APPENDIX

Appendix 6-1 Willingness-To Pay Survey

(1) Visited Companies

The companies visited by the Survey Team for the WTP survey are as listed in Table A6-1-1. Five trucking companies, two bus companies and five Japanese firms were visited.

Table A6-1-1 The List of Hearing Companies

Company	category	Date
NIPPON EXPRESS (CAMBODIA) CO. ,LTD	freight company	6 Feb., 2014
TRANCY LOGISTICS (CAMBODIA) CO., LTD.	freight company	11 Feb., 2014
Minebea (Cambodia) Co., Ltd	manufacturing industry	11 Feb., 2014
ROHTO-Mentholatum (Cambodia) Co., Ltd	pharmaceutical company	12 Feb., 2014
Sumi (Cambodia) Wiring Systems Co., Ltd	manufacturing industry	17 Feb., 2014
Taica (Cambodia) Corporation	manufacturing industry	18 Feb., 2014
DENSO International ASIA CO., LTD	manufacturing industry	20 Feb., 2014
Camboda Asia Travel Co., Ltd. （Mekong Express）	freight company	20 Feb., 2014
So Nguon Land Transportation and Service Import Export Co., Ltd.	freight company	21 Feb., 2014
Capitol Co., Ltd.	bus company	28 Feb., 2014
Sokan Transport Pte. Ltd.	freight company	3 Mar., 2014
Phnom Penh Sorya Transport Co., Ltd.	bus company	24 Feb., 2014

(2) Method of Survey and Survey Result

Top manager of each company was asked the following question:

“How much can will your company pay if the expressway between Phnom Penh and Bavet will be constructed and the travel time between Phnom Penh and Bavet will be shortened by 2 hours?”

The results of the survey are summarized in Table A6-1-2 and Figure A6-1-1.

Table A6-1-2 Survey Result

Company	WTP (US$) : Upper limit	Possible Range
A	30	20~30
B	50	40~50
C	50	
D	20	
E	15	
F	50	20~50
G	50	20~50
H	100	
Average[1)]	41.7	

Figure A6-1-1 Survey Result Dates

Appendix 8-1 Cash Flow Analysis of Route C

Table A8-1-1 Cash Flow Projection: Route C (Base Case)

Year	(−) A	(−) B	(−) C [A+B]	(+) D	(+) E	(−) F	(+) G [E−F]	(−) H	(−) I	(−) J	(−) K	(+) L
	Debt Outstanding (BOY)			Cumulative Surplus			Balance of Payment	ODA	Other Payments		New Borrowing	Net Surplus
	ODA Loan	Refinanced Loan			Revenue	M/O cost		Repayment	Principal	Interest		
2022	**2,118**											
2023	2,118	0	2,118	0	37	**12**	25	0	0	0	0	25
2024	2,118	0	2,118	25	39	12	27	0	0	0	0	27
2025	2,118	0	2,118	52	42	12	30	0	0	0	0	30
2026	2,118	0	2,118	83	45	12	33	0	0	0	0	33
2027	2,118	0	2,118	116	48	12	36	0	0	0	0	36
2028	2,118	0	2,118	152	52	12	40	71	0	0	0	−31
2029	2,048	0	2,048	121	55	12	43	71	0	0	0	−27
2030	1,977	0	1,977	94	59	12	47	71	0	0	0	−23
2031	1,907	0	1,907	71	62	12	50	71	0	0	0	−21
2032	1,836	0	1,836	50	64	12	52	71	0	0	0	−19
2033	1,765	0	1,765	31	67	12	55	71	0	0	0	−16
2034	1,695	0	1,695	15	69	12	57	71	0	0	0	−13
2035	1,624	0	1,624	2	72	12	60	71	0	0	9	−11
2036	1,554	9	1,562	0	75	12	63	71	2	1	10	−10
2037	1,483	17	1,500	0	78	12	66	71	4	2	10	−10
2038	1,412	23	1,436	0	81	12	69	71	6	2	10	−10
2039	1,342	27	1,369	0	84	12	72	71	8	3	9	−9
2040	1,271	28	1,299	0	88	12	76	71	9	3	7	−7
2041	1,200	26	1,226	0	91	12	79	71	9	3	3	−3
2042	1,130	20	1,150	0	95	12	83	71	8	2	0	2
2043	1,059	12	1,071	2	99	12	87	71	6	1	0	9
2044	989	7	995	12	103	12	91	71	4	1	0	16
2045	918	3	921	27	107	12	95	71	2	0	0	22
2046	847	1	848	49	111	12	99	71	1	0	0	28
2047	777	0	777	77	115	12	103	71	0	0	0	33
2048	706	0	706	109	120	12	108	71	0	0	0	37
2049	636	0	636	147	125	12	113	71	0	0	0	42
2050	565	0	565	189	130	12	118	71	0	0	0	47
2051	494	0	494	236	135	12	123	71	0	0	0	52
2052	424	0	424	289	140	12	128	71	0	0	0	58
2053	353	0	353	346	146	12	134	71	0	0	0	63
2054	282	0	282	410	152	12	140	71	0	0	0	69
2055	212	0	212	479	158	12	146	71	0	0	0	75
2056	141	0	141	554	164	12	152	71	0	0	0	82
2057	71	0	71	636	171	12	159	71	0	0	0	88
2058	−0	0	−0	724	178	12	166	0	0	0	0	166
2059	−0	0	−0	890	185	12	173	0	0	0	0	173
2060	−0	0	−0	1,063	192	12	180	0	0	0	0	180
2061	−0	0	−0	1,243	200	12	188	0	0	0	0	188
2062	−0	0	−0	1,431	208	12	196	0	0	0	0	196
2063	−0	0	−0	1,627	216	12	204	0	0	0	0	204
2064	−0	0	−0	1,831	225	12	213	0	0	0	0	213
2065	−0	0	−0	2,044	234	12	222	0	0	0	0	222
2066	−0	0	−0	2,266	243	12	231	0	0	0	0	231
2067	−0	0	−0	2,497	253	12	241	0	0	0	0	241
2068	−0	0	−0	2,738	263	12	251	0	0	0	0	251
2069	−0	0	−0	2,989	274	12	262	0	0	0	0	262
2070	−0	0	−0	3,250	284	12	272	0	0	0	0	272
2071	−0	0	−0	3,523	296	12	284	0	0	0	0	284
2072	−0	0	−0	3,806	308	12	296	0	0	0	0	296
EOY	−0	0	−0	4,102								

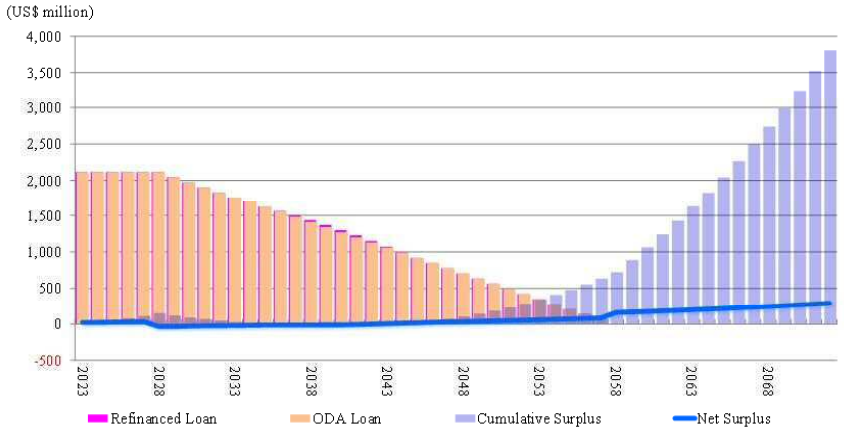


Figure A8-1-1 Cash Flow of Route C: Base Case

Table A8-1-2 Cash Flow Projection of Route C: Construction Cost: +10%, Toll Revenue: -10%

Year	(−) A	(−) B	(−) C [A+B]	(+) D	(+) E	(−) F	(+) G [E−F]	(−) H	(−) I	(−) J	(−) K	(+) L
	Debt Outstanding (BOY)			Cumulative Surplus			Balance of Payment	ODA	Other Payments		New Borrowing	Net Surplus
	ODA Loan	Refinanced Loan			Revenue	M/O cost		Repayment	Principal	Interest		
2022	2,330											
2023	2,330	0	2,330	0	33	12	21	0	0	0	0	21
2024	2,330	0	2,330	21	36	12	24	0	0	0	0	24
2025	2,330	0	2,330	45	38	12	26	0	0	0	0	26
2026	2,330	0	2,330	71	41	12	29	0	0	0	0	29
2027	2,330	0	2,330	99	44	12	32	0	0	0	0	32
2028	2,330	0	2,330	131	47	12	35	78	0	0	0	−43
2029	2,253	0	2,253	88	50	12	38	78	0	0	0	−40
2030	2,175	0	2,175	48	53	12	41	78	0	0	0	−36
2031	2,097	0	2,097	12	55	12	43	78	0	0	23	−34
2032	2,020	23	2,042	0	58	12	46	78	5	2	39	−39
2033	1,942	57	1,999	0	60	12	48	78	12	6	48	−48
2034	1,864	92	1,956	0	62	12	50	78	22	9	58	−58
2035	1,787	129	1,915	0	65	12	53	78	33	13	71	−71
2036	1,709	166	1,875	0	67	12	55	78	48	17	86	−86
2037	1,631	205	1,836	0	70	12	58	78	60	21	100	−100
2038	1,554	245	1,799	0	73	12	61	78	73	25	114	−114
2039	1,476	286	1,762	0	76	12	64	78	86	29	128	−128
2040	1,398	329	1,727	0	79	12	67	78	100	33	144	−144
2041	1,321	372	1,693	0	82	12	70	78	115	37	159	−159
2042	1,243	417	1,660	0	85	12	73	78	129	42	175	−175
2043	1,165	463	1,628	0	89	12	77	78	144	46	191	−191
2044	1,087	510	1,598	0	92	12	80	78	160	51	208	−208
2045	1,010	559	1,569	0	96	12	84	78	176	56	225	−225
2046	932	608	1,540	0	100	12	88	78	192	61	242	−242
2047	854	659	1,513	0	104	12	92	78	208	66	260	−260
2048	777	711	1,487	0	108	12	96	78	225	71	278	−278
2049	699	763	1,462	0	112	12	100	78	243	76	296	−296
2050	621	817	1,438	0	117	12	105	78	260	82	315	−315
2051	544	872	1,415	0	122	12	110	78	278	87	334	−334
2052	466	927	1,393	0	126	12	114	78	297	93	353	−353
2053	388	983	1,371	0	131	12	119	78	315	98	372	−372
2054	311	1,039	1,350	0	137	12	125	78	334	104	391	−391
2055	233	1,096	1,329	0	142	12	130	78	353	110	410	−410
2056	155	1,153	1,309	0	148	12	136	78	372	115	429	−429
2057	78	1,211	1,288	0	154	12	142	78	391	121	448	−448
2058	−0	1,268	1,268	0	160	12	148	0	410	127	389	−389
2059	−0	1,246	1,246	0	166	12	154	0	413	125	384	−384
2060	−0	1,217	1,217	0	173	12	161	0	412	122	372	−372
2061	−0	1,177	1,177	0	180	12	168	0	404	118	354	−354
2062	−0	1,127	1,127	0	187	12	175	0	389	113	327	−327
2063	−0	1,065	1,065	0	195	12	183	0	365	106	289	−289
2064	−0	989	989	0	202	12	190	0	345	99	254	−254
2065	−0	897	897	0	210	12	198	0	319	90	211	−211
2066	−0	789	789	0	219	12	207	0	287	79	159	−159
2067	−0	661	661	0	228	12	216	0	248	66	98	−98
2068	−0	511	511	0	237	12	225	0	202	51	29	−29
2069	−0	337	337	0	246	12	234	0	150	34	0	50
2070	−0	187	187	50	256	12	244	0	99	19	0	126
2071	−0	88	88	176	266	12	254	0	57	9	0	188
2072	−0	31	31	365	277	12	265	0	25	3	0	236
EOY	−0	6	6	601								

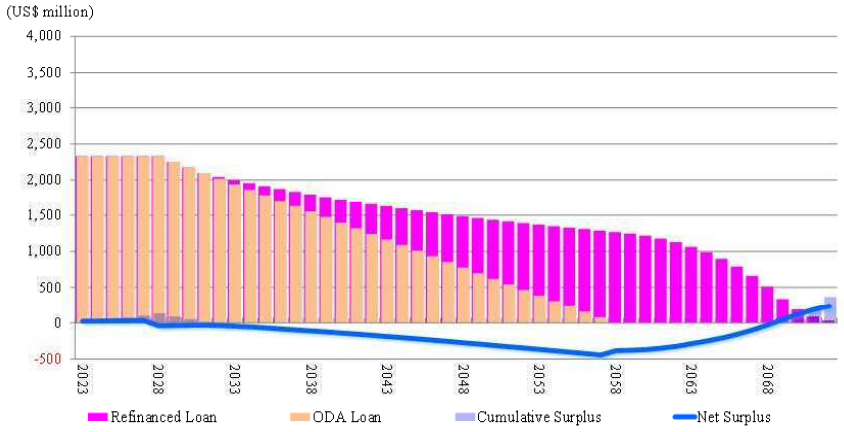


Figure A8-1-2 Cash Flow of Route C: Cost:+10%, Revenue:-10%

Table A8-1-3 Cash Flow Projection of Route C: Construction Cost: +10%, Toll Revenue: -10%, 3-Phase Construction

Year	(−) A	(−) B	(−) C [A+B]	(+) D	(+) E	(−) F	(+) G [E−F]	(−) H	(−) I	(−) J	(−) K	(+) L
	Debt Outstanding (BOY)			Cumulative Surplus			Balance of Payment	ODA	Other Payments		New Borrowing	Net Surplus
	ODA Loan	Refinanced Loan			Revenue	M/O cost		Repayment	Principal	Interest		
2022	**2,330**											
2023	2,330	0	2,330	0	16	**12**	4	0	0	0	0	4
2024	2,330	0	2,330	4	17	12	5	0	0	0	0	5
2025	2,330	0	2,330	10	38	12	26	0	0	0	0	26
2026	2,330	0	2,330	36	41	12	29	0	0	0	0	29
2027	2,330	0	2,330	64	44	12	32	0	0	0	0	32
2028	2,330	0	2,330	96	47	12	35	23	0	0	0	12
2029	2,308	0	2,308	108	50	12	38	23	0	0	0	15
2030	2,285	0	2,285	123	53	12	41	57	0	0	0	−16
2031	2,228	0	2,228	107	55	12	43	57	0	0	0	−14
2032	2,170	0	2,170	93	58	12	46	57	0	0	0	−12
2033	2,113	0	2,113	81	60	12	48	78	0	0	0	−30
2034	2,035	0	2,035	52	62	12	50	78	0	0	0	−27
2035	1,957	0	1,957	24	65	12	53	78	0	0	1	−25
2036	1,880	1	1,880	0	67	12	55	78	0	0	22	−22
2037	1,802	23	1,825	0	70	12	58	78	5	2	26	−26
2038	1,724	45	1,769	0	73	12	61	78	10	4	31	−31
2039	1,647	66	1,712	0	76	12	64	78	16	7	36	−36
2040	1,569	86	1,655	0	79	12	67	78	23	9	43	−43
2041	1,491	105	1,597	0	82	12	70	78	32	11	50	−50
2042	1,414	123	1,537	0	85	12	73	78	37	12	54	−54
2043	1,336	140	1,476	0	89	12	77	78	43	14	58	−58
2044	1,258	155	1,413	0	92	12	80	78	48	16	61	−61
2045	1,181	168	1,348	0	96	12	84	78	53	17	63	−63
2046	1,103	178	1,281	0	100	12	88	78	57	18	65	−65
2047	1,025	186	1,211	0	104	12	92	78	60	19	65	−65
2048	948	190	1,138	0	108	12	96	78	62	19	63	−63
2049	870	191	1,061	0	112	12	100	78	63	19	60	−60
2050	792	187	980	0	117	12	105	78	63	19	55	−55
2051	715	179	893	0	122	12	110	78	61	18	47	−47
2052	637	165	802	0	126	12	114	78	58	16	38	−38
2053	559	145	704	0	131	12	119	78	52	14	25	−25
2054	482	117	599	0	137	12	125	78	45	12	10	−10
2055	404	82	486	0	142	12	130	78	35	8	0	9
2056	326	47	374	9	148	12	136	78	24	5	0	29
2057	248	23	272	39	154	12	142	78	14	2	0	47
2058	171	9	180	86	160	12	148	55	7	1	0	85
2059	116	2	118	171	166	12	154	55	2	0	0	97
2060	61	0	61	268	173	12	161	20	0	0	0	141
2061	40	0	40	409	180	12	168	20	0	0	0	148
2062	20	0	20	557	187	12	175	20	0	0	0	155
2063	−0	0	−0	711	195	12	183	0	0	0	0	183
2064	−0	0	−0	894	202	12	190	0	0	0	0	190
2065	−0	0	−0	1,084	210	12	198	0	0	0	0	198
2066	−0	0	−0	1,283	219	12	207	0	0	0	0	207
2067	−0	0	−0	1,490	228	12	216	0	0	0	0	216
2068	−0	0	−0	1,705	237	12	225	0	0	0	0	225
2069	−0	0	−0	1,930	246	12	234	0	0	0	0	234
2070	−0	0	−0	2,164	256	12	244	0	0	0	0	244
2071	−0	0	−0	2,408	266	12	254	0	0	0	0	254
2072	−0	0	−0	2,662	277	12	265	0	0	0	0	265
EOY	−0	0	−0	2,927								

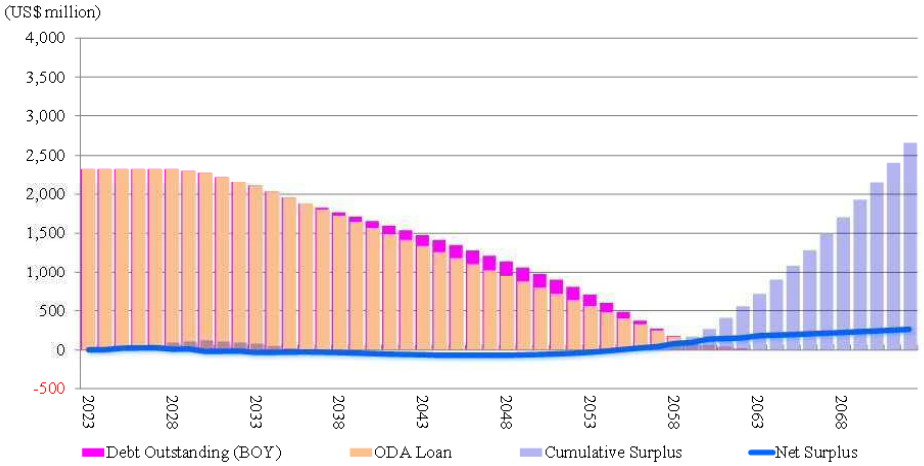


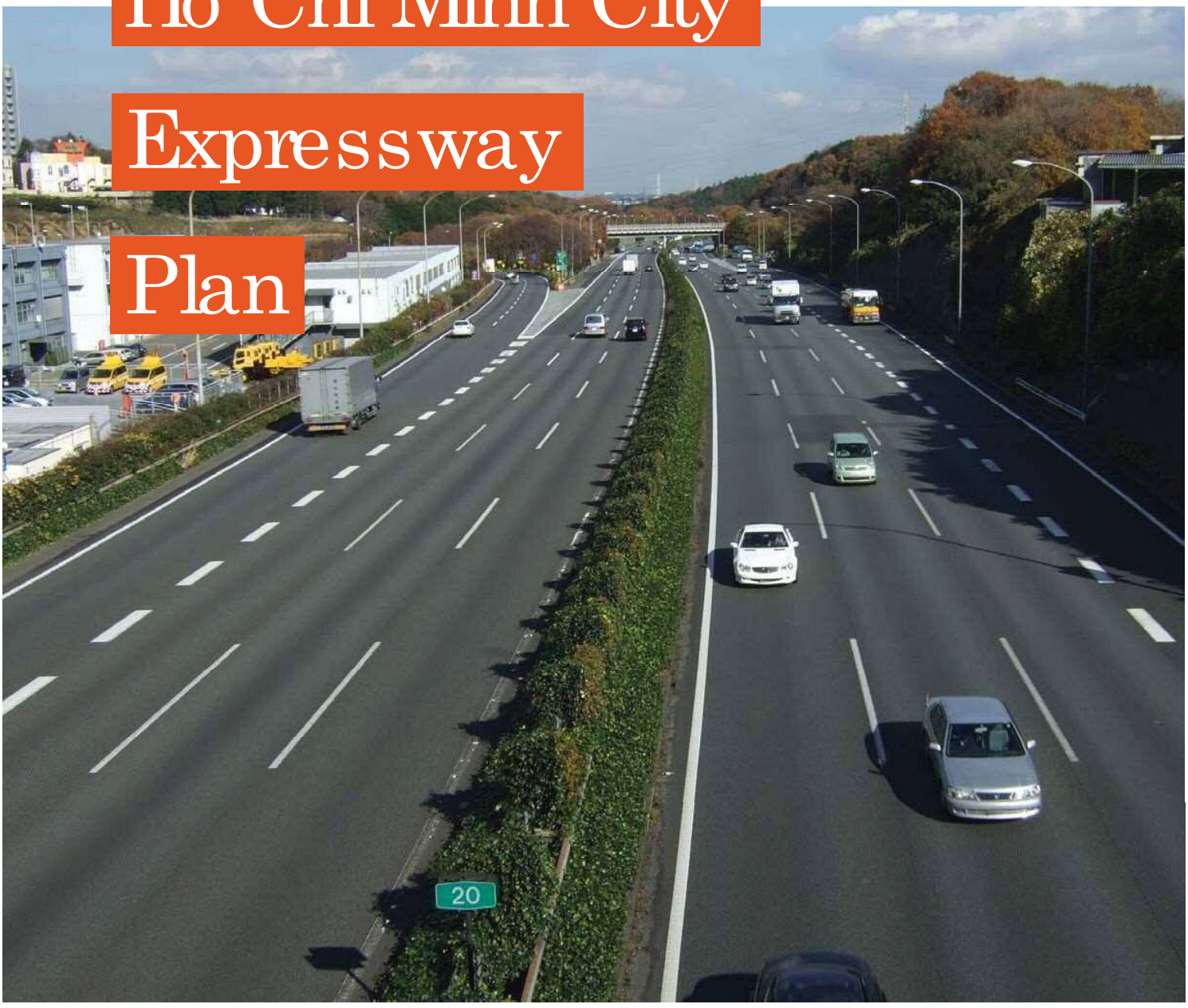
Figure A8-1-3 Cash Flow of Route C: Cost:+10%, Revenue:-10%, 3-Phases Open

Appendix 12-1 Leaflet

Phnom Penh – Ho Chi Minh City Expressway Plan

Ministry of Public Works and Transport

Japan International Cooperation Agency



April 2014

Data Collection Survey on Phnom Penh – Ho Chi Minh City Expressway Development Plan

Japan International Cooperation Agency (JICA)

Question 1:

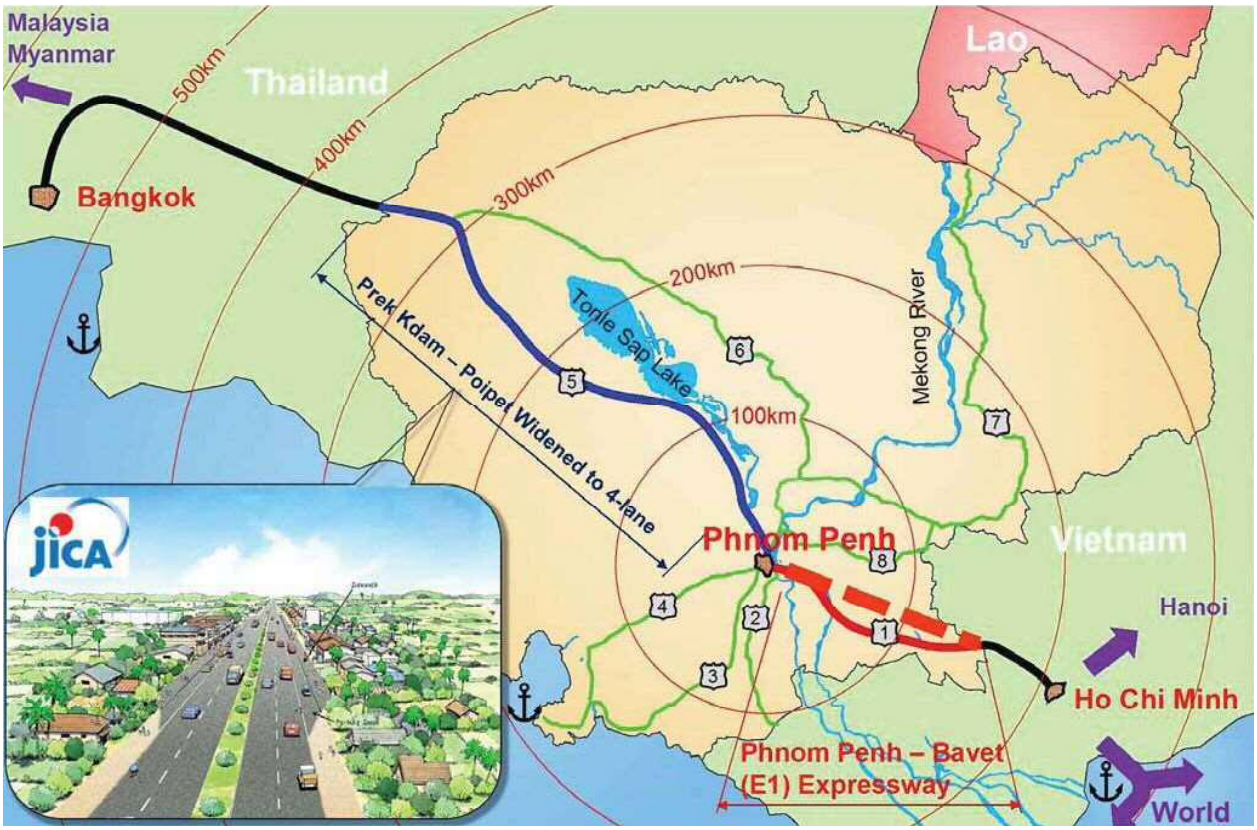
Why is the expressway between Phnom Penh and Ho Chi Minh City constructed?

なぜプノンペン～ホーチミン市間に高速道路を建設するのか？

Answer 1:

Bangkok – Phnom Penh – Ho Chi Minh City corridor is one of the most important corridors in GMS and ASEAN.
This corridor will become more important in after establishment of ASEAN Community scheduled in 2015.
Towards Thailand, National Road No. 5 is planned to widen to divided 4-lane by 2020.
By constructing an expressway between Phnom Penh and Bavet, transport between Bangkok – Phnom Penh –Ho Chi Minh City will be greatly strengthened.

バンコク～プノンペン～ホーチミンは大メコン圏（GMS）で最も重要な経済回廊。この回廊は 2015 年に予定されている ASEAN 共同体の成立以降、さらに重要となる。プノンペンとタイを結ぶ国道 5 号線は往復分離の 4 車線に拡幅する予定。プノンペンとホーチミン市を高速道路で結ぶことで、バンコク～プノンペン～ホーチミンの 3 大都市の間の輸送が大幅に改善。



Battambang – Serei Sophorn: L/A signed
Prek Kdam – Thlea Ma'am: L/A negotiation
Thlea Ma'am – Battambang: F/S completed

Question 2:

What is expressway? How is it different from other roads?

高速道路とは何か？普通の道路とどこが違うか？

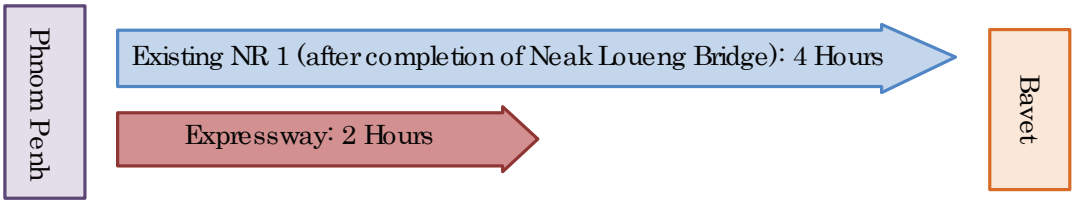
Answer 2:

Expressway is highway specially designed for high-speed and long drive. Entrance and exit is limited to interchanges and there is no stop signal. It has 4 or more lanes with median division. This allows safe and smooth traffic. Drivers can rest at rest area with toilet and other facilities. Travel time is greatly reduced compared to ordinary highway.

高速道路は、安全に高速走行できるように特別に配慮した道路。出入りはインターチェンジのみで交差点が無く、ノンストップで走れる。往復分離された 4 車線以上で、安全な追い越しが可能。これらにより、高速で安全な走行が可能となり、移動時間が大幅に短縮される。

▲ Interchange

Travel time from Phnom Penh to Bavet (Ho Chi Minh City) will be shortened by 2 hours.



▲Guard rail for traffic safety and traffic sign for comfortable drive

▲Separated 4 lane

▲Rest area with gas station, toilet, restaurant and kiosk

Question 3:

What is good with expressway? Why is it necessary?

高速道路はどんな利益をもたらすか？なぜ必要か？

Answer 3:

Modern industries with high added value, such as automobile and electronic industries need just-in-time parts supply and speedy and stable transportation of products. These need expressway. For further economic growth, industries of Cambodia need to shift to modern industries which yield higher income. Also, reduction in transportation time and smooth road surface enable long hauling of fresh food material, and the market for such products is expanded.

近代産業は迅速で安定した部品供給と製品の輸送が必要。カンボジアのこれからの経済発展のためには産業の近代化が必要で、そのために高速道路が必要。また、高速道路は生鮮食料品の市場拡大をもたらす。

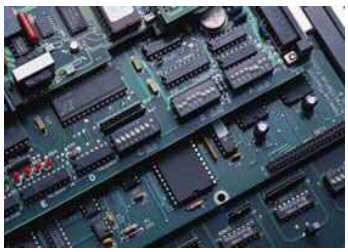
Further, expressway brings about . . . .

- Enhancement of cooperation among ASEAN Community
- Easy movement of people and closer communication among relatives and friends
- Better access to public services, such as medical service, from remote region

さらに、ASEAN 共同体の域内連携の強化、人の移動が容易になり、親戚や友人との交流も密になる、僻地からの病院等の公共サービスへのアクセスが容易になる、などの間接効果が生まれる。

▲ Economic Corridor of ASEAN Countries


▲Expressway is Essential for High-Tech Industry


▲Electronic industry Needs Expressway

Question 4:

Why do we start construction of expressway network now?

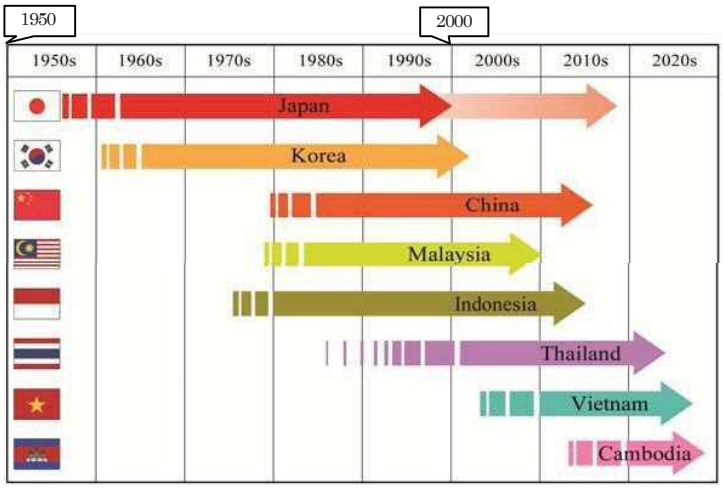
Isn't improvement of primary national roads more urgent?

なぜ今高速道路網建設を開始するのか？

Answer 4:

Construction of expressway network is an investment to invite foreign investment and promote economic growth. It takes many years and needs to be started before the economic growth starts. If delayed, construction cost (labor cost, material cost and land acquisition cost) becomes high and financial viability becomes too low. Actually, many Asian countries started construction of expressway network 30 years ago. Improvement of national roads should be implemented in parallel to construction of the expressway network.

高速道路網建設は外国投資を呼び込み、経済発展するための先行投資である。建設開始が遅れると、労務費・材料費・用地費などが上がり、採算が難しくなる。アジアの各国は 30 年以上前に高速道路建設に着手している。



▲Time of Start of Expressway Construction in Asian Countries

Many Asian countries started development of expressway when their GDP/Capita were less than USD 500. GDP/Capita of Cambodia is now 1,000 and it is time to start development of expressway network.

Question 5:

Where does the fund for construction of expressway come from?

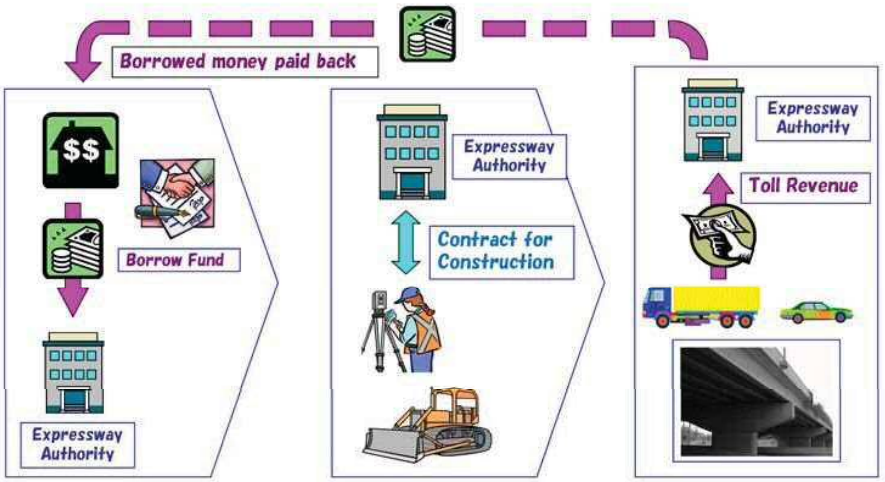
高速道路の建設資金はどこから調達するのか？

Answer 5:

Toll road system is introduced to obtain the necessary fund: Toll road system is the scheme where the fund for constructing an expressway is obtained from ODA loan, bond issuance and other means. This borrowed fund is paid back (amortized) with the toll revenue.

有料道路制度を導入する。有料道路とは借入金で道路を建設し、通行料金収入で借金を返済するもの。

BASIC CONCEPT OF TOLL ROAD SYSTEM



Step 1:
Expressway Authority Borrows the Fund

Step 2:
Expressway Authority Constructs Toll Road by Using the Fund

Step 3:
Toll Road is Open to Traffic and the Borrowed Fund is Paid Back with Toll Revenue

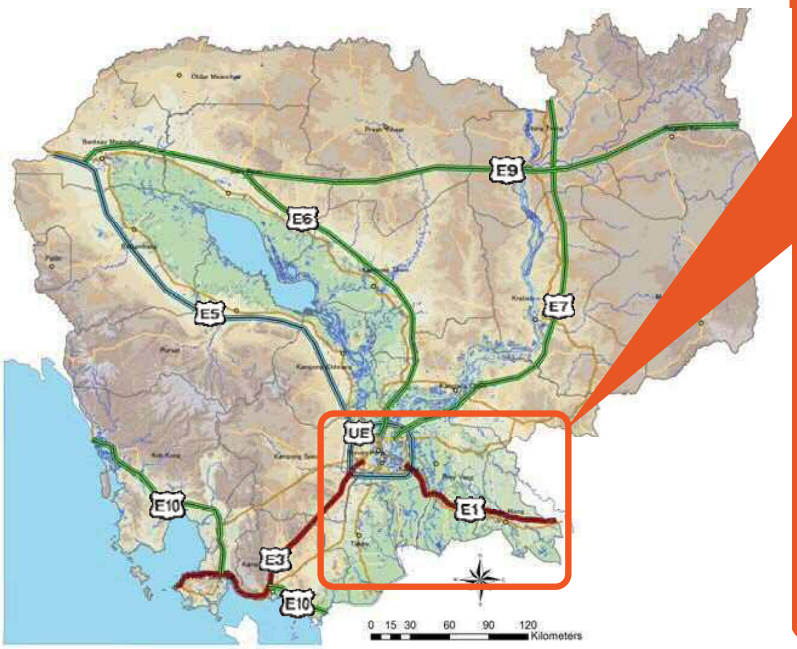
Proposal 1:

Route of Phnom Penh – Bavet (E1) Expressway

プノンペン～バベット間の高速道路ルート

Four alternative routes（A, B, C, D）were studied and Route B is proposed with Route C as the alternative. The proposed route will run in parallel to the existing National Road No. 1 (NR 1), in general. Two alternatives are possible: one along NR 1, and another passing near Prey Veng. These two alternative routes will be further studied.
E1 Expressway is connected to Ring Road 3 (RR3) which functions as the collector/distributor road of E1 on Phnom Penh side. Thus, RR3 need to be completed by the completion of E1.

4 本の候補ルートを検討した結果、B ルートを本命案、C ルートを代替案として提案。提案ルートは全体として既存国道 1 号線と並行。全区間にわたり既存国道と平行して走る案と、Prey Veng 付近を通る案がある。どちらが良いか今後さらに検討。E1 高速道路は環状 3 号線（RR3）に接続し、交通の集中を避ける。このため、E1 の開通に合わせて RR3 を整備することが必要。



▲ National Expressway Network

Effect of Phnom Penh – Bavet Expressway

プノンペン～バヴェット高速道路の効果

Opening of new factories which use parts transported from Vietnam

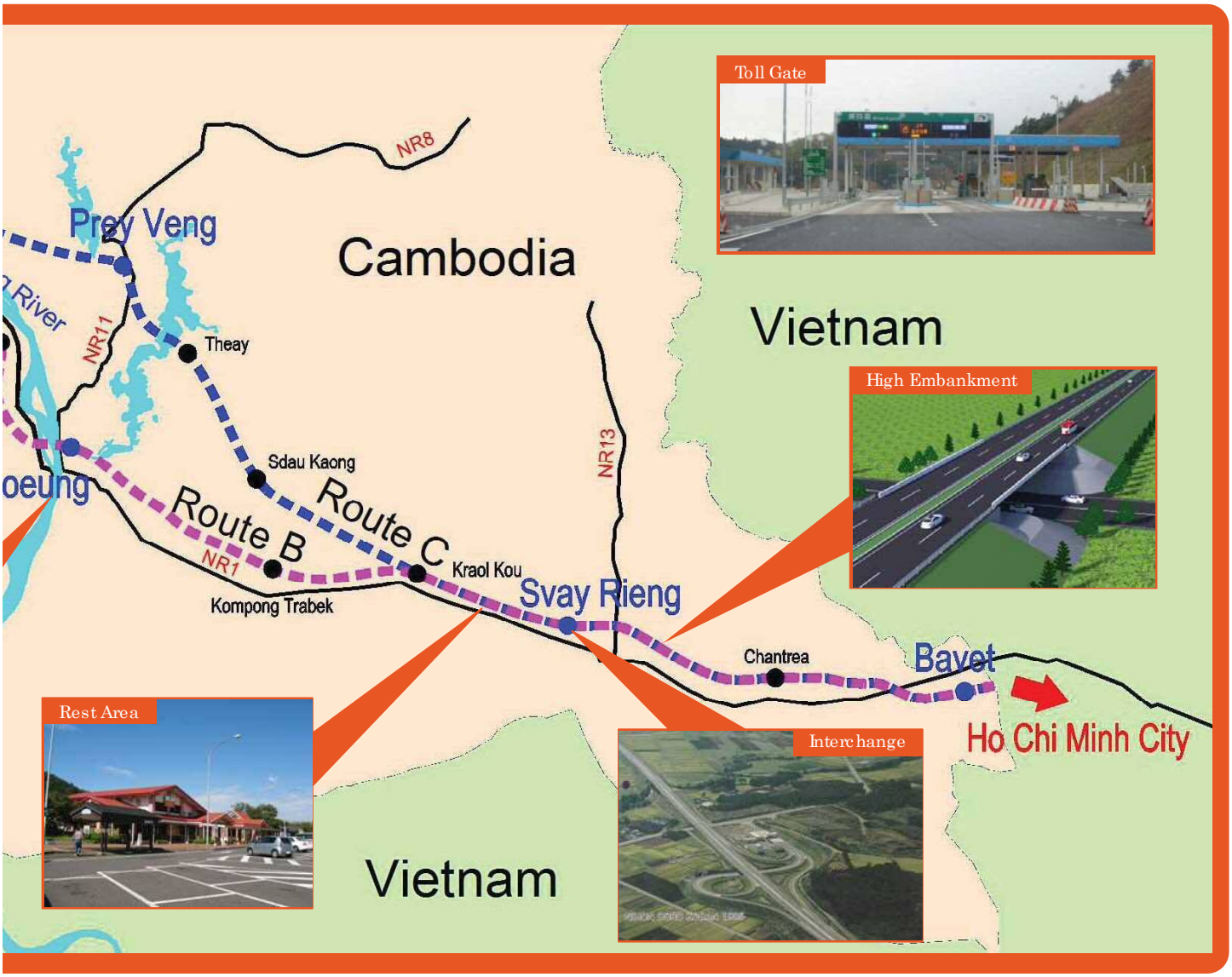
ヴェトナムから部品を調達して組み立てる工場の進出

Increase of employment

就業機会の増大

Increase of tourist visiting Cambodia and Ho Chi Minh City

カンボジアとホーチミン市を両方見ようという観光客の増加



Increase of export of agricultural products to Vietnam

ヴェトナムへの農産物の輸出の増加

Easier access to hospitals in Phnom Penh

プノンペン市の病院への通院が改善

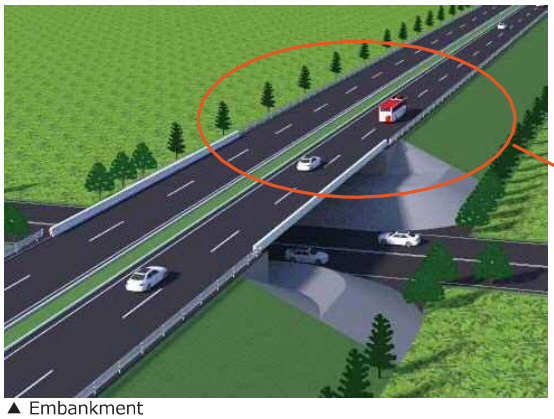
Proposal 2:

Main Technical Features 道路の構造

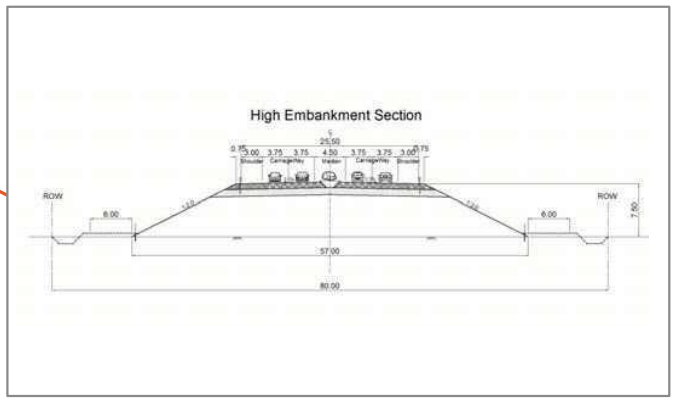
To allow crossing of existing roads, and considering the flood, the expressway shall be constructed on embankment and viaduct. A cable-stayed bridge (similar to Neak Loeung Bridge which is under construction) shall be constructed to cross Mekong River.

既存道路と立体交差するために、盛土構造あるいは高架構造を採用。メコン川渡河地点には斜張橋（建設中のネックルン橋に似た形式）を建設。

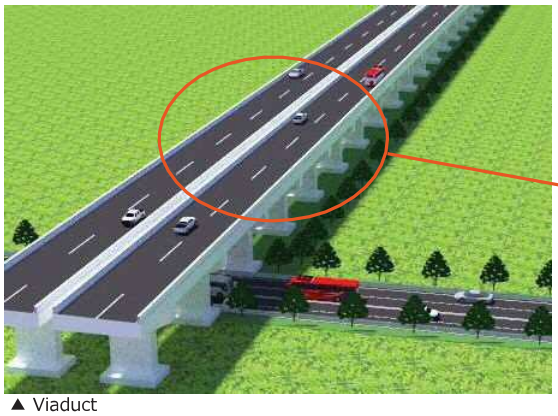
Divided 4 Lane: High embankment



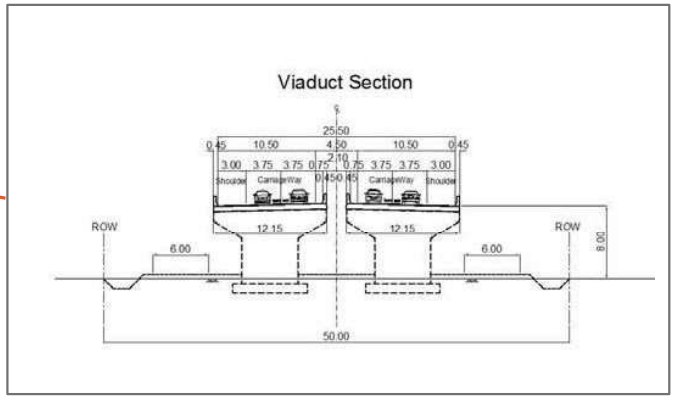
▲ Embankment



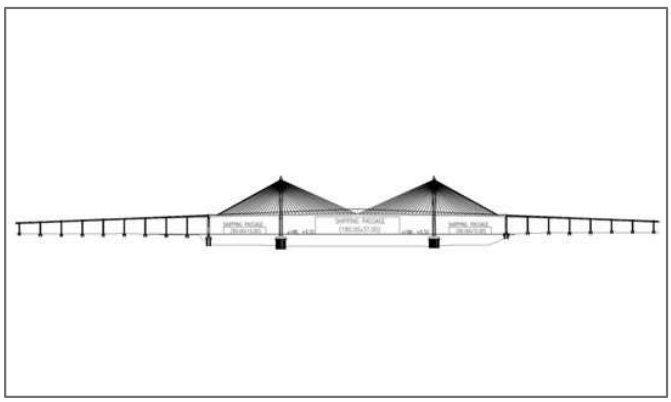
Divided 4 Lane: Viaduct



▲ Viaduct



Mekong Bridge (Concept)

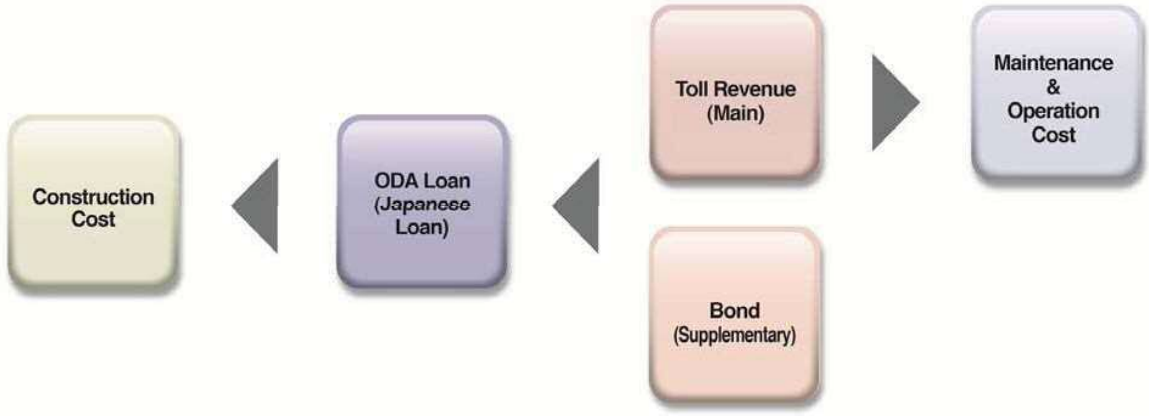


Proposal 3:

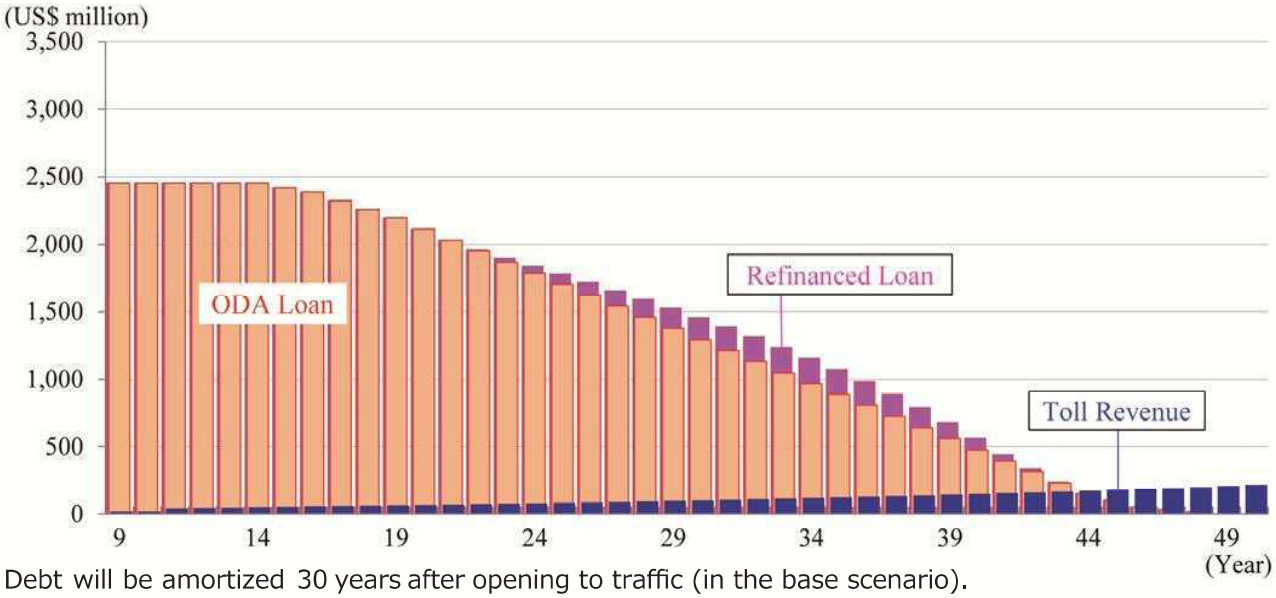
Funding Plan 資金計画

The construction cost will be approximately USD 2,200 million.
Construction shall be implemented in 3 phases; Phnom Penh –Neak Loeung, Neak Loueung – Svay Rieng and Svay Rieng –Bavet.This is to avoid concentration of investment in short period and enable constant amount of annual expenditure.
Average annual expenditure will in approximately USD 200 – 250 million
Japanese ODA loan is proposed as the main funding source for construction.
Toll revenue shall be the main fund source to amortize the ODA loan
Bond is proposed as the supplementary fund source for amortization of ODA loan.
Toll revenue shall be used as fund source for maintenance and operation cost.

工事費総額は約 22 億ドル。年間支出額を平準化するために、3 区間に分けてプノンペン寄りから建設を開始する。年間支出額は 2,000~2,500 万ドルとなる。主たる資金源としては日本の円借款を提案。通行料金収入で返済。通行料金だけでは返済できない場合の補助的資金源として「高速道路債券」の発行を提案。



Amortization of Loan



Debt will be amortized 30 years after opening to traffic (in the base scenario).
In the process, bonds will be issued to supplement toll revenue.
(Above figure shows the case where the construction cost is increased by 10%.)

Proposal 4:

Establishment of Expressway Authority

高速道路公社の設立

Construction and operation of expressway require high level of engineering knowledge, high commitment and new idea. It should not be bound by the precedent cases. Thus, a new institution which is exclusively responsible for construction and operation of expressway network needs to be established. Such institutions have been established in many Asian countries.
Example:
Indonesian Highway Corporation, Malaysian Highway Authority, Vietnam Expressway Corporation.

高速道路建設は一大国家プロジェクトであり、高度のプロジェクト実施能力が求められる。また、前例にとらわれず、フレッシュな考え方で事業を進めることが必要。このため、新たに高速道路の建設・管理を専門に担当する新しい組織を設立することが望ましい。現に多くの国で高速道路公社を設立して事業を進めている。（ベトナム・インドネシア・マレーシア等）

Examples of Tasks of Expressway Authority


▲ Traffic control

▲ Traffic information


▲ Road maintenance


▲ Toll collection


▲ Road patrol


▲ Maintain clean toilet

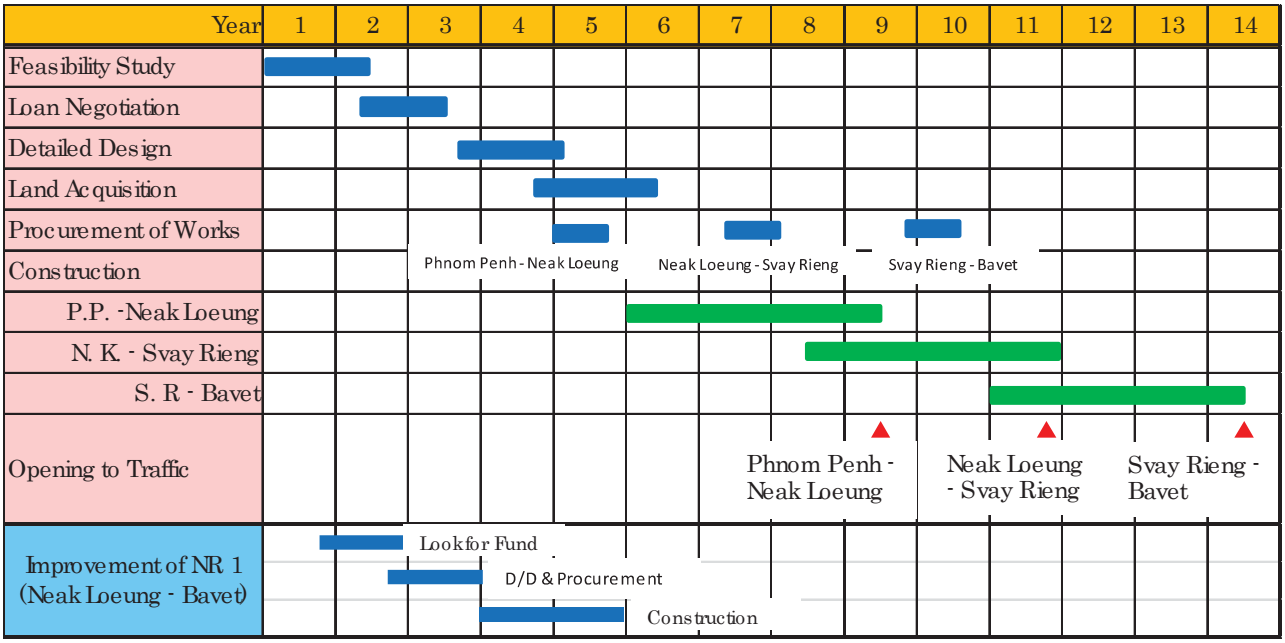
Proposal 5:

Implementation Schedule

事業実施スケジュール

It is proposed that Phnom Penh – Bavet Expressway is constructed in 3 phases in order to avoid excessive concentration of investment in short period:
Phase 1: Phnom Penh – Neak Loeung, Phase 2: Neak Loeung – Svay Rieng, Phase 3: Svay Rieng – Bavet
If the F/S will be started early 2015, the 1st section of expressway will be open to traffic in early 2020s.

投資の平準化を図るため、建設は 3 段階で行うことを提案。今年度中に F/S を開始出来れば、最初の区間（プノンペン～ネアックルン）の開通は 2020 年代初頭となる。



Proposal 6:

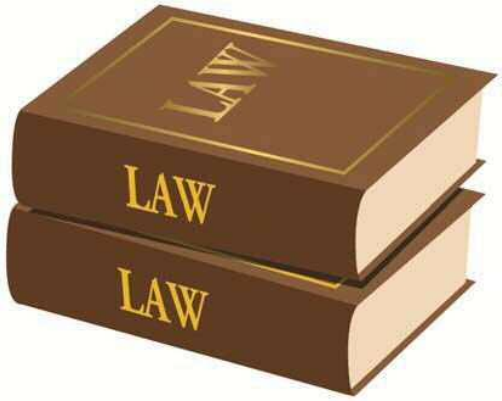
Amendment of Legal Framework

関係法令の改正

Following amendments in relevant legislations are necessary for implementation of expressway projects:

- Law for construction of national expressway network
- Law for toll road
- Ministerial order for establishment of Expressway Authority (Responsibility and power)
- Amendment in road traffic law (for traveling expressway)

高速道路建設法・有料道路法等の制定や道路交通法の改正が必要



Proposal 7:

Support by the people

Construction of a national expressway network is an important national project, requiring huge amount of investment. It needs strong political commitment and support by the people.

- Phnom Penh – Bavet Expressway needs annual disbursement of USD 250 million.
- This will correspond to 1% of GDP or 5% of the government budget of Cambodia in early 2020s.
- Japan has been investing 2% of GDP and 8% of government budget on road network development since 1965 (50 years).
- Huge benefit is expected in wide spectrum; including national economy, agriculture, tourism, better access to civil services.

国民の支持

高速道路網の建設は一大国家プロジェクトです。年間投資額は2020年代初頭のGDPの1%、国家予算の5%に相当します。日本は過去50年間にわたりGDPの2%、政府予算の5%を道路整備に投資してきました。投資額も大きい代わりに、得られる便益も、経済成長、農業振興、観光振興、市民サービスの向上等多方面にわたり大きなものとなります。
実現に向け、政治的決断と国民の支持が必要です。

Examples of Expected Benefit of Expressway

▲New Opening of Factory of Modern Industry

▲Promotion of Tourism

▲Foreign Tourists from Ho Chi Minh City

▲Better Access to Medical Service

▲Easy Access from Farm to Market

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2014.04.18

Appendix 12-2: Presentation by Mr. Shimada

Phnom Penh-Ho Chi Minh City Expressway（E1）

Development Plan　Background of Study

Phnom Penh-Ho Chi Minh City
Expressway（E1）Development Plan

Background of Study

Takashi Shimada（島田敬）
JICA/MPWT Expert on
Transport Policy

April 28,2014

Content

Part 1 /

ASEAN Logistics Movements and
JICA Project History in Cambodia

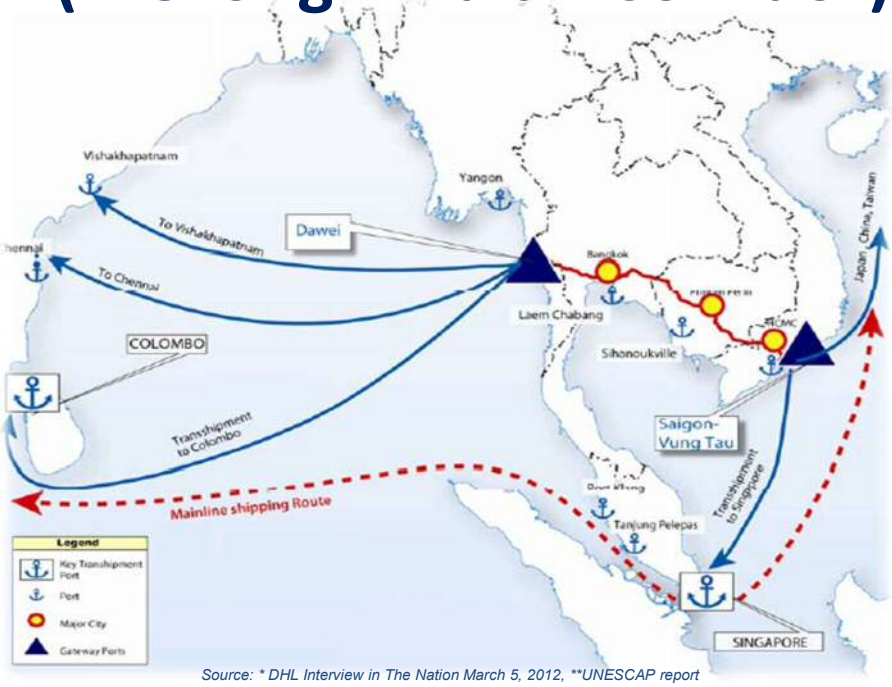
Part 2/

Economic Relation between Vietnam and Cambodia, and Needs for Expressway

Part 1

ASEAN Logistics Movements and
JICA Project History in Cambodia

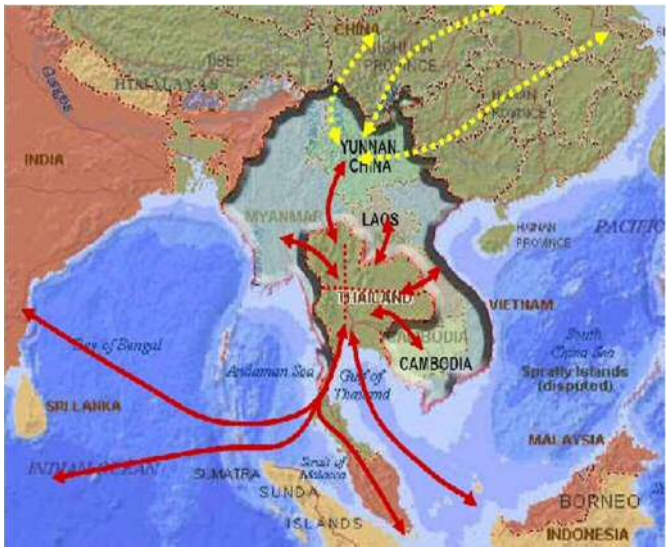
New "Logistics Short Cut" of the AEAN Region (Mekong –Indian Corridor)



*Source: * DHL Interview in The Nation March 5, 2012, **UNESCAP report*

Logistics Development in the GMS

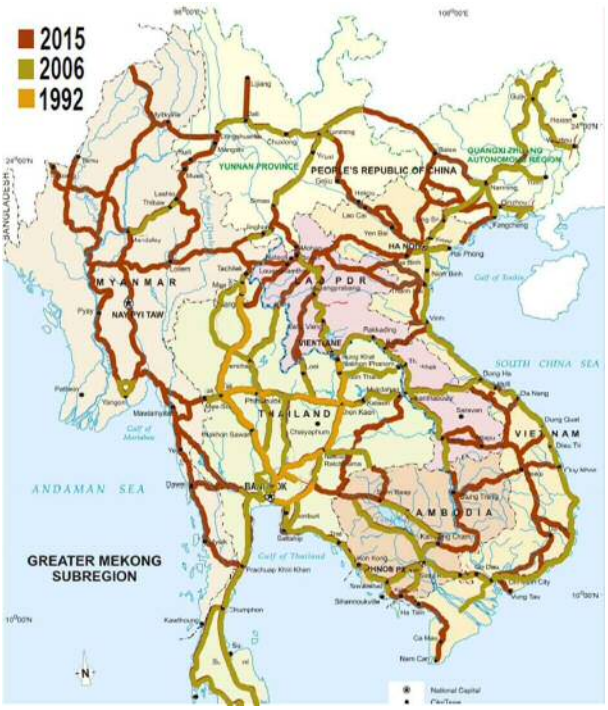
by Assoc. Prof. Ruth Banomyong (PhD)
Thammasat Business School

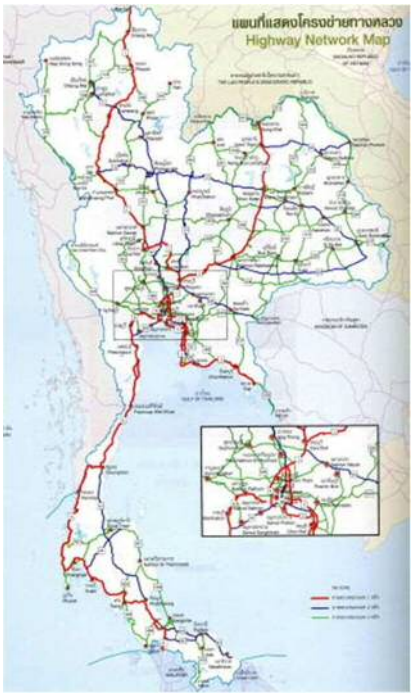


The image shows, the Greater Mekong Sub-region (GMS) Economic Corridor for ASEAN crosses the borders of the member countries and connects them through numerous trade routes. Thailand's strategic location in the middle of ASEAN countries allows it to connect the rest of the Economic Corridor through its sophisticated logistics system. (DITP RTG)

Major Roads in ASEAN and Thailand

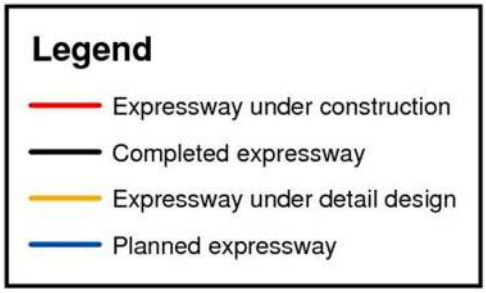
(DOH, RTG)

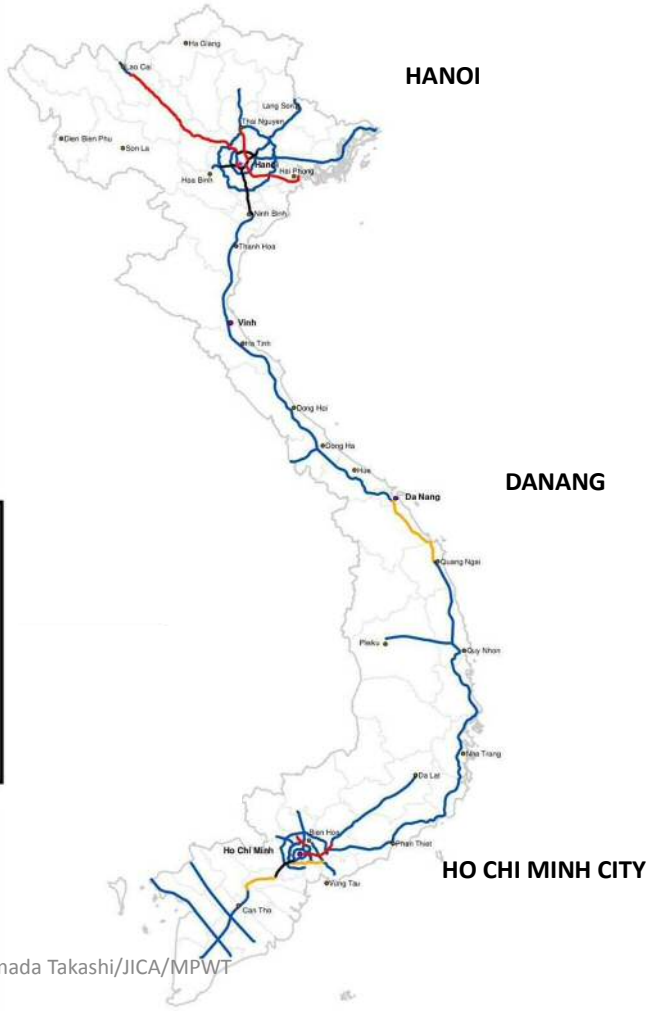




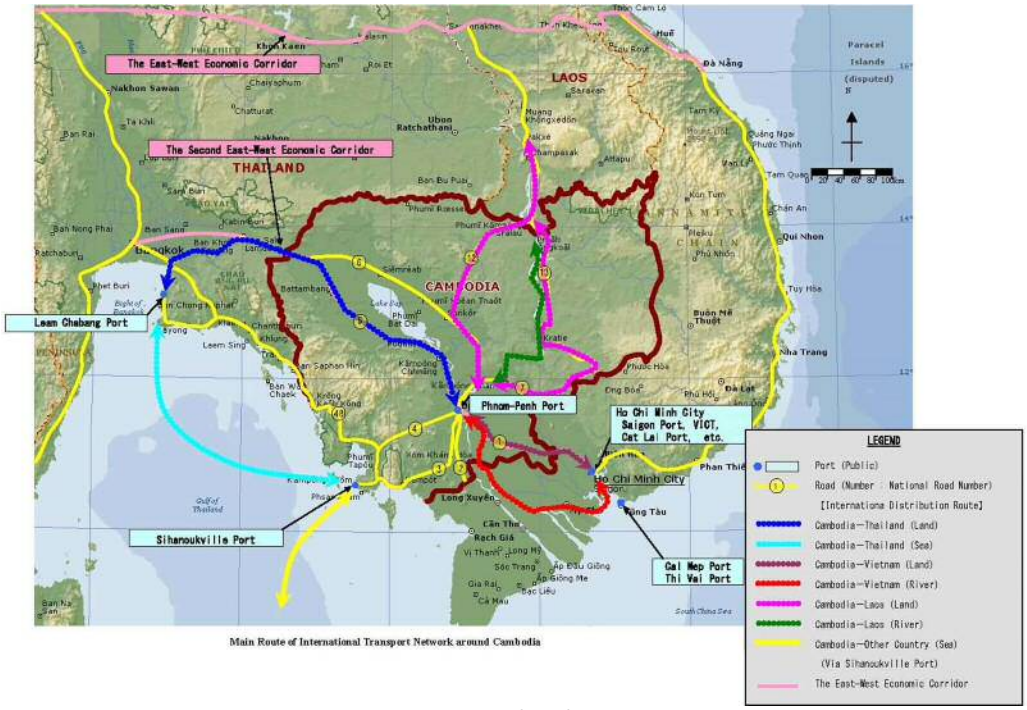
Vietnam Expressway Network

(MoT Vietnam)



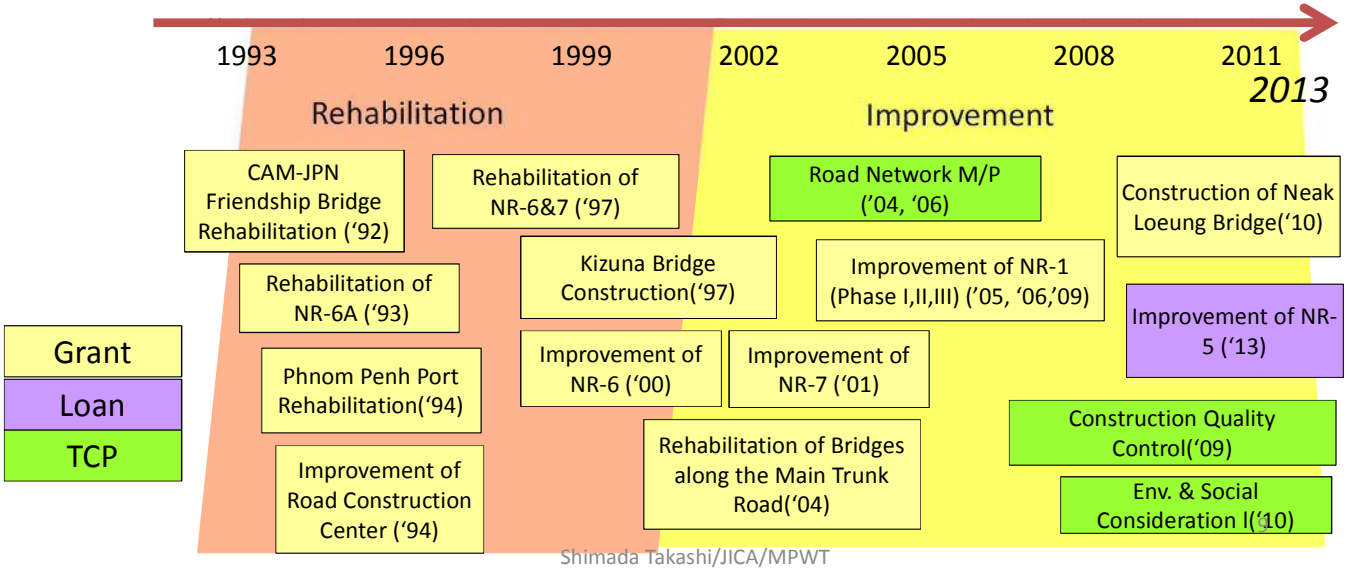


Logistics Corridors in Cambodia

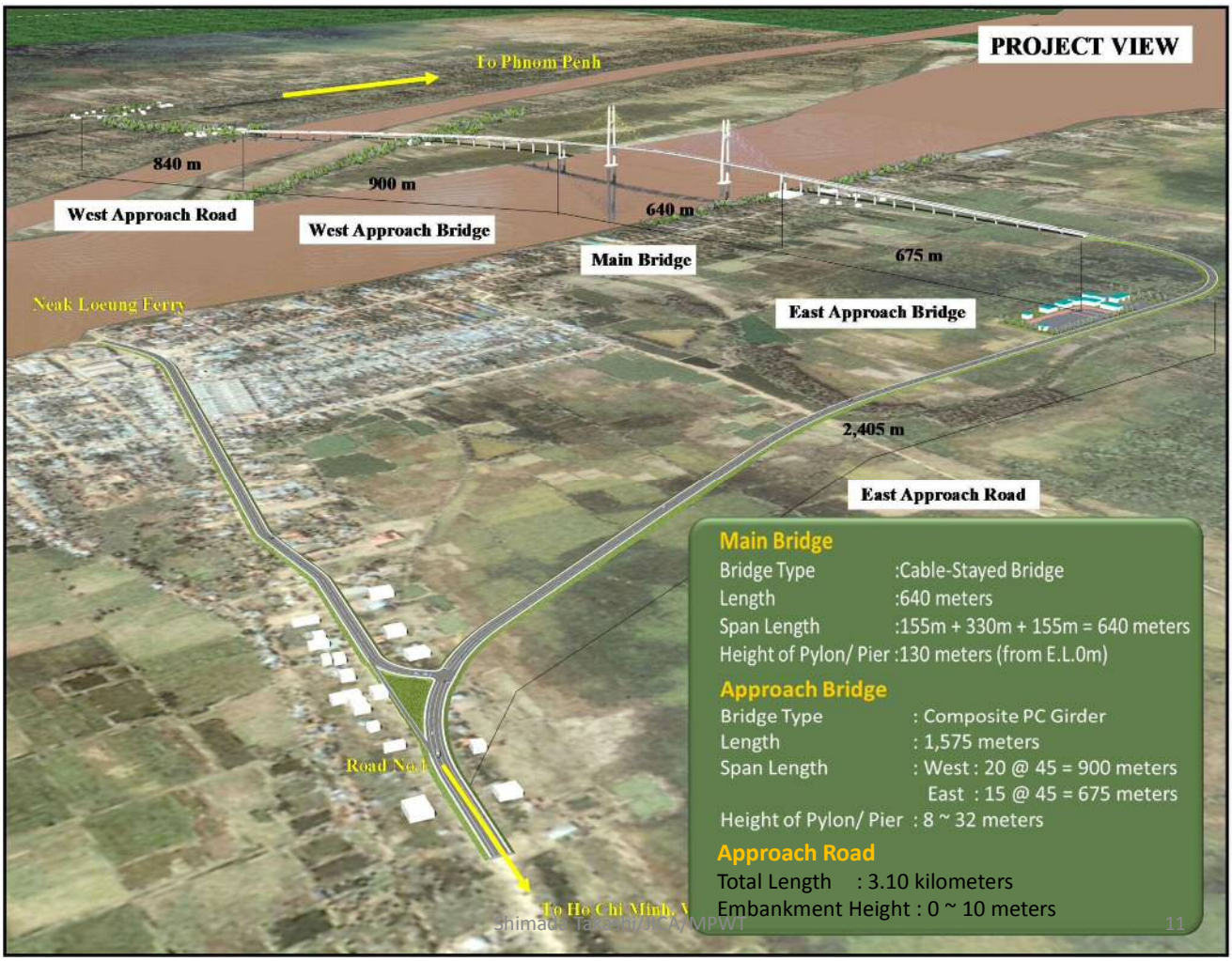


Main Route of International Transport Network around Cambodia

JICA Achievement in last 2 decades



Projects in the Past & Ongoing



NR-5 Improvement
(South, Middle and SS-Poipet)

Sections

SS-Piopet 36km

North 84km
[L/A: 2013]

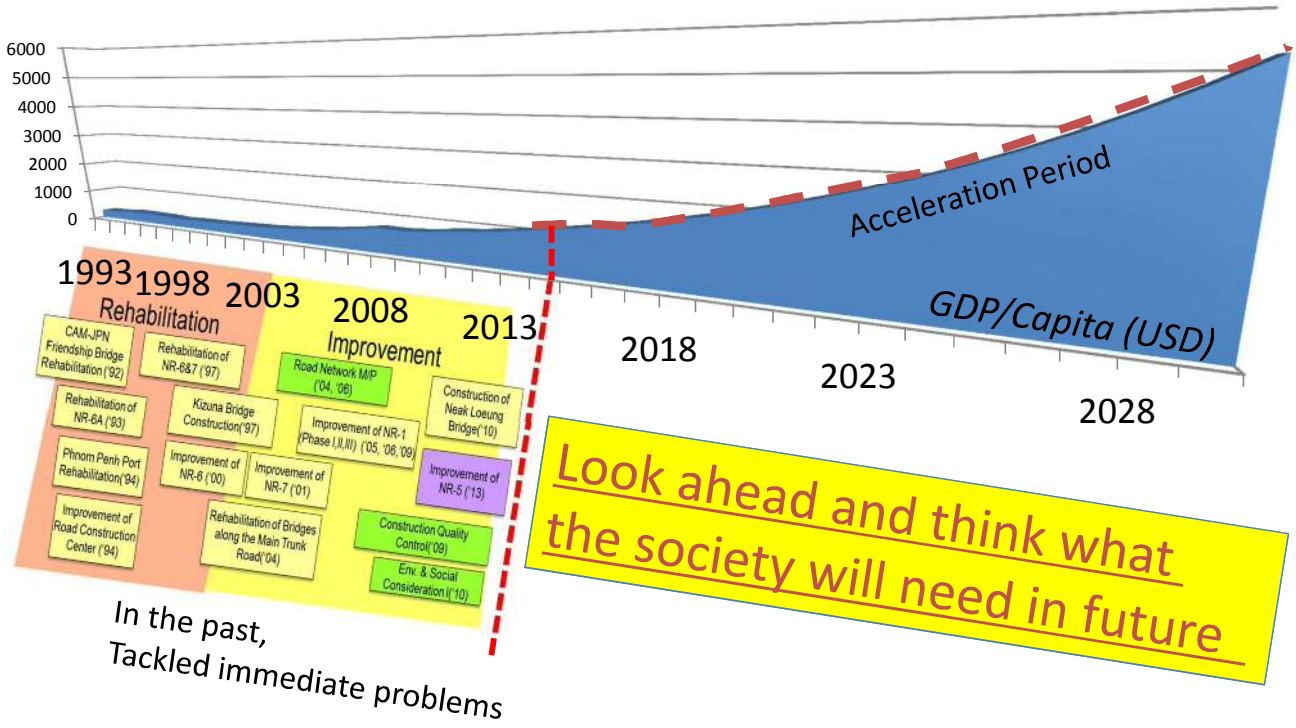
Middle 113km

South 136km

Total 370km

AC, 4 lanes

Development in next decade

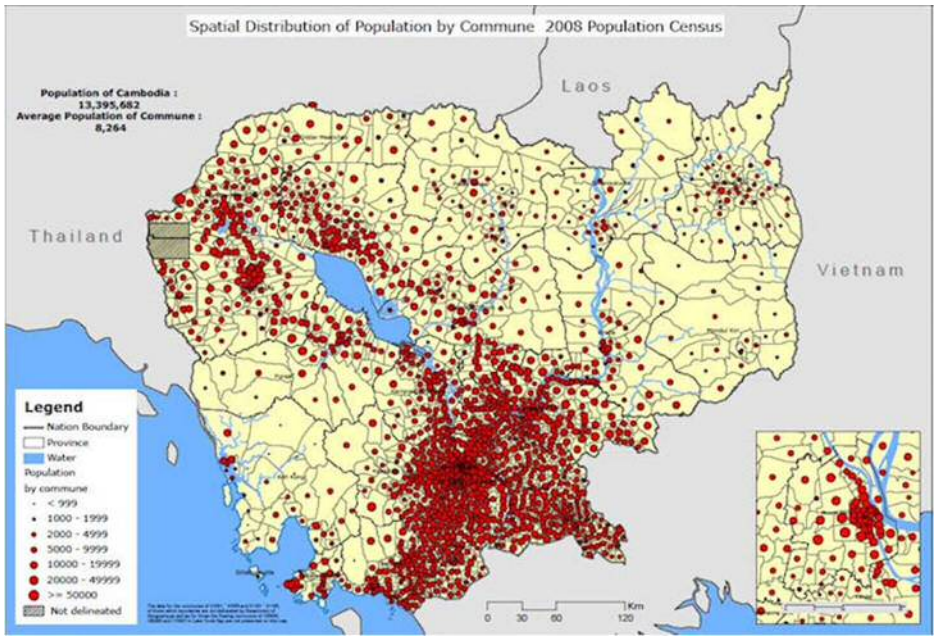


Part 2

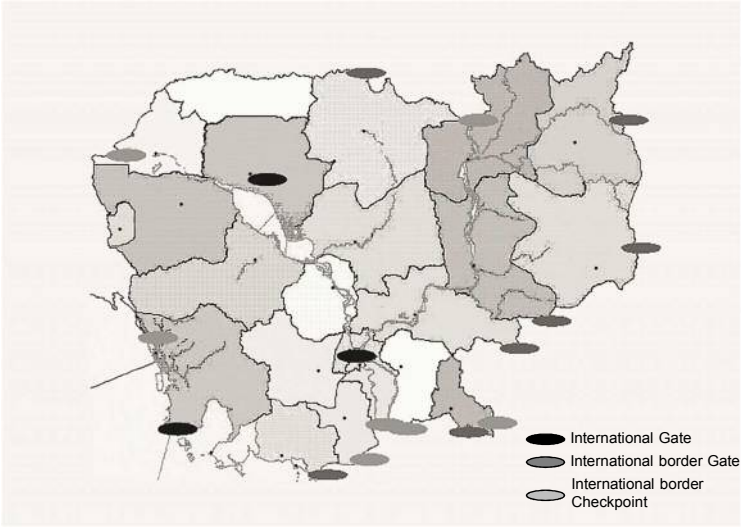
Economic Relation between Vietnam and Cambodia, and Needs for Expressway

Large Number of Peoples Living near Vietnamese border

(Demography Map in 2008)



Half of Cambodia Borders are in Vietnamese Side



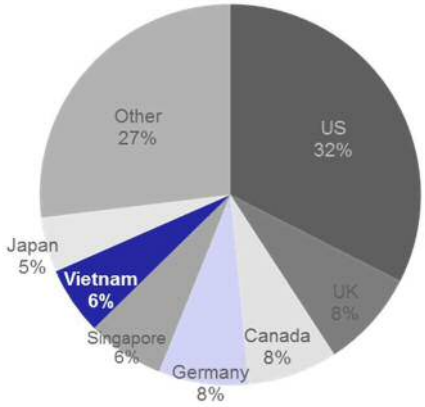
Cross border Trade regarded as an importance vehicle for both countries to forge strong economy linkage between themselves.

CBT have High Economic and welfare impact to large number of peoples living along the border.

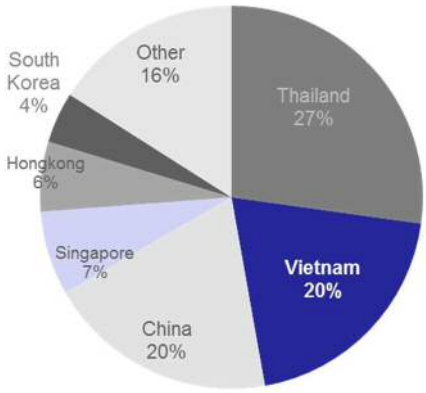
Cambodia and Vietnam are Good Trade Partners

Sources : * Mundi Index
** Viet Trade

Cambodia' Export in 2012*

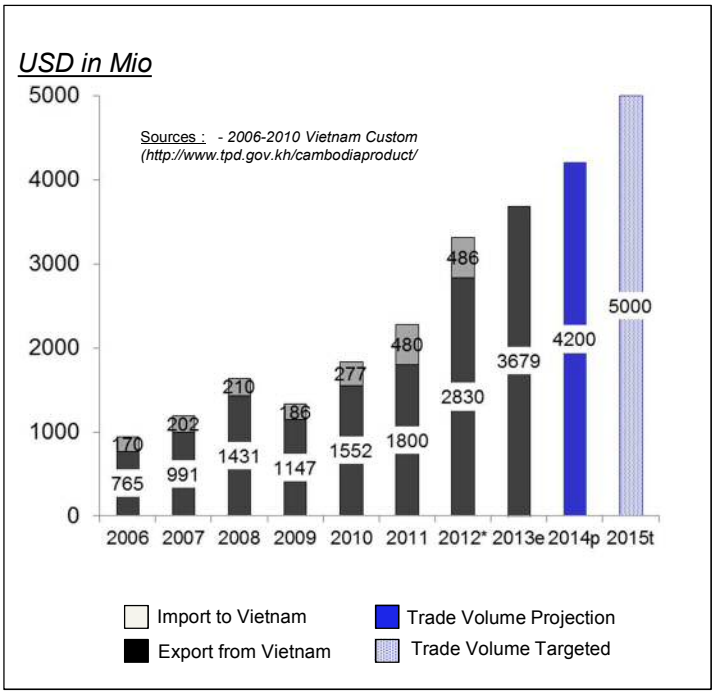


Cambodia' Import in 2012*



Vietnam ranked No 2 importer (after Thailand 27.2%) sharing 20% of total import value, while china is at 19.5%

Bilateral Trade between Cambodia and Vietnam



Trade volume between Cambodia and Vietnam was valued at 3.5 billion in 2013, up 25%.

Vietnam Export :

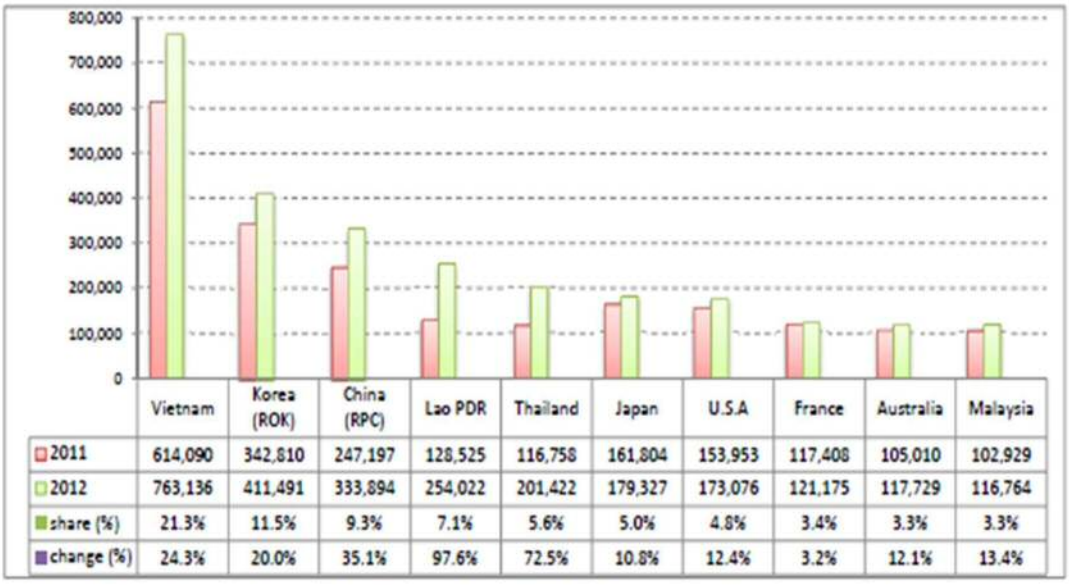
- Commodity:
  - Steel
  - Cement
  - Consumer products
  - Light industry products
  - Vegetables, Fruits

Cambodia Export

- Commodity:
  - Rice
  - Rubber
  - Tobacco
  - Cassava
  - Other agro-industry product such as soya bean, cashew nut, sesame seed…
  - Furniture from wood.
- Service (mainly on tourist sector)

Tourist to Cambodia (MoT RGC)

Vietnamese Tourist arrival raked No 1 for the last 5 years.

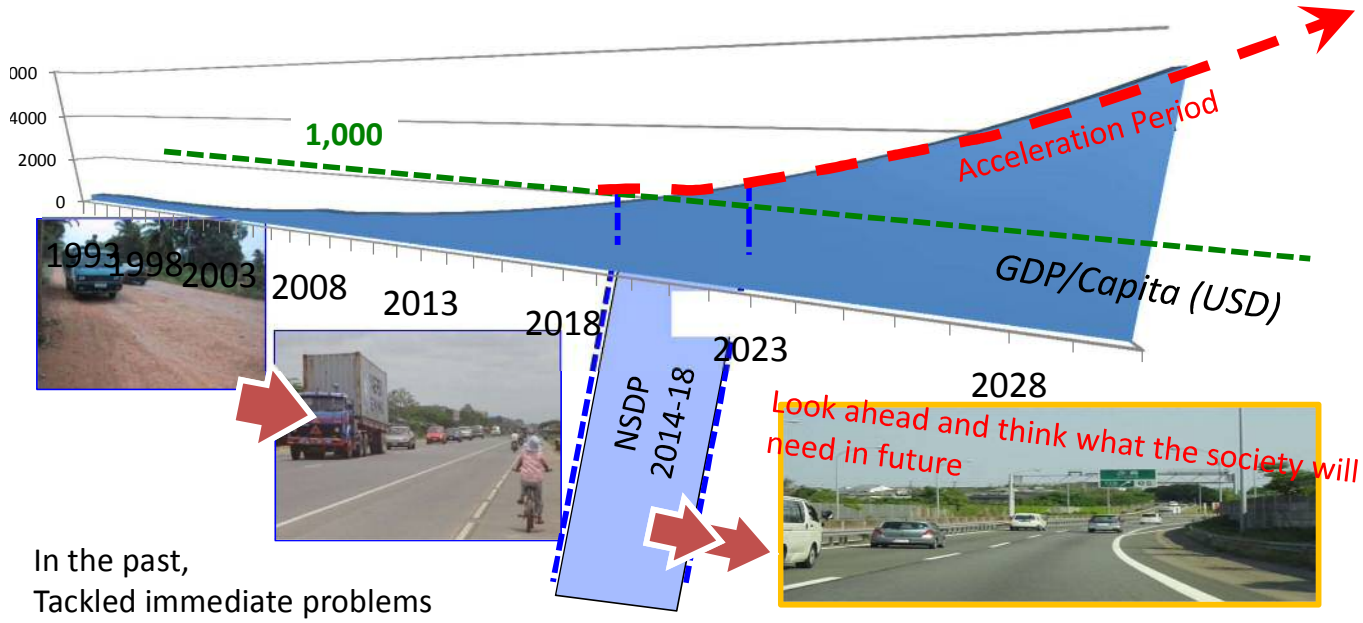


	Vietnam	Korea (ROK)	China (RPC)	Lao PDR	Thailand	Japan	U.S.A	France	Australia	Malaysia
2011	614,090	342,810	247,197	128,525	116,758	161,804	153,953	117,408	105,010	102,929
2012	763,136	411,491	333,894	254,022	201,422	179,327	173,076	121,175	117,729	116,764
share (%)	21.3%	11.5%	9.3%	7.1%	5.6%	5.0%	4.8%	3.4%	3.3%	3.3%
change (%)	24.3%	20.0%	35.1%	97.6%	72.5%	10.8%	12.4%	3.2%	12.1%	13.4%

Quotas of Cross Border Transport

	Bilateral	Trilateral	Total
Vietnam	500 tracks and buses	150 vehicles excluding periodic buses	650 vehicles
Lao PDR	40 tracks 20 buses 4 regular service buses	150 vehicles excluding regular service buses	214 vehicles
Thailand	40 tracks and buses		190 vehicles

Too Early to Start Project ?



In the past,
Tackled immediate problems

To Satisfy Demands ➡ **To Accelerate Economy by High Quality Infra**

PNH-HCMC/ 2 Hours

Priority Section: E1 PP-Bavet-HCMC

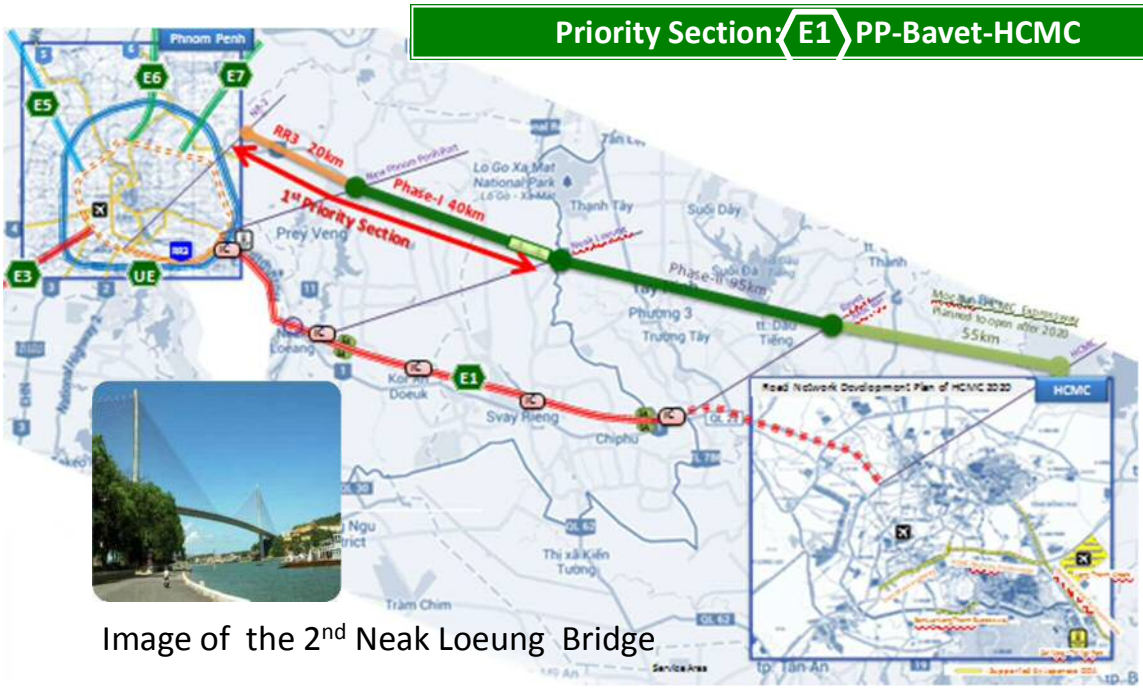
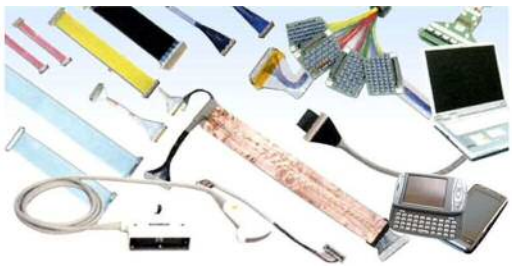


Image of the 2nd Neak Loeung Bridge

Expressway Development pushes up Economic Growth and satisfies Peoples' new requirements

- To enhance regional Development
- To enhance Industrial Development
- To improve Logistics
- To enhance Tourism
- To upgrade life quality
- To enlarge employment



Thank you for your kind Attentions !!

JICA/MPWT EXPERT
TAKASHI SHIMADA

Appendix 12-3: Presentation by Mr. Hata
Grand Design of Cambodian Expressway and Priority Project

Grand Design of Cambodian Expressway and Priority Project

HATA shunji
JICA Study team

Data Collection Survey on
Phnom Penh – Ho Chi Minh City Expressway Development Plan
April 2014

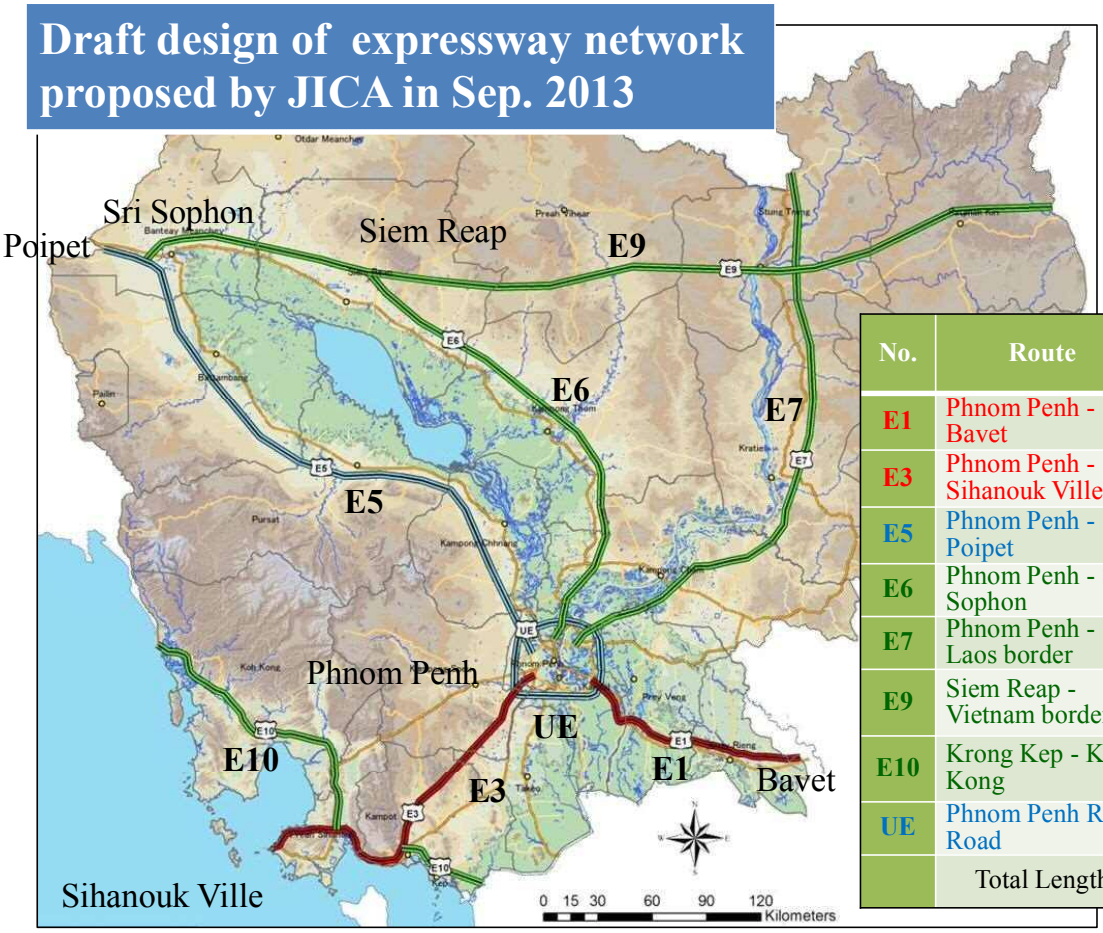
Brief history of Project

Date	Item
May. 2013	JICA stated Preliminary Data Collection Survey for Expressway Development
Sep. 2013	Ground Design of Cambodia Expressway was proposed by JICA. Phnom Penh – HCM (E1) was proposed for priority section.
Jan. 2014	JICA started Preliminary F/S based on the request of MPWT and materialized the proposal of Phnom Penh – HCM (E1)
Apr. 2014	Result of the study is reported at the Seminar 1st, Brief explanation of Ground Design of Cambodia Expressway in 2013 2nd, Result of the Preliminary F/S of Phnom Penh – HCM (E1) in 2014

Difference between Expressway and National Road

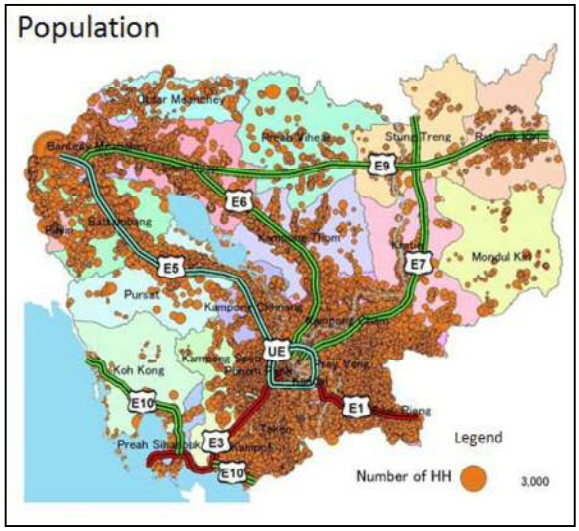
	General Features
Expressway	1. Designed for 120 km / hr, long distance traffic 2. Full access-control Can enter/exit at interchanges only Interval of ICs is 15km to 25km No direct entrance/exit from/to roadside No at-grade intersection, no stop, 3. Not used for pedestrian , only for automobile 4. Opposite directions are clearly divided by median.
National Road	1. Designed for low to medium speed traffic 2. No access-control 3. Used for daily activities of citizens & local industries

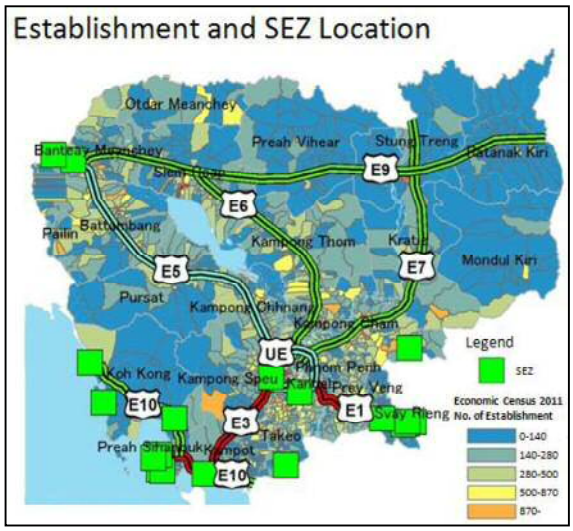
Draft design of expressway network proposed by JICA in Sep. 2013



No.	Route	Length km
E1	Phnom Penh - Bavet	135
E3	Phnom Penh - Sihanouk Ville	210
E5	Phnom Penh - Poipet	355
E6	Phnom Penh - Sri Sophon	400
E7	Phnom Penh - Laos border	335
E9	Siem Reap - Vietnam border	390
E10	Krong Kep - Koh Kong	220
UE	Phnom Penh Ring Road	155
	Total Length	2,200

Connectivity





Priority: Evaluation item for each expressway

	Items for evaluation	Scoring factors	Weight	Score
1	Population/ 100km	1. Population > 2,000,000 people 2. 2,000,000 >Population > 1,500,000 people 3. 1,500,000 >Population > 1,000,000 people 4. 1,000,000 >Population > 500,000 people 5. 500,000>Population	2	5 4 3 2 1
2	Traffic Volume	1. ADT >40,000 PCU/day 2. 40,000 > ADT >20,000 PCU/day 3. 20,000 > ADT >10,000 PCU/day 4. 10,000 > ADT > 5,000 PCU/day 5. 5,000 > ADT	2	5 4 3 2 1
3	Economy Number of Establishment	1.Large amount of Industrial and Agriculture Output 2.Medium amount of Industrial and Agriculture Output 3. Small amount of Industrial and Agriculture Output	1	5 3 1
4	Direct investment	1. More than 5 SEZ 2. SEZ = 4 3. SEZ = 3 4. SEZ = 1 - 2 5. SEZ =0	1	5 4 3 2 1
5	Agriculture	1.Large amount of paddy rice production 2.Medium amount of paddy rice production 3. Small amount of paddy rice production	1	5 3 1
6	Tourism	1.Big amount of Tourism Output 2.Medium amount of Tourism Output 3. Small amount of Tourism Output	1	5 3 1
7	GMS Corridor	Greater Mekong Sub-region (GMS) Other	1	5 0
8	Asian/ASEAN Highway	Asian Highway and ASEAN Highway Asian Highway or ASEAN Highway Other	1	5 3 0

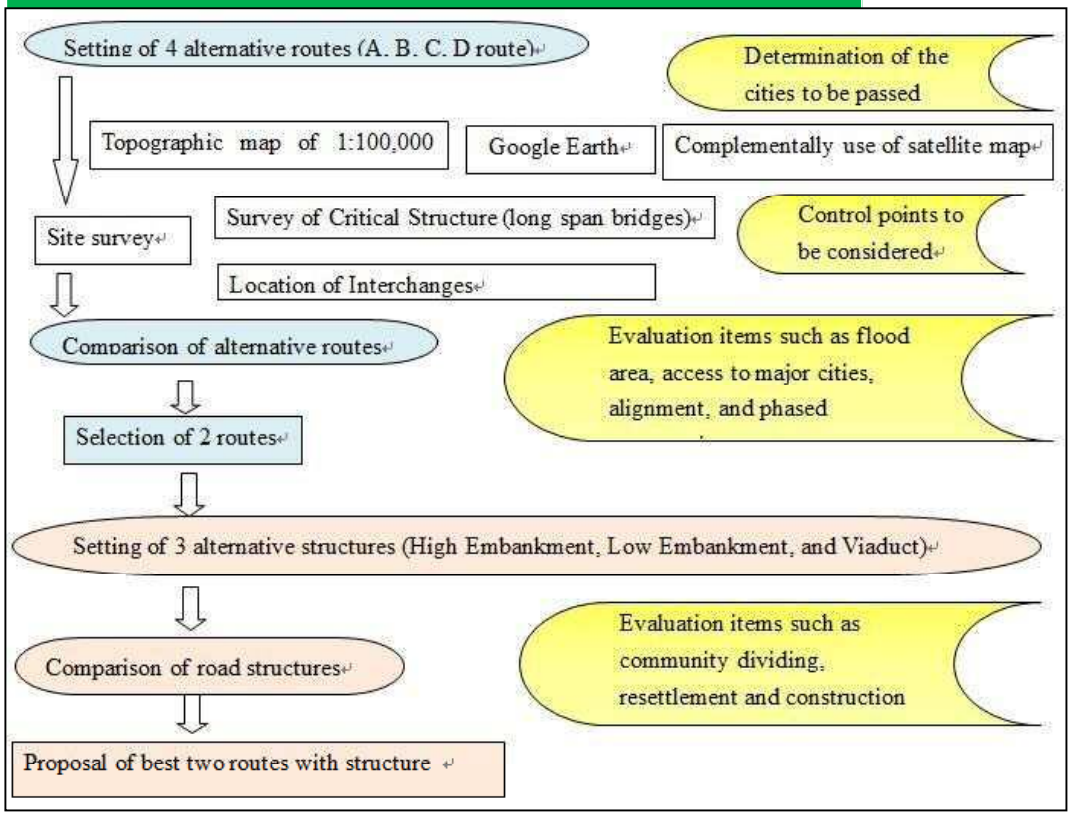
Priority: Result of Calculation for each expressway

	Items for evaluation	W	E1	E3	E5	E6	E7	E9	E10	U E
1	Population	2	5 x2	4 x 2	3 x 2	3 x 2	2 x 2	1 x 2	1 x 2	5 x 2
2	Traffic Volume	2	3 x2	3 x 2	3 x 2	2 x 2	1 x 2	1 x 2	1 x 2	4 x 2
3	Economy	1	5	5	5	5	3	1	1	5
4	Direct investment	1	5	5	2	1	1	2	5	3
5	Agriculture	1	5	5	5	5	3	1	1	1
6	Tourism	1	3	5	3	5	1	1	3	3
7	GMS Corridors	1	5	5	5	1	5	5	5	1
8	Asian / ASEAN	1	5	5	5	1	5	1	3	5
	Total points		44	44	37	28	24	15	22	36
	Implementation Schedule		Short	Short	Medium	Long	Long	Long	Long	Medium

E1 and E3 are given higher priorities, followed by E5 and UE. E6 and E7 are in given a mid-level priority, while E9 and E10 are given the lowest priorities.

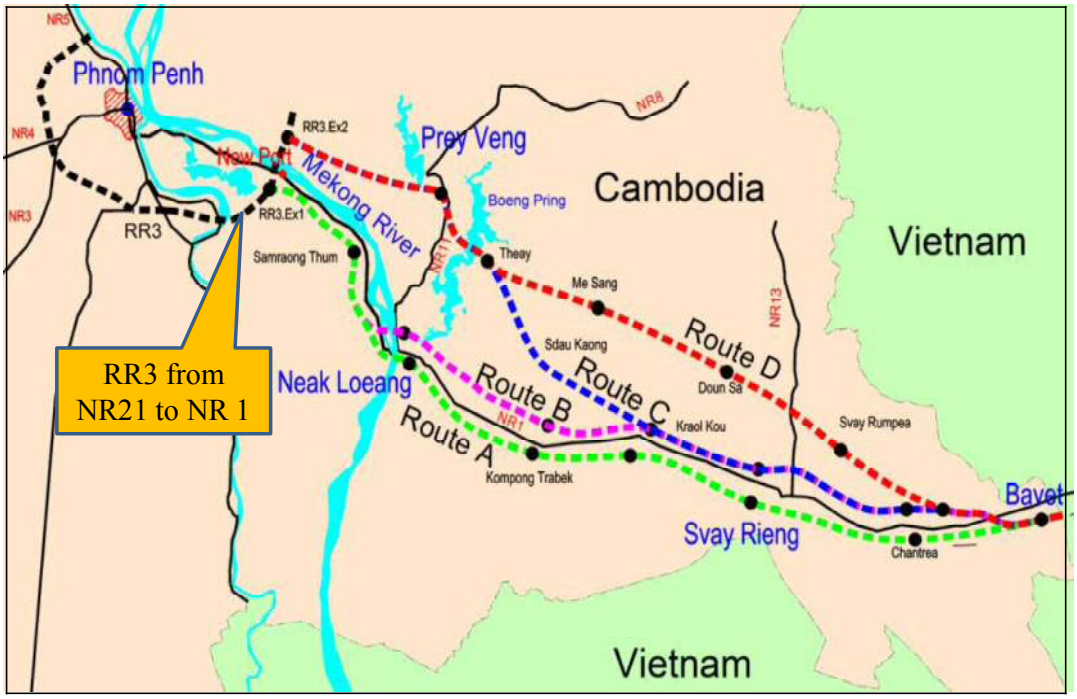
Result of the Preliminary F/S of Phnom Penh – HCM (E1)

Flow chart of expressway route selection



Priority Section : RR3 and E1 (Phnom Penh – Bavet)

Four Alternative Routes



Comparison of 4 alternative routes

Evaluation Item	Route A	Route B	Route C	Route D
Population of provinces and districts along the route(Y2008)	2,695,000 907,000 ○	2,695,000 907,000 ○	2,695,000 780,000 △	2,695,000 916,000 ○
Access to major Cities	Neak Loeang Svery Rieng ○	Neak Loeang Svay Rieng ○	Prey Veng Svay Rieng ◎	Prey Veng △
Economic activities Access to SEZ and NR1	Whole line goes along NR1 ◎	Whole line goes along NR1 ◎	60 km along NR1 from Kraol Kou ○	Shortest route △
Potential for new development	Area along NR1 ○	Area along NR1 ○	The east side of Mekong River ◎	The east side of Mekong River ◎
Length of route	139km+2km (RR3) =141km ○	138km+2km (RR3) =140 km ○	139km+5km (RR3) =144 km ○	131km+5km (RR3) =138 km ◎
Topography and natural condition: Flood area	West of Mekong Svay Rieng △	West of Mekong ○	Prey Veng ○	Prey Veng ○
Phased construction	Easy ◎	Easy ◎	Middle ○	Difficult △
Comprehensive evaluation		B is better than A ◎	C is better than D ○	

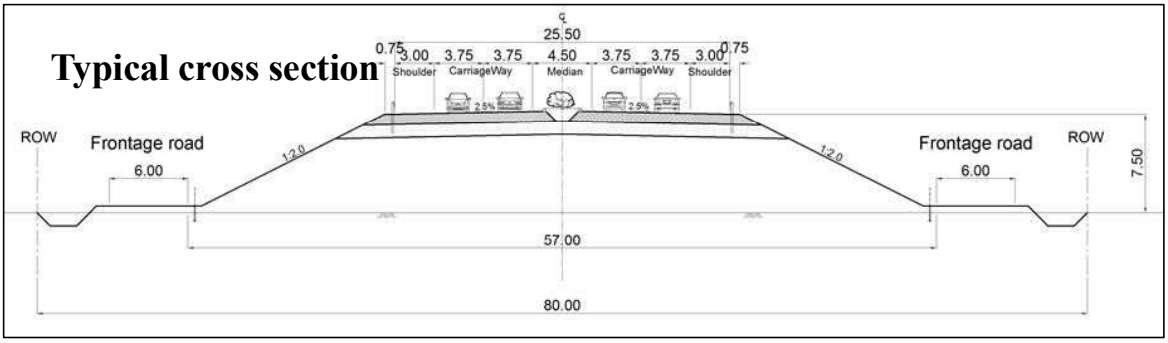
Legend: ◎ Good ○ Fair △ Poor

1, High Embankment

Computer Graphics

Design Standard of Expressway (Flat Terrain)

Item	
Design speed	120 km/hr
Minimum limit	70 km/hr
Lane width	3.75m
Shoulder width	3.0m
Median Width	4.5 m
Maximum Grade	4%



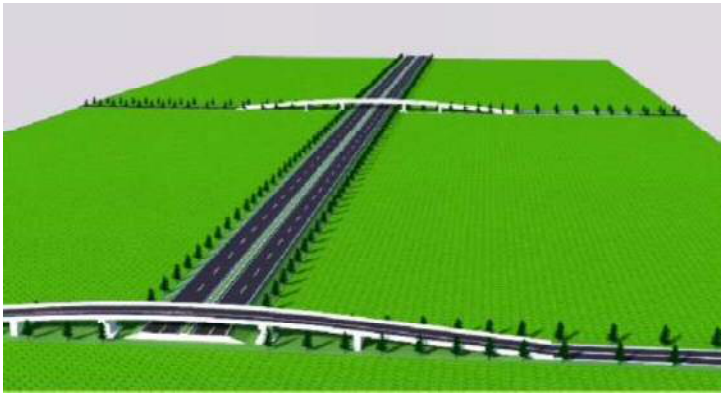
Evaluation of 3 materials for High Embankment

Material	Cost / m3	Volume L = 100km	Condition	Availability	Evaluation
Soil from existing borrow pit	USD30	16 mil m3	Transport distance of 150 km from mountain area along NR4	Too large volume, Expensive No trucks, Long construction period: Unfavorable (35 m+51 m) / 2 x 5.7m - 2.0m = 159 m2	△
Dredged Sand	USD15	16 mil m3	Transport distance of 50 km from Mekong River side	Too large volume, No trucks, Long construction period Environmental problem of erosion: Unfavorable	△
Soil from nearby borrow pit	USD10	16 mil m3	Assumed transport distance of 20 km from nearby borrow pit.	Borrow pit can be used for water reservoir after completion of the Project 300 m x 800 m x 6 m depth x 0.8 = 1,000,000 m3 16 borrow pits to be planned	○

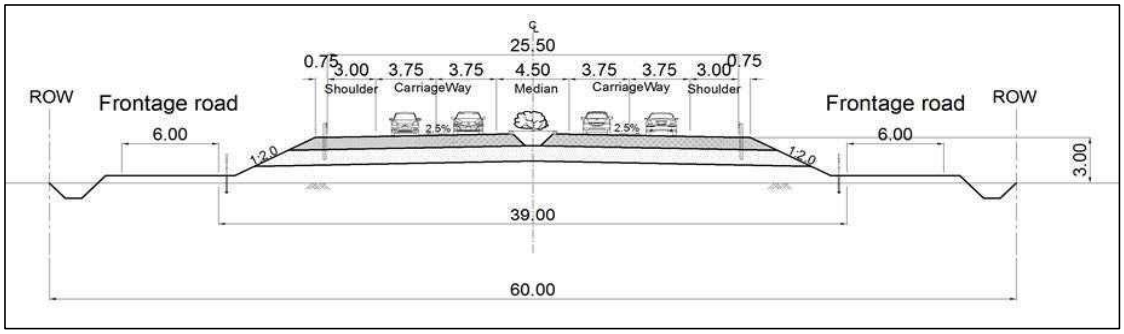
Legend : ○ Favorable △ Unfavorable

2, Low Embankment

Computer Graphics



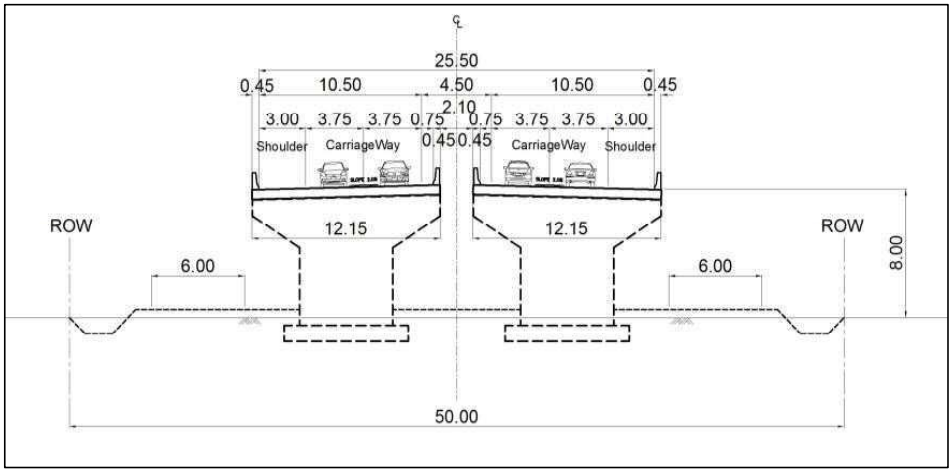
Typical cross section



3, Viaduct

Computer Graphics

Typical cross section



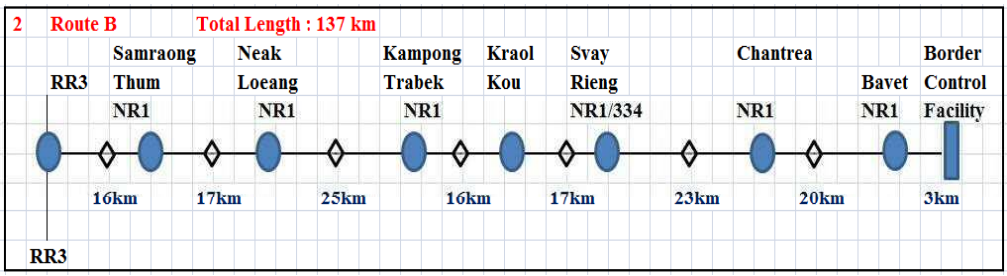
Comparison of 3 road structures

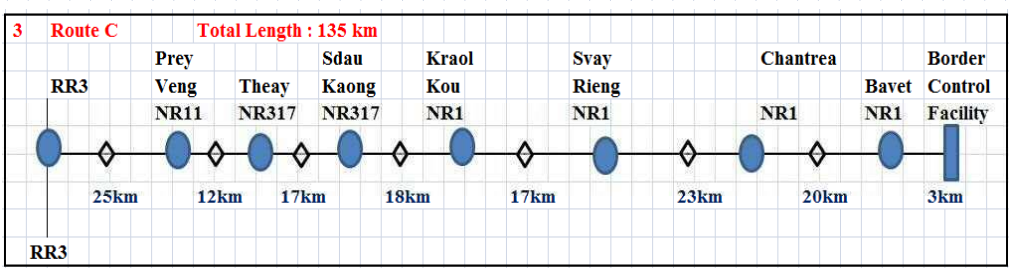
	High Embankment L=100km	Low Embankment L=100km	Viaduct L=100km
Embankment Material	16,000,000 m3 From near by borrow pit	4,000,000 m3 From near by borrow pit	0
Selected material	Transportation of 150km 6,000,000 m3	Transportation of 150km 6,000,000 m3	Transportation of 150km 5,000,000 m3 To be used for cement concrete
Community dividing: Crossing roads	Calvert Box installed in every 1 km : 100 C-BOX Increase access distance by 1km at maximum	Over bridge installed in every 1 km :100 OV Increase access distance by 2km at maximum	Installation of plane road at any points will not hinder the expansion of town/city.
	○	▲	◎
Blocking of flood water	Block flood water Open space required	Block flood water Open space required	Not block flood water
	○	▲	◎
Social impact: Resettlement	W= 80m	W= 60m	W= 50m
	○	○	◎
Countermeasure against soft ground	Many sand /cardboard drain	Little sand / cardboard drain	Foundation is long concrete piles
	▲	○	◎
Construction Cost	USD 7 mil / km	USD 5 mil / km	USD 24 mil / km
	○	◎	▲

Legend: ◎ Good ○ Fair ▲ Poor

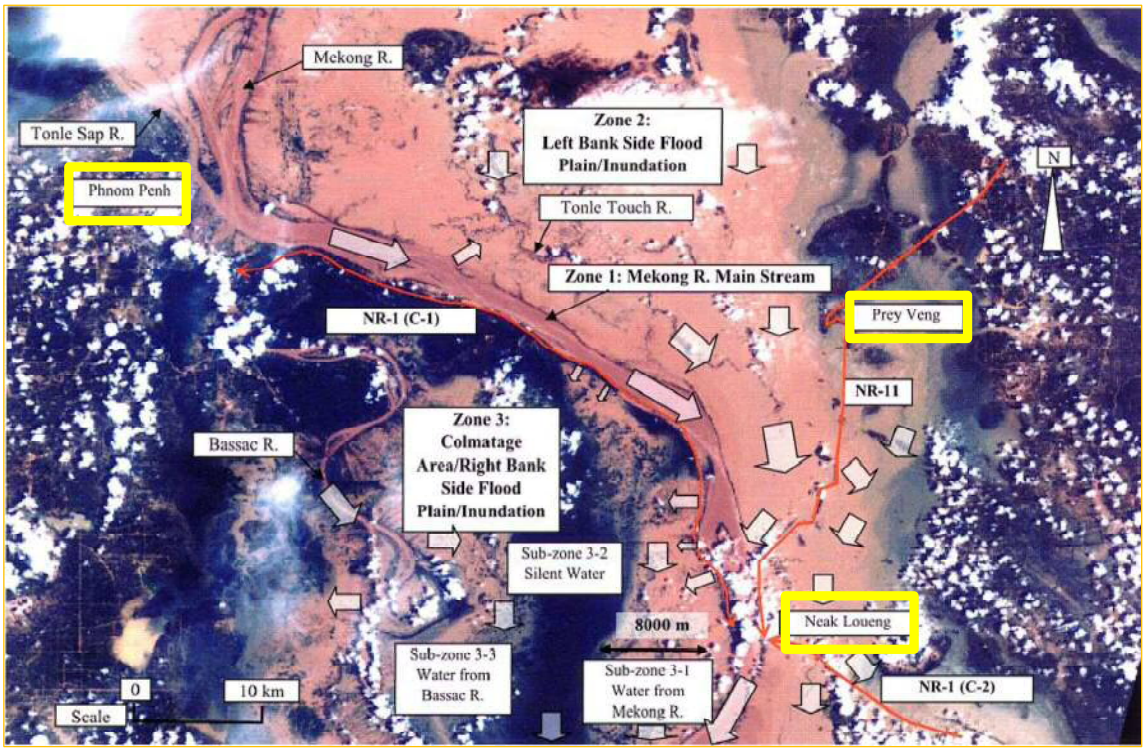
Example of interchange

Example of rest area

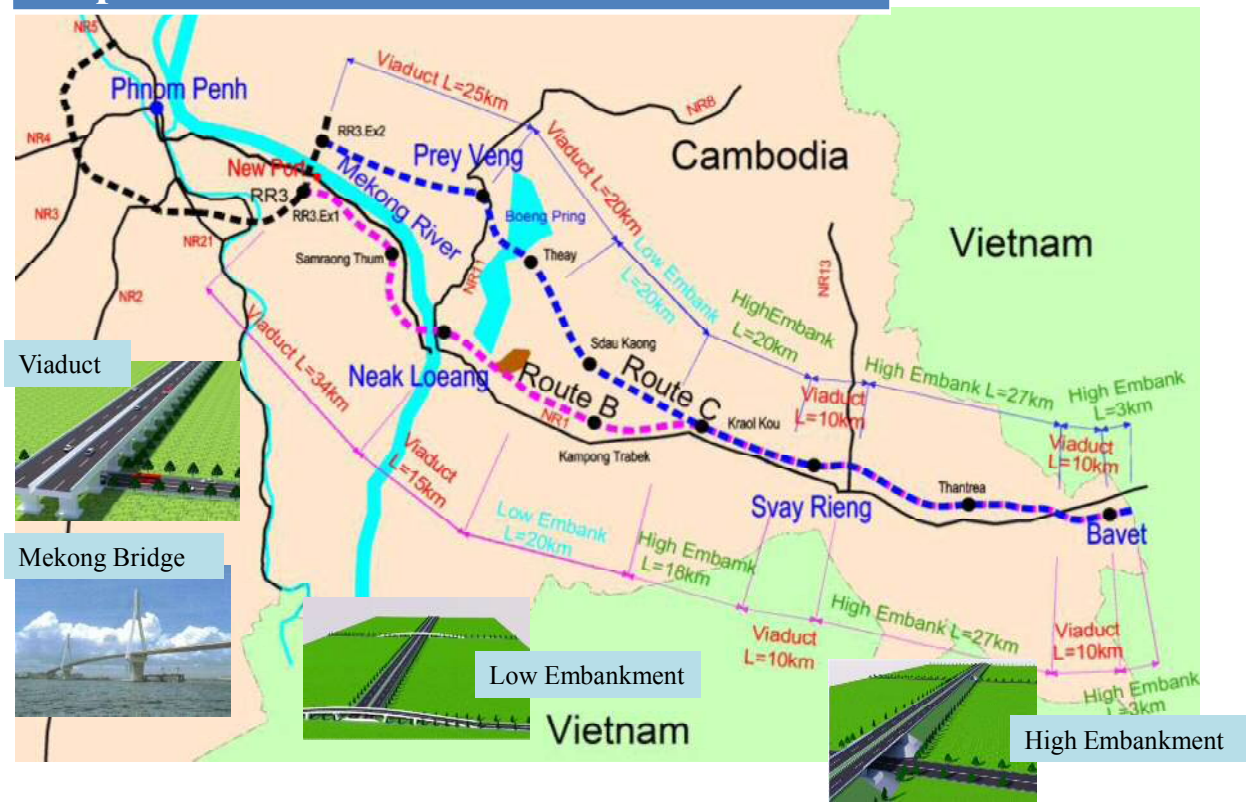




Flooding condition of 2000 Flood (Land sat Image Sep. 26, Y2000)



Proposed routes and road structure

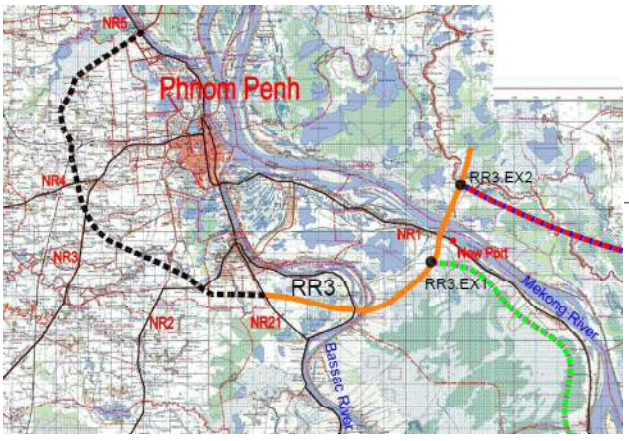


Viaduct: 69 km Low Embankment: 20 km High Embankment: 48 km

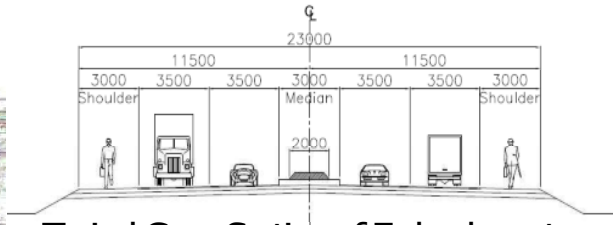
Structure and Construction cost of Route B

Route B	Length	Structure	Cost USD
RR3 (NR21 – NR1)	24km	23km Flat 1km Viaduct	66 mil
RR3. Ex1 IC – Neak Loeang **Flood area**	33km	**Viaduct** Structure	792 mil
Neak Loeang Bridge **Over Mekong River**	1 km	**Long span Bridge**	92 mil
Neak Loeang – 15 km to eastward **Flood area**	15km	**Viaduct** Structure	1,276 mil
Around Kampong Trabek **Sparsely populated area**	20 km	**Low Embankment**	
Around Kraol Kou **Less populated area**	18 km	**High Embankment**	
Around Svay Rieng City **Densely populated area**	10 km	**Viaduct** Structure	
From Svay Rieng to Bavet **Less populated area**	27 km	**High Embankment**	
Around Bavet City **Densely populated area**	10 km	**Viaduct** Structure	
Near Border **Border facilities**	3 km	**High Embankment**	
Total of Route B	137 km		***2,160 mil***
Ground Total **Including RR3 and Route B**	161 km		***2,226 mil***

RR3 from NR21 to NR1 in case of Route B
RR3 from NR21 to intersection of E1 & RR3in case of Route C



Construction cost of RR3



Typical Cross Section of Embankment

Mekong River Bridge

	In case of Route B		In case of Route C	
	Length	Cost	Length	Cost
Embankment	23km	USD 46 mil	26km	USD 52 mil
Short span bridge	1km	USD 20 mil	2km	USD 40 mil
Long span bridge	0	0	1km	USD 80 mil
Total	**24km**	**USD 66 mil**	**29km**	**USD 172 mil**

Appendix 12-4: Presentation by Mr. Sakurai

Phnom Penh – Ho Chi Minh City Expressway Development Plan

Financial, Institutional and Legal Issues

Phnom Penh – Ho Chi Minh City Expressway Development Plan
Financial, Institutional and Legal Issues

Road Map for Realizing E1 Expressway; "The Dream"

April 2014
Data collection Survey for Phnom Penh – Ho Chi Minh City Expressway Development
Japan International Cooperation Agency (JICA)

Poor Road Condition of Japan in 50's: National Road No. 1

Poor Condition of Primary National Highway in ‘50s

Traffic Condition in Tokyo (Early 1950s)

How to Realize Expressway?

- After Expressway Plan has been prepared, a plan how to implement the expressway becomes necessary.
- Road Map should cover subjects including;
  (i) Justification for construction of expressway,
  (ii) Financing plan & fund source,
  (iii) Organization for expressway, and
  (iv) Legal framework to authorize the above.
- The proposal for these subjects can be applied not only to Phnom Penh – Ho Chi Minh (E1) Expressway but also to the whole expressway network.

Justification for construction of E1 Expressway (1)

- E1 Expressway will greatly improve the connection between Bangkok, Phnom Penh and Ho Chi Minh City (Southern Corridor of GMS)
- E1 Expressway will enhance the regional cooperation among GMS and necessary for ASEAN Community to be established in 2015

Construction of E1 Expressway & Widening of NR 5

Justification for Construction of E1 Expressway (2)

- Expressway is indispensable for modern industries. Thus expressway promote economic growth.
- Foreign investors are attracted by expressway and employment opportunities will increase.
- Tourists from Ho Chi Minh City to Phnom Penh will increase.

Justification for Construction of E1 Expressway (3)

- Market for agricultural products will be expanded.
- Access to public services in Phnom Penh, such as hospital, will be improved.

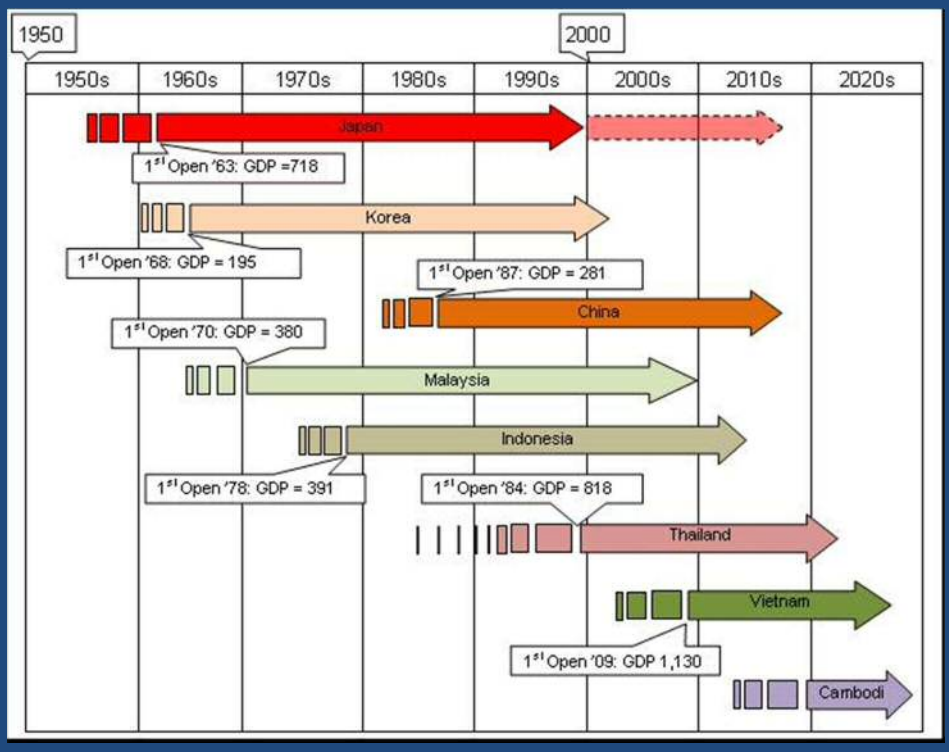
Justification for Construction of E1 Expressway (4)

- Construction cost of E1 Expressway is huge but benefit is also huge & diverse.
- EIRR is estimated to be 12.2 %. (Usually, EIRR = 12% is considered to justify road projects.)

Why do we start construction of expressway now?

- Construction of expressway needs many years, and needs to be started well before rapid economic growth starts.
- Many Asian countries started construction of expressway network in 1980s when their GDPs per capita were much less than USD 1,000.
- GDP per capita of Cambodia is now USD 1,000.
- Thus it is time to start construction of expressway

Year of Start of Expressway Construction in Asia



How to Realize E1 Expressway?

We need;

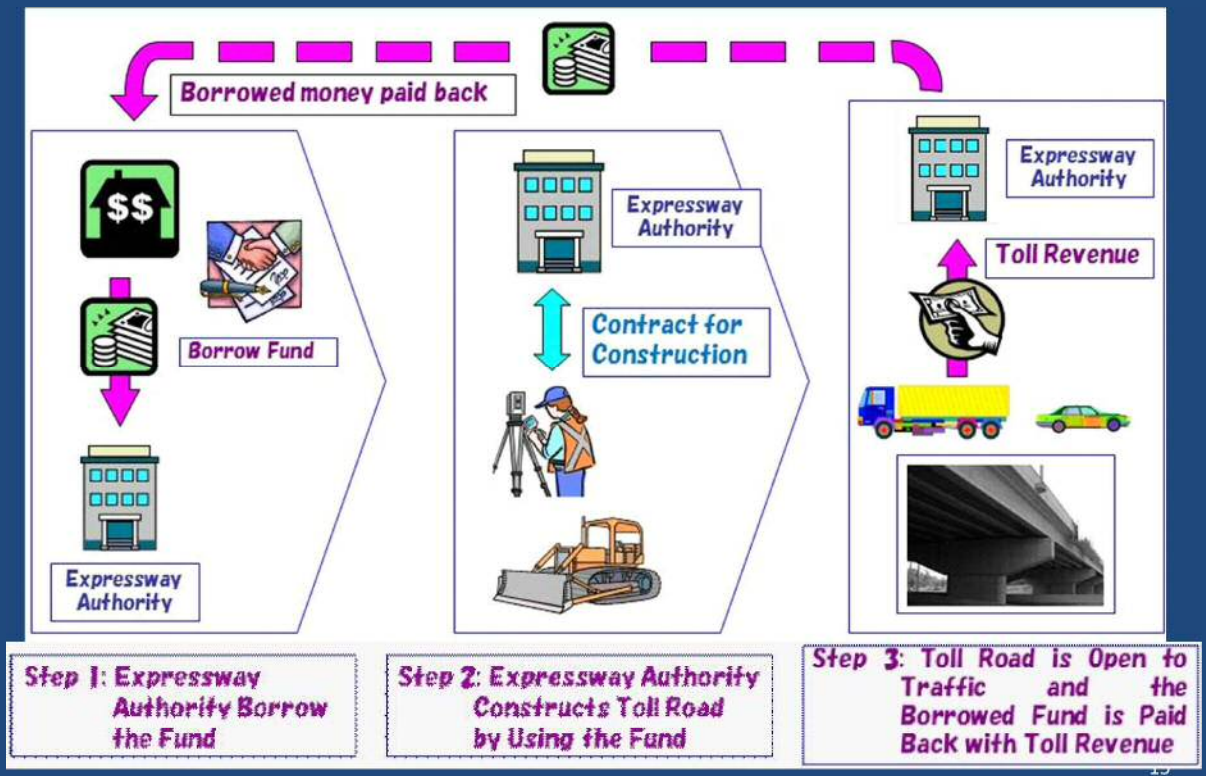
- Fund and Financial Plan
- Institutional Plan
- Implementation Schedule
- Legal Framework

Where does the Fund Come from?

Answer: Full-Scale Toll Road System is introduced.

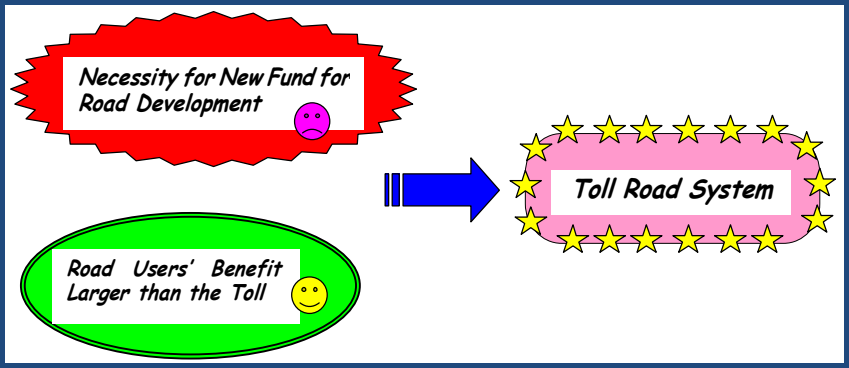
- If full-scale toll road system is introduced, the loan can be redeemed with toll revenue and government do not need to inject fund.

Concept of Toll Road System



Justification of Toll Road System

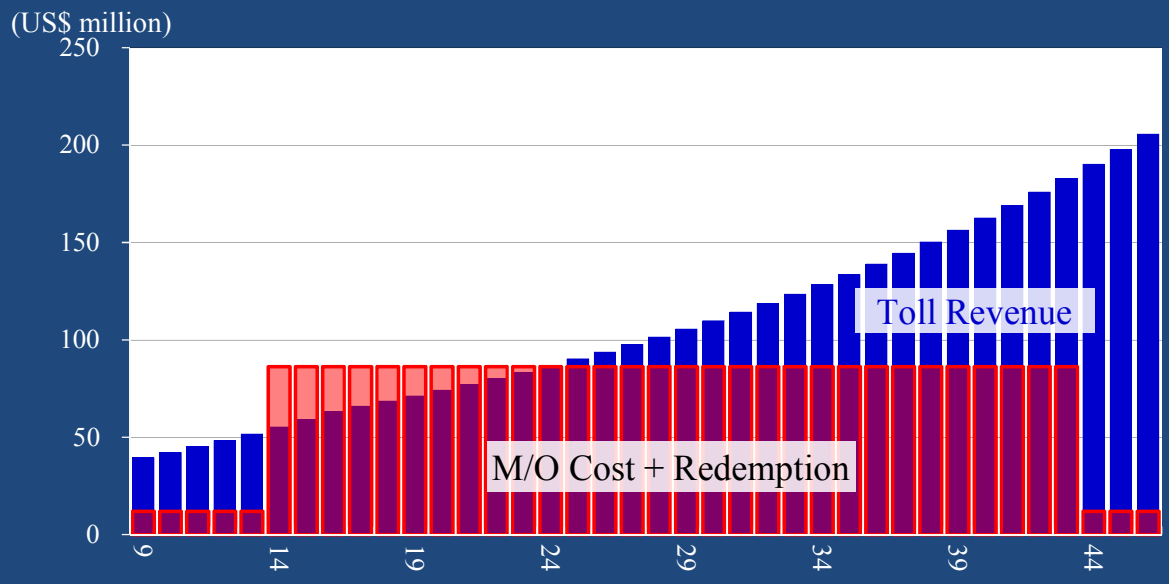
- Toll is a new fund source for improving the road network.
- Road user con get benefit from toll road



Financing Plan

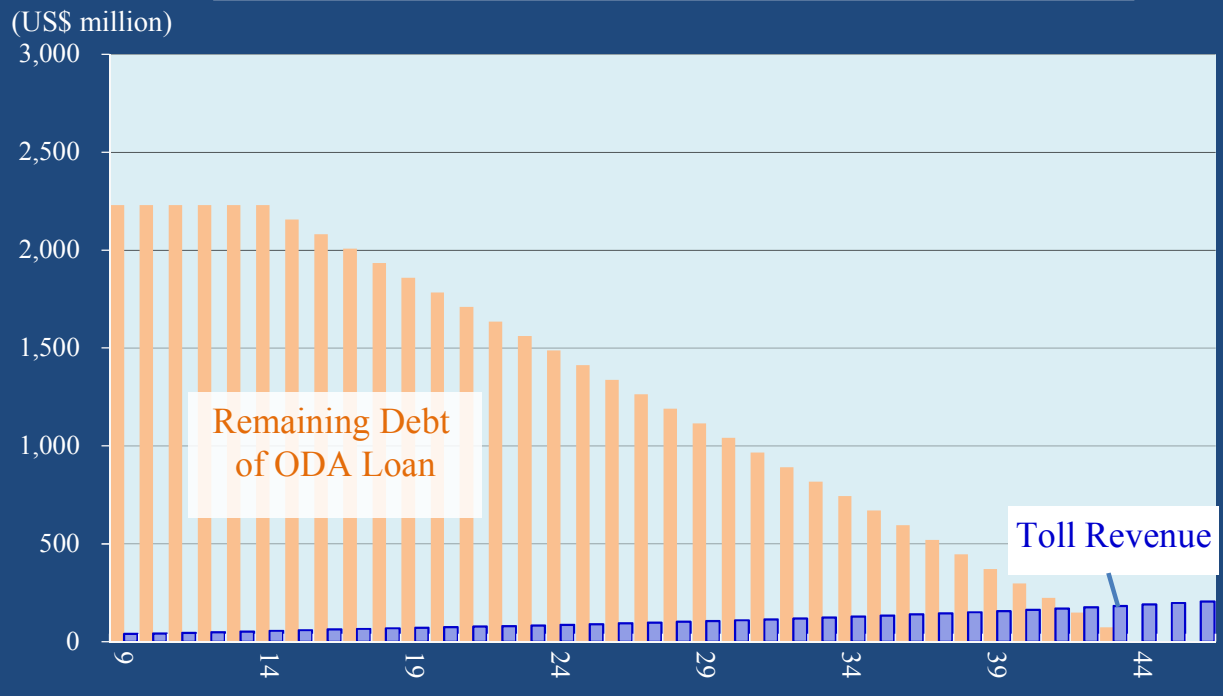
- Construction cost of E1 Expressway is estimated at approximately USD 2,230 million.
- ODA Loan (low interest rate & long grace period) is used as the fund for construction of E1 Expressway.
- The loan (debt) can be amortized in 35 years after opening to traffic.

Maintenance & Operation Cost, Redemption and Toll Revenue



Toll Revenue in year of opening = USD 40 million
Annual Redemption = USD 75 million: Small due to phased construction

Amortization of Debt of Loan



Financing Plan (2): Problem of PPP

- Excessive reliance on PPP often causes delay in construction of expressways because government has to wait until investor is interested and decide investment.
- If there is a section which yields good profit, such section should be constructed by government (Expressway Authority) and the profit should be used for non-profitable section.

Organization Plan (1): Necessity of New Institution

- Expressway is completely new concept and high level of engineering, high capacity for implementation of big project and new ideas (not influenced by old precedent cases) & energy are needed.
- Expressway authority should be established under supervision of the Minister of MPWT but should be autonomous, because the account system needs to be independent from that of MPWT with its own fund source and toll revenue.
- Employment/working condition and salary level should be different from that of MPWT officials.

Organization Plan (2) Tasks of Expressway Authority

▲ Traffic control

▲ Traffic information

▲ Toll collection

▲ Road maintenance

▲ Road patrol

▲ Maintain clean toilet

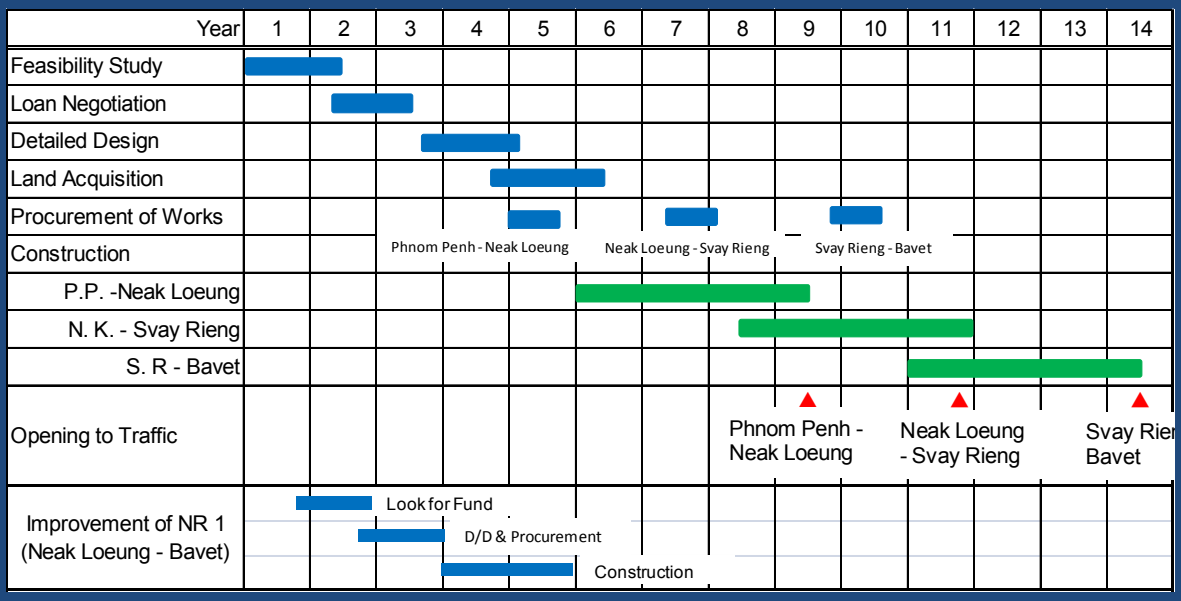
Organization Plan (3)
- Steps for Establishing Expressway Authority -

- Establishment of Expressway Authority should be done in steps.
- Step 1: Establishment of Preparation Office in MPWT
- Step 2: Establishment of Expressway Authority with main function of survey and design.
- Step 3: Add function for project implementation (construction)
- Step 4: Add functions for maintenance & operation
- Step 5: Full organization for construction and operation of whole national expressway

Organization Plan (4)

- Jobs of departments and divisions need to be defined.
- Capacity development of staff is needed in various areas.
- Various job manuals need to be prepared.

Implementation Schedule



- E1 shall be constructed in 3 phases.
- NR 1 (Neak Loeung – Bavet) should be improved

Phased Construction

- Traffic volume on Neak Loeung – Bavet in 2033 will be 25,000 pcu/day or less. Thus, it can be accommodated by NR 1. Phnom Penh – Neak Loeung is opened first.
- Amount of annual disbursement for construction and amount of annual redemption for amortization of loan becomes smaller by distributing the investment over long period. Thus financing becomes easier.

Necessary Actions & Time Schedule

- Feasibility study: Late 2014 or early 2015 – Mid 2016
- Loan negotiation: 2016 - 2017
- Establishment of Expressway Authority: Before start of procurement of consultant for detail design; late 2016
- Establishment of preparatory office: By the time of start of feasibility study; late 2014

Necessary Actions & Time Schedule (2)

- Detail design: Mid 2017 – early 2019
- Land acquisition (Phnom Penh – Neak Loeung): late 2018 – mid 2020
- Construction: Early 2019 – mid 2033
- Opening Mid 2023

Legal Framework

- Laws & decrees to legally authorize the above- discussed subjects need to be promulgated.
- Law for toll road (criteria, toll level etc)
- Law for construction of expressway network
- Law/decree for establishment of expressway authority
- Revision of Road Traffic Law (add stipulations on expressway, such as minimum speed, limitation of vehicles & use of left lane only for overtaking)

Phnom Penh – Ho Chi Minh City Expressway Development Plan

- Financial, Institutional & Legal Issues -

End of Presentation

THANK YOU FOR YOUR ATTENTION!

Appendix 12-5: Presentation by Mr. Thuyen

Vietnam – Cambodia Connectivity Plan

VIETNAM – CAMBODIA TRANSPORT CONNECTIVITIES PLAN

PHNOM PENH,
APRIL 2014

Mr. Nguyen Ngoc Thuyen
Deputy Director General of International Cooperation Dept
Ministry of Transport of Viet Nam

Neccessity for the Plan

- Facilitate and promote socio-economic, trading development, improve people's material and spiritual lives and strengthen friendly cooperative relationship between 2 countries, especially in border areas.
- Facilitate integration of regional and international economic development.
- Improving production efficiency (reduction in distance, time, transportation cost).

1. Vietnam – Cambodia border gates:

Border length: 1,137 km

Border provinces

Vietnam: 10

Cambodia: 8

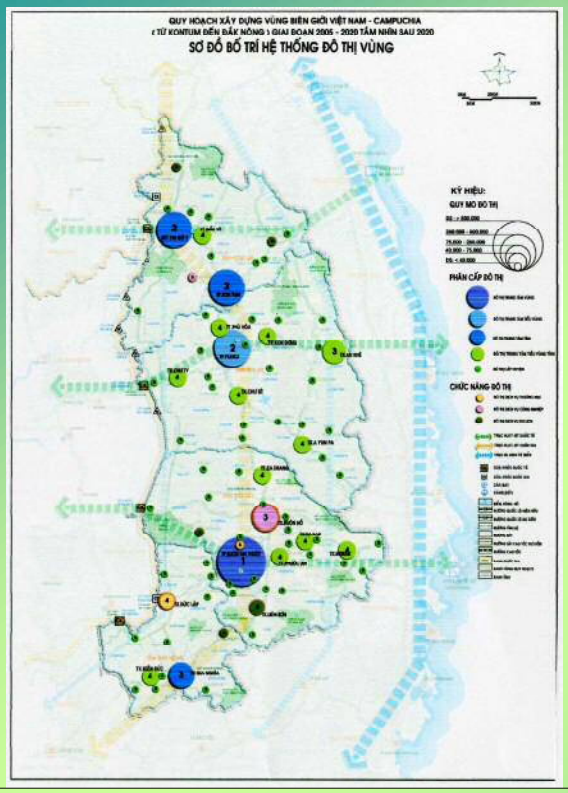
- Current status of border gates: 10 international border gates, 9 national border gates and 30 local border gates
- Border gates by 2020: International 13, national 12, local gates 24

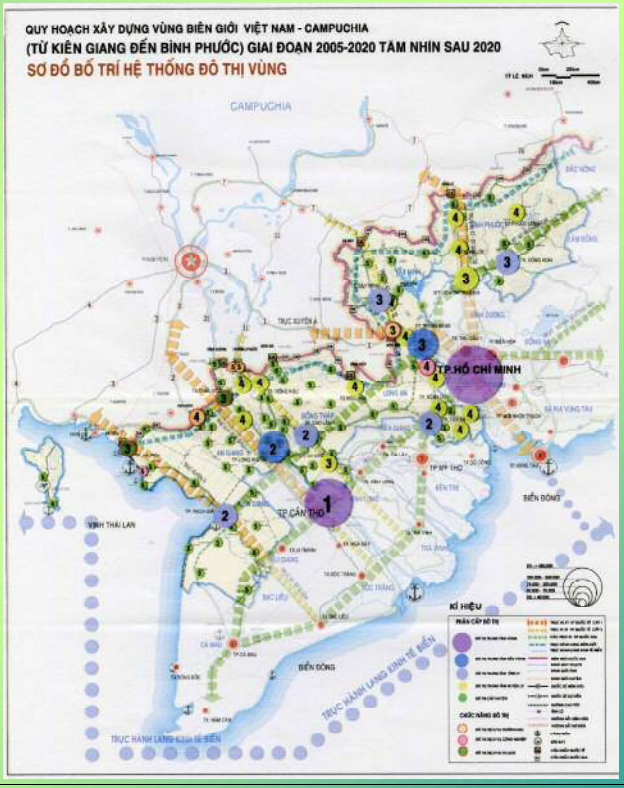
2. Border economic situation

- Border economic zone 2008 (VN): 8,176 650 ha area.
- Border economic zone by 2020: 11, 234 880 ha area.

3. Urban, residential construction in border areas

- Population in border areas in 2010: 8-9 million people; 2020: 10-11million in which the urban population 55-65%.
- Urban: 216 (1 type I, 3 type II, 17 type III, 27 type IV, 171 type V). Urban center: Pleiku city, Buon Me Thuot, Long Xuyen, Trang Bang.
- Formation of the townships, stable residential areas under main traffic corridors, size 30-60 ha /townships, population of 1000-3000 people.
- Industrial planning: hydropower, clean energy, mining, production of building materials (Zones I, II); serve export processing, mechanical industry, ship-building, petrochemical industry, thermal power, building material (Zones III, IV).

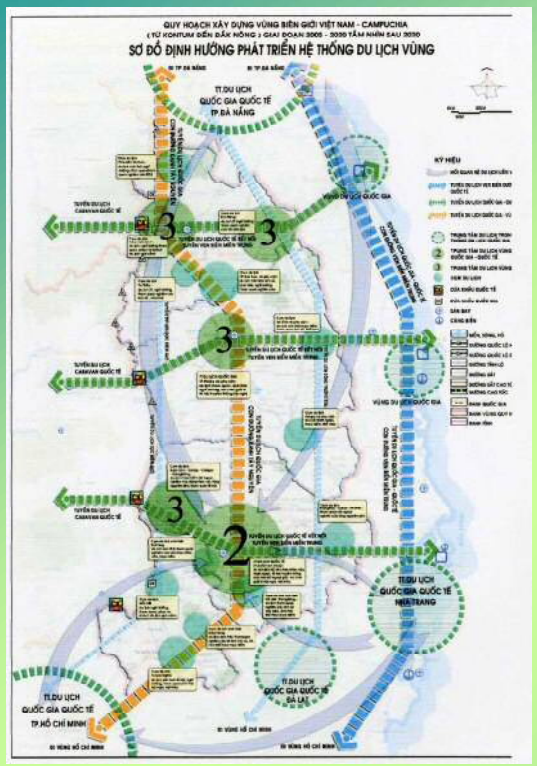


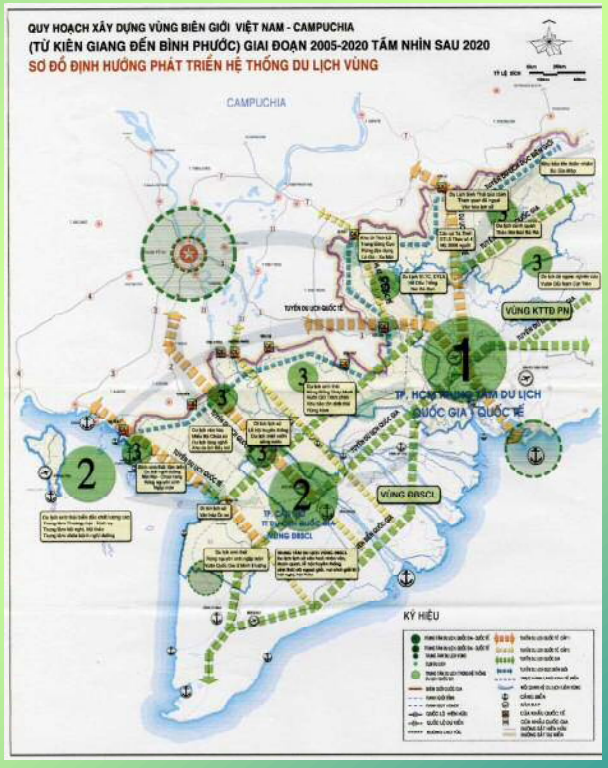


4. Tourism organization

To develop the domestic, inter-regional and international tour packages through international border gates; international tourist routes:

- Quy Nhon - Ho Pleicu - Le Thanh border gate
- Tuy Hoa City - Buon Ho - Dak Rue border gate
- Nha Trang - Buon Ma Thuot - Bu Prang border gate
- Ho Chi Minh City - Loc Ninh - Hoa Lu border gate
- Ho Chi Minh City - Tay Ninh - Xa Mat border gate
- Ho Chi Minh City - Moc Bai border gate
- Mekong Delta - Long Xuyen - Tinh Bien border gate
- Tour Mekong: Mekong Delta - Vinh Xuong border gate
- Mekong Delta - Rach Gia - Ha Tien border gate





5. Transport status

5.1. Transport through border gates

- Vehicle 2007: 33 956 vehicles (Exit: 16 545, Enter: 17 441)
- Passengers 2007: 748 416 (Exit: 74%, Enter: 26%)
- Forecast 2020: 153 589 vehicle turns, increasing 13.84%; 4,229,694 arrivals, increasing 14.8%.
- The number of traffic border gates: 5 (Xa Mat, Moc Bai Tinh Bien, Ha Tien, Hoa Lu).

  (Will continue to traffic according to Agreement and Protocol between Viet Nam and Cambodia on road transport: Le Thanh, Bu Prang).

-Commercial development via border gates: 500 vehicles

5.2. Road transport connectivity

- In Vietnam

+ There are 9 Highways connecting with the international border gates, national border gates, grade III - IV level, 2 lanes, Highway 22: 4 lanes; construction works are eternal.

+ Planning: Highway to the border gates level II - IV, 2 - 4 lanes; highways.

+ The urban axis, rural transport: 1-2 lane, asphalt surface, gravel, medium quality.

Planning: Urban grade IV-V; rural transport Class A, asphalt or equivalent.

- In Cambodia

+ There are 7 Highways connecting with international border gates and main border gates, low scale and quality.

+ There are 13 rural traffic route connecting with international border gates, national border gates. Low quality, poorly linked, scale 1 lane.

6. Collaborative, supported Cambodia project

6.1 Support from Vietnam:

- Road 78 construction project from Le Thanh border gate - Ban Lung town (improvement).
- Long Binh - Chrey Thom bridge construction project in Khanh Binh border gate
- So Ha bridge construction project at international border gate Ba Dinh (already completed).
- Provincial road 312A from Dinh Ba border gate- National Highway 1 (under construction).
- Road project from Ta Vat border gate – National Highway 7; Hoa Lu - Snoul district; Hoang Dieu - Kaev Seima district.

6.2. Support from other countries

- Road construction project through Buprang / O Reng is being researched to invest by the Japanese Government.
- Road construction project from My Quy Tay/ Xom Rong - National Highway 1 is prepared to invest by South Korea.
- Road construction project from Nekluong- Vinh Xuong/ Ka Oam sam, invested by the Cambodian Government .
- Road construction project from National Highway 33 – border gate Giang Thanh / Ton Hon, the Korean Government considers to invest the project.

7 . Overall transport connectivity between Viet Nam and Cambodia

7.1 . Viewpoint of transport connectivity

- Respect for the independent sovereignty , territorial integrity , equality , understanding , peace , friendship and cooperation and socio-economic development , defense and security ; accordance with the international and regional agreements, contributes to the cooperation between ASEAN's countries , builds the Southeast Asia into a peace , stability , cooperation , development and prosperity area.
- The identification of the location, scale transport connection must be commensurate with the socio-economic development, border gates of two sides, ensures the transport connectivity operators effectively, attracts transport in the future but also consistent with the actual transport needs .
- Focus on development of road transport connections ; transport connections to the international border gates , main border gates , the border gates that have high transport demand . Priority connecting transport in the areas which impetus socio-economic development.

7.2. Criteria for transport connectivity

- Focus on road transport connections.
- Prioritize transport connections to the pairs of international border gates, national border gates, local gates that have high trade demand.
- Each province should have at least 01 transport connection route.
- Connect the arterial traffic routes, have condition to invest infrastructure.
- Ability to link between socio-economic development and maintaining the security, politics, and social order and safety of each side.

7.3. Standard of roads uses to connect transport connectivity:

- Standard Vietnam TCVN4054-2005.
- Technical standard of the connecting roads to the pairs of border gates:

+ Road to international border gates: Le Thanh, Hoa Lu, Xa Mat, Moc Bai, Ha Tien, Tinh Bien and must meet the minimum technical standards of grade III, 2 B= 12m.
+ Road to remaining international border gates and national border gate must achieve the minimum technical standards for grade IV, 2 B= 9 m.

7.4 Overall transport connectivity

- Completion of construction, well exploit routes through the pairs of international border gates: Xa Mat / Tra Pieng Plong, Moc Bai / Bavet, Tinh Bien / Phnong Den and Ha Tien / Prek Chak.
- Connecting roads through the border gates must have a minimum grade III scale, 2 lanes, asphalt or equivalent.

- Priority on building investment and upgrading roads and buildings across the river to the pairs of international border gates, national border gates, ensuring convenient transportation

  The international border gates, main border gates have rural roads connectivity and not routing

  Highways across all pairs of international border gates and national border gates; minimum scale level V, gravel surface, reinforced concrete bridges. The roads through the the pair of international gate, will continue to be consistent surface upgraded.

  Build bridges to no longer have any pair of international border gate crossing by ferry.

- Upgrade the routes to the international border gates to reach grade III, 2 lanes

  The routes through the international gate, after consulting states, continue to upgrade to archieve the minimum level III, asphalt surface or equivalent , B =12 m, 2 lanes.

- Investment to upgrade to reach level V, asphalt road surface for the route to the main border gates that has the potential to promote economic development

  Upgrade to grade V, the asphalt or equivalent route through the main border gates which has economic development potential for the area.

- Routes to the main border gates, firstly build scale 1 lane road, gravel surface, ensuring transport, then upgrade asphalt surface or equivalent.

5.5. Selection of priority investment projects

- Priority Criteria

+ Border gate type: (1) international border gate, (2) main border gate.

+ Connect road to border gate type: (1) national highway, (2) ĐT = provincial road, (3) Rural Transport.

+ Capital: (1) investment demand meets supply capabilities.

+ Benefits: (1)State socio-economic development, (2)local socio-economic development, (3) development KKTCK, (4) the beneficiary communities.

TT	Pair border gates			connectivity criteria										Đánh giá chung
	Name			Type of road			Capital demand			Beneficiary				
	Việt Nam	Campuchia	Loại CK	Quốc lộ	ĐT	GTNT	Đường	Cầu	Cộng	KTQG	KTĐP	KTCK	Dân cư	

Tiêu chí ưu tiên đầu tư các dự án

1. Cửa khẩu quốc tế bên Việt Nam

TT	Cặp cửa khẩu			Bên Việt Nam										
	Tên cửa khẩu		Loại	Đường nối tới CK			Nhu cầu đầu tư (tỷ đ)			Hưởng lợi				Cộng
	Việt Nam	Campuchia		QL	ĐT	GTNT	Đường	Cầu	Cộng	KTQG	KTĐP	KTCK	Dân cư	
1	**Đắk Ruê**	**Chi Met**	**QT**		**ĐT**		**3**		**3**		**A**	**KTCK**	**B**	
2	Bu Prăng	Đắk Đam	QT		ĐT		35		35	B			A	
3	**Hoa Lư**	**Strapainsre**	**QT**	**QL**					**0**	**A**		**KTCK**	**A**	
4	Xa Mát	Tra Pieng Plong	QT	QL					0	A		KTCK		
5	Mộc Bài	Pavet	QT	QL					0	A		KTCK		
6	Mỹ Quý Tây	Xom Rong	QT		ĐT		28		28		B			
7	**Bình Hiệp**	**Prayyo**	**QT**	**QL**					**0**	**A**		**KTCK**	**A**	
8	**Dinh Bà**	**Bontia Chak Cray**	**QT**	**QL**					**0**		**A**	**KTCK**	**A**	
9	**Thường Phước**	**Kaoh Roka**	**QT**		**ĐT**		**13**		**13**		**A**	**KTCK**	**B**	
10	Vĩnh Xương	Kam Samnar	QT	QL			19		19	A			A	
11	Tịnh Biên	Phnom Den	QT	QL					0	A		KTCK	A	
12	Hà Tiên	PrekChak	QT	QL					0	A		KTCK	A	
13	**Lệ Thanh**	**Oyadav**	**QT**	**QL**					**0**	**A**		**KTCK**		

2. Cửa khẩu quốc tế (bên Campuchia)

	Tên cửa khẩu			Vốn đầu tư			Hưởng lợi					Ghi chú
	Việt Nam	Campuchia	Loại	Đường	Cầu	Cộng	KTQG	KTĐP	KTCK	Dân cư	Cộng	
1	**Đắk Ruê**	**Chi Met**	**QT**	**280**	**15**	**295**						
2	Bu Prăng	Đắk Đam	QT	169		169	Dự án đang được Chính phủ Nhật Bản nghiên cứu đầu tư					
3	**Hoa Lư**	**Strapainsre**	**QT**	**30**		**30**						
4	Xa Mát	T.Pieng Plong	QT	14		14						
5	Mộc Bài	Pavet	QT			0						
6	Mỹ Quý Tây	Xom Rong	QT	17		17	Dự án đang được Hàn Quốc nghiên cứu đầu tu					
7	**Bình Hiệp**	**Prayyo**	**QT**	**104**	**15**	**119**						
8	**Dinh Bà**	**B. Chak Cray**	**QT**	**57**		**57**			**KTCK**			**Dự án đang XD**
9	**Thường Phước**	**Kaoh Roka**	**QT**	**165**		**165**						
10	Vĩnh Xương	Kam Samnar	QT	80		80						Campuchia đầu tư
11	Tịnh Biên	Phnom Den	QT			0						
12	Hà Tiên	PrekChak	QT			0						
13	**Lê Thanh**	**Oyadav**	**QT**									

Dự án đầu tư giai đoạn 1 đến các cặp CKQT, CKC

	Tên CK Việt Nam	**Tên CK** Campuchia	**Loại CK**	**Đường**	**Cầu**	**Cộng** (tỷ đ.)	**Ghi chú**
1	Lệ Thanh	Oyadav	QT				Đang XD
2	Hoa Lư	Strapainsre	QT	30 18,5km		30	
3	Bình Hiệp	Prayyo	QT	104 26km	15 2cầu	119	2 cầu 50-60md
4	Dinh Bà	B.Chak Cray	QT	77 28,5km		77	Đang XD
5	Hoàng Diệu	Lapakhe	CKC	32 8km	6 33md	38	
6	Vat Sa	Monurum	CKC	23 11,5km		23	
7	Phước Tân	Bo Mon	CKC	42 10,5km		42	
8	Khánh Bình	Chray Thum	CKC	30 5km	384 440md	414	Chuẩn bị ĐT
	Cộng			**346** 110km	**405** 573md	**851**	

Các dự án đầu tư giai đoạn 1

(vốn các nước khác)

	Tên CK Việt Nam	**Tên CK** Campuchia	**Loại CK**	**Đường**	**Cầu**	**Cộng** (tỷ đ.)	**Ghi chú**
9	Buprăng	Ô Reng	QT	26km			JICA – Nhật Bản
10	Mỹ Quý Tây	Xom Rong	QT	15km			Hà Quốc
11	Vĩnh Xương	Kam Sammar	QT	42.5km			Cambodia
12	Giang Thành	Ton Hon	CKC	12km			Hàn Quốc
	Cộng			95.5km			
	Cộng chung			**205.5km**			

DA đầu tư giai đoạn 2 đến các cặp CKQT, CKC

	Tên CK Việt Nam	Tên CK Campuchia	Loại CK	Đường	Cầu	Cộng (tỷ đ.)
1	Đắk Ruê	Chi Met	QT	280 70km	15	295
2	Thường Phước	Kaoh Roka	QT	165 42km		165
3	Đắk Peur	Nam Lea	CKC	268 67km	15	283
4	Tà Vát	Mimot	CKC	120 30km		120
5	Ton Le Cham	SaTum	CKC	6 3km		6
6	KaTum	Chammun	CKC	48 12km		48
7	Chang Riec	Da	CKC	10 2.5km		10
8	T.B.T	Svaychrum	CKC	25 12,5km		25
9	Vàm Đồn	Se Prang	CKC	28 11km	9	37
10	Khánh Hưng	Krasang Chrum	CKC	52 22km	12	64
11	Hưng Điền	PrayThum	CKC	30 22.5km	27	57
12	Thông Bình	PemTia	CKC	30 7,5km		30
13	Bình Phú	B.Chak Cray	CKC	34 8,5km		34
14	Nha Sáp		CKC	44 17km		44
15	Chợ Đình	ThnoChoongSrong	CKC	60 15km		60
	Cộng			**1.200** 342,5km	**78**	**1.278**

6. Policies and implementing solutions

Raise capital solution

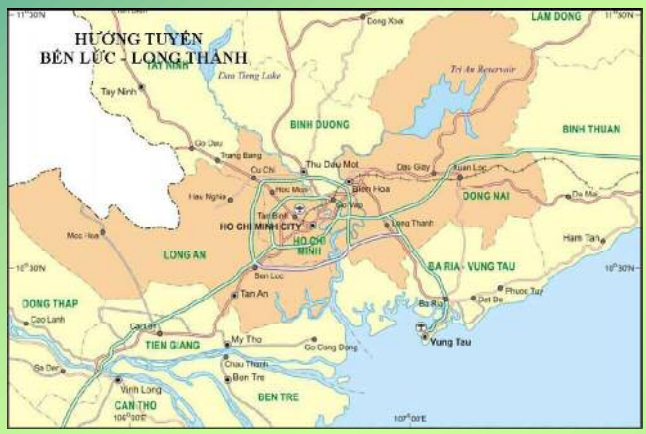
- Utilization annual budget of 2 countries

+ Prioritize investment in developing border areas.

+ Support from the Vietnam Government with capital, technology, experts ...

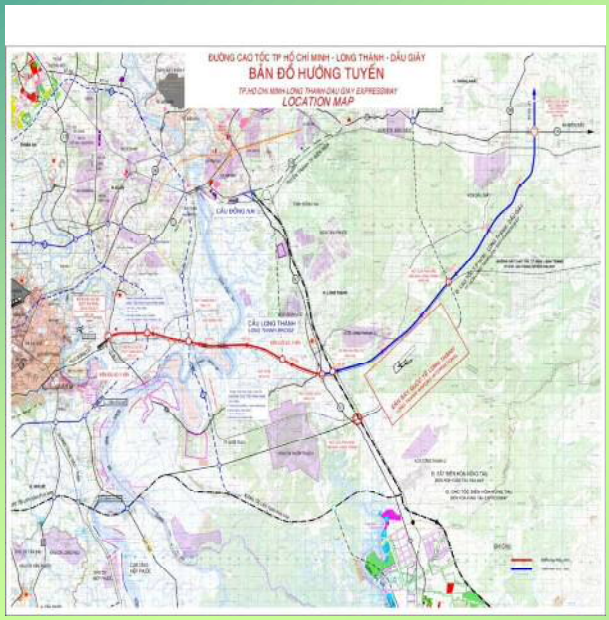
- Combine with other funding sources

Ben Luc – Long Thanh Expressway



- 57,8 km/ 4 lanes expressway
- 2012-2017
- $ 1,607.0 M
- Co-financing by ADB, JICA and the Government of Viet Nam. Amount to be financed by ADB of $636M, JICA 635 M and the Government of Viet Nam 337 M.
- Project investment has been approved in October 2010.
- Technical detailed design has completed
- Land acquisition is speeding up, construction work will be commenced at the end of 2013.

Ho Chi Minh – Long Thanh – Dau Giay Expressway



- 55km/4 lanes expressway.
- 2009 -2014
- $997.66 M
- Co-financing $917.1M by ADB, JICA and counterpart funding from the Government of Viet Nam $80.56M
- The construction work commenced in October 2009 and will be completed by the end of 2014.

GMS Southern Coastal Corridor Project (1st component)

- Implementation period: 2008-2015
- 122km/class III road;
- Total investment: $ 452.9M, co-financed by ADB, EDCF, Australian Government and the Government of Viet Nam ($122.66 M).
- Construction work commenced in 2011, progress up to now as planned.

Central Mekong Delta Transport Connectivity Phase I

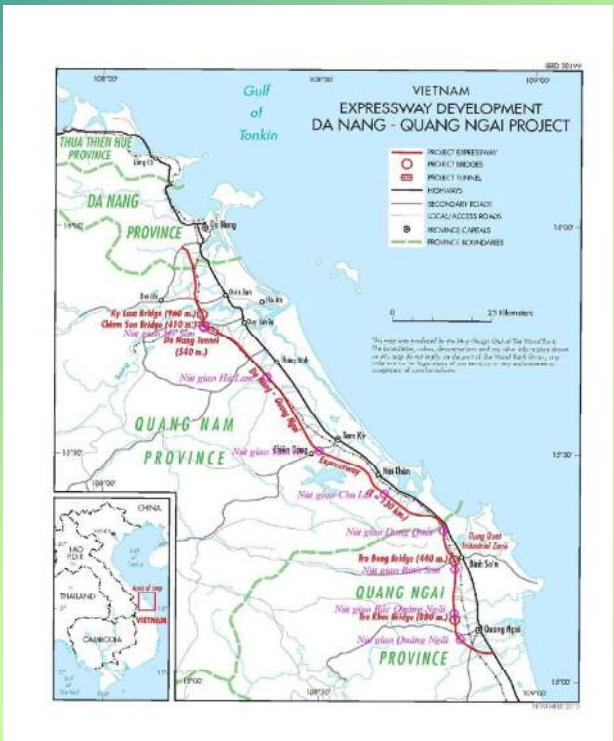
- Implementation period: 2011-2015;
- Construction of: Cao Lanh Bridge, Vam Cong Bridge and 15,7 km 4 lane - expressway connecting road
- Total investment: $ 928 M; co-financed by the Australian Gov, ADB; the Korean Gov; $146M will be financed by Vietnamese GoV.
- Technical detailed design has been completed, bidding for construction is being implemented.

Bien Hoa – Vung Tau expressway

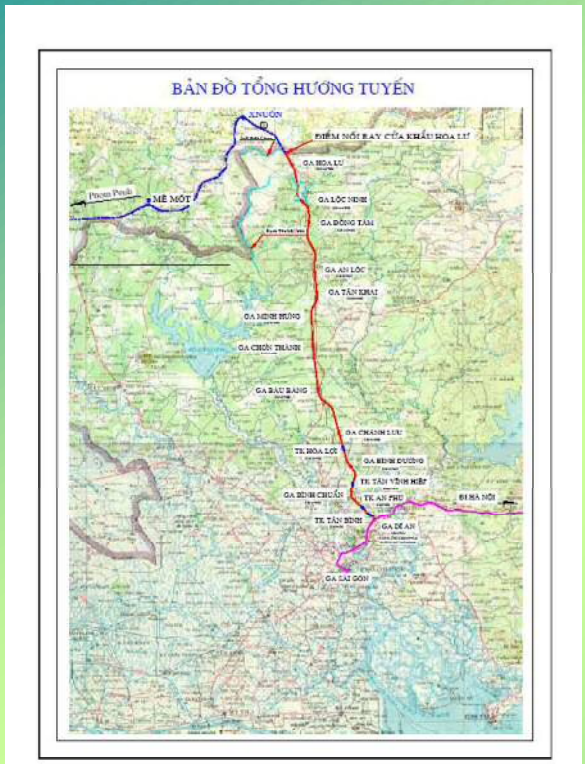
Bien Hoa – Vung Tau expressway and widening NH51: length 77.87km, 6 lanes; commenced at the end of 2009 and will be completed in 2013

- Total investment: $ 1.3 B
- The project is under BOT scheme

Da Nang – Quang Ngai Expressway



- 139.5 km 4 lanes expressway
- Implementation period: 2011-2016
- Total investment: $ 1.472M, co-financing from WB 630M, JICA 673M and the Government of Viet Nam 168M.
- Construction work for JICA's component was started in May 2013 and WB's component commenced in QI/2014.



Di An – Loc Ninh Project

- Length: 129 km including 12 stations, from Hoa Lu to Di An, its P.F/S has been completed. Double track, standard gauge, electrification.
- Railway connecting point with Cambodia at Hoa Lu Border Gate.
- First Phase: construction of single track with 1.000mm gauge (embankment standard gauge) to connect with North – South Railway line.
- Estimated cost: USD 900 Million

Resources demand upto 2020

- ***Highway:***

- National highway:
  32,7 billion USD.
- Expressway:
  18,7 billion USD.

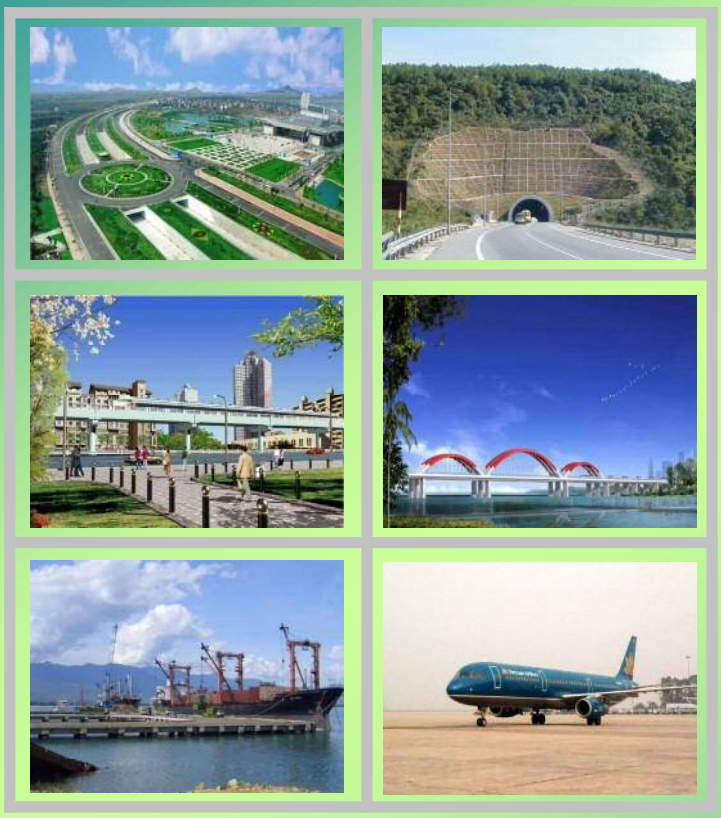
- ***Priority projects:***

Note:
UC: Under Construction
CI: Calling for Investment

2. Ha Noi–Thai Nguyen: 62Km; UC
1. Ha Noi – Hai Phong: 105Km; UC
3. Ha Noi-Viet Tri-Lao Cai: 264 Km; UC
4. Hoa Lac – Hoa Binh: 26Km; UC
6. Ninh Binh – Thanh Hoa: 115 Km; CI
5. Phap Van – Cau Gie 30Km; CI
8. Da Nang – Quang Ngai: 131Km; UC
7. Thanh Hoa- Ha Tinh: 160Km; CI
10. HCM-L.Thanh-D.Giay: 55Km; UC
9. Dau Giay–Phan Thiet: 98Km; CI
12. T.Luong–My Thuan: 54Km; CI
11 BenLuc–LongThanh: 55Km; UC
13. My Thuan – Can Tho: 38Km; CI
14. Bien Hoa–Vung Tau: 76Km; CI

Resources mobilization Orientation

- *Increase investment from the state budget; government bonds;*
- *Promote ODA; Encourage Foreign Direct Investment.*
- *Provide investment incentives, establish a PPP Gov fund to provide VGF in order to encourage private sector to invest transport infrastructure in different forms.*



Thank you for your attention

Appendix 12-6: Presentation by Mr. Toyoda

Current Situation of Expressways
And
Transports Network around Ho Chi Minh City

Current Situation of Expressways and Transports Network around Ho Chi Minh City

JICA Seminar on the Expressway Development Connecting from Phnom Penh to Ho Chi Minh City
28 April, 2014

Masatomo Toyoda (豊田雅朝)
Senior Project Formation Advisor
JICA Liaison Office in Ho Chi Minh City

Today's Agenda

Part A: HCMC Road Networks

- Express way Development Plan in Vietnam
- Expressway Construction Projects around HCMC
- Road Network around HCMC

Part B: South Economic Corridor

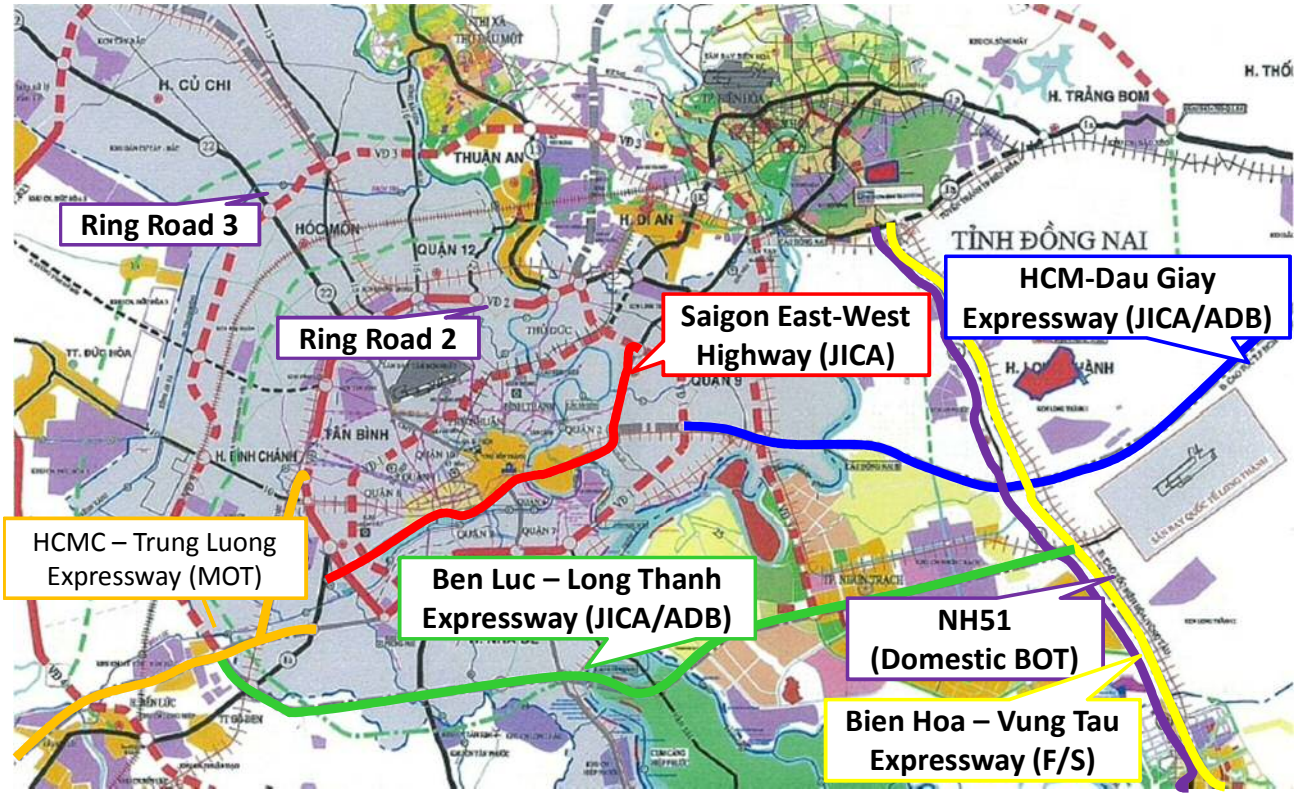
- Road Network Improvement between Phnom Penh and HCMC: NH22 and Ring Road 3
- Importance of Regional Integrated Development

PART A

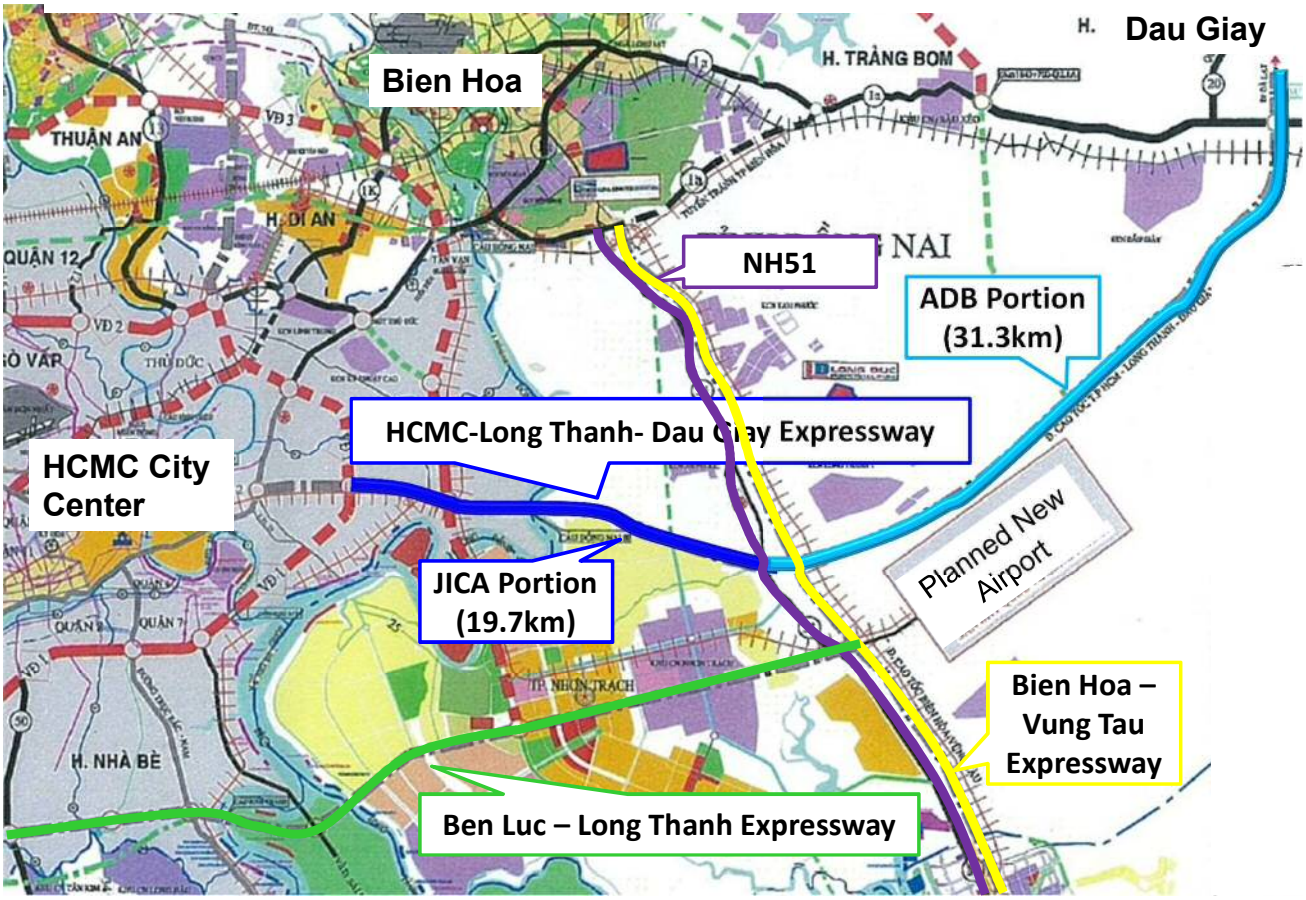
Road Development Plans

- **National Development Plan of North South Expressway (By 2020: 2639km to be built equivalent to 24.7 billion USD in the plan)**
- **Development Planning of HCMC Transport System toward 2020 and with a vision after 2020 (Including NH22 improvement and construction of RR3 in the plan)**

KEY Road Projects around HCMC



Map of HCMC-Dau Giay and Ben Luc Long Thanh Expressway



North-South Expressway Construction Project (Ho Chi Minh City – Dau Giay Section)

- Project Outline: 55KM from HCMC to Dau Giay (bypass of NH1) (4 lane, design speed 120km/h, no motor bike)
- Implementation Agency: Vietnam Expressway Corporation (under MOT)
- Finance: JICA 601 million USD (3 Time Slice Loans), ADB 134 million USD, Vietnam Counter Part Fund: 100 million USD
- JICA Section: 24 Km from HCMC to Long Thanh, and ITS for all section

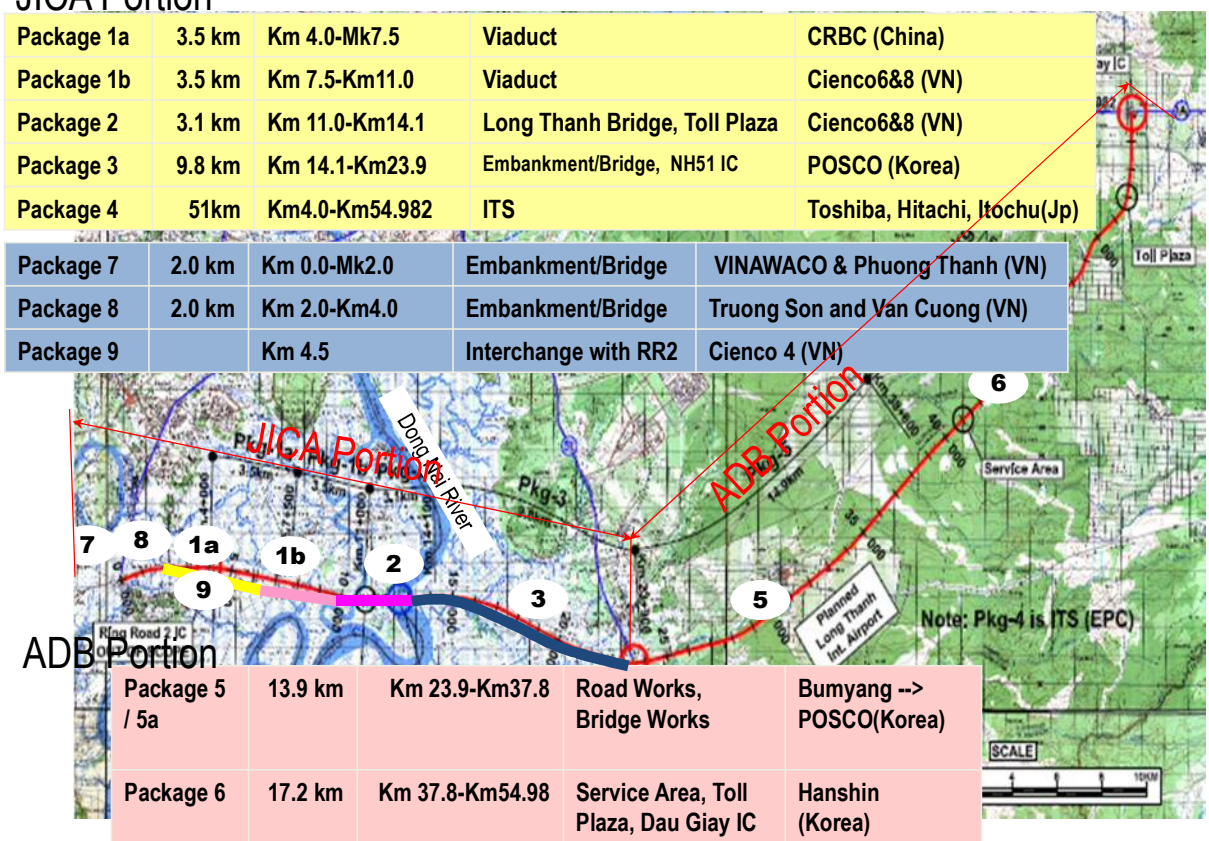
Schedule:

- Construction commencement: End of 2009
- Partial Opening: Jan 2014
- Opening for JICA section: Dec 2014
- Opening for ADB section: Mid 2016

Project Detailed by Packages

JICA Portion

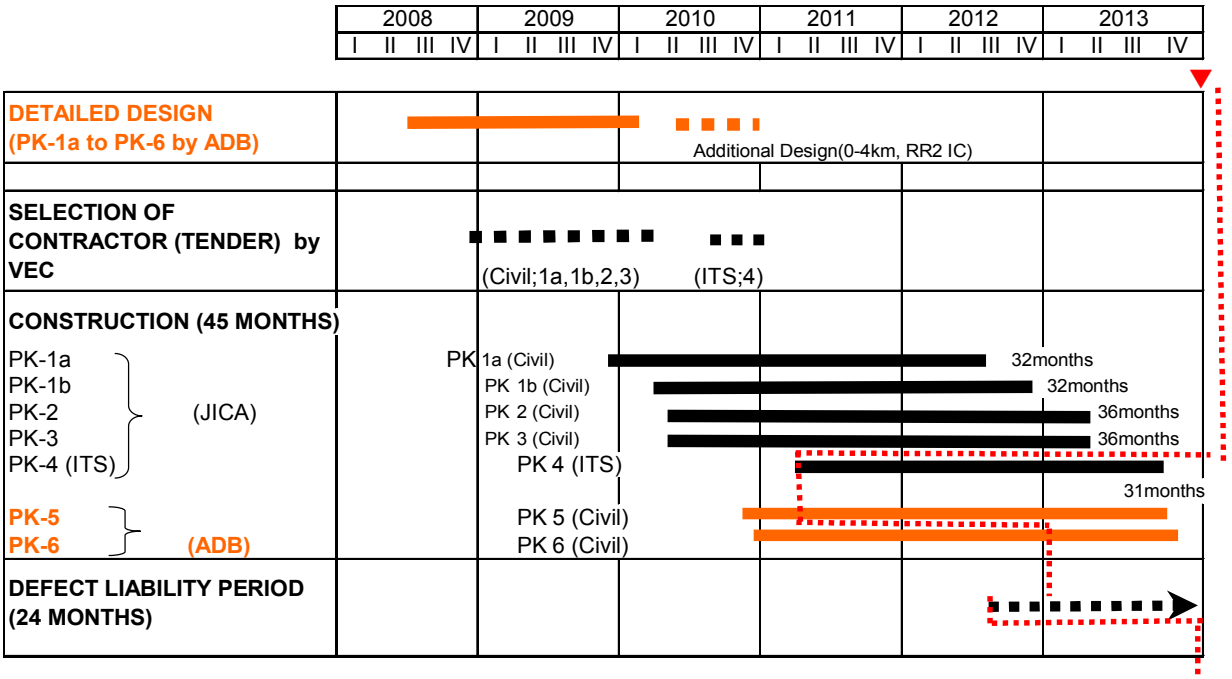
Package 1a	3.5 km	Km 4.0-Mk7.5	Viaduct	CRBC (China)
Package 1b	3.5 km	Km 7.5-Km11.0	Viaduct	Cienco6&8 (VN)
Package 2	3.1 km	Km 11.0-Km14.1	Long Thanh Bridge, Toll Plaza	Cienco6&8 (VN)
Package 3	9.8 km	Km 14.1-Km23.9	Embankment/Bridge, NH51 IC	POSCO (Korea)
Package 4	51km	Km4.0-Km54.982	ITS	Toshiba, Hitachi, Itochu(Jp)
Package 7	2.0 km	Km 0.0-Mk2.0	Embankment/Bridge	VINAWACO & Phuong Thanh (VN)
Package 8	2.0 km	Km 2.0-Km4.0	Embankment/Bridge	Truong Son and Van Cuong (VN)
Package 9		Km 4.5	Interchange with RR2	Cienco 4 (VN)



ADB Portion

Package 5 / 5a	13.9 km	Km 23.9-Km37.8	Road Works, Bridge Works	Bumyang --> POSCO(Korea)
Package 6	17.2 km	Km 37.8-Km54.98	Service Area, Toll Plaza, Dau Giay IC	Hanshin (Korea)

Implementation Plan



Implementation Plan (per Package)

As of 20th March. 2014

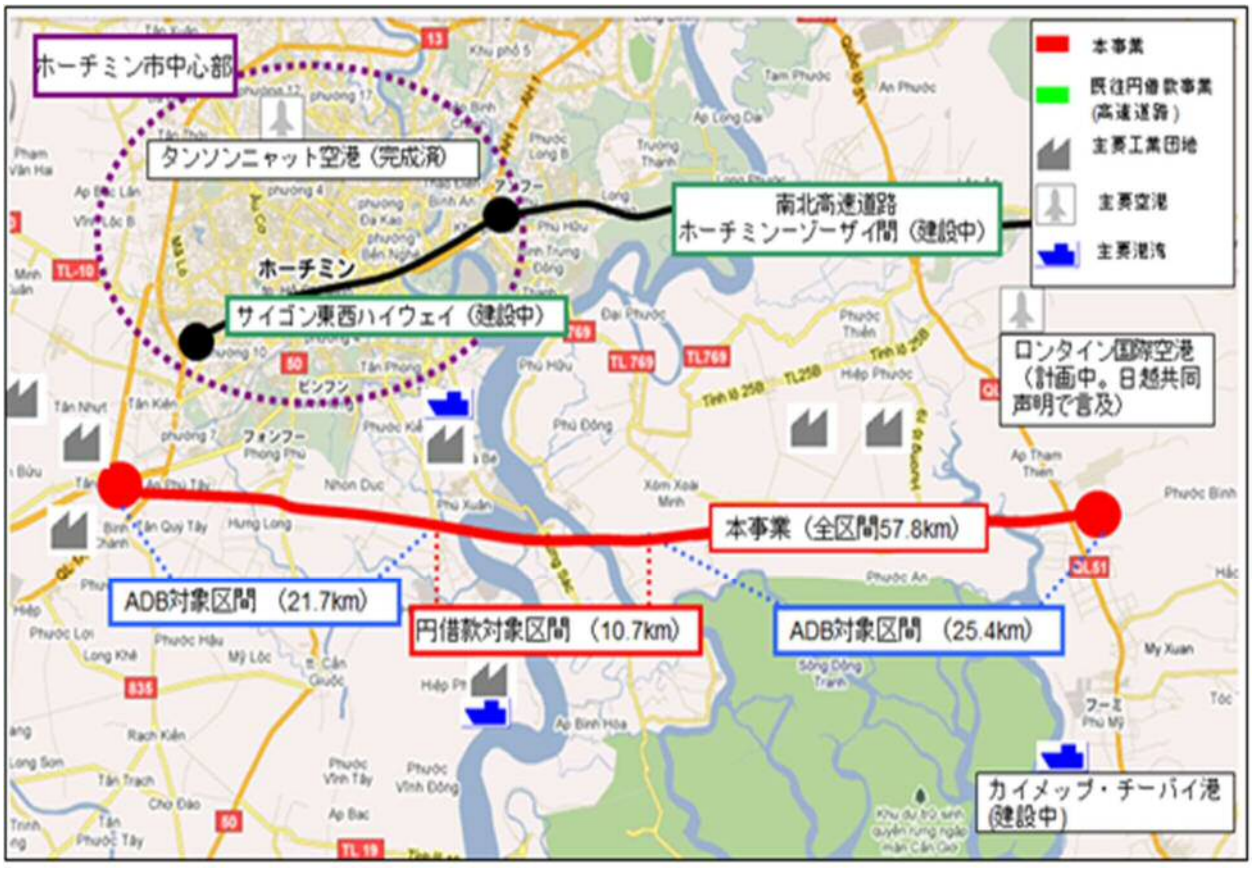
Contract Name	Name of Contractor	Contract Amount	Contract Period	Work Progress	Major Activity
Consultancy Service; Construction Supervision Contract	**Nippon Koei and TEDI South**		**1/Sep/09 to 01/April/15 67months+ 24months(DLP)**	**85.0%**	Construction supervision for Pk1a, PK1b, PK2,PK3 & PK4 PK7,PK8,PK9
Civil Works; Package 1a (Km 4+000 -Km 7+500)	**China Road and Bridge Corp.(China)**	**65 mil USD**	**1-Dec-09 to 31-Dec-12 (32 months)+5months**	**100%**	*Bored pile/ pier construction *Embankment (PVD) *Girder Fabrication/Erection
Civil Works; Package 1b (Km 7+500 -Km 11+000)	**Cienco 6 & 8 JV (Vietnam)**	**67 mil USD**	**1-Apr-10 to31-Sep-13 (32 months)+12months**	**100%**	*Bored pile/ pier construction *Embankment (PVD) *Girder Fabrication/Erection
Civil Works; Package 2 (Km 11+000 -Km 14+100)	**Cienco 6 & 8 JV (Vietnam)**	**57 mil USD**	**4-May-10 to30-Apr-14 (36 months) +12months**	**99%**	*Bored pile/ Pier construction *Embankment work (PVD, VCM,DMM) *Girder Fabrication/Erection
Civil Works; Package 3 (Km 14+100 -Km 23+900)	**POSCO E&C (Korea)**	**88 mil USD**	**4-May-10 to 30-Nov-13 (36 months) +8 months**	**100%**	* Soft soil improvement :VCM,DMM *Bridge works
ITS Works; Package 4 (Km 4+000 -Km 54+982)	**Contract Negotiation in progress (Toshiba, Hitachi, Itochu)**	**40 mil USD**	**31months**	-	*Traffic control system * Toll collection system
Civil Works; Package 7-8-9 (Km 0+00 -Km 4+000)	**Vietnamese contractor (Vinawaco, Truong son, Cienco 4)**	**200 mil USD**	**24months**	**58~63%**	* Soft soil improvement :PVD, VCM. *Bridge works

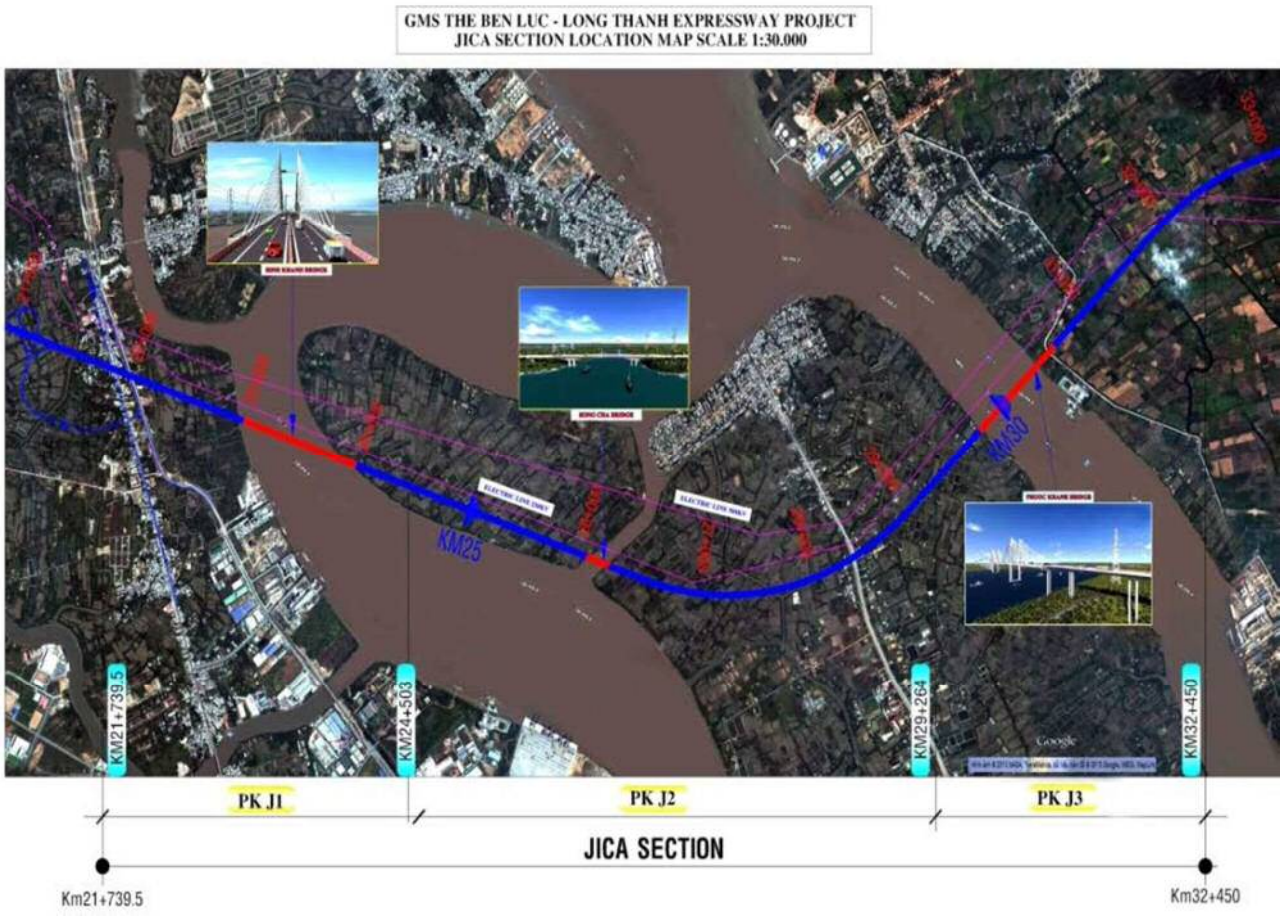
North-South Expressway Construction Project (Ben Luc – Long Thanh Section)

- Project Profile: 57.8 KM (4 Lanes, no motorbike, Design speed 120 Km/h, part of RR3)
- Project Owner: Vietnam Expressway Corporation under MOT
- Project Cost: Estimated 1.3 Billion USD (JICA 75.8 billion JPY (STEP), ADB 600 million USD, and Counter Part Fund by Vietnam
- JICA section: 3 packages (10.7 Km including 2 cable stayed bridges and ITS)

Schedule:

- D/D: Until mid 2013
- Commencement of construction: mid 2015
- Opening: around 2019





Issues on Expressway Construction

- Operation & Maintenance (O&M)
- Intelligence Technology System (ITS)
- Land Acquisition and Resettlement Action Plan (RAP)
- Environment Impact Assessment (EIA)
- Finance Matter (co-finance, counterpart fund, PPP/BOT scheme)
- Risk Management (Accidents, Operational safety)
- Land Settlement (Construction Management)
- Sample Construction Cost (*Viaduct Section 18 mil USD/Km, Embankment Section9 mil USD/Km, ITS 0.72 mil USD/Km*)

Toll (Tariff) Fee

- North-South Expressway Construction Project (Ho Chi Minh City – Long Thanh Section)

  40,000VND (around 2 USD) / 20Km

(MOT approved 2,000 VND/KM on this project)

- HCMC – Trung Luong Expressway

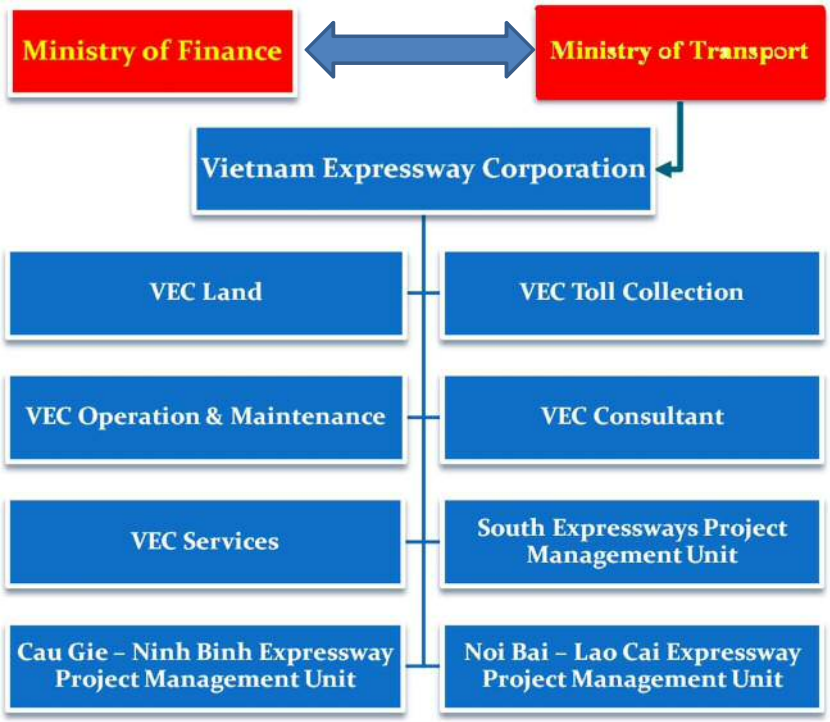
(After construction by MOT, sold to a Vietnamese company)

< 12 Seats 10,000 – 40,000 VND (0.5 – 2 USD)

10-18 Tons: 40,000 – 160,000 VND (2 – 8 USD)

> 18 Tons 80,000 – 320,000 VND (4 – 16 USD)

VIET NAM EXPRESSWAY CORPORATION ORGANIZATION CHART



JICA related Transport Projects around HCMC

JICA Financed projects

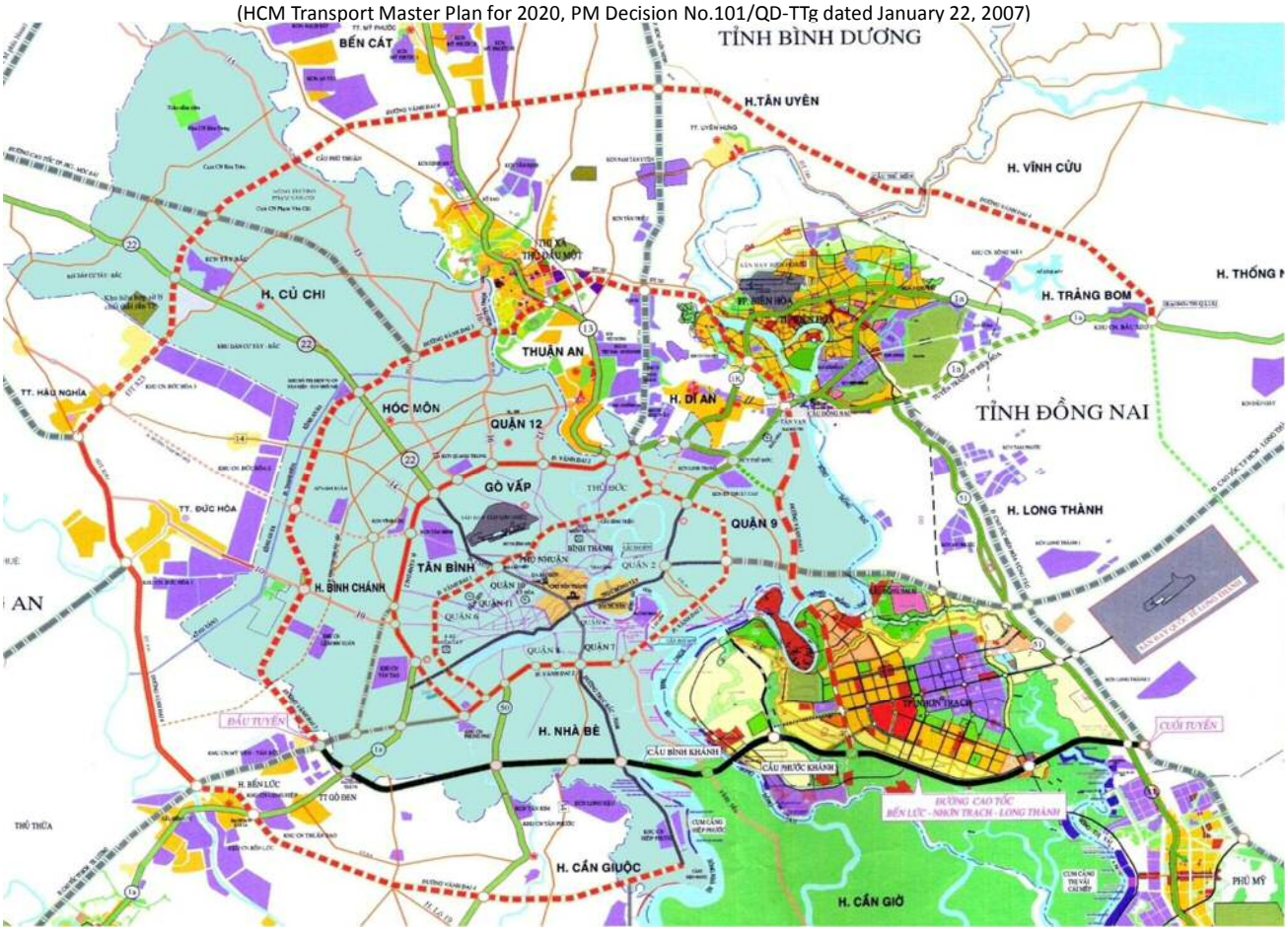
- **Ho Chi Minh Long Thanh Dau Giay Expressway**
- **Ben Luc- Long Thanh Expressway**
- Saigon East-West Highway
- Cai Mep – Chi Bai International Ports
- Tan Son Nhat Airport International Terminal

Possible future projects for financing

- Bien Hoa - Vung Tau Expressway (after JICA PPP F/S, no investor appears so far)
- Trung Luong - My Thuan Expressway (after JICA PPP F/S, no investor appears so far)
- Phuc An Bridge (METI F/S)
- Ring Road No.3 (ADB study)
- Long Thanh International Airport (JICA PPP F/S)

PART B

(HCM Transport Master Plan for 2020, PM Decision No.101/QD-TTg dated January 22, 2007)



Ring Road 3

- The plan is approved by the Prime Minister in Decision No. 1734/QD-TTg dated December 1, 2008
- Implementation Agency: CCIPM under MOT
- ADB now conducting F/S survey (PPTA) for whole section of RR3, going to be finance on part of RR3 with the coordination of Korean Government.
- Location: Start point: This point intersects with the Southern inter-regional expressway in NhonTrach City, Dong Nai province.
- *Project Profile: Total length:* 89,3 Km, Design speed in range of 80-100km/h, Right of way: 100m -120m in width.
- Investment budget: Intention is to mobilize various sources of capital in a flexible investment form: BOT, PPP, BT, ODA loans, state budget.

Information of the website from

http://www.adb.org/sites/default/files/projdocs/2013/43393-022-vie-tacr.pdf

http://cuulongcipm.com.vn/Home/Projects%20Preparation/0026aa.aspx

NH22 Improvement Project

- 1. Name of project: Expansion of National highway 22 (Trans-Asia)
- 2. Investor interest: Vietnam Urban and Industrial Zone Development Investment Corporation (IDICO)
- 3. Total estimated investment: around 60 mil USD
- 4. Location: District 12, Hoc Mon District, Cu Chi District - Ho Chi Minh City
- 5. Construction Period: about 5 years

Information of the website from
http://www.itpc.gov.vn/investors/opportunities/projects/NationalHighway22_Expanse/mldocument_view/?set_language=en

Discussion Points

- Regional Transport Integration (Necessity of Regional Master Plan and policy integration)
- Combination of the expressway in Cambodia side and Vietnam NH22 and RR3 development
- Proper development Plans for Expressway Construction (Organizational and Financial)
- Logistic issues (Transportation Cost, Port Management, etc)

End of Presentation