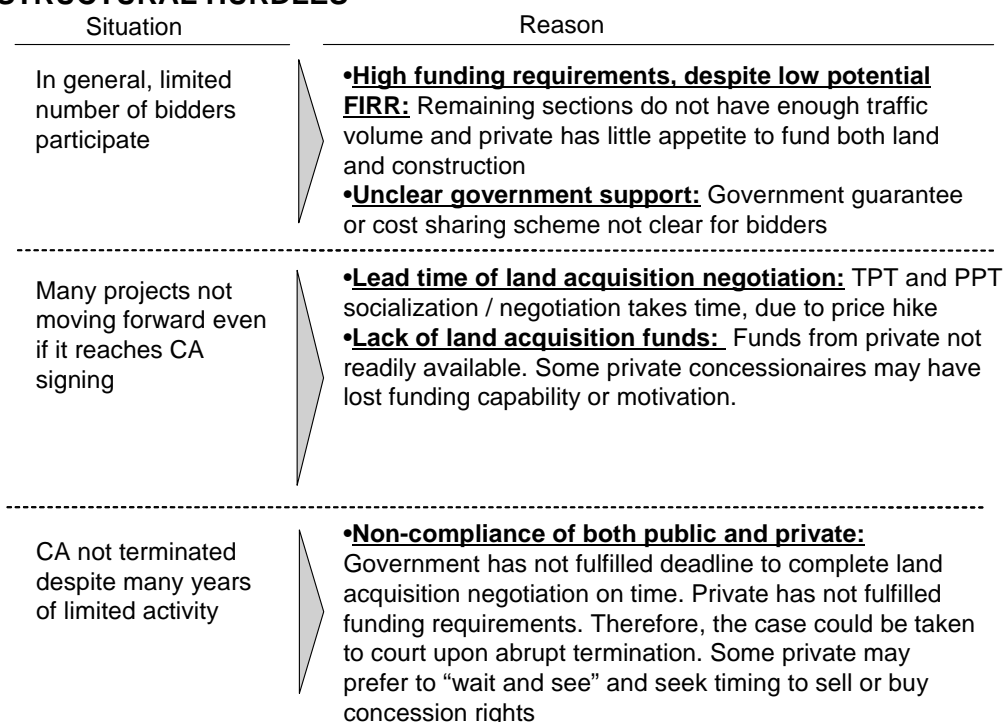
Source: Interviews to the various counterparts.

3.3.4 Issues on Toll Road Development

(1) General

As discussed in the Section 3.1.1, toll road development in Indonesia has been in a stagnation period. External conditions such as the Asian financial crisis interfered with the implementation. However, there are other fundamental issues than this external condition in the toll road development. The observed issues based on this study are summarized in the Figure 3.3.4-1.

PROGRESS OF TOLL ROAD BOT/PPP IS SLOW DUE TO A NUMBER OF STRUCTURAL HURDLES



Source : Study Team's Analysis

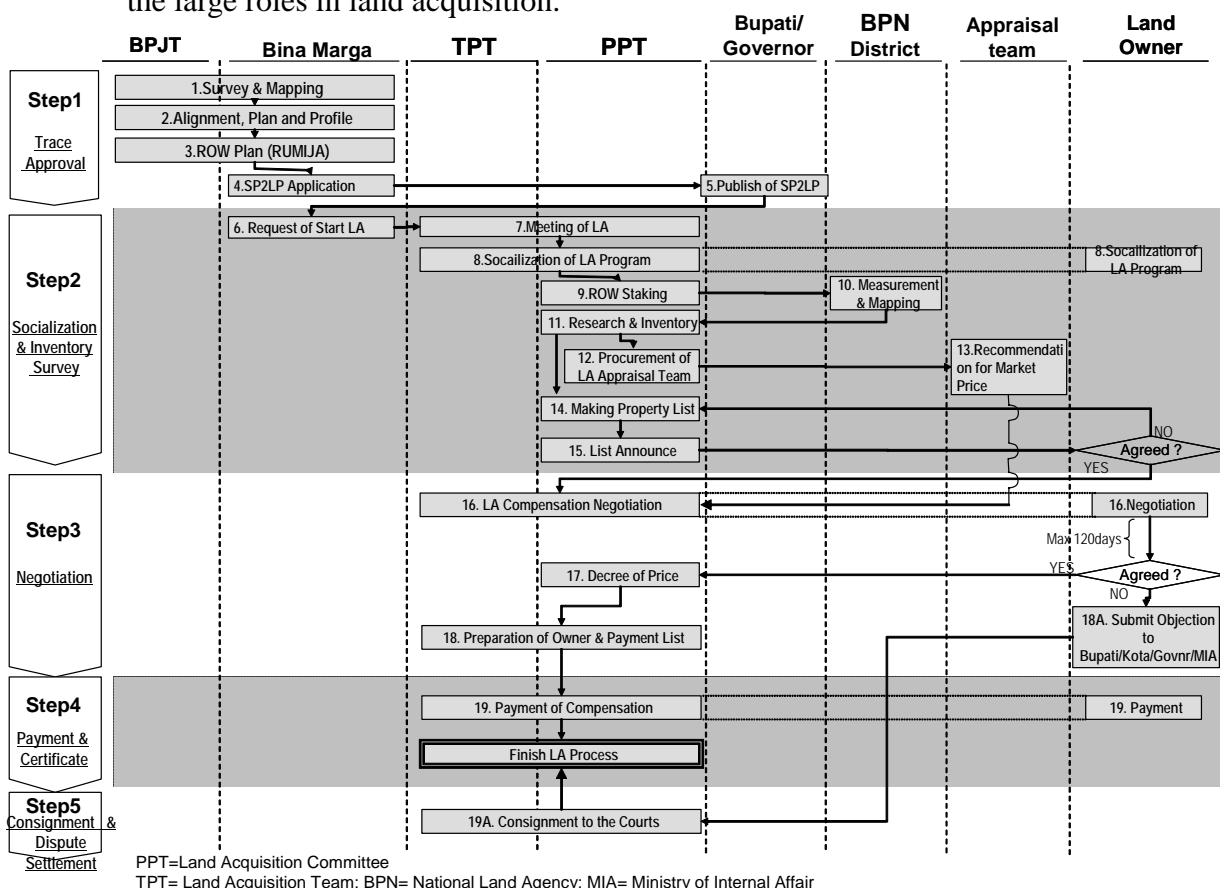
Figure 3.3.4-1 Observed Issues on Toll Road BOT/PPP

(2) Issues on Land Acquisition

The difficulty of land acquisition has been a long-standing issue in toll road development in Indonesia and is the prime reason for delays in the time frame of ongoing projects. Almost all investors realize this problem as an entry barrier to invest. To extract and synthesize the issues for land acquisition, we interviewed investors, government officials concerned who belong to land acquisition team (TPT) and land acquisition committee (PPT).

i) Current Procedure of Land Acquisition

The process of land acquisition at present is based on Presidential Regulation No.36/2005 and No.65/2006¹. Figure 3.3.4-2 indicates the step-by-step process of the regulations by persons in charge. As seen in the figure, land acquisition activities involve a lot of entities, such as BPJT and Bina Marga in the central government, TPT, which is composed by officials from the land acquisition division of Bina Marga, PPT(Land Acquisition Committee), which includes nine government officials from the regional government, the chief of regional government (Bupati, Governor), regional BPN and the land appraisal team organized from the private sector. Among the related entities, TPT and PPT play the large roles in land acquisition.

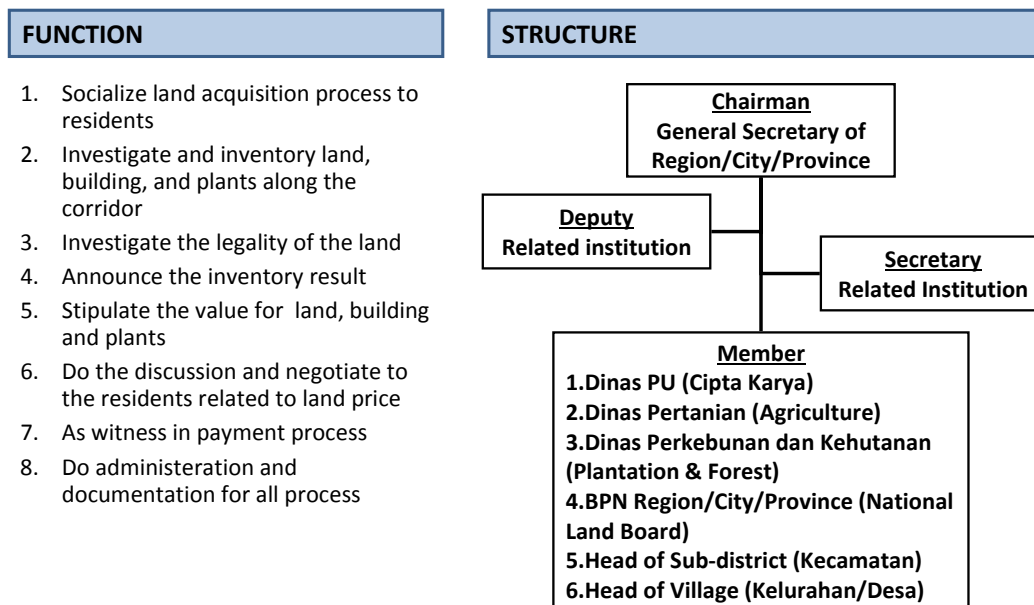


Source : Bina Marga

Figure 3.3.4-2 Land Acquisition Procedure

¹No.36 provoked protest because it might enable acquisition of the land compulsory for commercial purpose. From this circumstance, some revisions were made, which include the following: (1) decrease of kinds of important public facilities from 21 to 7 (Toll Road, Arterial Road, Safety Facilities, Dike, Railway and Airport, etc.), (2) delete the clause for deprivation of estate in reality, (3) addition of the clause for compensation. As result, the revised presidential regulation (No.65/2006) was issued.

The functions of TPT are mainly to oversee PPT and administer the project account for land acquisition as a local branch of the central government. TPT is normally composed of experienced officers from the central Bina Marga. In case of the PPT, its roles are specified by Presidential Regulation No.36 & No.65 as shown in the Figure 3.3.4-3.



Source :Presidential Regulation No.36 & 65

Figure 3.3.4-3 PPT Functions and Structure

ii) Observed Issues on Land Acquisition

(Organizational Problems)

Ambiguity of Final Responsibility

The responsibility of land acquisition is on the government side with the concession contract between BPJT and the investor. However, it is unclear which organization or among related officials in the central and regional government, actually takes the responsibility for any delay in land acquisition and for land speculation, etc. . As we can see in Figure 3.3.4-2, the acquisition process involves various entities from the central to regional government, and it is difficult to identify who has the final responsibility and authority for land acquisition and any delay thereof. This diffused responsibility situation is the lacking dynamic force to push forward land acquisition actively.

Overcapacity of PPT

In addition to the previously mentioned unclear responsibility of land acquisition, the volume of work for PPT is overloaded, considering its actual resources and capacity. PPT is set up after the issuance of SP2LP(Land Transaction Freeze), based on presidential regulation No. 36 and 65. As shown in Figure 3.3.4-3, PPT members are elected among the persons who hold key posts of each department of the regional government. The committee members and their staff in PPT actually have a lot of routine works within the regional government and there is not enough time to carry out land acquisition activities. This part-time organization style prevents the staff from tackling and negotiating courteously

with local residents during the socialization and negotiation phases (120 days).

Lack of Incentive for Short-Term Land Acquisition

If government officials are appointed as a committee member or staff of PPT, they are entitled to get a supplemental salary of 0.45 ~ 2.4 million Rp per month. This is in addition to their regular salary, as compensation for PPT work, which depends on the total amount of land acquisition². This supplemental salary does not contribute to shorten the acquisition period because this is provided/paid during all the period of acquisition without time limit and irrespective of their performance. Furthermore, despite investors paying this supplemental salary from their own financial resources in BOT projects, they often have trouble with readiness of fund arrangements for land acquisition as well as construction cost. The opinion is that the cost for the supplemental salary is relatively small and this situation is also favorable for the investors. Hence, there are no cases that investors claim that the PPT causes the delay of land acquisition to save on operational cost for the long-term process. Until now, there are no contingent fee systems to promote the initiative of PPT land acquisition.

Lack of Socialization Skill

PPT takes the role of socialization and direct negotiation with local land owners. It is normally necessary that large land acquisition and residents' relocation in toll road development project. For smooth consensus building, negotiation by experienced officials is inevitable for such large scale of socialization considering resident psychology. However, based on the interviews, such experienced facilitators may be limited in PPT human resource pool.

(Issues on the Process)

Delay and Expiration of the SP2LP issue

SP2LP (land freeze) is issued by the chief of regional government (Bupati/Governor) following the application by Bina Marga of the ROW plan. This SP2LP regulates the development action and land sale transaction within the ROW area. SP2LP is an efficient institution in order to avoid non-residents' entering within the ROW who intend to plot transactions of land with higher price. However, there are some routes which do not issue SP2LP, despite the investor being determined and the alignment is also nearly settled (e.g. Ciawi – Sukabumi). Thus, there is possibility to induce unnecessary entering of non-residents.

The other issue related to SP2LP is its validity. SP2LP is normally valid for three years after issuance and a one-year extension can be available, if necessary. Some of the toll road projects have revised contracts around 2004 and 2005, and it was considered that their initially issued SP2LP had expired, with no extension of validity. Subsequently, It is necessary to extend the validity or re-issue the SP2LP properly.

² Ministry of Finance Ministerial Regulation No.58/2008

Price issue

It is stated in Presidential Order No. 36 and 65 that a third-party land value assessor called the Land Appraisal Team will assess land prices, resettled house prices and other compensations. After their assessment, two acquisition prices are proposed, “Minimum Price” and “Maximum Price”. The former is calculated to protect landowners from acquisition based on unreasonably low price, while the latter is calculated to protect the government from land speculation. Within the range of the prices, PPT is required to negotiate with landowners. Through our interview of the TPTs, it was found that in many cases, PPT offers the maximum price from the initial stage for ease of negotiation (this means there is no room to negotiate). The prices are market-priced at over 2-5 times higher than the NJOP (land and building standard price).

In toll roads within DKI Jakarta, the use of the NJOP for land acquisition is obliged. As a result, negotiations are difficult in the metropolitan toll roads within DKI Jakarta.

Issues on Land Registration

Land registration system in Indonesia has been a fundamental problem. A few cases are found in which there are double issued registration certificates, and in some cases, with discrepancies between the certificate and registry book in target area. Even if a landowner is cooperative and shows interest in selling his land, the process would be need to be settled in court, and this fact leads to possible delays of acquisition.³

(Financial Problem of Investors)

Delay of Funds Reservation for Land Acquisition

In general, land acquisition funds are covered from SPC’s equity because the land acquisition cost is normally an upfront expense in the project. However, in some of the routes with low progress in land acquisition, the investor’s equity is usually not available or sufficient to cover the land acquisition cost. It is caused by the cash flow problems of the investors, which often have no choice but to depend on bank loans even for equity and the investors do not have enough capital to secure guarantee.

iii) Present Efforts in Land Acquisition

Revolving Fund Scheme

The Ministry of Public Works had set up the revolving fund scheme in 2007, as a system to help investors from low availability of funds during land acquisition. BLU (Public Service Unit) was also set up in BPJT to manage this scheme. In the revolving fund scheme, the route is separated into several sections, and negotiations for land acquisition are held for each section. BLU then pays the

³ In the SS Waru-Bandara Juanda inaugurated in 2008, there were two cases to be settled in court for land registration inconsistency. However, the construction activities were advanced even during settlement of the dispute, in accordance with Presidential Regulation No.36 & 65. These regulations allow construction to proceed if the situation meet the conditions, i.e.,the land acquisition progress is over 75% and chief of regional government (Bupati/Governor) approves.

agreed price to the landowners from the BLU account. After all of the transactions in the target section are made, investors should pay back the amount to BLU within 14 days with the specified interest rate (BI rate). If the investor can not pay back BLU, it will be called in default and is deprived of concession. It can be seen that this revolving fund scheme is workable in some of the toll road projects. However, in this scheme, the investor should submit the guarantee to the BLU prior to transaction. There is an issue that investors have difficulties to prepare this guarantee.

The resources of this revolving fund scheme are credited from MOF using low interest fund. Until now, the total fund scale was increased to Rp 2 trillion. Considering the predicted total of land acquisition cost at present (Rp16 trillion for ongoing projects and batch IV), the revolving fund scheme is still not enough.

Land Capping Fund

To avoid the financial risk of overruns by land speculation, the Ministry of Public Works also established a land capping scheme, which sets up the upper limit of an investor's burden⁴. This regulation ensures that government supports the excess amount beyond the specified land acquisition cost. The cost is greater than between the 110% of contracted land acquisition price (which is equal to the (NJOP + Market Price)/2) in the concession agreement, or the total price of the contracted land acquisition price, plus 2% of investment price. The government will directly pay the excess amount or compensate investors with an extension of the concession period. The fund for this scheme is allocated as part of the annual budget of Bina Marga. The government policy indicates that a total of 4.9 trillion rupiah will annually be budgeted for 28 toll roads until 2010.

(3) Issues on Toll Policy

Road Law No.38 specifies the toll tariff revision every 2 years' time after operation. Toll tariff level has been kept lower, since tariff revision requires political consensus and influences price inflation and causes public backlash. Under these circumstances, the revision of tariff level has been inflexible. Although the initial tariff is offered by the bidder during tender, and applied in the BOT scheme tender, there were also some cases that the actual initial tariff were modified and made lower than the offered ones. These facts have abated investors' interests for opportunities.

More recently, the positive reactions by the government can be seen in the toll policy. The Ministry of Public Works has approved the tariff revision (19.36% ~ 24.31%) in thirteen toll roads, since the effectivity of the new Road Law No.38 in August 2005⁵. The Cikampek and Sediato Tomo Toll Roads have also revised their tariff on May 2008⁶ and July 2008⁷, respectively. These recent moves are giving a favorable impression to investors regarding toll policy.

⁴ Ministry of Public Works Ministerial Regulation No.12/2008

⁵ Ministry of Public Works Ministerial Regulation No.370/2007

⁶ Ministry of Public Works Ministerial Regulation No.322/2008

⁷ Ministry of Public Works Ministerial Regulation No.393/2008

(4) Issues on Sector Funding Resource

The annual budget for Bina Marga totaled about Rp 17 trillion in 2008. Within this annual budget, a total of Rp 405 billion was allocated to the toll road development sector. This budget was implemented for general administration and land acquisition costs only, in the toll roads constructed by the government like Suramadu Bridge and Tanjung Priok Access Road. On the other hand, the land acquisition costs in the other BOT toll roads are borne by the investors themselves. After establishment of the land capping fund system as mentioned above, there is an increasing trend of government burden in land acquisition cost. In addition, the revision of Presidential Regulation No.67 (refer to the Chapter 2) will provide further increase of the burden in land acquisition to the government. Thus, security of funding resource to the toll road sector will also become an important issue to promote PPP scheme.

(5) Issues on Risk Allocations in Design and Operation Service Period

The Solo-Kertosono Road is the first PPP toll road project in Indonesia implemented by the “section split” modality, but the concession agreement has not yet been concluded up to the present. One of the pending issues in the contract negotiation is that SPC proposes to do construction supervision works, not only in the private sector section but also in the public section, with the intention to ensure the quality of public section. This proposal originates from the condition that the SPC has to take responsibility for the quality of the government execution part during the whole concession period.

The detailed issues and basic countermeasures are described below.

1) Details of Issues

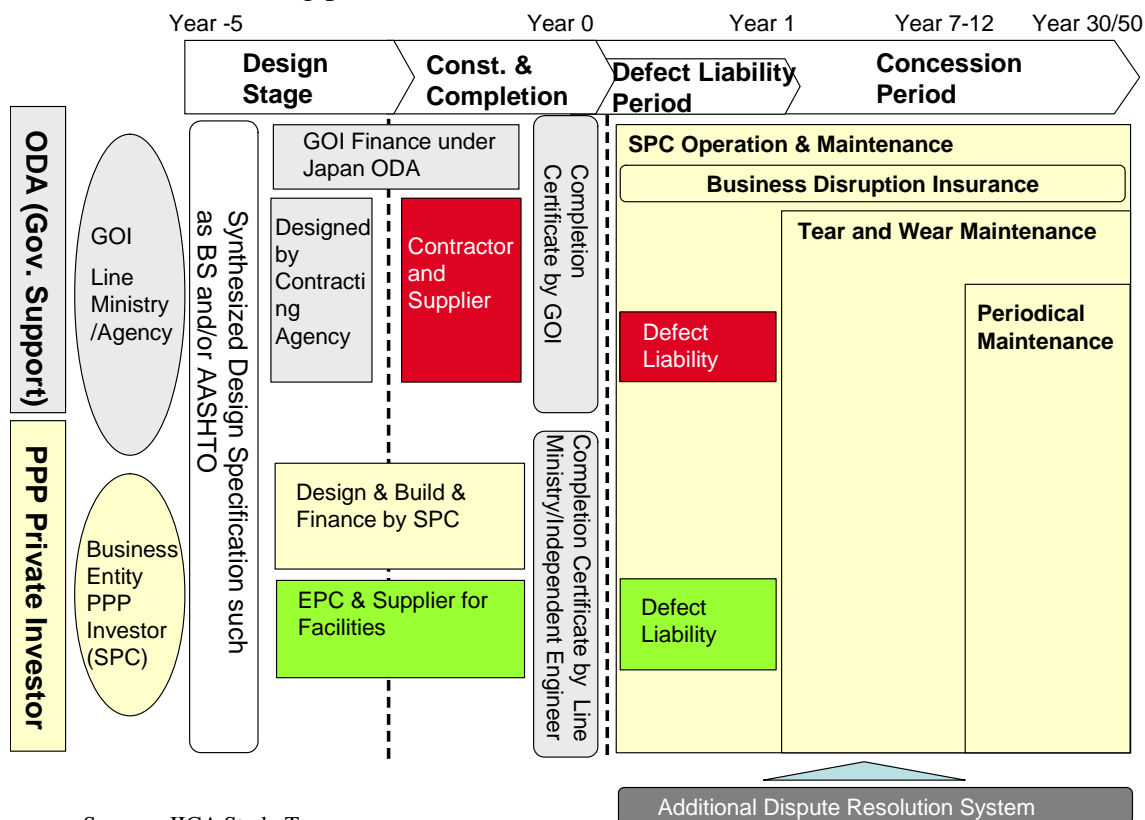
In the “section split” scheme, the government (i.e. Contracting Agency) undertakes the construction of a part of the project, and after completion of construction, the SPC carries out the operation & maintenance and enjoys the benefit from the toll fee collected in both public and private section. In this mechanism, SPC normally pays a royalty/fee to the Contracting Agency, in compensation for usage of the section constructed by the government. In this case, there’s an ambiguity against the risk for any accidental defects and disruptions arising in the government section. In other words, who is the risk-taker for damages from the government execution part? From the view of SPC, if any accidental damage and disruptions arise during the operation period, SPC actually assumes responsibility for the government section. Conversely, from the Contracting Agency side, government also takes responsibility for the proper maintenance by SPC.

2) Basic Countermeasures

To address the above-mentioned problem, it is important that the risks against various troubles and latent defects during the operation period should be specified in advance in the agreement between the Contracting Agency and SPC. Furthermore, both parties should share this demarcation upfront in the “Information Package”. The specific ideas are described below.

a) Additional Dispute Resolution (ADR) System

Figure 3.3.4-4 shows risks management for possible defects during the project life. The first one year of the operation & maintenance period is called the “Defect Liability Period”, and if latent defects were found in the facilities, the Contractor should be under obligation to undertake the remedial works for these defects. However, after the defect liability period, latent defects on the government section should be undertaken by either the Contracting Agency or SPC. In this case, which parties take responsibility for this defect on the government section becomes a controversial issue and may develop into dispute between the Contracting Agency and SPC. To resolve this kind of dispute during the O&M period, the Additional Dispute Resolution (ADR) System, which is a third party with participation of knowledgeable persons, should be established to settle the dispute fairly and impartially. Based on this ADR system, if the issue is adjudicated as a defect by workmanship, the Contracting Agency should ensure remedial works. On the other hand, if the issue is adjudicated as a defect by improper maintenance, SPC should ensure to provide remedial measures. This fair handling of issues by an ADR system will become the preferable system in terms of attracting private investors.



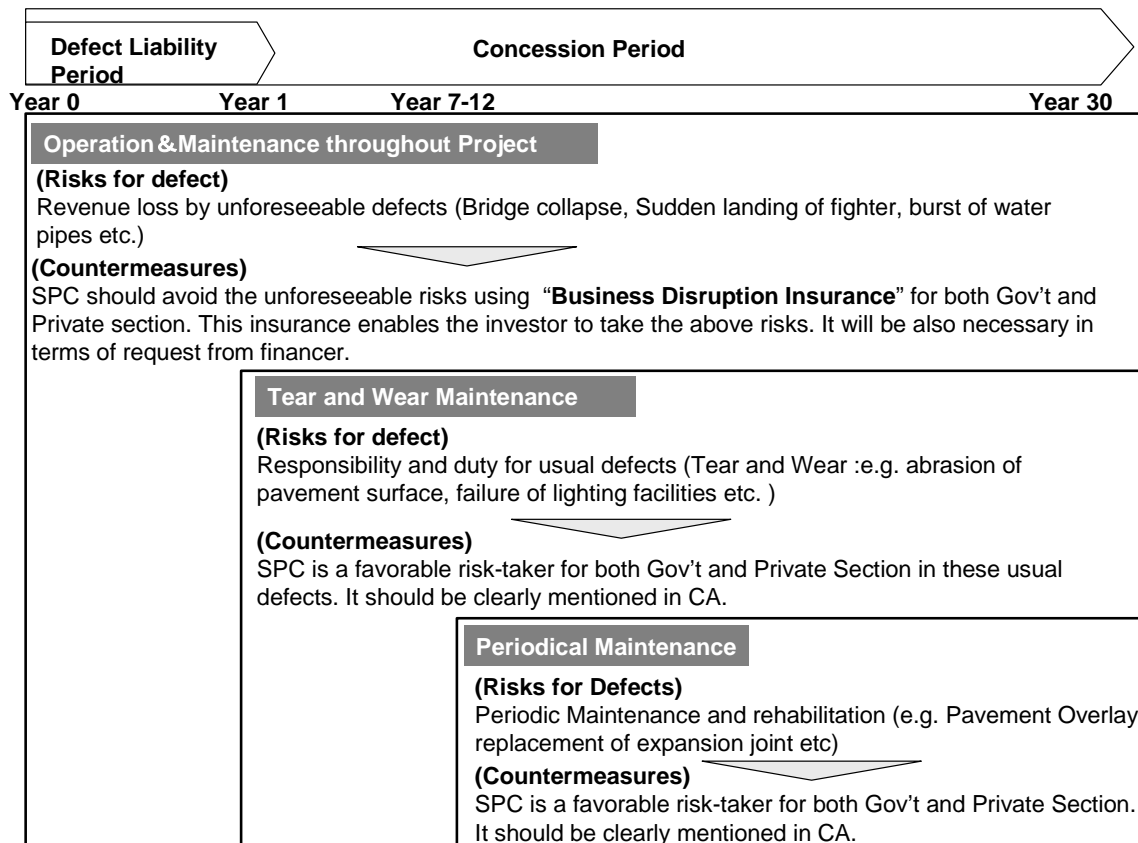
Source : JICA Study Team

Figure 3.3.4-4 Risk Management Life Cycle

c) Risk Management by SPC during the Concession Period

The operation & maintenance works are mainly divided into tear & wear maintenance and periodical maintenance, as shown in the above Figure 3.3.4-4. The responsibility for these activities is illustrated in the Figure 3.3.4-5 for every kind of activity. Tear & Wear maintenance and Periodical Maintenance will surely arise during the O&M period and these are the activities against predictable defects such as abrasions and wears, etc. These predictable routine defects should be clearly mentioned in the “Information Package” upfront as

SPC’s responsibility to avoid disputes. On the other hand, for unforeseeable defects during the entire O&M period, the abovementioned ADR system is indispensable to maintain the fairness of the contract. Furthermore, SPC should insure to a “Business Disruption Insurance” to cover the unforeseeable expense as a part of risk management. This type of the insurance is desirable for the Contracting Agency because of the assurance of the facility’s damage risk and also for the financiers, in terms of the improvement of the credibility of the SPC.



Source : JICA Study Team

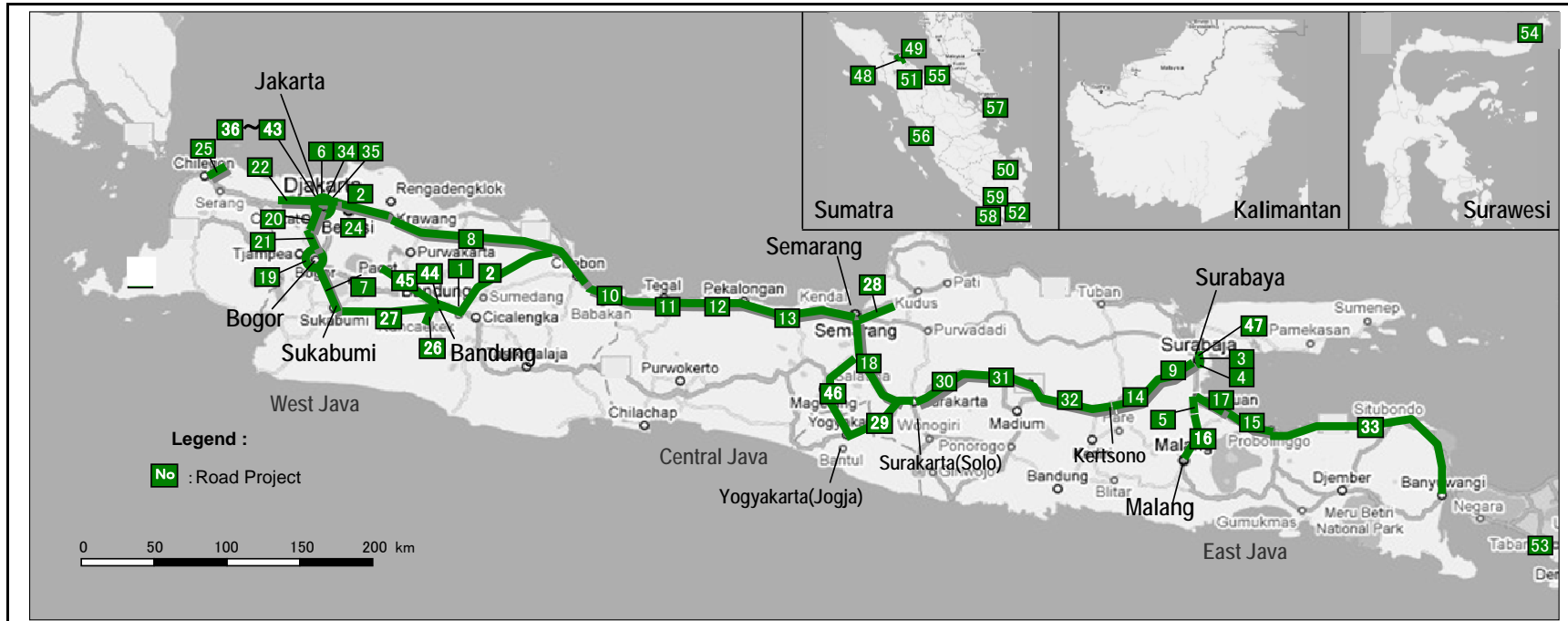
Figure 3.3.4-5 Risk Management against defects during concession period

3.4 Screening

3.4.1 List of Potential Projects

Potential projects for this study were arranged as a long list, with 59 projects listed as shown in Table 3.4.1, based on the Infrastructure Summit 2005, Infrastructure Conference 2006, and the PPP Book by BAPPENAS 2009. Most of the projects are located in Java, with 10 projects in Sumatra, and one project each in Batam, Sulawesi and Bali as shown in Table 3.4.1. The projects in this list are consistent with the toll road way master plan drawn up by Bina Marga.

Table 3.4.1 Long List and Location of Target Sections



Road Project	
No	Project
1	Ciranjang - Padalarang Road ⁽¹⁾
2	Bekasi - Cawang - Kampung Melayu ⁽¹⁾
3	Waru - Wonokromo-Tj Perak Road ⁽¹⁾
4	Waru - Tj Perak Stage 1 Road ⁽¹⁾
5	Gempol - Pandaan Road ⁽¹⁾
6	Jakarta Outer RR W1 ⁽¹⁾
7	Ciawi-Sukabumi Road ⁽¹⁾
8	Cikampek-Cirebon Road ⁽¹⁾
9	Surabaya-Mojokerto Road ⁽¹⁾
10	Kanci-Pejagan Road ⁽¹⁾
11	Pejagan-Pemalang Road ⁽¹⁾
12	Pemalang-Batang Road ⁽¹⁾
13	Batang-Semarang Road ⁽¹⁾
14	Kertosono-Mojokerto Road ⁽¹⁾
15	Pasuruan-Probolinggo Road ⁽¹⁾
16	Pandaan-Malang Road ^{(1) (3)}

No	Project
17	Gempol-Pasuruan Road ⁽¹⁾
18	Semarang-Solo Road ⁽¹⁾
19	Bogor Ring Road ⁽¹⁾
20	Depok-Antasari Road ⁽¹⁾
21	Cinere-Jagorawi Road ⁽¹⁾
22	Cikarang-Tanjung Priok Road ⁽¹⁾
23	Cileunyi-Sumedang-Dawuan Road ^{(1) (3)}
24	Makasar Seksi IV Road ⁽¹⁾
25	Cilegon-Bojanegara Road ⁽¹⁾
26	Pasir Koja-Soreang Road ^{(1) (3)}
27	Sukabumi-Ciranjang Road ^{(1) (3)}
28	Semarang-Demak Road ^{(1) (3)}
29	Jogja-Solo Road ^{(1) (3)}
30	Solo-Mantingan Road ^{(1) (2)}
31	Mantingan-Ngawi Road ^{(1) (2)}
32	Ngawi-Kertosono Road ^{(1) (2)}
33	Probolinggo-Banyuwangi Road ^{(1) (3)}

No	Project
34	Jakarta Outer RR-2 ⁽¹⁾
35	Jakarta Outer RR W2 North ⁽¹⁾
36	Kamal- Teluk Naga- Batu Ceper ⁽³⁾
37	Kemayoran- Kampung Melayu ⁽³⁾
38	Sunter- Rawa Buaya- Batu Ceper ⁽³⁾
39	Ulujami- Tanah Abang ⁽³⁾
40	Pasar Minggu- Casablanca ⁽³⁾
41	Sunter- Pulo Gebang- Tambelang ⁽³⁾
42	Duri Pulo- Kampung Melayu ⁽³⁾
43	Tanjung Priyok Access ⁽³⁾
44	Terusan Pasteur- Ujung Berung- Cileuy ⁽³⁾
45	Ujung Berung- Gedebage- Majalaya ⁽³⁾
46	Yogyakarta- Bawen ⁽³⁾
47	Bandara Juanda- Tanjung Perak ⁽³⁾
48	Medan-Kuala Namu-Tebing Tinggi ^{(1) (2) (3)}
49	Medan - Binjai ^{(1) (3)}
50	Palembang - Indralaya ^{(1) (3)}

No	Project
51	Pekanbaru- Kandis- Dumai ⁽³⁾
52	Tegginnere - Babatan ⁽³⁾
53	Serangang - Tj. Benoa ⁽³⁾
54	Menado Bitung ⁽³⁾
55	Kisaran-Tebing Tinggi ⁽³⁾
56	Bukit Tinggi- Padang Panjang- Lubuk Alung- Pada ⁽³⁾
57	Batu Ampar- Muka Kuning- Bandara Hang Nadim ⁽³⁾
58	Terbanggi Besar- Menggala- Pematang Pangganç ⁽³⁾
59	Bakaheuni- Terbanggi Besar ⁽³⁾

Source)
 * 1) Infrastructure summit 2005
 * 2) Infrastructure Conference 2006
 * 3) other latest sources (2009)
 Ref : Table : Prospective PPP project list (Road)
 No.s in the table are correspondent to no.s in the figure

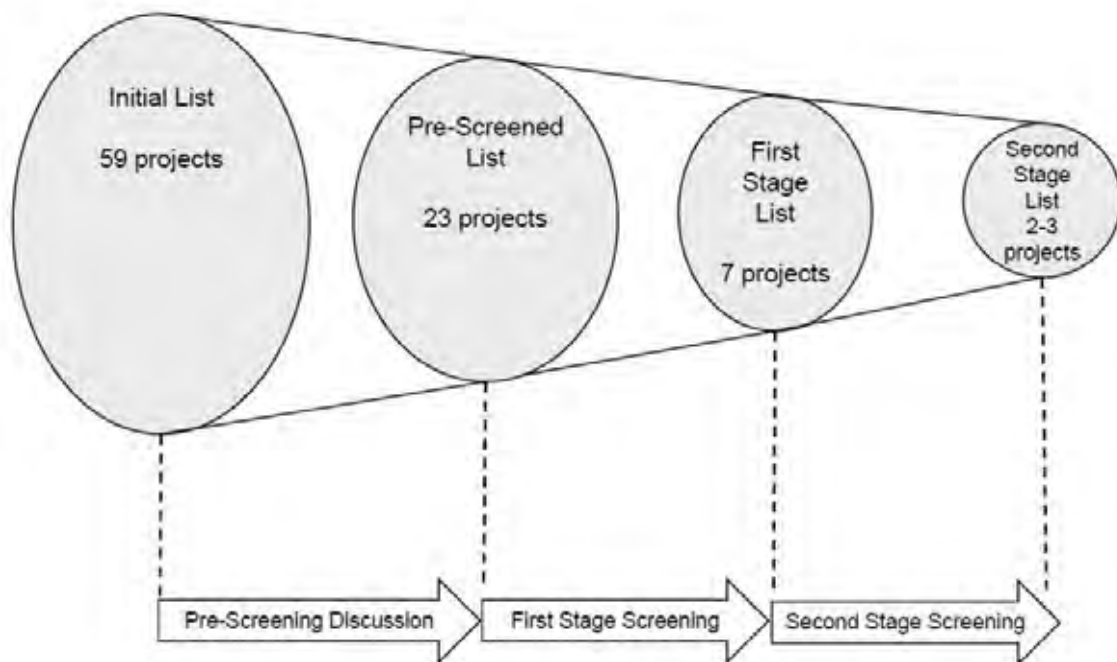
PPP Project (Road) Location Map

3.4.2 Flow of the Screening

By screening twice along the flow shown in Figure 3.4.2, 2-3 projects were finally selected from 59 projects as shown in Table 3.4.1. Pre-screening is carried out because the projects that have already been opened to traffic and had their investors decided on are included in the potential projects' list in Table 3.4.1, and so there was a need to exclude them for the target projects.

Afterwards, the first stage screening, which is a PPP requirement consisting of the priority level of the route, and the characteristics of the projects etc., was executed.

For the final route selection, the second stage screening consisting of setting more detailed evaluation items concerning the necessity, profitability and implementability of the projects and how to evaluate them, was executed.



Source: JICA Study Team

Figure 3.4.2 Flow of the Screening

3.5 Pre-Screening

3.5.1 Screening Items for Pre-Screening

Though the potential projects for this study was arranged as shown in Table 3.4.1, projects that have already opened to traffic and have their investors decided on were involved. Pre-screening was done to exclude them. The pre-screening involved determining the following four items:

- 1) Investor determined?
- 2) Tender activity processing?
- 3) Other donor plans?

4) JICA/ Other donor study?

3.5.2 Results of Pre-Screening

Result of the pre-screening on the five conditions is shown in Table 3.5.2, and 23 projects are remained and advanced to the first stage of screening as a result.

Three projects that involved other donors' investment considered as shown in Table 3.3.5 were selected for the first stage screening because they were not formally decided on yet.

Though the unsolicited projects that are located in the Jakarta area are planned as PPP projects by DKI Jakarta, DKI is offering a different mechanism of toll road development for them, and is negotiating with Bina Marga at present. However, as it is expected to take time before arriving at the conclusion, these six routes were dropped during the pre-screening.

Table 3.5.2 Results of Pre-Screening

Zero Screening Condition: 1) Investor determined? 2) Tender activity processing? 3) Other donor plans? 4) JICA/ Other donor study?

NO	Route	Status	Zero Screening			
			1	2	3	4
A Operation						
1	Cikampek - Padalarang Phase II	In operation	✓			
2	JORR E1 - North Section 3 (Hk Raya - Jatiasih)	In operation	✓			
3	JORR W2 - S2 (Veteran-Ulujami)	In operation	✓			
4	JORR E3 (Cakung - Cilincing)	In operation	✓			
5	JORR E1 North Section 4 (Jatiasih - Cikunir)	In operation	✓			
6	SS Waru - Bandara Juanda	In operation	✓			
7	Makasar Seksi IV	part of section under construction.	✓			
B PPJT Signing						
1	Kanci - Pejagan	Under construction	✓			
2	Surabaya - Mojokerto	Under construction	✓			
3	Gempol - Pandaan	Land Acquisition	✓			
4	JORR Seksi W1	Under construction	✓			
5	Bogor Ring Road	Under construction	✓			
6	Cinere - Cimanggis (Jagorawi)	Land Acquisition	✓			
7	Kertosono - Mojokerto	Under construction	✓			
8	Semarang - Solo	Land Acquisition	✓			
9	Gempol - Pasuruan	Land Acquisition	✓			
10	Depok - Antasari	Land Acquisition	✓			
11	Bekasi - Cawang - Kp. Melayu	Land Acquisition	✓			
12	Cikopo (Cikampek) - Palimanan	Land Acquisition	✓			
13	Pejagan - Pematang	DED and Land Acquisition	✓			
14	Pematang - Batang	DED and Land Acquisition	✓			
15	Semarang - Batang	DED and Land Acquisition	✓			
16	JORR W2 Utara (Ulujami - Kb. Jeruk)	DED and Land Acquisition	✓			
17	Cikarang (Cibitung) - Tanjung Priok	DED and Land Acquisition	✓			
18	Waru (Aloha)-Wonokromo-Tg. Perak	DED and Land Acquisition	✓			
19	Ciawi - Sukabumi	DED and Land Acquisition	✓			
20	Pasuruan - Probolinggo	DED and Land Acquisition	✓			
21	Ciranjang - Padalarang	CA Terminated				
22	Kunciran - Serpong	Financial Close negotiation	✓			

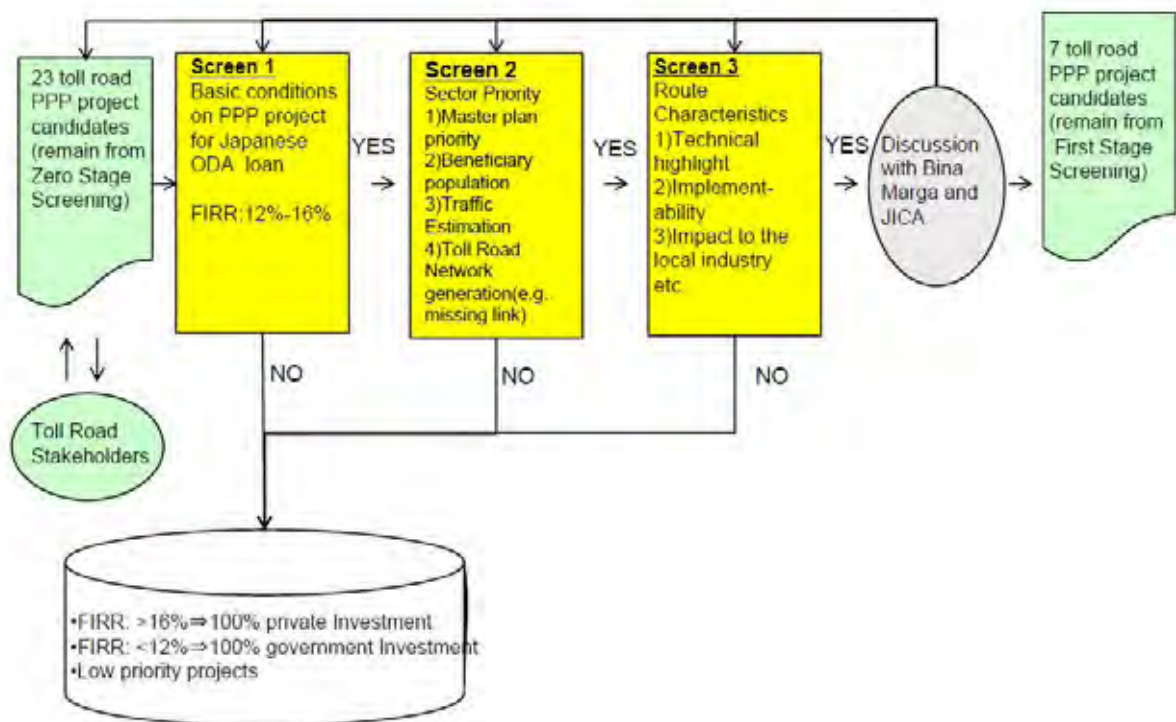
NO	Route	Status	Zero Screening			
			1	2	3	4
C PPJT Preparation and Process of Signing						
C.1 PPJT Preparation (Batch II)						
1	Cimanggis - Cibitung	PPJT preparation	✓			
2	Cengkareng - Batu Ceper - Kunciran	PPJT preparation	✓			
3	Serpong - Cinere	PPJT preparation	✓			
C.2 PPJT Preparation (Batch III)						
1	Solo - Mantingan - Ngawi	PPJT Preparation	✓			
2	Mantingan - Ngawi					
2	Ngawi - Kertosono					
D Tender Preparation 2008 (Batch IV)						
1	Medan - Binjai	PPP book (Ready for Tender),				
2	Palembang - Indralaya	PPP book (Priority),				
3	Bkhn - Terb. Besar (Tegineneng-Bal	PPP book (Priority),				
4	Pandaan - Malang	PPP book (Priority),				
5	Cileunyi - Sumedang - Dawuan	PPP book (Ready for Tender),			?	
6	Medan - Kualanamu - Tebing Tinggi	PPP book (Ready for Tender),			?	
7	Pasirkoja - Soreang	PPP book (Priority),				
8	Sukabumi - Ciranjang	PPP book (Priority),				
9	Manado - Bitung	PPP book (Priority),				
10	Pekanbaru - Kandis - Dumai	PPP book (Priority),				
11	Serangan - Tanjung Benoa	PPP book (Priority),			?	
E Toll Road Construction by Government						
1	Jembatan Surabaya - Madura		✓			
2	Akses Tanjung Priok	PPP book (Potential)	✓			
F Next Batch						
1	Kisaran - Tebing Tinggi	PPP book (Potential),				
2	Bkt Tinggi - Pdg Panjang - Lbk Alun	PPP book (Potential),				
3	Terbanggi Besar - Menggala - Pmtg	PPP book (Potential),				
4	Bakauheni - Terbanggi Besar	PPP book (Potential),				
5	Batu Ampar - Mk Kuning - Bandara	PPP book (Potential),				
6	Cilegon - Bojonegara	PPP book (Potential),				
7	Kamal - Teluk Naga - Batu Ceper	PPP book (Potential),				
8	Terusan Pasteur - Ujung Berung - C	PPP book (Potential)				✓
9	Ujung Berung - Gedebage - Majalay	PPP book (Potential)				✓
10	Semarang - Demak	PPP book (Potential),				
11	Jogja - Solo	PPP book (Potential),				
12	Jogja - Bawen	PPP book (Potential),				
13	Bandara Juanda - Tanjung Perak	PPP book (Potential),				
14	Probolinggo - Banyuwangi	PPP book (Potential),				

NO	Route	Status	Zero Screening			
			1	2	3	4
G Jalan Tol Terdalam Kota Jakarta						
1	Kemayoran - Kampung Melayu	PPP book (Potential), unsolicited		✓		
2	Duri Pulo - Kampung Melayu	PPP book (Potential), unsolicited		✓		
3	Sunter - Rawa Buaya - Batu Ceper	PPP book (Potential), unsolicited		✓		
4	Sunter - Pulo Gebang - Tambelang	PPP book (Potential), unsolicited		✓		
5	Pasar Minggu - Casablanca	PPP book (Potential), unsolicited		✓		
6	Ulujami - Tanah Abang	PPP book (Potential), unsolicited		✓		

3.6 First Stage Screening

3.6.1 The First Stage Screening Procedure

23 projects that had remained as a result of the Pre-Screening were screened along the procedure flowchart of the first stage screening shown in Figure 3.6.1. Three screens were set up in the first stage screening, and the specified items were each classified according to their evaluation details as shown in Table 3.6.1.



Source: JICA Study Team

Figure 3.6.1 Flowchart for the First Stage Screening

PPP toll road project proposes by this study assumes "Section split". Therefore, if the length is too short, the efficiency of construction and maintenance works is low and the project economy might be bad because the section should divide public portion and private portion. Then, the length of each project is confirmed before the first stage screening start. And the length of sections are various from section of Probolinggo – Banyuwangi (170.36 km: longest) to section of Serang - Tanjung Bena (9.00 km: shortest).

Then, the sections where the length is too short are excluded from the potential list of the first stage screening. After all four sections mentioned below where the length is less than 20km are excluded.

- Medan – Binjai (L=15.80km)
- Cilegon – Bojonegara (L=15.69km)
- Pasirkoja – Soreang (L=9.8km)
- Serang – Tanjung Bena (L=9.0km)

Table 3.6.1 Classification for Evaluation of Each Items at First Stage Screening

Evaluation Items	Evaluation			Remarks
Screen 1: Basic Condition on PPP project for Japanese ODA loan				
FIRR	<12%: Government Investment	12%-16%: PPP	>16%: Private Investment	
Screen 2: Sector Priority				
Score	★	★★	★★★	
Consistent with the Sector Plan (Blue Book) (PPP Book)	Add ★, if the section is listed in the Blue Book.			
	Potential	Priority	Ready for Offer	
Beneficiary Population	<2,000,000	: 2,000,000-4,000,000	>5,000,000	
Traffic Estimation (0 year)	<20,000	20,000-30,000	>30,000	
Increasing Rate (average)	<5%	6% - 10%	>11%	
Toll Road Network Generation (Location of the Section)	Independent Section	Extension Section	Missing Link	
Connectivity to the important Facilities	Add ★, if there are some important facilities (e.g. airport, seaport etc.).			
Composition of the Trans Toll Road	Add ★, if the section is part of Trans Jawa / Sumatra Toll Road.			
Screen 3: Route Characteristic				
Technical Highlight	Add ★, if construction work is needed high technology. (e.g. tunnel, long span bridge etc.)			
Implementability of Project / O&M	Add ★, if the section has more easy to implement (e.g. land acquisition complete, local government support etc.). Minus ☆, if the section has a limitation and barrier (e.g. short length, difficulty of land acquisition etc.).			
Impact to the Local Industry	Add ★, if the toll road will give direct impact to the industrial area.			

Source:
JICA Study Team

3.6.2 Screen-1

Screen-1 evaluates whether the projects requiring PPP are appropriate for yen loan. The criteria used were the FIRR values discussed with Bina Marga, and are shown as follows:

- FIRR > 16% Private Fund
- FIRR 12-16% PPP
- FIRR < 12% Government Fund

The projects that corresponded to FIRR 12-16% were selected as a result of Screen-1.

3.6.3 Screen-2

(1) Order of Priority for Toll Road Development

The order of priority in the toll road development was used as a criterion here. Originally the order of priority of toll roads was to be mentioned in the master plan as described in Chapter 3.2.1. However, it was not shown in it, and the following documents were to determine order of priority.

- Listed projects in Blue Book
- Classification in PPP Book (Ready for offer > Priority > Potential)

Although generally the budget allocation plan shows the order of priority of the projects, the budget allocation in Bina Marga was decided by the abovementioned materials. Therefore, the budget allocation was not considered in the evaluation.

(2) Beneficiary Effect

The traffic volume, which takes the toll road into account, can be used to show the direct effects of the toll road. Thus the forecast traffic volume estimated in FS was used as an evaluation item in the beneficiary. In addition, the total population along the toll road location that is related greatly to the traffic demand was also adopted as an evaluation item.

The concrete content of the evaluation is as follows.

- Total of population of the municipality along the toll road
- Forecast traffic volume (using first year traffic)
- Increasing rate of forecast traffic volume (first year → 10 years later)

(3) Location of the Toll Road

The priority of toll road development differs according to where the project is located in the toll road network. Thus, the locations of the toll road mentioned below are adopted as evaluation items.

- As a missing link: If the project is a final section of the toll road, the Trans Toll Road will be connected to the project as a single toll road and the traffic volume will increase rapidly.
- As an extension section: The project is an extending section from the opened section. Though continuous traffic from the opened section can be expected, no more than this can be expected.
- As an independent section: When there is no connection with other routes. Not much traffic or conversion traffic from the ordinary highway can be expected.

Since projects that connect to harbours, an airport, and other important facilities able to expect a certain traffic demand are expected to take the role of an important part of the social infrastructure, such projects had points added to their evaluation.

There is also a policy of toll road development on the Trans Java and Trans Sumatra Toll Roads by the government of Indonesia. Thus, when a project is composed of one section of Trans Java Toll Road and Trans Sumatra Toll Road, points were also added to its evaluation.

3.6.4 Screen-3

(1) Technical Evaluation

The structure of the toll road differs greatly according to what kind of geographical features the project passes over. When the project passes through smooth geographical features like flat terrain, it requires only simple earth works

such as cut and fill, and high technology construction work is not needed. On the other hand, when the toll road is constructed in a mountainous area, the construction of bridges and tunnels will be needed. Bridge and tunnel construction technology are remarkably advanced. There is a possibility that the term of the project will be shortened and cost will be reduced, if these new technology are adopted. If the project passes a mountainous area, and there is a possibility of the examination of reduction of the construction cost in the design in the future, points were added to the evaluation of the project.

(2) Implementability

Difficulty of land acquisition is a factor that most heavily influences the execution of the toll road project. As a result of the study of each project, it was understood that the difficulty of land acquisition differs in each case. In the case of projects where the land acquisition had already been completed or where a small number of land owners and leaseholders were able to execute the land acquisition comparatively easily, points were added to the project's evaluation.

Moreover, a certain project length is necessary in efficient execution of a project. In particular, an appropriate management length is needed in O&M when considering the arrangement of the maintenance workers and equipment. In cases where the project length is short, the efficiency of O&M is treated as low. Thus projects whose lengths were less than 20km were given demerit points.

(3) Impact to Regional Economy

The impact to the regional economy as an effect of the toll road development has to be considered. Currently, products are being transported from the producing region to the consuming region in the big city by using the ordinary highway. The traveling time would be greatly shortened by completion of the toll road, so an activation of the production activity in the region can be expected. Thus, projects located near industries that produce products related to the big city had points added to their evaluation.

3.6.5 Results of the First Stage Screening

The results of the first stage screening done through the 3 screens mentioned above are shown in Table 3.6.5. In addition, the relation between the total score of the evaluation and the FIRR is shown in Figure 3.6.5.

Projects that obtained a higher score and are in a proper range of FIRR (12%-16%) in Figure 3.6.2 were retained after the first screening evaluation. The following seven projects therefore retained and they will advance to the second stage screening evaluation. Outlines and location of seven projects are mentioned in Table 3.6.5-2 and Figure 3.6.5-2 respectively.

- Candidate Project-1 Sukabumi - CiranjangCiranjang - Padalarang
- Candidate Project-2 Cileunyi - SumedangSumedang - Dawuan
- Candidate Project-3 Bandara Juanda - Tanjung Perak
- Candidate Project-4 Pandaan - Malang
- Candidate Project-5 Kamal - Teluk Naga - Batu Ceper
- Candidate Project-6 Pekanbaru - Kandis - Dumai
- Candidate Project-7 Batu Ampar - Mk Kuning - Bandara Hang Nadim

Table 3.6.5-1 Results of the Evaluation

No.	Name of the Project	Screen 1(FIRR)		Screen 2	Screen 3
		FS (Source1)	FS 2 (Source2)		
1	Bandara Juanda - Tanjung Perak	13.43 %	15.70 %	★★★★★/★★★★★/★★★★★	★☆
2	Cileunyi - Sumedang- Dawuan	15.64 %	14.12 %	★★★★★/★★★★★/★★★★★	★
3	Medan - Kualanamu - Tebing Tinggi	—	11.26 %	★★★★★/★★★★★/★★★★★	
4	Sukabumi - Ciranjang- Padalarang	11.28 %	13.08 %	★★★★★/★★★★★/★★★	★
5	Batu Ampar - Mk Kuning - Bandara Hang Nadim	15.03 %	7.78 %	★★★★★/★★★★★/	★★
6	Kamal - Teluk Naga - Batu Ceper	12.89 %	—	★★★★★/★★★★★/★★★	☆
7	Pandaan - Malang	15.20 %	16.09 %	★★★★★/★★★★★/★	
8	Pekanbaru - Kandis - Dumai	15.48 %	9.01 %	★★★★★/★★★★★	★★
9	Jogja - Solo	—	16.73 %	★★★★★/★★★★★/	
10	Probolinggo - Banyuwangi	12.39 %	10.63 %	★★★★★/★★★★★/	
11	Bakauheni - Terbanggi Besar	—	—	★★★★★/★★★★★/	
12	Palembang - Indralaya	16.70 %	15.57 %	★★★★★/★★★★★	
13	Semarang - Demak	—	10.99 %	★★★★★/★★★★★	
14	Manado - Bitung	—	9.66 %	★★★★★/★★★★★	★
15	Bakauheni - Terbanggi Besar(Tegineneg-Babatan)	13.32 %	15.48 %	★★★★★/★★★★★	
16	Jogja - Bawen	—	15.13 %	★★★★★/★★★★★	
17	Terbanggi Besar - Menggala - Pmtg Panggang	5.91 %	—	★★★★★/★★★★★	
18	Kisaran - Tebing Tinggi	5.08 %	—	★★★★★/★★★★★	
19	Bkt Tinggi - Pdg Panjang - Lbk Alung - Padang	—	—	★★★★★/	
	Medan - Binjai	14.95 %	15.98 %	(Length 15.80km)	Four projects are excluded from the list because the adequate length is needed for PPP "Vertical Split"
	Cilegon - Bojonegara	—	12.05 %	(Length 15.69km)	
	Pasirkoja - Soreang	15.66 %	11.88 %	(Length 9.8km)	
	Serangan - Tanjung Benoa	—	6.93 %	(Length 9.0km)	

Note : "FS1" is the original local F/S, "FS2" is the revised figures by Bina Marga.

Source: JICA Study Team

Table 3.6.5-2 Outline of the Selected Projects by First Stage Screening

	Location of Section	Length & Project Cost	Outline of Section
Bandara Juanda-Tanjung Perak	East and the north side of Surabaya Ring Road, and it will be completed by this section	23km 5,030bil Rp (219bil Rp/km)	1)Passes through seaside and crowded houses area 2)Connect airport, harbor, and Suramadu bridge 2) Easing of traffic congestion in the city
Cileunyi-Sumedang-Dawuan	Connects between Bandung and Cirebon, and connects with Trans Jawa Toll Road at Dawuan	59km 3,945bil Rp (67bil Rp/km)	1)Passes through hill / mountains 2) Distribution route to Cirebon port 3)Easing traffic jam along the route
Sukabumi-Ciranjang-Padalarang	A part of section where connects between Jakarta and Bandung via Sukabumi	64km 5,103bil Rp (78bil Rp/km)	1)Passes through paddy field / hill 2)Distribution route to Jakarta 3)Easing traffic jam along the route 4)Alternative route between Jakarta and Bandung
Batu Ampar-Muka Kuning-Hang Nadim	Connects harbors, airport, and industrial estate inside Batam Island	25km 2,200bil Rp (88bil Rp/km)	1) Distribution route from industrial estate to harbor 2) Land of toll road is secured in the wide median strip of in the ordinary road
Kamal-Teluk Naga-Batu Ceper	Route on eastern edge in Second JORR where surrounds the airport	32km 3,590bil Rp (112bil Rp/km)	1) Passes through crowded houses, paddy field, and swamp area. 2) Connects between planed reclamation area (harbor, industrial and residential district) and Jakarta
Pandaan-Malang	A part of section where connects between Surabaya and Malang	37km 2,530bil Rp (68bil Rp/km)	1) Passes through hill 2)Distribution and tourist route that connects Surabaya with Malang and south coast area.
Pekanbaru-Kandis-Dumai	Connects between Pekanbaru and Dumai port, it will become a part of Trans Sumatra Toll Road	135km 8,446bil Rp (63bil Rp/km)	1) Passes through oil field and palm oil plantation area. 2) Distribution routes such as oil field development and palm oil

Source: JICA Study Team



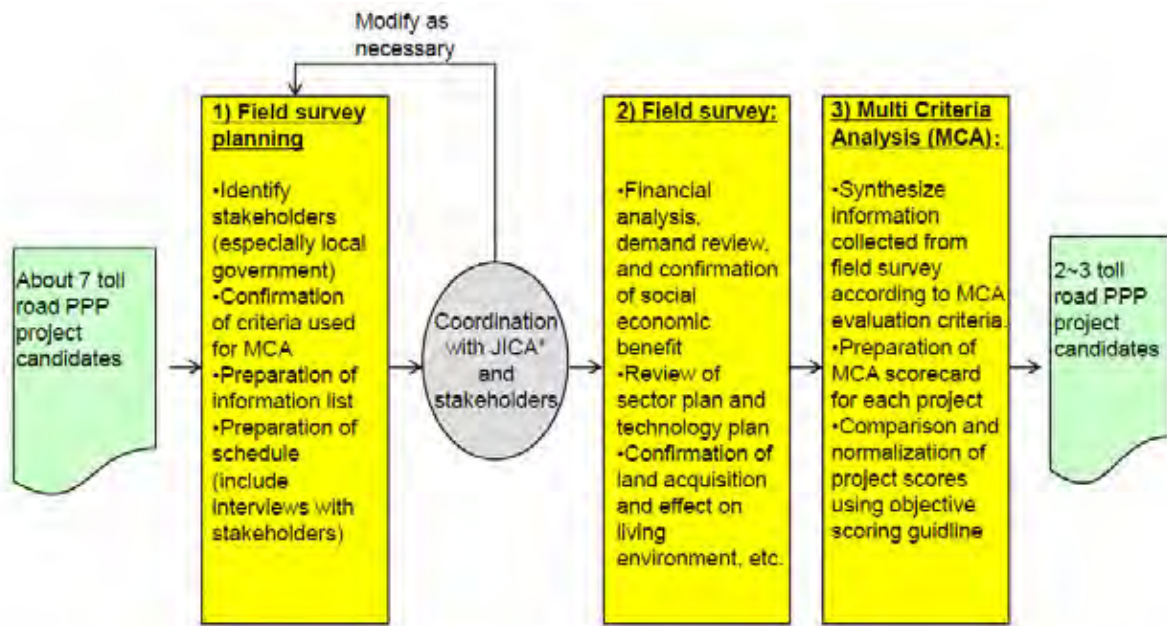
Source: JICA Study Team

Figure 3.6.5 Location of the Candidate Projects

3.7 Second Stage Screening

3.7.1 Procedure of Second Stage Screening

As the result of first stage screening in the previous section, the seven projects are selected as candidates in second stage screening. Prior to the screening, the draft evaluation criteria in Multi Criteria Analysis (MCA) was created and questionnaire was prepared for the site survey in accordance with MCA contents. In every candidate site, study team conducted the meeting with provincial BAPPEDA with attending the related lower regional government such as Dinas PU Province, Bappeda Kabupaten. and Dinas PU Kabupaten and exchange the opinions based on the questionnaire. In addition, site reconnaissance was also carried out and confirm current site conditions (e.g. current traffic conditions, social environmental issues, and the technical difficulties. After the survey, evaluation MCA was carried out to narrow the final candidates.



Source: JICA Study Team

Figure 3.7.1 Location of the Candidate Projects

3.7.2 Field Survey

Field surveys on the seven sections selected by the first stage screening were carried out for more detailed information gathering for the second stage during the middle of May to the first of June.

In this field survey, the data collection for MCA in the second stage screening, a hearing of ideas about projects with the local government (especially for those projects their intention of support is confirmed) and a confirmation of social and natural environmental conditions were carried out. Results of the field survey of each route are as follows. In addition, the interview results with the local government are attached in Appendix AP5-3.

(1) Sukabumi-Ciranjang-Padalarang

1	Date of Survey	19-21 May 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Jawa Barat			
3	Section Outline	Length		64.00km	
		FIRR		12.28%(FS) 13.08%(Revised)	
		Project Cost in Existing-F/S	Whole	5,103 bil Rp	
			Construction	2706 bil Rp	
			Land Acquisition	488 bil Rp	
		Beneficiary Population		4,246,856 person	
		Traffic	Toll Road (Forecast)	0 year	13,154 v/day
10 year	45,625 v/day				
Ordinary Road(ADT)			18,864 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		Route where connects between Jakarta and Bandung	
		Role of Toll Road		Distribution route to Jakarta Easing traffic jam along the route Alternative route between Jakarta and Bandung	
		Support from Local Government		This project following to Ciawi-Sukabumi project, so this project is second priority	
		Environmental Condition		Passes through paddy field/hill, and houses are a lot.	
		Technical Highlight		Long span bridge and tunnel will be planned.	
		Others		Necessary to review the section alignment	



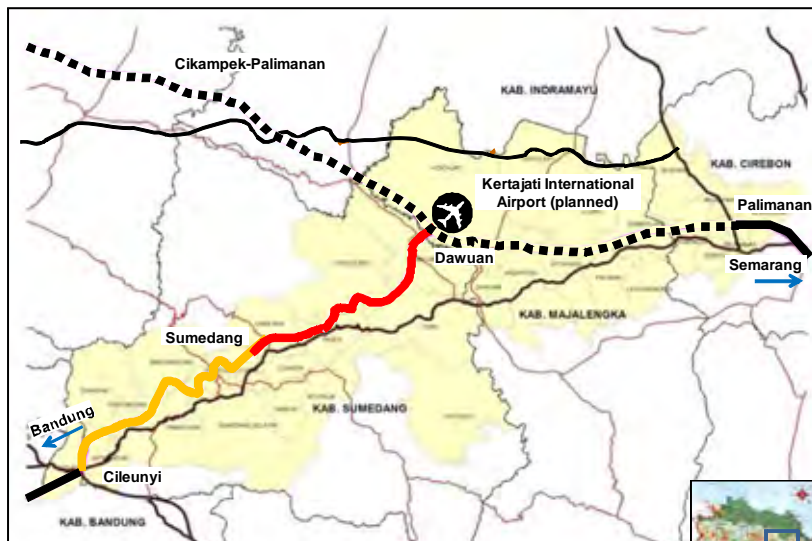
Source: JICA Study Team

■ Private Portion ■ Public (ODA) Portion

Figure 3.7.2-1 Detailed Location of “Sukabumi-Ciranjang-Padalarang” Section

(2) Cileunyi-Sumedang-Dawuan

1	Date of Survey	19-21 May 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Jawa Barat			
3	Section Outline	Length		58.60km	
		FIRR		15.84%(FS) 14.12%(Revised)	
		Project Cost in Existing-F/S	Whole	3,945 bil Rp	
			Construction	2,107 bil Rp	
			Land Acquisition	505 bil Rp	
		Beneficiary Population		5,676,360 person	
		Traffic	Toll Road (Forecast)	0 year	29,639 v/day
10 year	41,727 v/day				
Ordinary Road (ADT)			40,617 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		Route where connects between Bandung and Cirebon	
		Role of Toll Road		Distribution route to Cirebon port Easing traffic jam along the route	
		Support from Local Government		It is positive as a part of the land acquisition cost is borne.	
		Environmental Condition		Passes through hill/ mountains, and the houses are a lot.	
		Technical Highlight		Large-scale bridges and tunnels will be planned.	
		Others		It is necessary to review horizontal/ section alignment and construction cost estimate by FS. On-going land acquisition need to adjust with reviewed design.	



Source: JICA Study Team

█ Private Portion █ Public (ODA) Portion

Figure 3.7.2-2 Detailed Location of “Cileunyi-Sumedang-Dawuan” Section

(3) Bandara Juanda-Tanjung Perak

1	Date of Survey	25-27 May 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Jawa Timur			
3	Section Outline	Length		23.00km	
		FIRR		13.43%(FS) 15.70%(Revised)	
		Project Cost in Exiting-F/S	Whole	5,030 bil Rp	
			Construction	2,668 bil Rp	
			Land Acquisition	729 bil Rp	
		Beneficiary Population		6,330,150 person	
		Traffic	Toll Road (Forecast)	0 year	65,833 v/day
10 year	209,683 v/day				
Ordinary Road(ADT)			20,615 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		East and north sections of Surabaya Rig Road, and connect airport, harbor, and Suramadu bridge	
		Role of Toll Road		Easing of traffic congestion of city	
		Support from Local Government		On-going four toll road projects in Surabaya area have a priority, this project is next	
		Environmental Condition		It is necessary a large-scale resettlement in north section	
		Technical Highlight		It is necessary a countermeasure for soft ground.	
		Others		If the on- going inner ring road will be discontinue, necessity of this project will be raised.	



Source: JICA Study Team

——— Private Portion ——— Public (ODA) Portion
Figure 3.7.2-3 Detailed Location of “Bandara Juanda-Tanjung Perak” Section

(4) Pandaan-Malang

1	Date of Survey	25-27 May 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Jawa Timur			
3	Section Outline	Length		37.00km	
		FIRR		15.20%(FS) 16.09%(Revised)	
		Project Cost in Exiting-F/S	Whole	2,744 bil Rp	
			Construction	1,404 bil Rp	
			Land Acquisition	447 bil Rp	
		Beneficiary Population		4,447,873 person	
		Traffic (Forecast)	Toll Road	0 year	41,803 v/day
	10 year		52,760 v/day		
Ordinary Road(ADT)			53,334 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		One section of route where connects between Surabaya and Malang	
		Role of Toll Road		Distribution and tourist route that connects Surabaya with Malang and south coast area.	
		Support from Local Government		They have a positive policy to development.	
		Environmental Condition		Passes through hill, and the houses are few.	
		Technical Highlight		Technical difficulty is low.	
		Others		There is a toll road submerged by the muddy water gush at Sidoarjo on this side of this project. Alternative toll road development is necessary.	



Source: JICA Study Team

█ Private Portion █ Public (ODA) Portion

Figure 3.7.2-4 Detailed Location of “Pandaan-Malang” Section

(5) Kamal-Teluk Naga-Batu Cepar

1	Date of Survey	9-10 June 2009			
2	Visited and Interviewed Organization	PU Building – Kabupaten Tangerang			
3	Section Outline	Length		32.00km	
		FIRR		12.89%(FS)	
		Project Cost in Exiting-F/S	Whole	3,590 bil Rp	
			Construction	N/A	
			Land Acquisition	1,314 bil Rp	
		Beneficiary Population		6,248,656 person	
		Traffic (Forecast)	Toll Road	0 year	44,066 v/day
	10 year		129,197 v/day		
Ordinary Road(ADT)			—		
4	Section Characteristic	Location of Toll Road		Route on the west edge of Second Jakarta Outer Ring Road	
		Role of Toll Road		Route where connects between planed reclamation area (harbor, industrial and residential district) and Jakarta	
		Support from Local Government		Priority of the reclamation project is high, and the toll road project is following	
		Environmental Condition		It is necessary a lot of resettlements in the vicinity of the airport. As for other sections, there is no problem because it passes through paddy field swamp area.	
		Technical Highlight		Technical difficulty is low.	
		Others		FS need to revise to match to the reclamation project, accordingly present design maturity is low.	



Source: JICA Study Team

— Private Portion — Public (ODA) Portion

Figure 3.7.2-5 Detailed Location of “Kamal-Teluk Naga-Batu Cepar” Section

(6) Pekanbaru-Kandis-Dumai

1	Date of Survey	1-2 June 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Riau			
3	Section Outline	Length		135.00km	
		FIRR		15.48%(FS) 9.01%(Revised)	
		Project Cost in Existing-F/S	Whole	8,446 bil Rp	
			Construction	4,992 bil Rp	
			Land Acquisition	475 bil Rp	
		Beneficiary Population		2,582,797 person	
		Traffic	Toll Road (Forecast)	0 year	8,837 v/day
10 year	14,976 v/day				
Ordinary Road(ADT)			10,231 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		Route where connects between Pekanbaru and Dumai port.	
		Role of Toll Road		Distribution routes such as oil field development and palm oil	
		Support from Local Government		Financial condition of the local government is good, so support can be expected.	
		Environmental Condition		It is necessary to adjust the route with the natural forest, and plantation section has been adjusted.	
		Technical Highlight		Technical difficulty is low.	
		Others		Route has been adjusted with a large-scale oilfield and the plantation, so land acquisition is easy.	



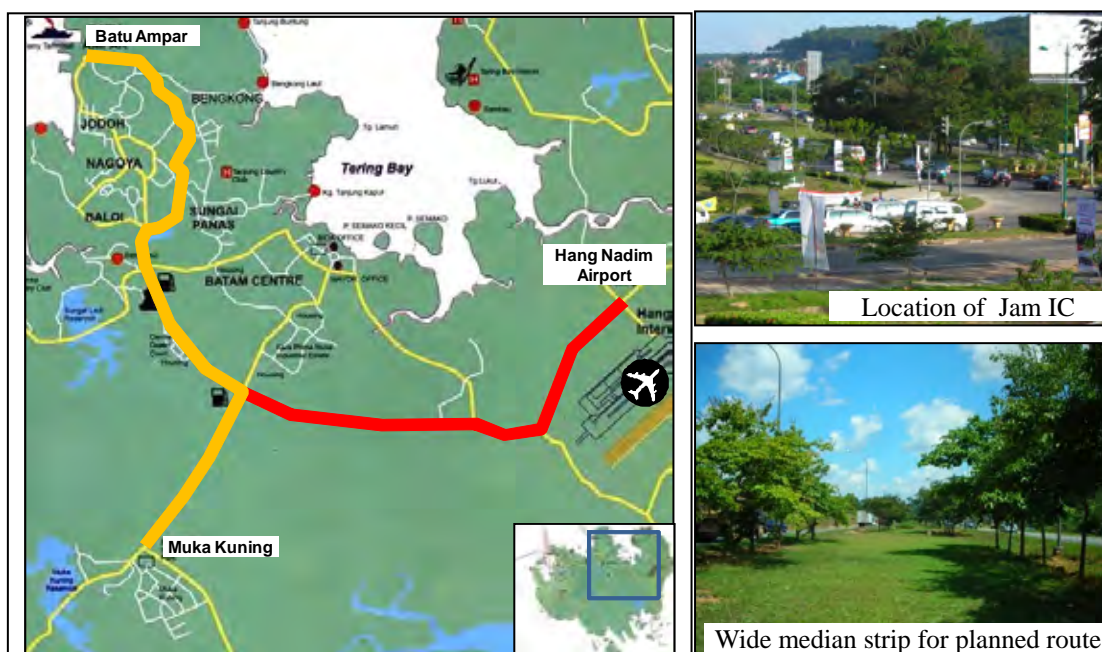
Source: JICA Study Team

█ Private Portion █ Public (ODA) Portion

Figure 3.7.2-6 Detailed Location of "Pekanbaru-Kandis-Dumai" Section

(7) Batu Ampar-Muka Kuning-HangNadim

1	Date of Survey	4-5 June 2009			
2	Visited and Interviewed Organization	Bappeda Propinsi Riau Island			
3	Section Outline	Length		25.00km	
		FIRR		15.03%(FS) 7.78%(Revised)	
		Project Cost in Existing -F/S	Whole	N/A	
			Construction	692 bil Rp	
			Land Acquisition	N/A	
		Beneficiary Population		1,000,000 person	
Traffic	Toll Road (Forecast)	0 year	32,195 v/day		
		10 year	57,897 v/day		
	Ordinary Road(ADT)		53,288 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road		Route where connects industrial estate, harbor and airport inside Batam island.	
		Role of Toll Road		Distribution route from industrial estate to harbor	
		Support from Local Government		Local government is planning the toll road development together with the development of the island, so support from it can be expected.	
		Environmental Condition		Land of toll road is secured in the wide median strip of in the ordinary road, so there is no problem on the environment.	
		Technical Highlight		It is necessary to construct flyovers in the intersections.	
		Others		Development of ordinary road is advanced, and traffic congestion can be seen at only morning and evening peak hours. There is a regulation of control the number of vehicle to the island	



Source: JICA Study Team

— Private Portion — Public (ODA) Portion

Figure 3.7.2-7 Detailed Location of “Batu Ampar-Muka Kuning-Nadim” Section

(8) Jogja-Solo*⁸

1	Date of Survey	23-24 July 2009		
2	Visited and Interviewed Organization	Bappeda Propinsi Jawa Tengah Bappeda Propinsi Jogja		
3	Section Outline	Length	40.495km	
		FIRR	16.73%(FS) 15.6%(Revised by this study)	
		Project Cost in Exiting-F/S	Whole	2,567 bil Rp
			Construction	1,039 bil Rp
			Land Acquisition	508 bil Rp
		Beneficiary Population	3,484,947 person	
Traffic (Forecast)	Toll Road	0 year	19,542 v/day	
		10 year	64,098 v/day	
	Ordinary Road(ADT)	24,714 v/day (year 2008)		
4	Section Characteristic	Location of Toll Road	<ul style="list-style-type: none"> - Route heads to Jogja after branching at Solo of Trans Jawa Toll Road - A part of the ring road of Bawen-Jogja-Solo in the future. 	
		Role of Toll Road	<ul style="list-style-type: none"> - Touristic purpose vehicle use this road. - Commuting purpose vehicle use this road between Solo-Jogja 	
		Support from Local Government	- Unpromising for the budget constrain in the local government	
		Environmental Condition	- Passes through paddy /cultivated field area, and affected houses are few.	
		Technical Highlight	- Most of the road are constructed by cut and fill.	
		Others	<ul style="list-style-type: none"> - Confirmation of location of historical remains and they should be avoided. - Need the negotiation with the Ministry of Agriculture how to construct the toll road to minimize the affected area of paddy field. 	



Source: JICA Study Team

Private Portio █ Public (ODA) Portion █

Figure 3.7.2-8 Detailed Location of "Jogja-Solo" Section

⁸ The Jogja-Solo is added after the field survey. The reasons refer to the 3.7.2 (9) & (10).

(9) Dropping “Kamal-Teluk Naga-Batu Cepar” from shortlist of the Second Stage Screening

Through the field survey and interviews to regional governments, we confirmed that the maturity for Kamal-Teluk Naga-Batu Cepar was relatively unaffordable to complete MCA compared to the other candidates in terms of the following points and this route was eliminated from the shortlist of the second stage screening.

- The regional governments now prioritize JORR2 rather than this route. And they are now standing on the wait-and-see attitude for this route at the same time as the actual implementation speed of Teruk Naga port.
- In the local F/S, the shortcut alignment located at the south of Cengkareng Airport are mainly discussed and no traffic demand forecast data for “Kamal – Teruk Naga – Batu Cepar” route which located at the north of the airport.
- The demand forecast data related to Teruk Naga Port project and the other regional planning (e.g. real estate and industrial zone etc.) which may supplement the traffic demand forecast are also not available.

(10) Additional Field Survey on Jogja-Solo

During the Field Survey, we found that three projects may have the following concerns.

Table-3.7.2 Project preference information

No.	Sections	Project preference information
1	Cileunyi - Sumedang – Dawuan	The Government of China is almost decided to support.
2	Bandara Juanda - Tanjung Perak	The examination to develop by the bundle with the Suramadu Bridge is advanced.
3	Pandaan - Malang	There is a possibility to be put on the tender at the early stage because of the high financial viability.

Source : Interviews to the BAPPENAS, Bina Marga and BPJT

There is a concern that the number of possible projects decrease after the second stage screening because of the above mentioned information. Thus “Jogja-Solo” that is the next mark candidate in the first stage screening is added to the second stage screening, and carried out the field survey.

3.7.3 Reviewing the Assumptions of the FIRR

The evaluation of the profitability in the second stage screening employed the use of FIRR. However, the calculated FIRR in FS faced a problem in evaluation because the traffic demand forecast was assumed to be over the estimate and the construction cost was needed to improve the accuracy of estimation.

(1) Traffic Demand Forecast

As for the traffic forecast in FS, generally the tendency was seen as an excessive estimation. Whether the forecast traffic was much different from the actual situation was checked by the discrepancy between the traffic (actual survey data) of the ordinary accompanying highway and the forecast traffic for the first year

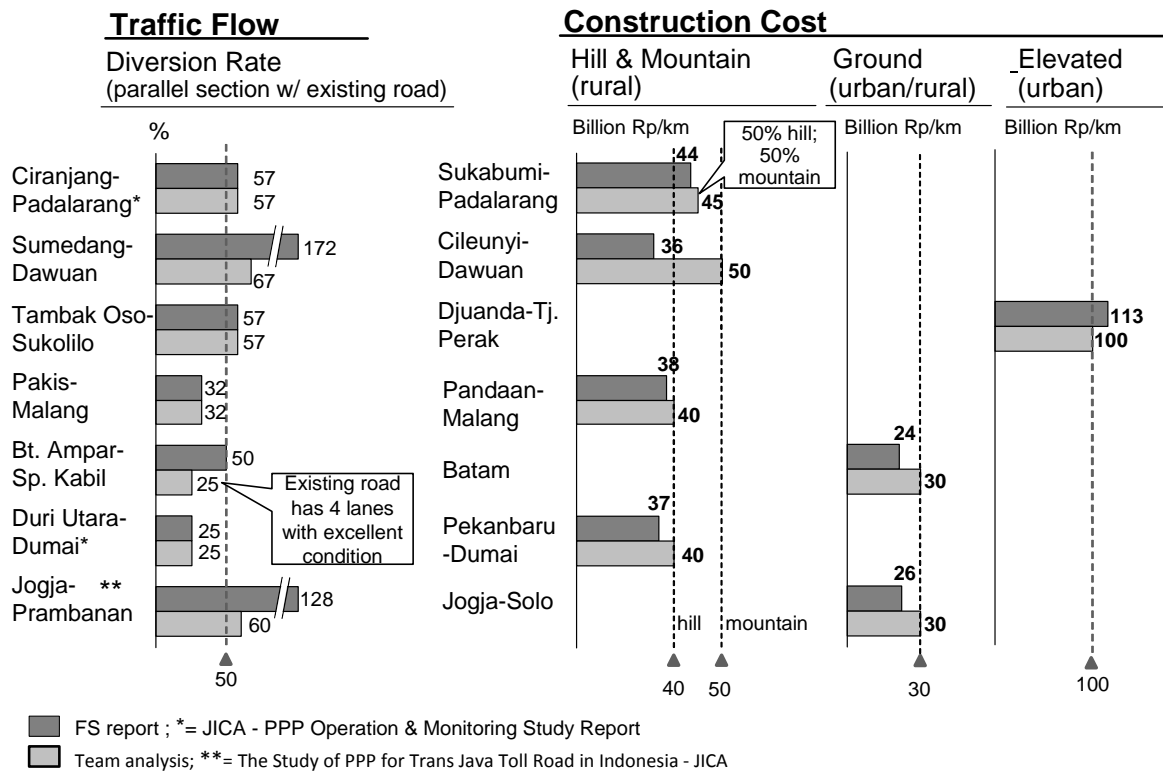
operation. Appendix AP5-4 shows the actual traffic survey data of the ordinary highway and the forecast traffic by FS for the same section.

In general, within 50% of traffic in the ordinary highway diverted to the parallel toll road. But for the urban toll road, the diversion rate can reach 60%. Table 3.7.3-1 and Figure 3.7.3 shows the section whose forecast traffic was considered excessive, and the forecast traffic that was used for analysis.

Table 3.7.3-1 Reviewed Forecast Traffic

No	Section Code	Section Name	Ordinary Highway		Toll Road				
			Road Name	ADT 2008 (veh/day)	Section Name	Forecast Traffic by FS		Forecast Traffic by This Study	
						First Year (veh/day)	Diversion Rate	First Year (veh/day)	Diversion Rate
1	JB-3	Sukabumi-Ciranjang	Gekbrong-Cianjur	11618	Sukabumi-Cianjur	4435	38%	4435	38%
	JB-4	Ciranjang-Padalarang	Citarum-Padalarang	18864	Ciranjang-Padalarang	10782	57%	10782	57%
2	TJ-4-4	Cileunyi-Sumedang	Cileunyi-Jatinangor	40617	Cileunyi-Tj. Sari	20045	49%	15769	39%
		Sumedang-Dawuan	Sumedang-Dawuan	15323	Sumedang-Dawuan	26431	172%	10245	67%
3	S-4	Bandara Juanda-Tanjung Perak	Raya Rungkut	22289	Tambak Oso-Sukolilo	12620	57%	12620	57%
4	TJ-18-3	Pandaan-Malang	Malang-Karanglo	53334	Pakis-Malang	16949	32%	16949	32%
5	JORRII-1	Kamal-Teluk Naga-Batu Ceper	-	-	Kamal-Teluk Naga	-	-	-	-
6	TS-8	Pekanbaru-Kandis-Dumai	Duri-Dumai	10231	Duri Utara-Dumai	8837	86%	2508	25%
7	Batam-1	Batu Ampar-Muka Kuning-Hang Nadim	Batu Ampar-Simp. Kabil	53288	Batu Ampar-Simp. Kabil	26500	50%	13500	25%

Source: FS Report, IRMS Data Bina Marga, Team Analysis



Source: FS Report, JICA PPP Operation & Monitoring Study Report, Team Analysis

Figure 3.7.3 Diversion Rate and Construction Cost Comparison

From the table and figure above, first year traffic in Ciranjang-Padalarang and Sumedang-Dawuan has exceed 50% of existing traffic, but we still retain that number because the terrain is mountainous and the road is narrow. Agricultural products from Sukabumi and Cianjur transport to Bandung via Ciranjang-Padalarang. This road could be an alternative road to Bandung beside Cipularang toll road. We also assume Ciawi-Sukabumi toll road had been operated when Sukabumi-Padalarang will be operated.

FS traffic data Sumedang-Dawuan section is over the estimate, we decrease it from 172% to 67% by using data from JICA-PPP Operation & Monitoring Study Report. Sumedang-Dawuan is the main road that connects Bandung, Cirebon, and Central Java. There is also plan to build Kertajati International Airport (2 runways) in Majalengka, close to Dawuan. Transportation of agricultural products to Bandung from Sumedang and Central Java uses this road. Many trucks use this road that results in congestion in the Cileunyi-Sumedang section.

Batam FS data had assumed 50% of the existing traffic will shift to the toll road. Considering that the traffic is not congested and the road condition is excellent, we assumed optimistically only 25% of vehicles from the existing road will divert to the toll road.

(2) Construction Cost

Cost of construction work of the toll road project in Indonesia is divided by geographical condition, and the calculated average unit prices (billion Rp/km) are shown in Appendix AP5-3. According to this, it has been understood that the flat area (at grade) will generally cost about 30 bil Rp/km, hilly area about 40 bil Rp/km and mountainous area about 50 bil Rp/km and the urban area (elevated structure) about 100 bil Rp/km. The construction costs that span this range of the targeted seven projects are calculated again to use an average value for the relevant geographical conditions. The result is shown in Table 3.7.3-2.

Table 3.7.3-2 Results of the Reviewed Construction Cost

No	Section Code	Section Name	Length (km)	Terrain	Construction Cost by FS		Construction Cost by This Study	
					Total Cost (Billion Rp)	Cost per km (Billion Rp)	Total Cost (Billion Rp)	Cost per km (Billion Rp)
1	JB-3	Sukabumi-Ciranjang	28.0	Hilly	951.1	34.0	2745	45.00
	JB-4	Ciranjang-Padalarang	33.0	Mountainous	1755.2	53.2		
	Total	Sukabumi-Padalarang	61.0		2706.3	44.4		
2	TJ-4-4	Cileunyi-Dawuan	58.5	Mountainous	2107.1	36.0	2925	50.00
3	S-4	Bandara Juanda-Tanjung Perak	23.7	Urban	2667.7	112.6	2370	100.00
4	TJ-18-3	Pandaan-Malang	36.6	Hilly	1403.9	38.4	1464	40.00
5	JORRII-1	Kamal-Teluk Naga-Batu Ceper	-	Flat/Swamp	-	-	-	-
6	TS-8	Pekanbaru-Kandis-Dumai	135.0	Hilly	4992.0	37.0	5400	40.00
7	Batam-1	Batu Ampar-Muka Kuning-Hang Nadim	28.5	Flat	691.7	24.3	855	30.00

Source: FS Report, Team Analysis

Aforementioned Figure 3.7.3 also shows construction cost by FS data is below

the average. We change it by using average construction cost in Indonesia based on geographical condition. The terrain in Sukabumi-Padalarang is hilly and mountainous, about 50:50. Based on it, we use average cost in Rp 45 billion/km. Estimation SERR construction cost is over, we decrease it to Rp 100 billion/km.

(3) Operation and Maintenance

In most FS reports, Operation and Maintenance (OM) cost is usually a factor of revenue (routine 5%, periodical 20%) or construction cost (routine 0.5%, periodical 2%). In this study, we used the annual OM cost that had already covered the routine and periodical costs. In reality, operators expend their periodical cost in every year in sections. Based on our interview with PT. Citra Manunggal Surabaya (PT.CMS) - operator of Waru-Juanda Toll Road (12.8km) - Rp 1.5 billion per km was spent for annual operation and maintenance costs in 2008.

Table 3.7.3-3 shows the main OM costs (toll collection, road service and maintenance) in 3 toll roads operated by Jasa Marga. The OM costs of toll roads in Java island is almost the same, but OM costs in Medan is only 55% of the OM cost of toll roads in Java island. One of the causes of this discrepancy is the difference in daily traffic. According to this, we assume that the OM cost of toll roads in Java Island is Rp 1.5 billion per km, the same with PT. CMS, and the OM cost of toll roads with lower traffic (Pekanbaru-Dumai, Batam) is Rp 1 billion per km.

Table 3.7.3-3 Main Operational and Maintenance Cost in 2008

Jasa Marga Report 2008	Length (km)	ADT (veh/day)	OM cost (billion Rp)	OM cost/km (billion Rp)
Padalarang-Cileunyi	39.5	119,490	15.49	0.39
Surabaya-Gempol	36.3	155,584	14.14	0.39
Belmera-Medan	34	46693	7.62	0.22

Source: Jasa Marga Report 2008

3.7.4 MCA

(1) Setting up of MCA

As described in section 2.4.1, the MCA approach is recommended for project screening to select the suitable and certifiable PPP project. In this study, we thus apply the MCA approach and basically set up the contents of criteria in accordance with the items recommended in OGM. However, as MCA originally is designed as versatile use in multi sectors, some of the criteria in OGM such as “National Security/National Integration” and “Safety” are difficult to quantify to use in these toll road projects. So, these contents are excluded from our MCA approach in this study.

In setting up of detailed indicators of MCA, we aimed to evaluate a variety of perspectives to cover necessary aspects in toll road projects. And to identify the project’s advantages and disadvantages after scoring, each criteria is categorized into three classifications such as “Necessity”, “Profitability” and “Implementability” depending on the characteristics of criteria. The detailed indicators and criteria of MCA are shown in the Table 3.7.4-1

Table 3.7.4-1 The detailed criteria of MCA

Category	Evaluation contents	Weight	Allocation
Necessity	EIRR more than 20% =3Points; 12-20% = 2points, less than 12% =1point	10.0%	45%
	The importance level of the project by regional government Already considered the budget or regarded as most urgent priority = 3points; regarded as one of top3 = 2points; not urgent =1point;	8.0%	
	The importance with in sectoral plan Trunk line (e.g. Trans Jawa, Trans Sumatra), Primary Feeder of Trunk Line, Metropolitan toll road = 2points; other toll road = 1point	10.0%	
	Contribution to agriculture and industries the value of existing tourism (2%); export products (2%); agriculture&fishery(2%); industrial product(2%) and future regional plans(2%)	10.0%	
	Technological Development application of typical advanced technologies (tunnel, steel bridges) will be available = 3points; partial application of advanced technologies= 2points; low availability of advanced technologies = 1point;	7.0%	
Profitability	FIRR(Project FIRR) 12-16% = 3points; 10-12%,16%-18%= 2points; less than 10%, more than 18%=1point;	12.0%	25%
	Past trends of Growth ratio (average points bellow two indicator) GRDP growth rate >6% = 3points; 5-6% = 2points, <5% = 1point Past trends of no. of registered vehicle w/o motorcycle Growth rate >15% = 3points; 10%-15% = 2points, <10% = 1point	8.0%	
	Potential demand risks and uncertainty (connectivity, bottleneck) Firm basic assumption by network = 3points; some concerns of deviation of traffic flow = 2points; highly uncertainty of traffic flow = 1point;	5.0%	
Implementability	Uncertainty of constructionability through existing design lower risks for constructionability = 3 points; moderate uncertainty for future constructionability = 2 points; highly uncertainty for future constructionability = 1 point	3.0%	30%
	Fiscal capacity by local government (Original Tax revenue/person) More than 200 = 3points; 100-200 = 2points; less than 100 = 1point	4.0%	
	Trace approval (SP2LP) Already issued. = 3points; Not yet = 2point	4.0%	
	Difficulty of land acquisition Ratio of difficult land use (residential area) Less than 10% = 3points; 10-30% = 2points; more than 30%= 1point	4.0%	
	Extent of natural impacts (e.g. impact for endangered Species for fauna & flora) No serious natural impacts = 3points; Serious but it can be mitigated=2points; Serious environmental issues predicted = 1point	4.0%	
	Extents of social impacts Estimated counts of no. of buildings to be resettled less than 500 = 3points; 500-1000 = 2points; over 1000 = 1point	5.0%	
	Appropriateness of private participation in PPP scheme(section split) more than 500 bill. Rp by private = 3points; 100-500 bill. Rp by private=2points; less than 500 bill. Rp by private = 1point;	6.0%	

Source : JICA Study Team

Each indicator uses the quantifiable item as much as possible for accountability of evaluation. If it is unavoidable to use qualitative items, the relative comparison between candidates is applied to avoid biased scoring.

The each score will be re-calculated by the weight which reflects the importance of the criteria. The weight is determined in consideration of the original opinion

by the counterpart, Bina Marga.⁹ The item of detailed criteria and the results of scoring are described in the next section.

(2) Necessity

i) Social Economic Benefit

The main purposes of an economic evaluation are to assess the degree of contribution of the project to the national economy and to investigate whether the implementation of the project is justified or not from an economic point of view. The Economic Internal Rate of Return (EIRR) is applied as the indicator to evaluate Socio Economic Benefit. This EIRR basically includes i) Saving of Vehicle Operation Cost (VOC) and ii) Saving of Time Cost in the toll road project. Normally, over 12% of EIRR is a minimum requirement to select the target project to be implemented. In this study, the traffic volume of local F/S are reviewed in accordance with exiting traffic volume with assumed diversion rate (refer to the 3.7.3-1). The EIRR is also recalculated by using reviewed traffic volume.

We score 3 points to a project which has more than 20% of EIRR, 2 points to a project which has 12-20% of EIRR and 1point to a project which has less than 12% of EIRR.

The results are shown hereunder.

Table 3.7.4-2 Reviewed EIRR

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tanjung Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja - Solo
EIRR	17.90%	20.14%	16.12%	11.01%	16.32%	18.76%	17.77%
Evaluation	2	3	2	1	2	2	2

Source re-calculated by using the original EIRR calculation of Bina Marga

ii) Priority of regional government

The regional government’s priority is one of the un-negligible key indicators for smooth implementation of toll road project in terms of the followings;

- The toll road development which will provide huge regional economic impact should have the consistency with the regional spatial planning
- In this study’s PPP case, the land acquisition cost will be the government burden. The regional governments highly likely cover the part of the land acquisition cost.
- As substantial work of land acquisition is mainly carried out by local governments like PPT, the priority projects of local government directly link to their motivation.

⁹ Through discussions, Bina Marga put emphasis on selecting the really required routes. Thus total weight of necessity of toll road rather than profitability.

To assess level of the priority of the regional government, we interviewed to the provincial BAPPEDAs in the field survey. In the evaluation, if the regional government already considers the budget allocation or regards as most urgent priority project, the highest 3points were given. We scored 2points if the regional government regards as one of top 3 project, and 1 point to be given in the case that there's a will to implement, but long term plan or not urgent. The following table shows the result of evaluation.

Table 3.7.4-3 Priority of Regional Government

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tanjung Perak	Pekambaru-Dumai
Interviewee	BAPPEDA East Jawa Province & related Kabupaten	BAPPEDA West Jawa Province & Related Kabupaten	BAPPEDA East Jawa Province & related Kabupaten	BAPPEDA Riau Province & related Kabupaten
Interview note	The Governor's Policy is to concentrate on the following on-going projects within coming 5years. - Surabaya - Mojokerto - Gempol - Pasuruan - relocation of polon disaster - Waru(aloha) - Tg.Perak - Gempol - Pandaan There're many projects in East Jawa Prov and they seems to allocate budget for the above five projects first.	Bappeda Province considers the next priority after Cisumedau and Ciawi-Sukabumi. Kabupaten Sukabumi also regards Ciawi-Sukabumi as No.1 priority and Sukabumi-Padalarang is the next. Bandung Barat regards sukabumi-Padalarang as No.1 or No.2 in consideration of Pasir Koja – Soreang.	The Governor's Policy is to concentrate on the following on-going projects within coming 5years. - Surabaya - Mojokerto - Gempol - Pasuruan - relocation of polon disaster - Waru(aloha) - Tg.Perak - Gempol – Pandaan Kota Surabaya BAPPEDA prioritize this project rather than Waru(aloha) - Tg.Perak In consideration of the land acquisition difficulties.	Priority of provincial BAPPEDA is highest of the other projects because of the low accessibility to Dumai port which is 3rd biggest port in Indonesia. They wants to improve the exist. Transportation for CPO, pulp, rubber. They also put IMT (Indonesia-Malaysia-Thailand) Golden triangle development on their perspective.
Evaluation	2	2	2	3
	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo	
Interviewee	BAPPEDA Riau Island Province & Batam Authority	BAPPEDA West Jawa Province & Related Kabupaten	BAPPEDA Central Jawa & DI Yogyakarta	
Interview note	The priority of regional government should be referred to Batam Authority's priority. Considering the present traffic situation, they seems to regard this project as "the midterm project" rather than "urgent project" in line with port rehabilitation project. At present, revised pre F/S is carried out.	Both Bina Marga and Regional Government already consider the budget allocation for land acquisition in FY2010. In addition, Bina Marga is also budgeting for DED in FY 2010. Land acquisition activity is already started in Sec1, &Sec2 of total 5sections. Priority is highest for regional government from these land acquisition activities.	Semarang-Solo is a top priority. Then, Jogja-Solo is listed on the special plan ranked as the following priority project. Semarang-Solo and Solo-Kertosono are advancing to complete until 2012. Then, implementation period between this project and above two toll road will be not overlapped and not to become an obstacle in execution.	
Evaluation	2	3	2	

Source Interviews to provincial BAPPEDAs

iii) Importance within sectoral plan

The toll road is defined as the National Road¹⁰ and development policies are undertaken by Bina Marga in every 5 years' RENSTRA. As described in Section 3.2.2, the new RENSTRA for 2010 to 2014 is now under preparation. In their latest toll road development policies in the draft version, they prioritize "trunk toll road" such as Trans Jawa and Trans Sumatra. Following the trunk toll road, the feeder toll road and metropolitan toll road is prioritized. Given this situation, they probably has intention to implement national backbone rather than feeder as faster as possible.

Thus, as the importance within sectoral plan, we scored 3points to trunk line (e.g. Trans Jawa, Trans Sumatra) and, 2points to primary feeder of trunk line and ,metropolitan toll road, and 1point to the others.

¹⁰ Road Law No.38

Table 3.7.4-4 Importance within Sectoral Plan

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo
Importance within Sectoral plan	Primary feeder of Trans Jawa toll road	Primary feeder of Trans Jawa toll road	Metropolitan toll road	A part of Trans Sumatra toll road	None of them	Primary feeder of Trans Jawa toll road	Primary feeder of Trans Jawa toll road
Evaluation	2	2	2	3	1	2	2

Source Interview to Bina Marga

iv) Contribution to regional economic

In the toll road project, as described in previous section, saving of VOC and saving of time cost are the tangible benefits to calculate EIRR. However, in reality, the toll road project also provides various “intangible impacts” to regional economy, communities and living of the residents. Thus, it is important to evaluate extent of such intangible impacts as “Contribution to Regional Economic”. We consider the impacts as shown in the Table 3.7.4-5. And the results are shown in the Table 3.7.4-6, respectively.

Table 3.7.4-5 Indicators for Contribution to Regional Economic

Contribution to tourism (2%)	Improvement of accessibility to tourism location will provide easier dissemination of local information and enhanced promotion of local culture and tourism. We evaluate the annual no. of tourist in kabupaten and kota along the target toll road from the statistics.
Improvement of accessibility for agricultural & fishery (2%)	Evaluate the convenience of distribution and logistics to contribute to the promotion of agriculture, fishery & forestry. The annual agricultural, fishery and forestry production value in kabupaten and kota are referred.
Improvement of accessibility for industrial product (2%)	Evaluate the convenience of contributing to the promotion and distribution of industrial logistics. The annual industrial output value in kabupaten and kota along the toll road are referred.
Contribution to accessibility in export products (2%)	This item is also applied in OGM. The improvement of accessibility to the port will enhance export circumstances. The annual export values from the statistics in each kabupaten and kota along the toll road are evaluated.
New Regional Plan along toll road (2%)	Evaluate the program of industrial location is scheduled to spatial planning and other developments along the toll road. Evaluated according to the size of the project.

Table 3.7.4-6 Evaluation Result Contribution to Regional Economic

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja - Solo
Contribution to tourism (mil. people) Annual tourists is more than 5mil = 3points, 1-5mill = 2 points, less than 1mill.= 1point	0.7	8.8	3.9	0.1	1.1	5.7	4.7
Evaluation	1	3	2	1	2	3	2
Improvement of accessibility for agricultural & fishery (bill. Rp) Annual agriculture production along the toll road more than 5000bill. Rp=3points, 1000-5000bill. Rp=2points, less than 1000bill. Rp=1point	3,902	5,367	105	2,171	172	2,422	2,428
Evaluation	2	3	1	2	1	2	2
Improvement of accessibility for industrial product(bill. Rp) Annual agriculture production along the toll road more than 20000bill. Rp=3points, 10000-20000bill. Rp=2points, less than 10000bill. Rp=1point	6,784	12,170	25,058	37,976	20,724	13,659	5,230
Evaluation	1	2	3	3	3	2	1
Contribution to accessibility in export products (bill. Rp) Annual export value along the toll road more than 5000bill. Rp=3points, 1000-5000bill. Rp=2points, less than 1000bill. Rp=1point	150	137	7,117	10,838	5,106	105	244
Evaluation	1	1	3	3	3	1	1
New Regional Plan along toll road No. and size of development plan (e.g. real estate, industrial zone)	2 Large scale dev.	1 Large scale dev. 1 small scale dev.	2 Large scale dev., 3 small scale dev.	2 Large scale dev.	1 Large scale dev 1 medium scale dev.	1 medium scale dev 2 small scale dev.	No considerable regional plan along the toll road
Evaluation	2	1	3	2	2	1	1

Source : The figures generated by BPS, Regional Plans are referred to spatial planning.

v) Technical Highlight

In this PPP project, it is assumed that Japanese ODA loan will be applied to the government portion in section split scheme. In Japanese ODA project, it is normally expected to transfer high technology which has been not yet developed in Indonesia (e.g. tunneling, steel long span bridges, soft ground countermeasure, huge slope protection technology and advanced construction methods to ensure shorter construction period etc.). Thus, the possibility to introduce and transfer technology is evaluated as “Technical Highlight”.

If the project has potential to apply typical advanced technologies in a large part of construction cost (e.g. tunnel and steel bridges and soft ground countermeasure), we scored 3points. We scored 2points if the project has a potential of partial application of the advanced technologies. If no advanced

technologies is expected to apply, 1 point was given. Evaluated results are shown in the following table.

Table 3.7.4-7 Evaluation Result of Technical Highlight

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg. Perak	Pekambaru-Dumai
Descriptions	The project area locates hinterland and the alignment is passing through paddy field and the gentle hilly area. No particular difficulties for construction can be found.	The almost project area locates gentle hinterland and paddy field. However, the alignment is passing on the mountainous area from around sta.101km at Cipatat to the end point. The tunnel or slope protection can be possibly applied to this area. In addition, the alignment should pass over the river in deep valley at around sta.92km, the long span bridge should be constructed.	The alignment is passing on the east side fish pond area and residential area. The train is flat, but this project includes wide variety of structures. Particularly, the alignment becomes the elevated section with viaducts after Suramadu IC. The various bridge technologies can be available in this section. In addition, the at-grade section 8km from the start point is passing through the fish pond area and this area will need soft ground treatment.	The alignment is passing hilly area from the Pekanbaru to Kandis and the other train is flat from Kandis to Dumai. However, no particular difficulties for construction can be found.
Evaluation	1	3	3	1
	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja - Solo	
Descriptions	Almost all alignment will pass along with exiting road. The new toll road will be constructed at the center of the ROW. Although no particular difficulties can be found, the effective construction method may be needed because the construction work will be executed under heavy traffic.	The project area locates mountainous and hilly area from the start point to around sta. 47km. In the pre-F/S design, huge embankment and high pier bridges are planned. Nevertheless, the long distanced steep slope (e.g. 6%) is also applied. The alignment will be possibly improved by using tunnel technology.	The project area locates on the soft ground and may need soft ground treatment. In addition, mitigation measure to decrease the area of toll road will be required in consideration of rice field restrictions.	
Evaluation	2	3	2	

Source : JICA study team

(3) Profitability

i) Financial Viability (12%)

FIRR was calculated again based on the review result of construction cost and the forecast traffic as described in section 3.7.3. The assumptions of calculation are shown in the followings;

a. General Assumption

We assumed the concession agreement will signed on 2011 for 35 years period. Land acquisition will be started on 2011. It needs at least 2 years to complete it (based on interview). In parallel, detailed engineering design can be started in 2011 and finish within 1 year, then the tender process for construction starts. Construction period will start in 2013. It takes 3 years for finish it. We assumed the portion for each year is 20:50:30 to accommodate S-curve project schedule. Finally, toll road will be operated in 2016.

b. Basic Financial Assumption

- *Land acquisition cost*: by reference to the latest F/S data
- *Construction cost per km*: average toll road cost by specific geographical conditions in Indonesia (see section 3.7.3).

- *Depreciation*: straight line/ linear depreciation which no residual value at the end of depreciation time. Depreciation time for infrastructure is 30 years.
- *Inflation*: Inflation assumption that used by Fiscal Policy Board - MOF for Fiscal Year 2008 and 2009 is 6%. In this calculation, we use 6% also.
- *VAT*: based on regulation is 10%
- *Corporate tax*: SPC will be charged 25% of profit. If no profit, there will be no tax. This value based on Law No. 36/2008 about Income Tax. In that law, Article 17 (2a) stated that Corporate tax will be 25% from Fiscal Year 2010.
- *Non toll road revenue*: based on Jasa Marga Report, non toll road revenue only 1% of toll road revenue in 2007 and 2008.
- *Design and construction*: figures from in this study and Financial Report for FS and Pre-design of Toll Road Investment Tender (Bina Marga Report, January 2006). All number based on percentage of construction cost; except for financial administration cost is based on loan amount.
- *Operation and maintenance*: we use annual OM cost based on the similar toll road studies.
- *Initial fare*: this number comes from FS based on ATP-WTP survey and the different fare for each type is based on Cikampek-Padalarang Toll Road fare.

The recalculated results are shown in Table 3.7.4-9(The detailed results are shown in the Appendix AP5-6)

Table 3.7.4-8 Summary of Assumptions in Financial Model

Timings of Ivents					
	Start	Period			
Land Acquisition	: 2011	2 years			
Design (DED)	: 2011	1 years			
Construction	: 2013	3 years			
Operation	: 2016	30 years			
Concession agreement	: 2011	35 years			
Cost			Revenue		
Construction cost (mid. 2008 price, Billion Rp)			Initial Fare		
Depreciation			Type I	=	based on the exist. F/S
Asset depreciation method	: Linear		Type II	=	1.5 x Type I
Infrastructure depreciation	: 30 years		Type III	=	2 x Type I
Land Acquisition Work Allocation			Type IV	=	2.5 x Type I
First year	: 50%		Type V	=	3 x Type I
Second year	: 50%		Non toll road revenue		
Construction Work Allocation			: 1% of toll revenue		
First year construction	: 20%		Operation days		
Second year construction	: 50%		: 365 days		
Third year construction	: 30%		Calculation Assumptions		
Design & Construction			Foreign exchange rate		
Design (DED)	: 2.00% of construction cost		: ¥ 1.00 Rp 104		
Overhead cost	: 1.00% of construction cost		Discount Rate		
Physical contingency cost	: 10.00% of construction cost		: 15%		
Price escalation	: 6.00% of construction cost		Inflation		
Supervision & management	: 3.00% of construction cost		During pre-operation		
Financial administration	: 1.25% of loan percentage of construction cost		: 6%		
Operation and Maintenance			During operation		
Operation & Maintenance cost	: 1.5 Billion Rp per km		: 6%		
(incl. routine & periodic)			Taxation		
			VAT		
			: 10%		
			Corporate tax		
			: 25%		
			Tax exemption after 1st profit year		
			: 0 years		

Source: JICA Study Team

Table 3.7.4-9 Recalculation Result of FIRR

		Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg. Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo
Terrain		Hilly	Hilly/Mountainous	Urban	Hilly	Flat	Mountainous	Hilly
Length	Km	36.6	61.0	23.7	135	28.5	58.5	40.5
Land Acquisition Cost	Bill.Rp	532	488	868	475	0	505	508
Construction Cost	Bill Rp	1464	2745	2370	5400	855	2925	1215
	Bill Rp/km	40	45	100	40	30	50	30
Investment cost	Bill Rp	3478	5785	5495	10529	1992	6130	2928
Toll Fee Type I	Rp/km	650	650	1100	900	650	650	300
FIRR	Project FIRR	13.8%	12.0%	10.5%	9.3%	9.2%	11.7%	12.7%
Evaluation		3	3	2	1	1	2	3

Source: JICA Study Team

ii) Demand generation prospects (8%)

In the traffic demand forecast, socio-economic framework whose explanatory variables is the Gross Regional Domestic Products (GRDP) are generated at first. Then the number of registered vehicles which is directly used in the traffic demand analysis is calculated from this socio-economic framework. Therefore, to use the growth ratio of GRDP and no. of registered vehicle is appropriate as the indicators to evaluate the demand generation prospects. We use the five years' average for both indicators. The scoring principle is that the higher, the better. We scored 3 points if the GRDP growth in the project area was more than 6% per year. If the rate was between 4 and 5%, 2points were given. If it was less than 5%, 1point was given.

As for the numbers of registered vehicle, we apply the figures without motorcycles because the motorcycle can not utilize toll road. We scored 3points if the growth rate more than 20%. If the ratio is 10-20%, 2points were given. If it was less than 10%, 1point was given. Finally, we applied the average of both scores. The results are shown in the following table.

Table 3.7.4-10 Evaluation of Demand Generation Prospects

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo
Ave. Growth ratio of GDP	5.67%	5.33%	5.67%	4.66%	6.78%	5.33%	5.19%
Evaluation	2	2	2	1	3	2	2
Ave. Growth Ratio of Registered Vehicle	16.68%	8.76%	16.68%	27.56%	73.85%*	8.76%	17.33%
Evaluation	2	1	2	3	2	1	3
Ave. Score	2	1.5	2	2	2.5	1.5	2.5

*note : Score the middle because the figures are available only two years.

Source : The figures from BPS

iii) Demand Risks (5%)

Toll road in Indonesia has actually implemented depending on the project readiness such as fund allocation either by overseas donors or private investors. Therefore there are always the risks that adjacent toll road's default provide serious sluggish demand than original network scenario. We evaluated this potential risks and uncertainty within this decade in terms of connectivity and bottleneck. If there's low uncertainty such as "stand-alone" project and/or implementation of adjacent toll road and related project (e.g. port rehabilitation etc.) is practical, we scored 3points. If there is some concerns of deviation of traffic flow, 2 points were given. If the project has highly uncertainty of traffic flow, 1point was given. The results are shown in the following table.

Table 3.7.4-11 Toll Road Network Assumptions in Local F/S for Demand Forecast

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekanbaru-Dumai
Risk analysis	“Branch line of Trans Jawa Toll Road”. LA progress of Gempol-Pandaan is 73.94%. The operability of important adjacent route is high. The key success factor is diversion rate from exist. Road.	Ciawi-Sukabumi is vital important for demand from Jakarta. However very low LA progress (0%) because of low financial availability of the investor. This route includes uncertainty for the connectivity in next ten years.	Suramadu Bridge and SS Waru-Bandara Juanda are already operated. No concerns for the Connectivity. However, there’s uncertainty of const. Waru(Aloha) – Tj.Perak which becomes competitive route of this route.	This route is a part of “Trans Sumatra”. The assumption in demand forecast is not considered the network of Trans Sumatra. There’s not considerable risk for demand because of “stand-alone” route at least for the present.
Evaluation	3	1	2	3
	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo	
Risk analysis	The route is “stand-alone” route. The expansion of Batu Ampar port project is the demand risk factor for this route. The realization of port expansion project is prioritized by Batam Authority	The connectivity for this route is no problem because Padalarang – Cileunyi is operated to keep the traffic from Jakarta. This route will connect to Cikampek – Palimanan. The realization of Cikampek –Palimanan is practical because LA the progress will be 70% up to Sep. 2009 (by the interview to TPT).	The important toll roads for Jogja-Solo are “Semarang-Solo” and “Solo-Kertosono” which are the Trans Jawa Toll road. The practicability of these two toll road are relatively high considering the priority.	
Evaluation	3	3	3	

Source : Various Local F/S and Study Team’s analysis

(4) Implementability

i) Uncertainty of Constructionability

When we think of the implementability, one of the important factors is the uncertainty of constructionability. The constructionability may be translated as technical risk which has a possibility to rise construction cost. We make a relative comparison among candidates in terms of this technical risks during construction based on the existing design and site reconnaissance and evaluated.

The scoring principle are that we scored 3points if the uncertainty of constructionability is relatively lower. If the moderate uncertainty for constructionability, 2 points was given. If highly uncertainty for constructionability is foreseen, 1 point was given. From the view of relative comparison, the project which has apparently the risk of constructionability was “Cileunyi – Dauwan” based on our engineering sense. Thus, we scored 1point to the “Cileunyi - Dauwan”. On the contrary, we scored 3points to “Batu Ampar-Muka Kuning-Hang Nadim” as a project which has no because toll road construction sites are already ensured within wide ROW and the risk work items such as hugh earthworks can not be foreseen. The details are described in the Table 3.7.4-12.

Table 3.7.4-12 Evaluation of Uncertainty of Constructionability

	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekbaru-Dumai
Risk analysis	Almost all works will be constructed on the gently hilly area. The variety of structures are not so many. Considerable difficulties can not be foreseen.	Most part of the alignment locates on the gently hilly area and paddy field. It can be foreseen the certain level of difficulty around the mountainous area from around sta.101km at Cipatat to the end point. The risks are evaluated as moderate level of difficulty.	Almost all construction on the flat area. There may be risks for soft ground treatment in the at-grade section 8km from the start point, however it will be mitigated by using proper methods. The risks are judged as "moderate".	Since the level of alignment study is still preliminary, it can not be identify the specific risk. However, it is evaluated that it is moderate level of constructionability based on the existing terrain it the alignment is properly selected.
Evaluation	2	2	2	2
	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo	
Risk analysis	The new toll road will be constructed in the center median and existing arterial road will be reconstructed outward of toll road. ROW for const. is already ensured and the remarkable difficulties can not been found at present.	Existing site location is hilly and mountainous area. As per the Pre F/S alignment, the volume of earthworks are remarkably high. And huge slopes over 30 to 40 meter high can be found all over the alignment. It is considered that the const. of high pier bridges around Sta.43km also includes technical risks.	Existing site locates gently hilly area. Soft ground works will be the risk for construction. However, no many considerable difficulty will be needed.	
Evaluation	3	1	2	

Source : Various Local F/S and Study Team's analysis

ii) Readiness for Land Acquisition

We could check the readiness for land acquisition in "Fiscal Capacity by Local Government", "Trace approval(SP2LP)" and "Difficulty of Land Acquisition".

Fiscal capacity by local government

In one of the candidate project, "Cileunyi-Dauwan", land acquisition work has been already started. The budget for land acquisition in this section are shared by the central government, provincial government and kabupaten government¹¹. Considering this actual situation, the fiscal capacity of local government is regarded as important factor for smooth land acquisition implementation.

The budget of local government is composed by "original revenues", "balance fund", "regional government loan" and "other revenue". We evaluate this "original revenue" of provincial government dividing its population (original Tax revenue/person (thousand rupiah)).

If this indicator is more than 200, we scored 3points. If the indicator is between 100 and 200, 2points were given. If less than 100, 1point was given.

Trace approval (SP2LP)

As described in section 3.3.4, issuance of SP2LP is the first step process of the

¹¹ Interview from Bina Marga & West Jawa Province

land acquisition activity and is an important process in promoting a smooth land acquisition. There's apparently different implementability between routes with SP2LP and route that are not issue yet. We evaluate 3 point to the project which already has SP2LP. If the project doesn't have SP2LP yet, 2point was given.

Difficulty of land acquisition

Generally, it is difficult to acquire the land in urban area rather than rural area. The difficulty of land acquisition

Furthermore, in each region, forest farms, residential areas, commercial areas by land acquisition will become more difficult.

Normally, the most difficult land use is the commercial area followed by residential area, then agricultural & forest area. Thus, we evaluate the ratio of difficult land use such as residential and commercial area of the total area to assess the difficulty of land acquisition. However, we also considered that the difficulty is variable even in the same residential area between in country side area (e.g. Cisumedau) and urban area (e.g. Surabaya). Therefore, if the residential area in urban area like Surabaya, the area was corrected by two times from original area.

The figures for area by land use were referred to the existing AMDAL. We scored 3points if the ratio of difficult land use (residential and other difficult area) less than 10%. If the ratio between 10-30%, we scored 2points. If the ratio more than 30%, 1 point was given.

For "Batu Ampar-Muka Kuning-Hang Nadim", although AMDAL study is still under process, Batam Authority already own their ROW along the existing road enough wide to construct toll road in the center of the existing road. Thus we scored 3points to this project.

Table 3.7.4-13 Evaluation in Readiness for Land Acquisition

		Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo
Fiscal Capacity by local gov.	Province	East Jawa	West Jawa	East Jawa	Riau	West Jawa	West Jawa	Cent. Jawa DI Yogyakarta
	Original Tax revenue	113.1	92.0	113.1	247.9	92.0	92.0	105
	Evaluati on	2	1	2	3	1	1	2
Trace Approval (SP2LP)	Trace Approval Issued?	Yes	Not yet	Not yet	Not yet	Yes	Yes	Not yet
	Evaluati on	3	2	2	2	3	3	2
Diff. of Land Acquisition	AMDAL is ready or not ?	Yes	AMDAL only for Sukabumi Cilanjang	Yes	Yes	Yes	Yes	Yes. but not approved yet
	Ratio of difficult land use	1%	22%*	41%	16%	7%	7%	30%
	Evaluati on	3	2	1	2	3	3	1

*note: The figures in Cilanjang - Padalarang is not available. But study team assumes residential area through the drawings

Source : BPS, Interview to the gov. and AMDAL

iii) Impact on living environment

Extent of natural impacts

Indonesia is well-known throughout the world for the highest biodiversity and is also famous for the largest tropical rainforest in the Asia. In case of the road development of Indonesia, we must check whether the preserved forests or nature reserve exists or not in the vicinity of the ROW using existing AMDAL. If the project has no serious natural impacts, we scored 3points, in the case that there's possibility to impact natural environment but it can be mitigated, we scored 2points. If the serious environmental issues predicted, 1point was given.

Extents of social impacts

It is generally known that the toll road will affect vast area and often cause social impacts because of its huge project scale. To pay attention to this social environmental considerations are vital important for further smooth implementation. In the toll road project in Indonesia, the number of affected household (KK: Kepala Keluarga) is normally applied as the one of the indicators to assess social impacts. We tried to correct such data from the AMDAL or other sources, but it is actually difficult to prepare this indicator for all of the routes because the preparation of this indicator needs massive inventory survey to get the data for both the numbers of buildings and landowners. Therefore, we applied the number of buildings to be resettled which

can be available in some routes and be countable through the drawings or satellite image if the data is not available as simple indicators for social impacts.

If the number is available in the AMDAL, we prevailed the figures of AMDAL. If there's no information from the AMDAL, the counted figures from the satellite image was applied. In the case that both can not be prepared (e.g. Batu Ampar – Muka Kuning – Hang Nadim), we assumed the numbers based on the site reconnaissance.

We scored 3points if the number of buildings to be resettled less than 500. If the number of buildings are between 500-1000, we scored 2points. If the number of buildings over 1000, 1 point was given.

Table 3.7.4-14 Evaluation in Impact on Living Environment

		Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo
Extent of Natural Impacts	Concerned issues	no considerable impacts	no considerable impacts	no considerable impacts	The alignment is passing the Protected Forest, Taman Hutan Raya, Animal Protection Conservation Area (Suaka marga satwa)	no considerable impacts	no considerable impacts	Conservation of the rice field is a main area of focus. ¹²
	Evaluation	3	3	3	2	3	3	2
Extent of Social Impacts	No. of buildings to be resettled	238*units	2485units (973*(for Sukabumi-Cilanjang) 1512**(for Cilanjang-Padalarang)	632** units or more	40* units	100*** units	1521** units or more.	1377** units or more.
	Evaluation	3	1	2	3	3	1	1

*note: The figures are referred to AMDALs.

**note: The figures are counted from the satellite images and existing drawings.

***note: From the interview to Batam Authority and assumption through site reconnaissance.

Source : Interview to the gov. and AMDALs

iv) Project Type & cost

Appropriateness of private sector in PPP scheme (Section split)

In the evaluation in “Project Type / Cost” of the OGM, the criterion which gives higher score to the larger project cost is designed. Considering that the selected project from this study will be implemented as “a model case” of PPP scheme,

¹² The AMDAL study of Jogja-Solo were carried out together with “Solo-Kertosono” in 2007. Originally there has been issue of conversion of paddy field for Jogja-Kertosono. However, Solo-Kertosono were approved because of the higher priority of Trans-Jawa by Ministry of Environment after ministries coordination. At the moment, the prospect of approval for Jogja-Solo lies in the hands of ministries coordinations.

the investment amount of private portion should be evaluated as appropriateness of PPP scheme. In section 3.8 below, we examined the private proportion when that proportion keeps SPC's FIRR as 18% in section split scheme. We evaluated the investment amount by using these results. However, it should be taken into consideration that small percentage of private portion is not appropriate to "Section Split scheme" even if that amount is larger. So we applied the composite result (private investment (Rp Bill.) x private proportion of total (%)) and evaluated. If this indicator (private investment x its proportion) is more than 500 billion rupiah, we scored 3 points. If the indicator is between 100 - 500 billion rupiah, then we evaluated as 2 points. If the project investment less than 100 billion rupiah, 1 point was given.

Table 3.7.4-15 Evaluation in Attractiveness of private sector for PPP scheme

		Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tg Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi - Dawuan	Jogja-Solo
Appropriateness of private participation for PPP scheme	Private Investment (bill. Rp) (a)	2,156	1,996	1,539	526	139	1,931	1,874
	Private Proportion (b)	(62%)	(35%)	(28%)	(5%)	(7%)	(32%)	(64%)
	(a) x (b)	1,337	689	431	26	10	608	1,199
	Evaluation	3	3	2	1	1	3	3

note: The private investment were calculated on the condition that the private portion can keep 18% FIRR after government investment is considered.

Source : JICA Study teams' analysis

(5) The result of MCA

The overall result of MCA is shown as the Table 3.7.4-16. The final score is summed up of weighted scores. Figure 3.7.4 shows the characteristics of the project by three factors (Necessity, Profitability and Implementability).

Prior to the candidate project is nominated, we updated the latest information regarding implementation policy by BAPPENAS, Bina Marga and BPJT. From the interviews to these stakeholders, we confirmed that "Cileunyi-Dawuan" toll road will be implemented by using China fund and "Bandara Juanda – Tg.Perak" toll road will be tendered out by "bundle scheme"¹³ with Suramadu Brige.

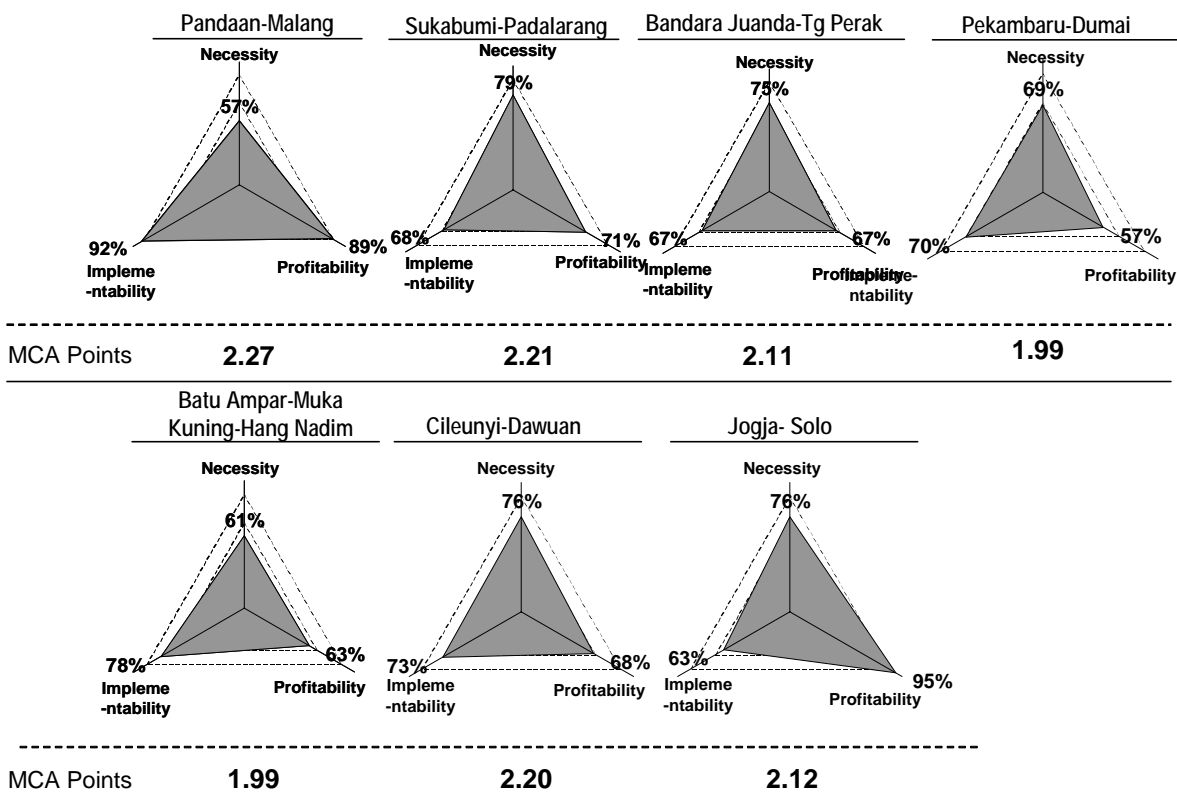
From the final scores and this latest implementation policy by stakeholders, we selected the three highest score projects, (1) Pandaan-Malang (2) Sukabumi-Padalarang and (3) Jogja-Solo as prospective candidates for further feasibility study.

¹³ The "bundle scheme" aims to procure the investor to construct Bandara Juanda –Tg.Perak with concession to operate Suramadu Bridge like "tie-in package". Bina Marga designs that the investor is attracted to construct the adjacent toll road by revenue from the Suramadu bridge.

Table 3.7.4-16 MCA Scoring Result

Category	MCA category	Evaluation contents	Weight	Allocation	Pandaan-Malang	Sukabumi-Padalarang	Bandara Juanda-Tanjung Perak	Pekambaru-Dumai	Batu Ampar-Muka Kuning-Hang Nadim	Cileunyi-Dawuan	Jogja-Solo	
Necessity	Social Economic Benefit	EIRR	10.0%	45%	2	3	2	1	2	2	2	
					0.20	0.30	0.20	0.10	0.20	0.20	0.20	
	Priority of local government	The importance level of the project by regional government	8.0%		2	2	2	3	2	3	2	
					0.16	0.16	0.16	0.24	0.16	0.24	0.16	
	Importance within sectoral plan	The importance with in sectoral plan	10.0%		2	2	2	3	1	2	2	
			0.20	0.20	0.20	0.30	0.10	0.20	0.20			
	Contribution to regional economic	Contribution to agriculture and industries (tourism, agriculture, industry, export and regional development plan)	10.0%	1.4	2.0	2.4	2.2	2.2	1.8	1.4		
				0.14	0.20	0.24	0.22	0.22	0.18	0.14		
	Technical Highlight	Technological Development	7.0%	1	3	3	1	2	3	2		
				0.07	0.21	0.21	0.07	0.14	0.21	0.14		
Profitability	Financial Viability	FIRR(Project FIRR)	12.0%	25%	3	3	2	1	1	2	3	
					0.36	0.36	0.24	0.12	0.12	0.24	0.36	
	Demand generation prospects	Past trends of Growth ratio (GRDP growth rate, Past trends of no. of registered vehicle w/o motorcycle)	8.0%		2.0	1.5	2.0	2.0	2.5	1.5	2.5	
				0.16	0.12	0.16	0.16	0.2	0.12	0.2		
	Demand Risks	Potential demand risks and uncertainty	5.0%	3	1	2	3	3	3	3		
				0.15	0.05	0.10	0.15	0.15	0.15	0.15		
Implementability	Uncertainty of Constructionability	Uncertainty of constructionability through existing design	3.0%	30%	2	2	2	2	3	1	2	
					0.06	0.06	0.06	0.06	0.09	0.03	0.06	
	Readiness for Land Acquisition	Fiscal capacity by local government			4.0%	2	1	2	3	2	1	2
						0.08	0.04	0.08	0.12	0.08	0.04	0.08
		Trace approval (SP2LP)			4.0%	3	2	2	2	2	3	2
					0.12	0.08	0.08	0.08	0.08	0.12	0.08	
		Difficulty of land acquisition			4.0%	3	2	1	2	3	3	1
				0.12	0.08	0.04	0.08	0.12	0.12	0.04		
Impact on living environment	Extent of natural impacts(e.g. impact for endangered Species for fauna & flora)		4.0%	3	3	3	2	3	3	2		
				0.12	0.12	0.12	0.08	0.12	0.12	0.08		
	Extents of social impacts		5.0%	3	1	2	3	3	1	1		
				0.15	0.05	0.10	0.15	0.15	0.05	0.05		
Project Type & cost	Appropriateness of private participation in PPP scheme(section split)		6.0%	3	3	2	1	1	3	3		
				0.18	0.18	0.12	0.06	0.06	0.18	0.18		
					2.27	2.21	2.11	1.99	1.99	2.20	2.12	

Source : JICA Study Team



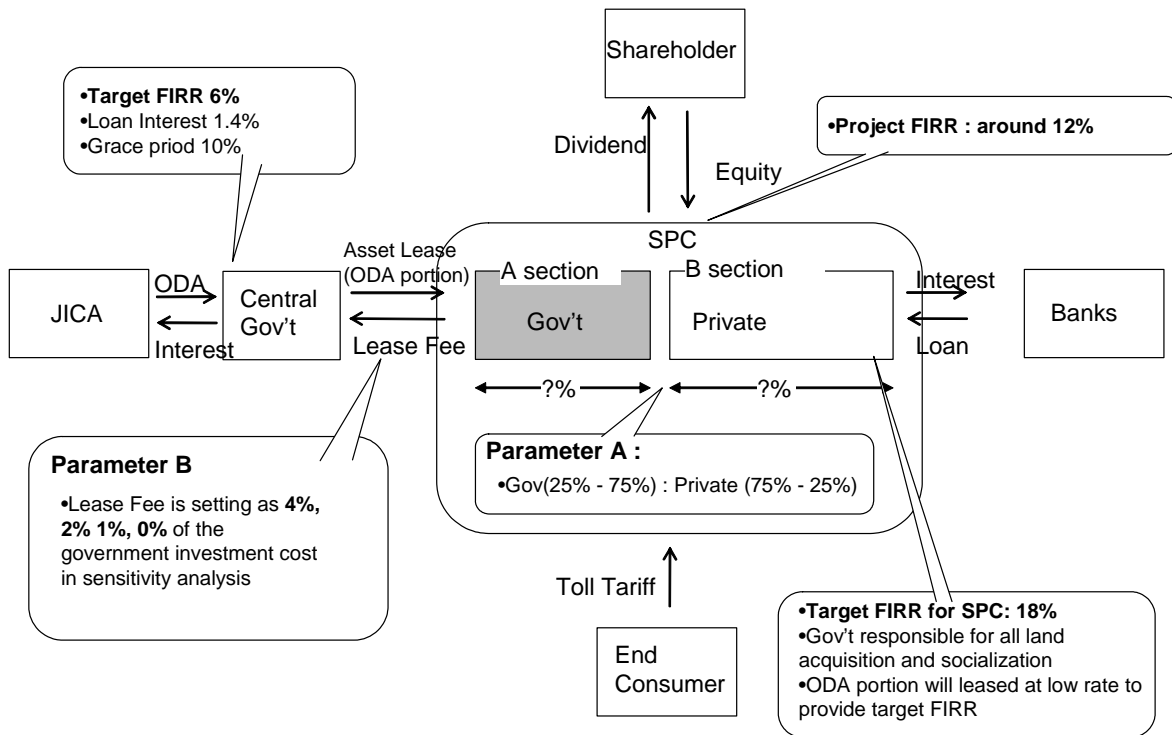
*note : The figures of percentage are representing the scoring ratio in each category.

Figure 3.7.4 Characteristics of the Project by Categories

3.8 Detailed Examination in PPP scheme

The projects selected in the previous section will be implemented by the PPP scheme, which needs proper proportion between government and private sector funds to gain optimum conditions for both parties. From the financial perspective, there are three indicators to be decided for the project: Project FIRR, SPC FIRR and GOI FIRR. The Project FIRR should be within 12%-16%, as appropriate percentage range of the FIRR. The SPC FIRR, which is rate of return on private investment, should be higher than commercial banks' interest rate (also around 12%-16%). In all the model cases, the commercial interest rate is assumed as 16%, so SPC FIRR should be set to at least 18%. The FIRR of GOI should be around 6%, taking into consideration the ODA loan interest rate and currency risk. In this PPP scheme, the operational period will be managed by the private sector. The government is not involved in the organization, although the private companies should pay infrastructure lease fees to the government as compensation. The amount of this fee is based on the government portion size. Subsequently, a simulation was made to find the GOI FIRR by setting the SPC FIRR at 18% (Refer to Figure 3.8).

As a result, the Sukabumi-Padalarang and Pandaan-Malang road projects met all the criteria and are feasible for study in the next stage. Then, the financial simulation was conducted among those candidate projects by using their sensitivity for changes in the infrastructure lease fee and public (ODA) portion and computing the corresponding SPC and GOI FIRRs. Table 3.8 shows the results of the financial simulation.



Source : JICA Study Team

Figure 3.8 Pattern Diagram for Calculation of PPP Scheme

Table 3.8 Toll Road PPP Candidate Financial Simulation

		Public Private Ratio					
		25 : 75		50 : 50		75 : 25	
		SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR
Lease Fee	4%	12.20%	10.40%	13.70%	9.40%	16.60%	8.90%
	2%	12.60%	9.50%	14.80%	8.00%	19.30%	7.10%
	1%	12.80%	9.00%	15.40%	7.20%	20.60%	6.10%
	0%	13.00%	8.50%	15.90%	6.40%	22.00%	5.10%

Sukabumi-Ciranjang-Padalarang
Investment cost: Rp 5,785 billion
Project FIRR 12%

		Public Private Ratio					
		25 : 75		50 : 50		75 : 25	
		SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR
Lease Fee	4%	15.80%	9.90%	18.30%	9.40%	23.80%	9.10%
	2%	16.20%	9.20%	19.50%	8.20%	26.70%	7.60%
	1%	16.40%	8.80%	20.00%	7.60%	28.20%	6.80%
	0%	16.60%	8.50%	20.60%	6.90%	29.70%	5.90%

Pandaan-Malang
Investment cost: Rp 3,478 billion
Project FIRR 13.8%

		Public Private Ratio					
		25 : 75		50 : 50		75 : 25	
		SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR	SPC FIRR	GOI FIRR
Lease Fee	4%	14.10%	9.90%	15.80%	9.30%	19.20%	8.90%
	2%	14.40%	9.30%	16.80%	8.30%	21.50%	7.60%
	1%	14.60%	8.90%	17.20%	7.70%	22.80%	6.90%
	0%	14.80%	8.60%	17.70%	7.20%	24.10%	6.20%

Jogja-Solo
Investment cost: Rp 2,928 billion
Project FIRR 12.7%

Source : JICA Study Team

Based on table above, the optimum condition for both parties (grey area) is shown. The Pandaan-Malang toll road is an attractive project for both parties. In 50:50 portions, the SPC FIRR and GOI FIRR exceeded the minimum limit. The Sukabumi - Pandalarang toll road needs 75% ODA portion to gain the expected FIRR.

3.9 Data Sheet of Selected Projects

3.9.1 Pandaan - Malang

<p>1. Name of Project 1) Section Name: Pandaan-Malang 2) Length: 36.6km 3) Project Cost: 3,478 bil Rp 4) Couterpart Agency: Bina Marga/BPJT/East Jawa Province</p>	<p>4. PPP Modality - PPP scheme with "Section Split".</p>
<p>2. Role and Priority 1) Implication: This route is a part of toll road between Surabaya and Malang. This route connects to Trans Jawa toll road at Pandaan. 2) Role: The traffic heading to Malang and southern seacoast area through Malang utilize this route. There're also the traffic aimed to tourism in Malang 3) Priority: The BOT concession of this route was terminated and tendered out as Batch IV. However no investors are determined. "Priority Project" in the PPP Book.</p>	<p>5. Necessity, Profitability, Implementability 1) Necessity - EIRR: 17.9% - Priority Regional Government: The provincial gov willing to concentrate on the implementation of i) Surabaya – Mojokerto, ii) Gempol – Pasuruan, iii) relocation of polon disaster, iv) Waru(aloha) - Tg.Perak, v) Gempol – Pandaan. - Sector Priority: As subsequent priority after Trunk Toll Road (e.g. Trans Jawa, Trans Sumatra). - Contribution to Regional Economic: Malang area is well-balanced development area in both agriculture & forestry and Industry & Mining. The production value of agriculture & forestry is about Rp3902bill, and Industry & Mining is Rp6784bill. The industrial park (Sendang Biru:4000ha) and Real Estate Plan (Kepanjen:28,000ha) are planed as the regional development plan along the route and further traffic generation will be expected. - Technical Highlight: Northern area of Malang is gently hilly area and flat paddy field. Thus there may be no particularly difficult structure. Less chance to transfer of the technology is expected. 2) Profitability - FIRR(Project FIRR): (FS) 11.28% (Revised FS) 13.08% (Revised this Study 13.1%) Demand Generation Prospects: Ave. GDP Growth 5.7%, Past trend of Registered Vehicles 16.7%</p>
<p>3. Project Outline 1) Road Class, Lane, Design Speed: Class I, 2lanes × 2directions (3X2 future expansion) , 100km/h (flat) , 80 km/h (mountainous) 2) Cost Breakdown: Const. Cost 2,588 bil Rp , Land Acquisition Cost 634 bil Rp 3) Beneficially Population: 4,447,873 people 4) Forecasted Traffic: 19,781 veh./day (0year), 25,087 veh./day (10year)(Pandaan - Purwodadi) 5) Exist. Traffic on arterial road: 53,334 veh./day (AADT 2008) 6) Technical Characteristics: This route passes on gently hilly area heading to Malang from Pandaan. Near to the Malang city, the alignment passes on the flat paddy field. There's no considerable technical difficulty throughout the route.</p>	
<p>(continued) Demand risks: The progress of land acquisition in Gempol - Pandaan which is adjacent line of Pandaan-Malang is 73.94%(as of Feb.2009). The realization of this Gempol - Pandaan is realistic and the connectivity from Trans Jawa to this project may be ensured. The diversion riation from existing route to the toll road is the key factor in terms of profitability. 3) Implementability - Uncertainty of Constructionability: Moderate risks are assumed in terms of constructionability - Fiscal Capacity of Regional Gov.: Original Tax Income per person Rp113,000 - Readiness for Land Acquisition (Issuance of SP2LP): already Issued - Difficulty of Land Acquisition: Ratio of Residential Area 1% - Natural Environmental Impact: No considerable impacts for Natural Environment is foreseen. - Social Environmental Impact: No. of Buildings to be resettled 238nos - Private Participation and Proportion: 1,642 (62%)</p>	<p>7. Environmental and Social Considerations 1) Social Impacts The affected no. of buildings are 1377nos. The 2) Natural Impacts There's no serious and sensitive area such as conservation forests nature reserve. The review of AMDAL is necessary in terms of usual natural impacts (e.g. atmosphere, noise and vibrations).</p>
<p>6. Anticipated Issues and Risks 1) The readiness of land acquisition is already prepared because the investor was awarded by BOT scheme. Regional gov. is also cooperative and no considerable issues related to land acquisition are foreseen 2) The progress of land acquisition of Gempol-Pandaan 74% and this route will be inaugurated earlier than this project. 3) The part of Surabaya-Gempol at Sidoarjo were damaged by mud eruption. This accident becomes public issues and the government is very positive to restore this toll road.</p>	<p>8. Concerns related to the adoption 1) The concession of this toll road was terminated and BPJT tendered out again as BOT scheme. However the investor is not determined yet until now. BPJT may be now willing to tender out sooner. 2) Although no remarkable issues for this route, the specific reasons to select this project in terms of application of Japanese ODA loan are indiscoverable.</p>

3.9.2 Sukabumi - Padalarang

<p>1. Name of Project 1) Section Name: Sukabumi-Ciranjang-Padalarang 2) Length : 61.0km 3) Total Project Cost: 5,785bil Rp 4) Counterpart Agency: Bina Marga/BPJT/West Jawa Province</p>	<p>4. PPP Modality PPP scheme with "Section Split".</p>
<p>2. Role and Priority 1) Implication : Route between Jakarta and Bandung though Sukabumi 2) Role: commodity distribution route to Jakarta from roadside, alternative route of Jakarta ·Cikampek-Bandung 3) Priority : Tender was made as Batch IV after termination of concession for Ciranjang-Padalarang, but Investor is not decided. "Priority Projects" in PPP book.</p>	<p>5. Necessity, Profitability, Implementability 1)Necessity - EIRR :20.1% - Priority of Regional Government : As No.2 priority after Cilenyui-Dauwan - Sector Priority: As subsequent priority after Trunk Toll Road (e.g.Trans Jawa, Trans Sumartra) - Contribution to Regional Economic : Expect contribution to not only the business between Jakarta and Bandung but also Tourism. Relatively huge production along the toll road such total production in Agri, Forestly &Fishery and Industry & Mining along the toll road is total Rp20,000bill. - Technical Highlight: Applicability of the tunnel in the mountainous section And long span bridge (Steel particular bridge etc.) should be planned across deep valley at Sta.92km. 2) Profitability FIRR (Project FIRR): (FS) 11.28% (Revised FS) 13.08% (Revised this Study 12.1%) Demand Generation Prospects:Ave. GDP Growth 5.3%, Ave. Growth of Registered vehicles 8.8% Demand risks : Land acquisition of Ciawi – Sukabumi Section is still 0%.There's uncertainty of implementation in near future.</p>
<p>3. Project Outline 1) Road Class, Lane, Design Speed: Class I, 2lanes × 2directions(3X2 future expansion),100km/h(flat), 80 km/h (mountainous) 2) Cost Breakdown: Const. 4,853 bil Rp, Land Acquisition 581 bil Rp 3) Beneficially Population: 4,246,856 people 4) Forecasted Traffic : 20,874veh./day(0yr), 37,368veh/day (10yrs)(Cianjur - Ciranjang) 5) Exist. Traffic on arterial road: 18,864veh/day(AADT 2008) 6) Technical Characteristics: Passing paddy field, hilly area and mountainous area from Sukabumi to Padalarang. Revision of Vertical alignment is necessary on mountainous section and applicability of tunnel const. Long span br. with particular structure type in the immediate vicinity of Exist. Citarum Br. (L=220m / Center Span=125m)</p>	
<p>3)Implementability -Uncertainty of Constructionability : Moderate risks are assumed in terms of constructionability -Fiscal Capacity of Regional Gov.: Original Tax Income per person is Rp92,000. -Readiness for Land Acquisition Readiness for Land Acquisition (Issuance of SP2LP) : Not yet -Difficulty of Land Acquisition : Ratio of Residential Area 22% -Natural Environmental Impact: No considerable impacts for Natural Environment is foreseen. Social Environmental Impact: No. of Buildings to be resettled 2485 nos Appropriateness of Private in Section Split Scheme : Private Participation and Proportion Rp1,738bill.(35%)</p>	<p>7. Environmental and Social Considerations 1) Social Impacts The almost alignment passes on the rural area. However, no. of buildings to be resettled are the most largest of the candidate route. The mitigation measures should be taken in the further sturdy. 2) Natural Impacts here's no serious and sensitive area such as conservation forests nature reserve. The review of AMDAL is necessary in terms of usual natural impacts (e.g. atmosphere, noise and vibrations). There's existing AMDAL only for Sukabumi-Cilanjang section and the AMDAL study for Cilanjang-Padalarang should be carry out.</p>
<p>6. Anticipated Issues and Risks The existing pre-F/S design needs further review by the detailed topographic data. In this review, the redesign of vertical alignment is necessary in consideration of the application of tunnel for the safety design. However effect to the profitability by cost increase should be taken into consideration. 1) The implementation of Ciawi – Sukabumi section will also influence to the traffic demand in Sukabumi – Ciranjang. There's concession in Ciawi – Sukabumi, but the progress of land acquisition still 0%.</p>	<p>8. Concerns related to the adoption 1) The investor for Ciawi – Sukabumi Section is determined, but land acquisition is not progressed. (0% as of March, 2009) . This implementation of Ciawi-Sukabumi will boost up the necessity of Sukabumi-Paralarang and increase the traffic demand from Jakarta to Bandung. 2) It should be considered that the applicability of tunnel in the mountainous section and particular types of bridge in Citrarum in terms of technical development of Indonesia.</p>

3.9.3 Jogja-Solo

<p>1. Name of Project</p> <p>1) Section Name: Jogja-Solo 2) Length: 40.495km 3) Project Cost: 2,928 bil Rp 4) Couterpart Agency: Bina Marga/BPJT/Central Jawa Province, DI Yogyakarta</p>	<p>4. PPP Modality - PPP scheme with "Section Split".</p>
<p>2. Role and Priority</p> <p>1) Implication: This route connects between Yogyakarta and Solo. This route connects to Trans Jawa at Solo. 2) Role: The adjacent route, Jogja-Bawen, is expected for traffic flow heading to Semarang. And this Jogja-Solo will mainly contribute to traffic flow from east. The feature of this route is to vitalizing the tourism and mitigate traffic congestion on exist. road. 3) Priority: This toll road priority follows the two adjacent toll road on Trans Jawa, Semarang-Solo, Solo-Kertosono.</p>	<p>5. Necessity, Profitability, Implementability</p> <p>1) Necessity - EIRR: 17.8% - Priority Regional Government: The provincial gov. (Central Jawa and DI Yogayakarta) put the higher priority which follows Semarang – Solo and Solo - Kertosono . - Sector Priority: As subsequent priority after Trunk Toll Road (e.g. Trans Jawa, Trans Sumatra). - Contribution to Regional Economic: Main feature of this route is contribution to tourism as typified by the world heritage such as Borobudur and Peranbanan. The production value of agriculture& forestry is about Rp2,428 bill, and Industry & Mining is Rp5,230 bill. - Technical Highlight: Almost all section of the alignment is located on gently hilly area and flat paddy field. Soft ground treatment will be foreseen in the some sections. And this route needs technical considerations for mitigation measures to minimize of toll road area to decrease land conversion from paddy field to toll road and retain irrigation systems.</p> <p>2) Profitability - FIRR(Project FIRR): (FS) 21.66% (Revised this Study 12.7%) Demand Generation Prospects: Ave. GDP Growth 5.2%, Past trend of Registered Vehicles 17.3%</p>
<p>3. Project Outline</p> <p>1) Road Class, Lane, Design Speed: Class I, 2lanes×2directions, 120km/h (flat) 2) Cost Breakdown: Const. Cost 2,148bil Rp, Land Acquisition Cost 605bil Rp 3) Beneficially Population: 3,484,947people 4) Forecasted Traffic: 22,941veh./day (0year), 32,172veh./day (10year) (Prambanan - Klaten) 5) Exist. Traffic on arterial road: 38,225veh./day (AADT 2005) 6) Technical Characteristics: This route passes on gently hilly area near Mt.Merapi. The alignment is crossing over 16 rivers.</p>	<p>7. Environmental and Social Considerations</p> <p>1) Social Impacts The affected no. of buildings, 238nos are extremely low impact for 40km length toll road. The mitigation measures should be taken in the further sturdy.</p> <p>2) Natural Impacts There're the issue on restriction of land conversion from paddy field to others around project area. And the exist. AMDAL is not yet approved by this issue. The coordination between ministries will be needed to solve the issue. The review of AMDAL is necessary in terms of usual natural impacts (e.g. atmosphere, noise and vibrations).</p> <p>8. Concerns related to the adoption</p> <p>1) To mitigate land conversion restriction, minimization of affected area in paddy field is necessary. The considerations for this mitigation are needed for the design of alignment and structure type.</p>
<p>(continued)</p> <p>Demand risks : This route will connect to Trans Jawa Toll Road at Solo. Thus, the key of the demand prospect is practicability of Semarang-Solo, Solo-Kertosono and Kertosono-Mojokerto. Semarang-Solo is currently undertaken by the Jasa Marga as a BOT investor and its progress of land acquisition is 12%(as of June '09). For Solo-Kertosono, although the CA is not signed yet, the land acquisition is undertaken by the government and its progress is 16%(Solo-Mantingan) and 14%(Mantingan-Kertosono). The progress for Kertosono-Mojokerto is 22%. These toll roads are practically realized because these progress is gradually but stable.</p> <p>3) Implementability</p> <ul style="list-style-type: none"> - Uncertainty of Constructionability : Moderate risks are assumed in terms of constructionability - Fiscal Capacity of Regional Gov.: Original Tax Income per person Rp105,000 - Readiness for Land Acquisition (Issuance of SP2LP) : not yet Issued - Difficulty of Land Acquisition : Ratio of Residential Area 30% - Natural Environmental Impact: Land conversion issues on paddy fields are foreseen. - Social Environmental Impact : No. of Buildings to be resettled 1377nos - Private Participation and Proportion: 1,874 (64%) 	<p>6. Anticipated Issues and Risks</p> <p>1) Land conversion of paddy field is restricted by the Ministry of Agriculture for this region. The existing AMDAL is not approved yet from this issue.</p>