

2-2-6 IMPLEMENTATION PLAN

2-2-6-1 Implementation Policy

The basic concepts for implementation of the Project under the Japanese Grant Aid system are as follows:

- On reaching an agreement and signing of the Exchange of Note and Grant Agreement by both Governments of Japan and Cambodia, the Project will be implemented in accordance with the guideline of Japan's Grant Aid.
- Ministry of Public Works and Transport (MPWT), Kampong Chhnang Department of Public Works and Transport (DPWT) and Prey Veng Department of Public Works and Transport (DPWT) are responsible for the Project implementation.
Assistance in tendering and construction supervision will be undertaken by Japanese consulting firm in accordance with an agreement between MPWT and the Consultant.
- A Japanese pre-qualified tenderer who has been awarded the contract by the MPWT will undertake the implementation of the Project.

Main concepts for the implementation planning are as follows;

- Materials and labor for the project will be procured in Cambodia as much as possible. If the required qualities and capacities are not enough, materials and labor can be procured effectively from the third countries and/or Japan.
- Implementation method and schedule for the Project shall be planned on the basis of local meteorological, topographic and geological conditions as well as any natural conditions affecting the construction works.
- General and easy method having no need for special equipment and technology shall be applied.
- Appropriate standards and specifications for construction shall be proposed, and site organizations of both the contractor and consultant shall be arranged to comply to the above-mentioned standards and specifications.
- Facilities to strictly secure safety for construction staff and third parties shall be installed. Especially, educational training on environment and anti-AIDS/HIV shall be carried out.
- Protection against water pollution and soil flowing out at the work site during rainy season, concrete plant, quarry sites and borrow pits shall be done in order to preserve environment. Construction waste shall be treated and/or dumped in a proper site specified by the Government of Cambodia.

2-2-6-2 Implementation Conditions

Construction plan and method shall be prepared considering the safety of the construction staff and the third parties for the first place, and preservation of environment for the road users and the road side residents as well. Main points are as follows;

(1) Improvement of Roads and Drainage facilities in Kampong Chhnang City

Construction Procedure : Drainage facilities shall be constructed from downstream side to upstream

side.

RC (Reinforced Concrete) Pipe : The manufacturers producing high quality RC Pipes are very limited. Accordingly, RC Pipes will be manufactured at site.

Steel sheet pile (Temporary Cofferdam) : Walls and houses at site are made of brick with no reinforcement and vulnerable to vibration. Accordingly, light-steel sheet piles will be used in order to avoid impact from strong vibration.

Concrete : There are no concrete plants around the site, and it takes over an hour for transportation from the nearest plant in Phnom Penh to the site. Accordingly, a concrete plant will be built near the site.

Asphalt Mixture : There are some asphalt plants at the outskirts of Phnom Penh, and its quality can be maintained by avoiding temperature decrease with the cover during transportation in the local high temperature. Accordingly, asphalt mixture can be procured from local manufacturer.

(2) Improvement of Bridges along National Road No.11

Concrete : There are no concrete plants around the site, and a concrete plant will be built around medium point of the site.

RC (Reinforced Concrete) Pile : The piles will be manufactured near the batching plant yard, and trailer truck will be used for transportation to each site. Crawler type piling machines will be used for piling.

Temporary detour : Construction procedure will be “Construction of temporary detour” -> “Removal of existing bridge” -> “Construction of Bridge” -> “Removal of temporary detour”, and temporary detour will be used for a long period. Most of the temporary bridges on the detours are used in the rainy season also. Since main purpose of the existing bridges is to maintain a water level between upstream and downstream of the bridges, each temporary bridge also must have almost same bridge length in order to maintain the water flow cross-section.

Asphalt Mixture : There are some asphalt plants at the outskirts of Phnom Penh, and the quality can be maintained by avoidance of temperature decrease during transportation with the cover in the local high temperature. Accordingly, asphalt mixture will be procured from local manufacturer.

2-2-6-3 Others

(1) Local Weather

Cambodia has dry season from November to April (i.e., Mekong river’s low water level season) and rainy season from May to October (i.e., Mekong river’s high water level season), and construction shall be mainly carried out in dry season.

For the improvement of bridges along National Road No.11, bridge will be constructed during dry season only, because any construction activity in the river can not be made during high water season.

In the improvement of roads and drainage facilities in Kampong Chhnang City, main activities are reconstruction of existing structures, and construction activities can be made unless flooding occurs.

(2) Safety for Road Side Residents

- Construction yards will be clearly separated and off-limited from general public by using security facilities.
- Preventive measures to the heavy machine drivers and operators shall be carried out through periodical traffic and construction safety education.
- Guard persons will be provided to avoid collision between heavy machines and ordinary vehicles, pedestrians, and bicycles

(3) Consideration for Environment

- Debris and waste from removal of the existing pavement shall be done in proper manner to mitigate the environmental adverse impacts.
- Selecting the site of borrowing pits will be made upon consultation with relevant authorities, and at the location with the least negative impacts to the environment.
- Construction methods causing significant vibration and noise shall be avoided during early morning and night time.
- Dust control measures shall be carried out by spraying water promptly
- Provision of information and educative training on labor safety, public health (malaria, sex related disease, AIDS/HIV, etc.), natural environment preservation measures shall be conducted for the construction work forces.

2-2-6-4 Scope of Work

Undertakings of each government of Japan and Cambodia are listed in Table 2-2-6

Table 2-2-6 Undertakings of both Governments

Item	Contents	Undertaken by		Remarks
		Japan	Cambodia	
Procurement of Materials & Equipment	Procurement & Transportation	O		
	In-land Transportation Clearance		O	
Preparation Works	Lands & Right of Way Acquisitions		O	Including spaces for site office, storage yard, workshop, etc.
	Relocation of Encroached Facilities		O	
	Provision of Quarry Sites		O	
	Provision of Waste Disposal Areas		O	
	Other Works	O		
Relocation & Removal of various obstacles	Relocation of Underground & Aerial Obstacles		O	
Main Works	Road Works	O		

2-2-6-5 Consultant Services

A Japanese consultant will carry out detailed design, assistance in tendering and construction supervision in accordance with the consultant agreement made between the Governments of Cambodia and the Consultant.

(1) Detailed Design Services

The following services shall be carried out as the Detailed Design Services by the Consultant:

- To confirm the contents of the Project with the Implementing Agencies in Cambodia through discussions and field investigations
- To conduct detailed design and preparation of detailed drawings
- To formulate detailed construction planning and project cost estimation

Period for the Detailed Design Service will be as follows:

- 2 months from verification of the consultant agreement.

(2) Tender Related Services

The following services will be carried out by the Consultant in the period from tender notice to construction contract;

- Preparation of Tender Documents (shall be done in parallel with above-mentioned Detailed Design Services)
- Tender Notice
- Pre-Qualification
- Tendering
- Tender Evaluation
- Contract Facilitation

Period for the Tendering Related Services will be as follows;

- 3.5 months from verification of agreement of detailed design

(3) Construction Supervision Services

The following services will be carried out by the Consultant during the period of construction to be executed by the Contractor according to the relevant contract and implementation plan:

- Inspections and Approvals of the Site Surveys
- Inspections and Approvals of the Construction Plans
- Quality Control
- Progress Control
- Control for Measurement of the Works
- Inspection of the Safety Aspects
- Final Inspection and Delivery

The distance between both sites, namely Kampong Chhnang and Prey Veng is approximately 200km, and DPWT in charge and construction type are also different. Accordingly, two resident Engineers will be provided for construction supervision.

During the period of construction, the Consultant will coordinate in advance with the officer-in-charge for work safety management of the Contractor to prevent any accidents at the site.

2-2-6-6 Quality Control Plan

Main quality control items for concrete works and earth & pavement works are shown in Table 2-2-7

and Table 2-2-8, respectively;

Table 2-2-7 Main Quality Control Items for Concrete Works

Item	Test Item	Test Method (Specification)	Frequency of Tests
Cement	Physical Property Test	AASHTO M85	Once before trial mix; thence once in every 500m ³ of concrete or when material is changed
Fine Aggregate	Physical Property Test	AASHTO M6	Once before trial mix; thence once in every 500m ³ or when material source is changed
	Sieve Analysis	AASHTO T27	Once a month
Course Aggregate	Physical Property Test	AASHTO M80	Once before trial mix; thence once in every 500m ³ or when material source is changed
	Sieve Analysis	AASHTO T27	Once a month
Water	Quality Test	AASHTO T26	Once before trail mix
Concrete	Slump Test	AASHTO T119	Twice a day
	Air Content Test	AASHTO T121	Twice a day
	Compressive Strength Test	AASHTO T22	6 specimens in each concreting. In case of large amount in each concreting, 6 specimens in every 75 m ³ (3 for 7-day strength and 3 for 28-day strength)
	Temperature Test	—	Twice a day
	Salinity Test	—	Twice a day

Table 2-2-8 Main Quality Control Items for Earth & Pavement Works

Item	Test Item	Test Method (Specification)	Frequency of Tests
Embankment	Field Density Test	AASHTO T191	Once every 500 m ³
Subgrade & Base Course	Filed Density Test	AASHTO T191	Once every 1,000 m ³
	Field Compaction Test	AASHTO T180	Once every 1,000 m ²
Asphalt Concrete (Surface & Binder Course)	Temperature of Asphalt Mixture	Temperatures while carrying, laying and compacting	5 times a day
	Abrasion Test of Aggregate	AASHTO T96	Once every 1,500, and when material is changed

2-2-6-7 Procurement Plan

All construction materials and machinery necessary for the Project can be procured locally except a few items. Many local contractors have their own machinery, and utilize those machinery for the construction by hiring or leasing. Procurement Plan for Major Materials and Equipment are as shown in Table 2-2-9.

Table 2-2-9 Procurement Plan for Major Materials and Equipment

Item	Procured from			Remarks
	Cambodia	Japan	Third Country	
[Materials]				
Aggregate	○			
Cement	○			
Sand	○			
Rubble	○			
Asphalt	○			
Steel Reinforcement Bars	○			
Admixture of concrete	○			
Gabion	○			
Reinforced Concrete Pile	○			
Guardrail	○			
Steel Materials			○	Thailand
Plywood	○			
Wooden materials for falsework	○			
Fuel, lubricant	○			
[Machinery]				
Bulldozer	○			
Backhoe	○			
Dump Truck	○			
Truck with Crane	○			
Crawler Crane	○			
Truck Crane	○			
Lafterain Crane	○			
Crawler Type Piling Machine	○			
Giant breaker	○			
Motor Grader	○			
Road Roller	○			
Tyre Roller	○			
Vibration Roller	○			
Tampa	○			
Concrete Plant			○	Thailand
Concrete Pump Car			○	Thailand
Truck Mixer			○	Thailand
Generator	○			
Asphalt Finisher	○			
Water Spreading Car	○			

2-2-6-8 Implementation Schedule

Implementation schedule for the detailed design, the tender arrangement, and the construction of the Project is shown in Table 2-2-10

- To arrange the proper and effective way using and maintaining the road after the completion of the project
- To coordinate and solve any issue related to the Project that may be raised from residents and/or third parties
- To bear all the expenses necessary for the Project other than the ones covered by the Japanese Grant Aid
- To secure safety and order at the construction site

2-4 PROJECT OPERATION PLAN

2-4-1 Organization for Road Management and Maintenance

Management and maintenance after the project for the roads and drainage facilities in Kampong Chhnang City and for the bridges along National Road No.11 will be carried out by Kampong DPWT Chhnang and Prey Veng DPWT respectively.

Pavement crack sealing, filling pot holes, and large scale repairing of bridges will be carried out by MPWT.

Regarding maintenance for roads, drainage facilities and bridges of the project, there required no technical difficulty. It is evaluated that current organization can manage and maintain the project roads, drainage facilities and bridges.

2-4-2 Maintenance Plan

Necessary maintenance works are as follows:

- Periodical maintenance : Routine inspection and cleaning of surface roads, slopes, drainage facilities, ancillary facilities of roads and bridges, etc.
- Ad-hoc maintenance : Repair for damaged parts, such as sealing and patching pavement, repainting road markings, and any other damaged parts

2-4-3 Present Road Maintenance Conditions and Recommendations

Recent road management and maintenance conditions are observed as follows;

- Routine inspection and periodical maintenance are in relatively good operation but cleaning of drainage facilities is not sufficient.
- Repair of carriageway and pavement is in relatively good operation.

To achieve effective results of the Project and sustain good conditions of the road and bridge facilities, it is important to manage and maintain the facilities adequately by keeping them in good condition and extending their life spans, for which the following recommendations are proposed:

- To check facilities regularly for controlling their conditions
- To clean up facilities, especially drainage
- To secure necessary budget for maintenance

2-5 PROJECT COST ESTIMATION

2-5-1 Project Cost Estimation

2-5-1-1 Total Project Cost

Confidential until the Contract of Construction is verified.

2-5-1-2 Cost Borne by the Government of Japan

Confidential until the Contract of Construction is verified.

2-5-1-3 Cost Borne by the Government of Cambodia

Table 2-5-1 Breakdown for cost borne by the Government of Cambodia

Items	Estimation	
	thousand US\$	million Yen
Bank Commission	10	0.8
Resettlement	20	1.5
Land Acquisition	9	0.7
Total	39	3.0

2-5-1-4 Conditions in Cost Estimate

- Time of Cost Estimation : March 2012
- Exchange Rate : 1 United States Dollar = 77.18 Yen
- Construction Period : As shown in the Implementation Schedule
- Other Condition : Cost estimate is implemented in accordance with the guideline of Japan's Grant Aid

2-5-2 Operation and Maintenance Cost

Kampong Chhnang DPWT and Prey Veng DPWT will be in charge of daily and periodical maintenance of respective improved roads/drainage facilities and bridges.

Annual maintenance cost is estimated as stated below and the breakdown are shown in Table 2-5-2 and Table 2-5-3.

- Estimated annual maintenance cost for the roads and drainage facilities in Kampong Chhnang City : 7.0 Thousand US\$
- Estimated annual maintenance cost for the bridges along National Road No.11 : 3.5 Thousand US\$

Table 2-5-2 Breakdown for annual maintenance cost for the roads and drainage facilities in Kampong Chhnang City

Items	Location/Activities	Frequency	Unit Price	Cost (per year)
Periodical maintenance			(US\$/time)	(US\$/year)
1) Maintenance	Shoulder • Slope etc. / Cleaning • Grass Cutting	3 times/year	100	120
2) Cleaning	Drainage facilities / Mud, Debris Removal	1 time/year	800	800
3) Periodical Inspection	Whole/ Periodical Inspection	12 times/year	20	240
Ad-hoc maintenance				
1) Pavement	Pavement / Potholes patching etc.	1 time/year	4,500	4,500
2) Shoulder / Slope	Shoulder, Slope / Repair damaged portion	1 time/year	400	400
3) Drainage Facilities	Drainage Facilities / Repair damaged portion	1 time/5years	1,000	200
4) Ancillary facilities	Ancillary facilities / Repair damaged portion	1 time/year	500	500
5) Structure	Main structures / Repair damaged portion	1 time/10years	2,000	200
Total				6,960

Table 2-5-3 Breakdown for annual maintenance cost for the bridges along National Road No.11

Items	Frequency	Unit Price	Cost (per year)
Periodical maintenance		(US\$/time)	(US\$/year)
Cleaning	Bridge surface	1time / year	1,100
	Catchpit		
	Bridge access road sidedrain		
	Grass cutting at shoulders		
Inspection	Road surface (crack)	1time / year	300
	Bridge members (Deformation, Corruption)		
	Slope collapse (land slide)		
	Erosion protection (Outflow, Damage)		
Repair	Sealing for pavement cracks	1time / year	400
	Patching for pavement potholes		
	Patching for aggregate layer		
	Repairing of Gabion		
Ad-hoc maintenance			
Repair	Repairing for Gabion / Erosion protection	1time / 10years	10,000
	Guide Posts	1time / 30years	21,000
Total			3,500

CHAPTER3 PROJECT EVALUATION

3-1 RECOMMENDATIONS

3-1-1 Prior Condition for Project Implementation

“OBLIGATION OF RECIPIENT COUNTRY” shown in 2-3 has to be reliably conducted by MPWT.

3-1-2 External Condition for Overall Plan of the Project

Adequate maintenance of the project roads by MPWT and/or DPWT is crucial in order to develop and maintain the Project effects.

Especially, periodic cleaning of drainage facilities in Kampong Chhnang City is very important to function well.

Regarding National Road No.11, synergistic effect will appear with completion of other bridges improvement works by the government of Cambodia and ADB.

3-2 PROJECT EVALUATION

3-2-1 Adequacy

3-2-1-1 Improvement of roads and drainages facilities in Kampong Chhnang City

- ① Beneficiary of the Project reaches throughout Kampong Chhnang Province whose population is 540 thousand people and it is numerous.
- ② The project site locates on National Road No.5 which is also Asian Highway No.1 from Phnom Penh to Bangkok and it is very important route.
- ③ Although emergency repairing with Double Bituminous Surface Treatment (DBST) was carried out for the damaged surface it is temporary repair.
- ④ Improvement of Roads and Drainage Facilities in Kampong Chhnang City including adjacent streets reduce road damages.
- ⑤ Cambodia can operate and maintain the project facilities by itself and excessively special techniques are not required.
- ⑥ This project meets the policy of “Further restoration and construction transport infrastructure” stated in National Strategic Development Plan Update 2009-2013.

3-2-1-2 Improvement of Bridges along National Road No.11

- ⑦ Beneficiary of the Project reaches throughout Prey Veng Province whose population is 1,060 thousand people and it is numerous.
- ⑧ It connects three National Roads, namely N.R.No.1, N.R.No.7 and N.R.No.8 and very important national route from Thailand to Vietnam without passing through Phnom Penh Capital.
- ⑨ Although there was no overflowing the bridges during rainy season in 2011, the water level reached to almost bridge slab levels. Accordingly, urgent reconstruction of bridges is required taking into account that the bridges are very old.
- ⑩ Five wooden bridges along National Road No.11 will be reconstructed under ADB loan. Accordingly, it will be very effective to reconstruct the remaining bridges as a cooperation

project with ADB in flood disaster mitigation

- ⑪ Cambodia can operate and maintain the project facilities by itself and excessively special techniques are not required.
- ⑫ This project meets the policy of “Further restoration and construction transport infrastructure” stated in National Strategic Development Plan Update 2009-2013.

3-2-2 Effectiveness

3-2-2-1 Quantitative Impact

(1) Improvement of roads and drainage facilities in Kampong Chhnang City

Quantitative Impact Items	Before Implementation (2012)	After Implementation (2017)
① Maintenance Cost of Road & Drainage Facilities in Kampong Chhnang DPWT (US\$/year)	Approximately 20,000	Approximately 7,000
② Period of stagnant water at road sides (Day/Year)	Approximately 50	Approximately 0

(2) Improvement of Bridges along National Road No.11

Quantitative Impact Items	Before Implementation (2012)	After Implementation (2017)
① Maintenance Cost of Bridges in Prey Veng DPWT (US\$/year)	Approximately 8,000	Approximately 3,500
② Travelling Time due to Improvement of Traveling Performance (through National Road No.11) (minutes)	Approximately 120	Approximately 80

3-2-2-2 Qualitative Impact

(1) Improvement of roads and drainage facilities in Kampong Chhnang City

- Comfort of travelling will be improved due to improvement of road pavement and drainage facilities.
- Safety and Comfort of walking will be improved due to improvement of sidewalk.
- Living environment will be improved due to improvement of drainage system.

(2) Improvement of Bridges along National Road No.11

- The function as National Road will be strengthened due to reconstruction of temporary bridges with permanent bridges
- Number and period of overflowing at two spillways on National Road No.11 will be reduced (Approximately 20 cm depth overflow occurred on the National Road No.11 for totally 30 days during the flood in 2000 and 2011, but it will be almost solved due to this project)

<<ANNEX>>

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in Cambodia
4. Minutes of Discussion (M/D)
5. Technical Notes
6. Abbreviated RAP
7. Design Data

1. Member List of the Study Team

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First Field Survey (23 Jan.'12~1 Feb. '12)

No.	Name	Job Title	Organization
1	Mr. HAYASHI Hiroyuki	Leader	Director, Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA
2	Mr. TANAKA Yukinari	Grant Aid Cooperation Planning	Assistant Director, Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA
3	Mr. TAMAKI Takakazu	Chief Consultant / Road Planning	Katahira & Engineers International
4	Mr. OSHITA Soemu	Bridge Design	- ditto -
5	Mr. HIRAOKA Kazuyuki	Construction Planning & Cost Estimation	- ditto -

Second Field Survey (13 Feb.'12~13 Mar. '12)

No	Name	Job Title	Organization
1	Mr. TANAKA Yukinari	Grant AID cooperation Planning	Assistant Director, Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA
2	Mr. TAMAKI Takakazu	Chief Consultant / Road Planning	Katahira & Engineers International
3	Mr. OSHITA Soemu	Bridge Design	- ditto -
4	Mr. HIRAOKA Kazuyuki	Construction Planning & Cost Estimation	- ditto -
5	Mr. FUJIWARA Hidekatsu	Road Design	- ditto -
6	Mr. KAWAJIRI Tatsuo	Natural Conditions Survey	- ditto -
7	Mr. NISHINO Ken	Environmental and Social Consideration	- ditto -

Draft Final Report Explanation Team (21 Jul . '12~28 Jul . '12)

No	Name	Job Title	Organization
1	Mr. TANAKA Yukinari	Grant AID cooperation Planning	Assistant Director, Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA
2	Mr. TAMAKI Takakazu	Chief Consultant /Road Planning	Katahira & Engineers International
3	Mr. OSHITA Soemu	Bridge Design	- ditto -

2. Study Schedule

2. Study Schedule

First Field Survey (23 Jan.'12~1 Feb. '12)

No. of Day	Date	Day	JICA		Consultants		
			Hayashi (Leader)	Tanaka	Tamaki (Chief Consul.)	Oshita	Hiraoka
1	23-Jan-12	Mon.	Survey for other project in PNP		Arrive at PNP		
2	24-Jan-12	Tue.	Discussion within Team/Field Survey NR 118/ Report to EOJ/Discussion with MPWT				
3	25-Jan-12	Wed.	Report to JICA Office / Signing MOD			Field Survey : Kampong Chang	
			20:40 Dep. PNP 21:45 Arr. BKK 23:50 Dep. BKK				
4	26-Jan-12	Thu.	07:30 Arr. NRT		Field Survey : National Road No.11		
5	27-Jan-12	Fri.	Discussion within Team				
6	28-Jan-12	Sat.	Field Survey (Kampong Chnang)				
7	29-Jan-12	Sun.			Arrangement of Survey Data	Field Survey :N.Road No. 11	Arrangement of Survey Data
8	30-Jan-12	Mon.			- ditto -	Field Survey : KC	- ditto -
9	31-Jan-12	Tue.	Report to MPWT and JICA / 20:40 Dep. PNP 21:45 Arr. BKK 23:50 Dep. BKK				
10	1-Feb-12	Wed.	07:30 Arr. NRT				

NRT: Narita, PNP: Phnom Penh, SR : Siem Reap, KT : Kampong Thom, KC : Kampong Chang, BKK:Bangkok
 MPWT: Ministry of Public Works and Transport, EOJ : Embassy of Japan in Phnom Penh
 MOD : Minutes of Discussion

Second Field Survey (13 Feb.'12~13 Mar. '12)

No of Day	Date	Day	JICA		Consultant					
			Tanaka	Tamaki	Oshita	Hiraoka	Fujwara	Kawajiri	Nishino	
1	13-Feb-12	Mon.				13:30 Dept. Narita (OZ103) 16:10 Arr. Seoul 19:10 Dept.Seoul (OZ739) 22:50 Arr. Phnom Penh				
2	14-Feb-12	Tue.		Meeting with JICA Cambodia Meeting with MPWT Meeting with JICA expert	Field Survey (Kampong Chhnang)	Meeting with JICA Cambodia Meeting with MPWT	Field Survey (Kampong Chhnang)			
3	15-Feb-12	Wed.		Field Survey (National Road No.11)			Field Survey (National Road No.11)			
4	16-Feb-12	Thu.		Field Survey (Kampong Chhnang)		Data Collection on Cost Estimation	Field Survey (Kampong Chhnang)	Field Survey (National Road No.11)	Field Survey (Kampong Chhnang)	Field Survey (Kampong Chhnang)
5	17-Feb-12	Fri.		Data collection on MPWT/DPWT	Field Survey (Kampong Chhnang)			Field Survey (National Road No.11)		
6	18-Feb-12	Sat.		Meeting within Team./ Reporting						
7	19-Feb-12	Sun.		Reporting						
8	20-Feb-12	Mon.		Data collection	Field Survey (Kampong Chhnang)	Data collection	Field Survey (Kampong Chhnang)			
9	21-Feb-12	Tue.		Field Survey Data collection	Field Survey (National Road No.11)	Field Survey Data collection	Field Survey (Kampong Chhnang)	Field Survey (National Road No.11)	Meeting with Envir. Dept. (KC)	
10	22-Feb-12	Wed.		Meeting within Team./ Reporting				Meeting within Team./ Reporting		
11	23-Feb-12	Thu.		Meeting with MPWT(Road Infra. Dept)		Data Collection on Cost Estimation	Reporting			
12	24-Feb-12	Fri.		Field Survey	Bridge designing (Draft)	- ditto -	Road & Drainage designing (Draft)	Reporting	Discussion with Prey Veng DPWT	
13	25-Feb-12	Sat.		Reporting				Reporting		
14	26-Feb-12	Sun.		Reporting						
15	27-Feb-12	Mon.		Reporting to MPWT on 2nd field survey	Bridge designing (Draft)	Field Survey (Kampong Chhnang)		Field Survey (KC→ NR No.11)	Reporting	
16	28-Feb-12	Tue.		Reporting	- ditto -	Data Collection on Cost Estimation	Road & Drainage designing (Draft)	Field Survey (Kampong Chhnang)	- ditto -	
17	29-Feb-12	Wed.		- ditto -	Meeting with Consultant for NR11 ADB Bridges	- ditto -	- ditto -	Field Survey (National Road No.11)	- ditto -	
18	1-Mar-12	Thu.		- ditto -	Drafting of Technical Notes	- ditto -	- ditto -	Reporting	- ditto -	
19	2-Mar-12	Fri.		Meeting with Prey Veng DPWT		Field Survey (National Road No.11)	- ditto -	- ditto -	Meeting with Prey Veng DPWT	
20	3-Mar-12	Sat.		Meeting within Team./ Reporting		Field Survey (Kampong Chhnang)	Meeting within Team./ Reporting			
21	4-Mar-12	Sun.		Reporting						
22	5-Mar-12	Mon.	11:45 Dept. NRT(TG643) 16:45 Arr. BKK 18:25 Dept. BKK (TG584) 19:40 Arr. PP	Meeting with MPWT		Reporting				
23	6-Mar-12	Tue.	Meeting with JICA Cambodia Meeting with MPWT	Meeting with MPWT	Meeting with Kampong Chhnang DPWT Meeting with MPWT	Meeting with MPWT	Meeting with Kampong Chhnang DPWT Meeting with MPWT			
24	7-Mar-12	Wed.	Field Survey (Kampong Chhnang)		Technical Notes	Reporting	Field Survey (Kampong Chhnang)	Reporting	Meeting with Ministry of Environmet	
25	8-Mar-12	Thu.	Field Survey (National Road No.11)	Reporting	Field Survey (National Road No.11)	Reporting				
			Reporting to JICA Cambodia Office			Reporting to JICA Cambodia Office	Meeting with MPWT	Reporting to JICA Cambodia Office		
26	9-Mar-12	Fri.	Confirmation on Technical Notes with MPWT	Confirmation/Signing on Technical Notes with MPWT		Reporting			Field Survey (National Road No.11/Kampong Chhnang)	
27	10-Mar-12	Sat.	20:40 Dept. PP (TG583) 21:45 Arr. BKK 23:50 Dept. BKK (TG642)			Reporting				
28	11-Mar-12	Sun.	7:00 Arr. NRT			Reporting				
29	12-Mar-12	Mon.				- ditto -				
30	13-Mar-12	Tue.				- ditto - 23:50 Dept. Phnom Penh (OZ740)				
						6:50 Arr. Seoul 9:00 Dept.Seoul (OZ102) 11:10 Arr. Narita				

Draft Final Report Explanation (21 Jul . '12~28 Jul . '12)

No of Day	Date	Day	JICA	Consultant	
			Tanaka	Tamaki	Oshita
1	21-Jul-12	Sat.	/	11:00 Dept. Narita(JL717) 15:40 Arr. Bangkok 18:15 Dept.Bangkok(TG584) 19:25 Arr. Phnom Penh	
2	22-Jul-12	Sun.		8:00 - Field Survey (Kampong Chhnang)	
3	23-Jul-12	Mon.		11:00 Meeting with DPWT Kampong Chhnang 14:00 Field Survey (National Road No.11) 15:30 Meeting with DPWT Prey Veng	
4	24-Jul-12	Teu.		11:00 Meeting with MPWT	
5	25-Jul-12	Wed.		16:40 Dept. Nairobi(EK720) 22:40 Arr. Dubai	
				11:00 Meeting with MPWT : Road Infra. Dept	
6	26-Jul-12	Thu.		03:05 Dept. Dubai(EK384) 12:25 Arr. Bangkok 13:40 Dept.Bangkok(PG933) 14:50 Arr. Phnom Penh	
				16:30 Meeting with MPWT	
7	27-Jul-12	Fri.	09:00 Meeting with MPWT on MD(draft) 10:30 Meeting with MEF on ARAP 14:00 Meeting with ADB on bridges construction on NR No.11 15:00 Confirmation with MPWT on MD(draft) 16:00 Confirmation with MEF on ARAP		
			08:00 Reporting to JICA Cambodia Office 09:00 Final Confirmation with MPWT & MEF on MD 10:00 Reporting to EOJ 15:00 Signing on MD(MPWT/JICA)		
8	28-Jul-12	Sat.	19:30 Dept. Phnom Penh (PG936) 20:40 Arr. Bangkok 22:25 Dept.Bangkok(NH714)		
			20:25 Dept. Phnom Penh(TG585) 21:30 Arr. Bangkok 23:10 Dept.Bangkok(JL718)		
8	28-Jul-12	Sat.	06:40 Arr. Narita	07:25 Arr. Narita	

EOJ : Embassy of Japan

MPWT : Ministry of Public Works and Transport

DPWT : Department of Public Works and Transport

MEF : Ministry of Economy and Finance

MD : Minutes of Discussion

3. List of Parties Concerned in Cambodia

First Field Survey (23 Jan.'12~1 Feb. '12)

Name	Organization
Mr. Masafumi Kuroki	Embassy of Japan Ambassador of Japan
Mr. Shinichi Tamamitsu	Embassy of Japan First Secretary
Mr. Gaku Ohusa	Embassy of Japan Second Secretary
Mr. Tadao Kuwano	M.P.W.T. Chief Advisor/Road Construction and Maintenance
Mr. H.E. Tauch Chankosal	M.P.W.T. Under Secretary of State
Mr. Chhim Phalla	M.P.W.T. Director of International Cooperation Department
Mr. Kong Sophal	M.P.W.T. Deputy Director of International Cooperation Department
Mr. Chou Kolla	D.P.W.T. Kampong Chnang Deputy Director
Mr. Ly Chanrithy	D.P.W.T. Kampong Chnang Chief of Department
Mr. Meas Kang	D.P.W.T. Prey Veng Deputy Director
Mr. Chea Mo	D.P.W.T. Prey Veng Deputy Director
Mr. Kry Rathat	D.P.W.T. Prey Veng Chief of Department

Second Field Survey (13 Feb.'12~13 Mar. '12)

Name	Organization
Mr. Tadao Kuwano	M.P.W.T. Chief Advisor/Road Construction and Maintenance
Mr. Tauch Chankosal	M.P.W.T. Secretary of State
Mr. Chhim Phalla	M.P.W.T. International Cooperation Department Director
Mr. Kong Sophal	M.P.W.T. International Cooperation Department Deputy Director
Mr. Heng Salpiseth	M.P.W.T. International Cooperation Department Officer
Mr. Nay Chamnang	M.P.W.T. Deputy Director of Road Infrastructure Department
Mr. Chao Sopheale Pibal	M.P.W.T. Technical Chief Officer
Mr. Noun Cham Rong,	D.P.W.T Prey Veng Director
Mr. Meas Kang	D.P.W.T Prey Veng Deputy Director
Mr. Chea Mo	D.P.W.T Prey Veng Deputy Director
Mr. Kry Rather	D.P.W.T Prey Veng Engineer
Mr. Heng Seing Hy	Environmental Department Prey Veng
Mr. Cheng Nhann	Kampong Chhnang Province Vice Governor
Mr. Hay Monorom	Kampong Chhnang Province Mayor
Mr. Yin Bothorn	D.P.W.T Kampong Chhnang Deputy Director
Mr. York Sophon	Kampong Chhnang Provincial Post Director
Mr. Kuch Dara	Cambodia Telecom Branch Director
Mr. Chay Leaphea	D.P.W.T Kampong Chhnang Deputy Director
Mr. Ly Chanrithy	D.P.W.T Prey Veng Chief Officer
Mr. Keov vet	D.P.W.T Prey Veng Officer
Mr. Or Sovanreak	Electricity Kampong Chhnang
Mr. Cheun Vuth	Environmental Department Kampong Chhnang

Draft Final Report Explanation (21 Jul . '12~28 Jul . '12)

Name	Organization
Mr. Yoshihiro Higuchi	Embassy of Japan Minister
Mr. Tomohiro Iizuka	Embassy of Japan Secretary Second Secretary
Mr. Tadao Kuwano	M.P.W.T. Chief Advisor/Road Construction and Maintenance
Mr. Tauch Chankosal	M.P.W.T. Secretary of State
Mr. Chhim Phalla	M.P.W.T. International Cooperation Department Director
Mr. Kong Sophal	M.P.W.T. International Cooperation Department Deputy Director
Mr. Nay Chamnang	M.P.W.T. Deputy Director of Road Infrastructure Department
Mr. Meas Kang	D.P.W.T Prey Veng Deputy Director
Mr. Kry Rathet	D.P.W.T Prey Veng Engineer
Mr. Yim Vanna	D.P.W.T Kampong Chhnang Deputy Director
Mr. Ly Chanrithy	D.P.W.T Kampong Chhnang Chief Officer
Mr. Sim Samnang	M.E.F. Deputy Director
Mr. Nhean Vannak	M.E.F. Deputy Chief
Mr. Heng Hongth	M.E.F. Deputy Chief
Mr. Chantha Kim	A.D.B. Programs Officer Cambodia Resident Mission
Mr. Nida Ouk	A.D.B. Senior Project Officer (Infrastructure) Cambodia Resident Mission

4. Minutes of Discussion (M/D)

First Field Survey (23 Jan.'12~1 Feb. '12)

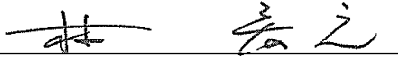
**Minutes of Discussions
on the Preparatory Survey
on the Project for Flood Disaster Rehabilitation and Mitigation
in the Kingdom of Cambodia**



The Government of Japan (hereinafter referred to as "GOJ") decided to conduct a Preparatory Survey on the Project for Flood Disaster Rehabilitation and Mitigation (hereinafter referred to as "the Project") and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Royal Government of Cambodia (hereinafter referred to as "GOC") the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Hiroyuki Hayashi, Director for Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA, and is scheduled to stay in Cambodia from 21st to 25th January, 2012.

The Team held discussions with the officials concerned of GOC and conducted field survey. As a result, both parties confirmed the main items described in the Attachment. The Team will proceed to further works and prepare the Preparatory Survey Report.

Phnom Penh, 25th January, 2012


Hiroyuki Hayashi
Leader
Preparatory Survey Team
Japan International Cooperation Agency



H.E. Traivut
Minister
Ministry of Public Works and Transport (MPWT)
Kingdom of Cambodia

ATTACHMENT

1. Purpose of the Project

The purpose of the project is to rehabilitate or replace infrastructure which have damaged by the flood in 2011 or contributed to urgent rehabilitation/retrieval of damaged infrastructure caused by flood.

2 Objectives and Schedule of the Survey

- (1) Cambodian side understood that the purpose of the Survey is to draft the most appropriate outline design and cost estimation of the Project as Japan's Grant Aid upon explanation by the Team.
- (2) Cambodian side agreed with the schedule of the Study explained by the Team as attached Annex 1.

3. Japan's Grant Aid Scheme

- (1) Cambodian side understood the Japan's Grant Aid scheme explained by the Team, as described in Annex 2.
- (2) Cambodian side confirmed to take necessary measures, as described in Annex 3, for smooth implementation of the Project. The Team supplemented that the detail will be further investigated thorough the Study.
- (3) It should be noted that implementation of the Preparatory Survey does not imply any decision or commitment by JICA to extend its grant for the project at this stage.

4. Project Components

- (1) As the results of a series of discussion, Cambodian side finally requested candidate components shown as below and in Annex 4;
 - 1) Rehabilitation of drainage system and roads on NR No.5 around Kampong Chhnang city, and other drainage system and roads(section) damaged by the flood within the southern part of NR No.5 which is approximately 140 km from Prek Kdam Bridge to Pursat, if necessary,
 - 2) Rehabilitation of the bridges along NR No.11 except the bridges committed and completed by Asian Development Bank (ADB) and GOC, and,
 - 3) Reconstruction of road in total 300 m long damaged by the flood on NR No. 118 including the

river bank protection.

- (2) Cambodian side explained that NR No.6 including 6A should be excluded from the candidate projects because the road will be improved under the Chinese loan project.
- (3) Bridges of bypass road in Siem Reap should be excluded of the Project, because the road is toll road and managed by the Apsara Authority including operation and maintenance.
- (4) Cambodian side confirmed that official request of the Project should submit to Embassy of Japan not later than 10th February, 2012.

5. Responsible and Implementing Organizations

Cambodian side explained that the responsible and implementing organization for the Project is Ministry of Public Works and Transport (hereinafter referred to as "MPWT"). MPWT confirmed its responsibility for necessary arrangements and undertakings during the Project. The organization chart of MPWT is as shown in Annex 5.

6. Environmental and Social Considerations

- (1) The Team explained the Project is to be categorized as "Category B" according to the JICA Environmental and Social Considerations Guideline (hereinafter referred to as "the JICA Guideline"), since the purpose of the Project should be limited within rehabilitation, retrieval, and replace of the existing road and bridge in principle, its negative impacts on the social and environment consideration can be minimized and mitigated through designing of the Project.
- (2) Cambodian side understands the Project needs to follow the JICA guideline.

7. Inception Report

The Team explained the contents of Inception Report and Cambodian side received it.

8. Other relevant issues

(1) Request for Equipment for emergency road rehabilitation

Cambodian side explained that machinery and equipment are very important and essential for rehabilitation and improvement of road and bridge as soon as possible after flood, and the number of equipment for emergency road rehabilitation is shorted. Therefore Cambodian side requested it to JICA as the letter dated on 20th January, 2012.

The Team confirmed it and requested MPWT to submit further information in written such as the

implementation and operation system, role of the implementation unit, budget. The letter is shown in Annex 6.

Annex 1 Schedule of the Survey

Annex 2 Japan's Grant Aid Scheme

Annex 3 Major Undertakings to be taken by Each Government

Annex 4 Project Component

Annex 5 Organization Chart of MPWT

Annex 6 Letter dated on 20th January, 2012

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Schedule of the Survey

Description	Month	2012						
		January	February	March	April	May	June	July
Preparation of Survey		□						
1st Field Survey / Determination of Components			■					
1st Analysis			□					
2nd Field Survey			■					
2nd Analysis / Preparation of Draft Report				□				
Explanation of Draft Report								■
Submission of the Survey Report								△

Note □ : Activity in Japan ■ : Activity in Cambodia

- (1) The 2nd Field Survey will be dispatched to conduct a more detailed survey for outline design of the components from the middle of February to the middle of March, 2012.
- (2) JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around by the middle of July, 2012.
- (3) JICA will prepare and submit the final report around the end of July, 2012.

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- Preparatory Survey
 - The Survey conducted by JICA
- Appraisal & Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
 - Agreement concluded between JICA and a recipient country
- Implementation
 - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the

implementation of the Project.

- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the

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for

necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant Aid, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant Aid.

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.



(8) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

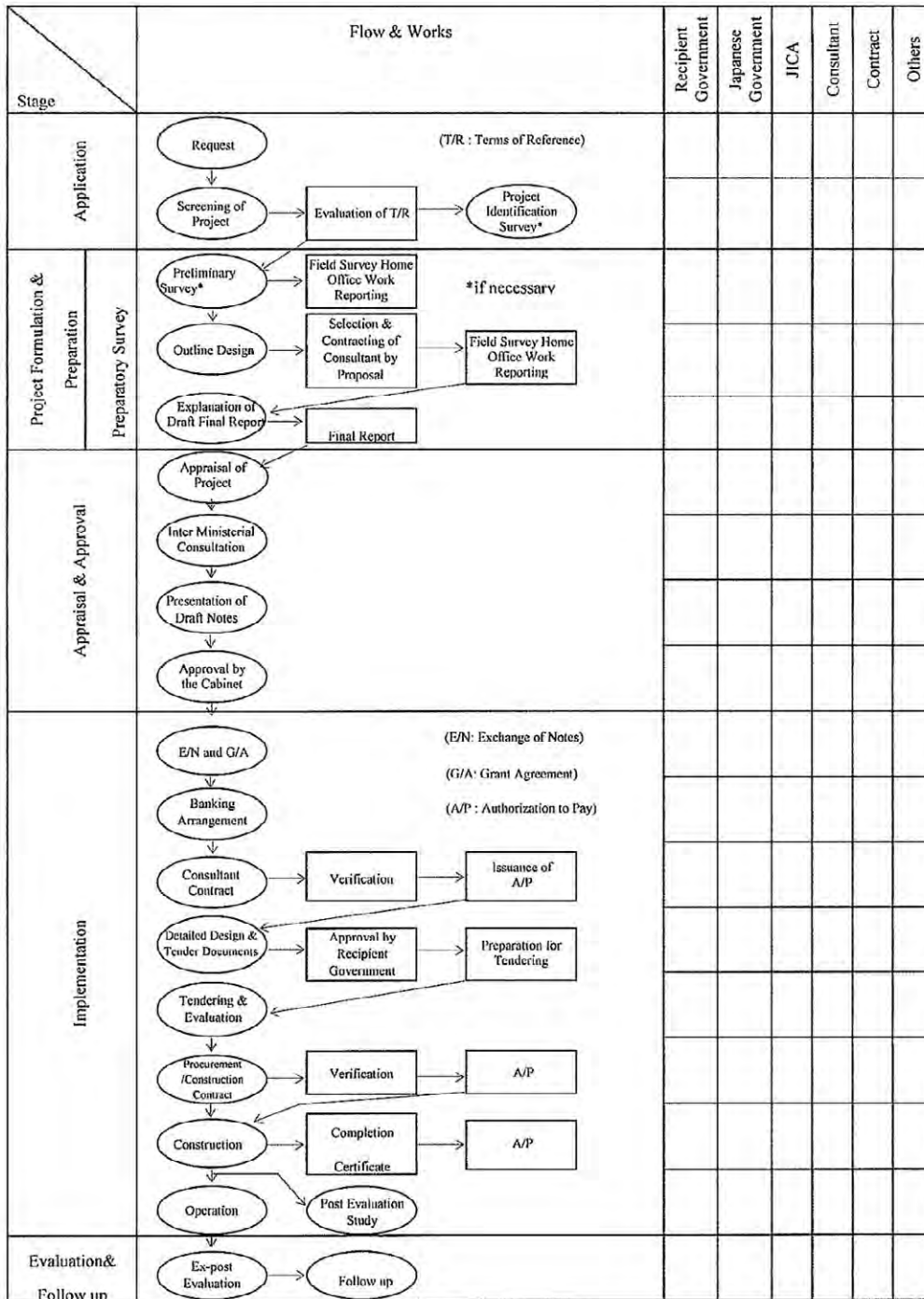
(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

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FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



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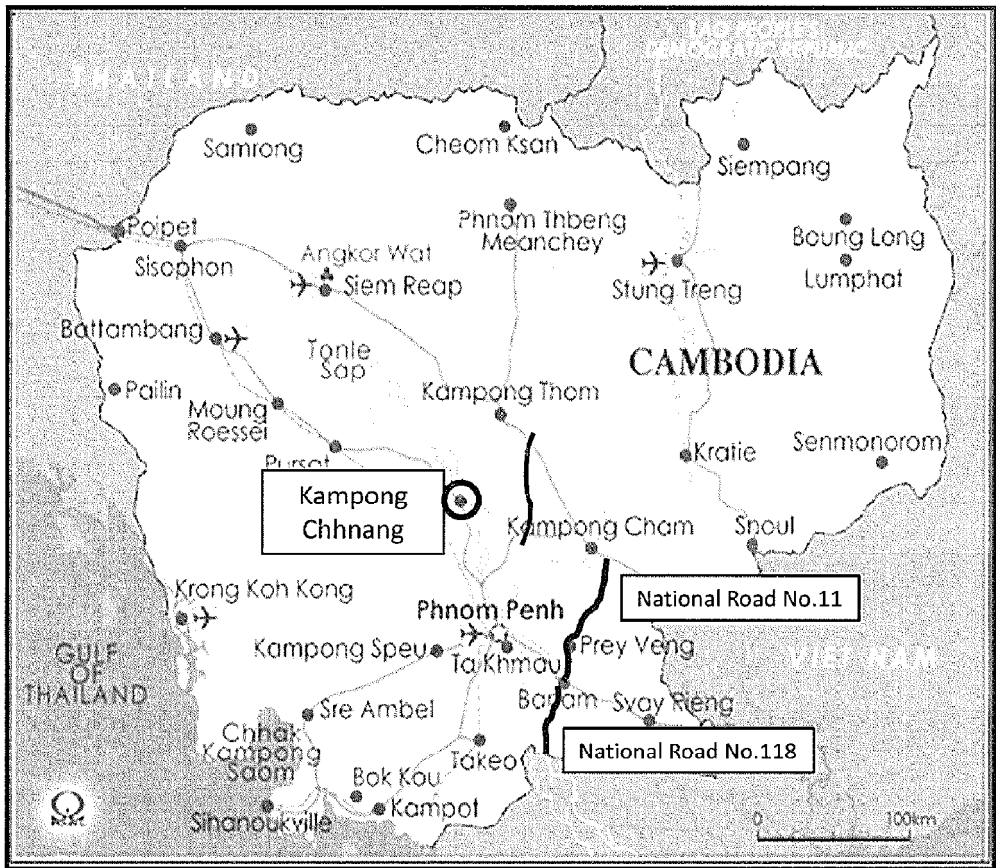
Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure a lot of land necessary for the implementation of the Project and to clear the site;		●
2	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	1) tax exemption and custom clearance of the Products at the port of disembarkation		●
	2) disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
3	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		●
4	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
5	To ensure that the Facilities be maintained and used properly and effectively for the implementation of the Project		●
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
7	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
8	To give due environmental and social consideration in the implementation of the Project.		●

(B/A : Banking Arrangement, A/P : Authorization to pay)

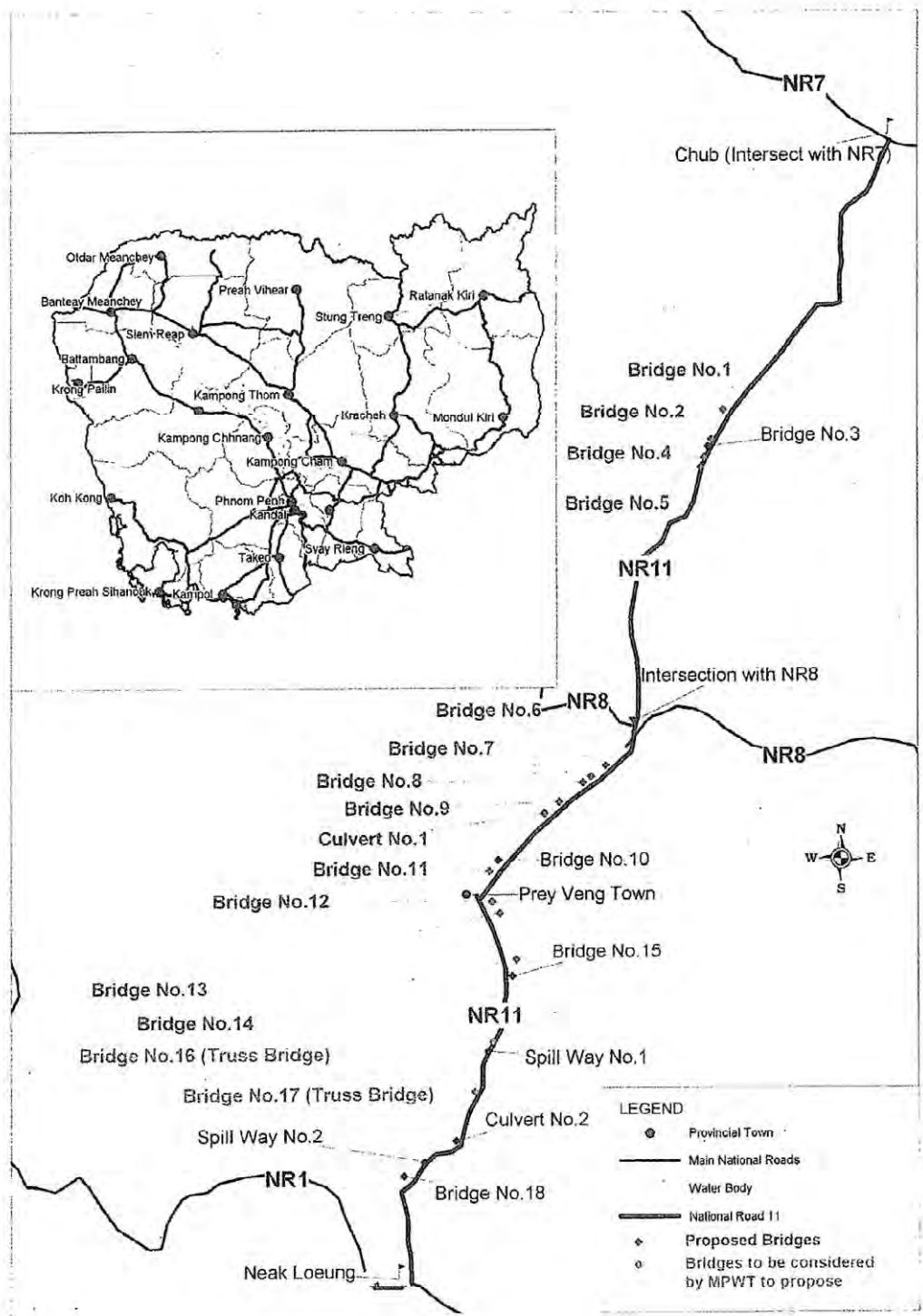
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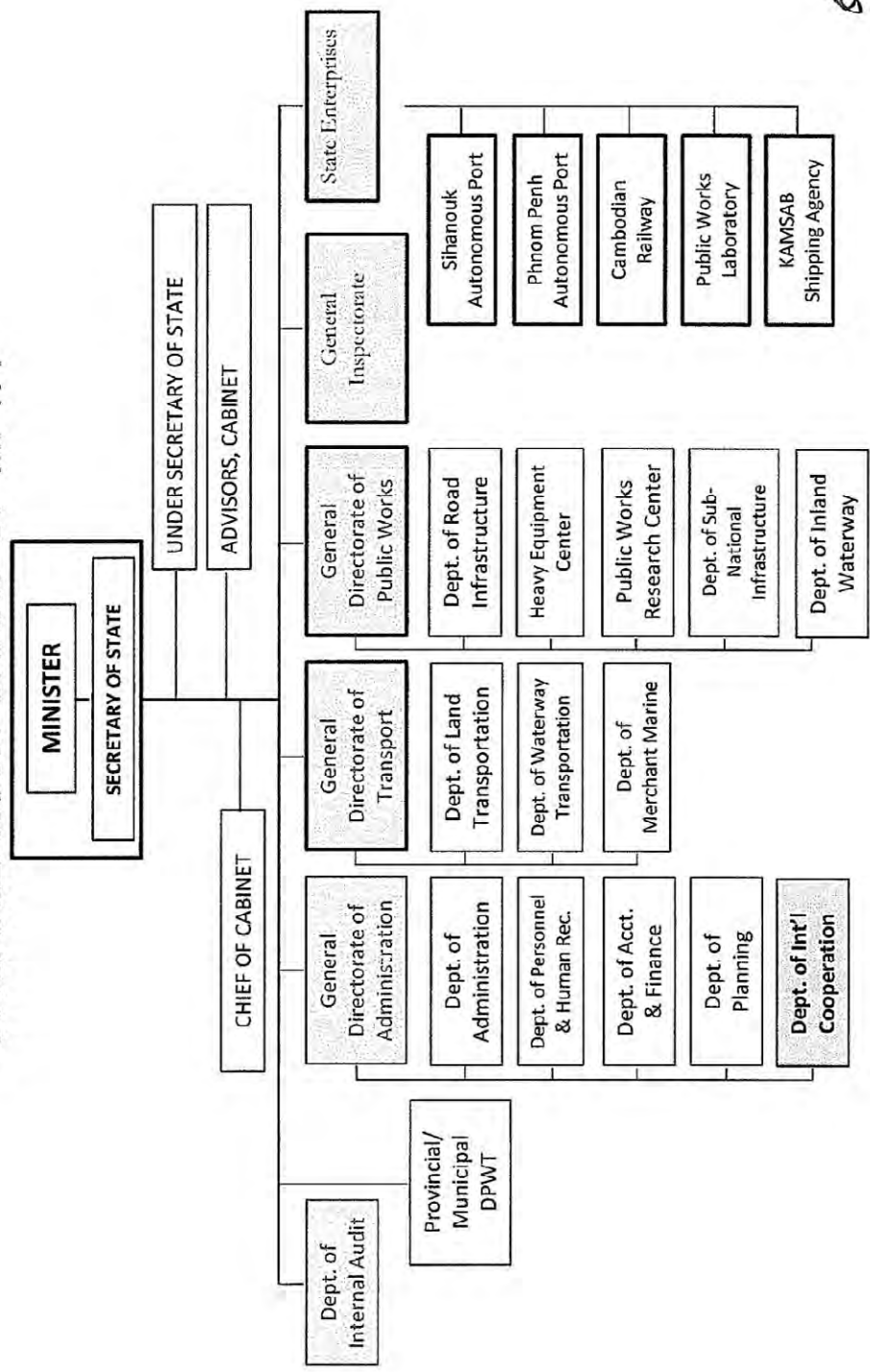


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ORGANIZATION CHART OF MPWT



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ANNEX 6

KINGDOM OF CAMBODIA
Nation Religion King

ព្រះមហាក្សត្រ



MINISTRY OF PUBLIC WORKS
AND TRANSPORT

No. ២៤៤៧/MPWT

Phnom Penh, R.D., January 2012

Attn: Mr. Yasujiro Suzuki,
Chief Representative of JICA Cambodia Office

SUBJECT : Request for Construction Equipment from JICA for the Emergency Flood Rehabilitation Works.

Dear Sir,

This request for additional equipment is prepared in accordance with the Record of Discussion (R/D) between the Ministry of Public Works and Transport of the Royal Government of Cambodia and Japan International Cooperation Agency on 11 May 2009 for the Project for Strengthening of Construction Quality Control and in accordance with Annex III of R/D.

In relation to the above subject, we would like to bring your attention to the following background and information as follows:

Every year, since 2007 the Ministry of Economy and Finance (MEF) has provided the national budget to the Ministry of Public Works and Transport (MPWT) for the emergency works with the amount of approx eight percent (08%) of the Budget Category No. 61 (as shown in Appendix 1).

The emergency works such as collapse of bridge structure(s), damage of the roads etc., are unpredictable and they may occur in various places throughout the country.

As you may aware, this year Cambodia faced a high flood causing severe damages to many sections of the transport infrastructures. Therefore, MPWT really needs to conduct the emergency works aiming at restoring the ordinary traffic flow which are obstructed due to the damages to the road sections and/or bridges.

In general the emergency works are usually implemented by the Provincial Department of Public Works and Transport of the particular provinces where the damage sections are located. However, in some cases, the ability for effective implementation of the emergency rehabilitation of the Provincial Departments of Public Works and Transport is restricted due to their limited and insufficient technical capability and human resources.

In this consideration, we would like to establish the Special Working Team for implementation the flood emergency rehabilitation works from the Road Infrastructure Department (RID) under the direct supervision of General Directorate of Public Works (see organization chart is in the Appendix 2) with the support from the Strengthening Construction Quality Control (SCQC) Project which is financed by JICA.

For effectiveness and efficiency in implementation of the Works of this Special Working Team, several facilities such as construction equipment, office facilities and transport facilities etc., must be

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Corner Norodom Blvd. & St. 106
Phnom Penh, Cambodia

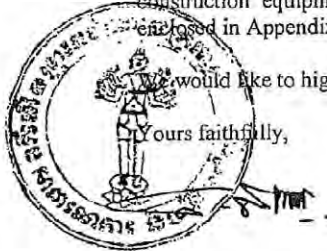
Tel: (855) 23-428 158
Fax: (855) 23-884 213

supported. At the same time, the construction equipment can also be utilized in the actual work execution in appointed pilot projects of SCQC Project (JICA).

Therefore, we would like to request for your kind consideration for the possibility in supplying the construction equipment for this emergency working team. The List of Requested Equipment is enclosed in Appendix 3.

We would like to highly appreciate for your kind support and cooperation.

Yours faithfully,



Tauch Chankosal
Secretary of State

cc:

- H.E Tram Iv Tek, Minister, MPWT
- H.E Lim Sidenine, Secretary of State, MPWT
- H.E. Kem Borey, Director General of Public Works, MPWT
- Mr. Tadao Kuwano JICA Expert for MPWT
- Ministry of Foreign Affair and International Cooperation
- Council Development of Cambodia
- Embassy of Japan in Cambodia
- File



Corner Norodom Blvd. & St. 106
Phnom Penh, Cambodia

Tel: (855) 23-428 138
Fax: (855) 23-884 213

Appendix 1

National Budget for the Emergency Works

Type of Work	Yearly Budget (Million US\$)				
	2007	2008	2009	2010	2011
Emergency Works	1.58	1.90	2.38	2.85	3.65

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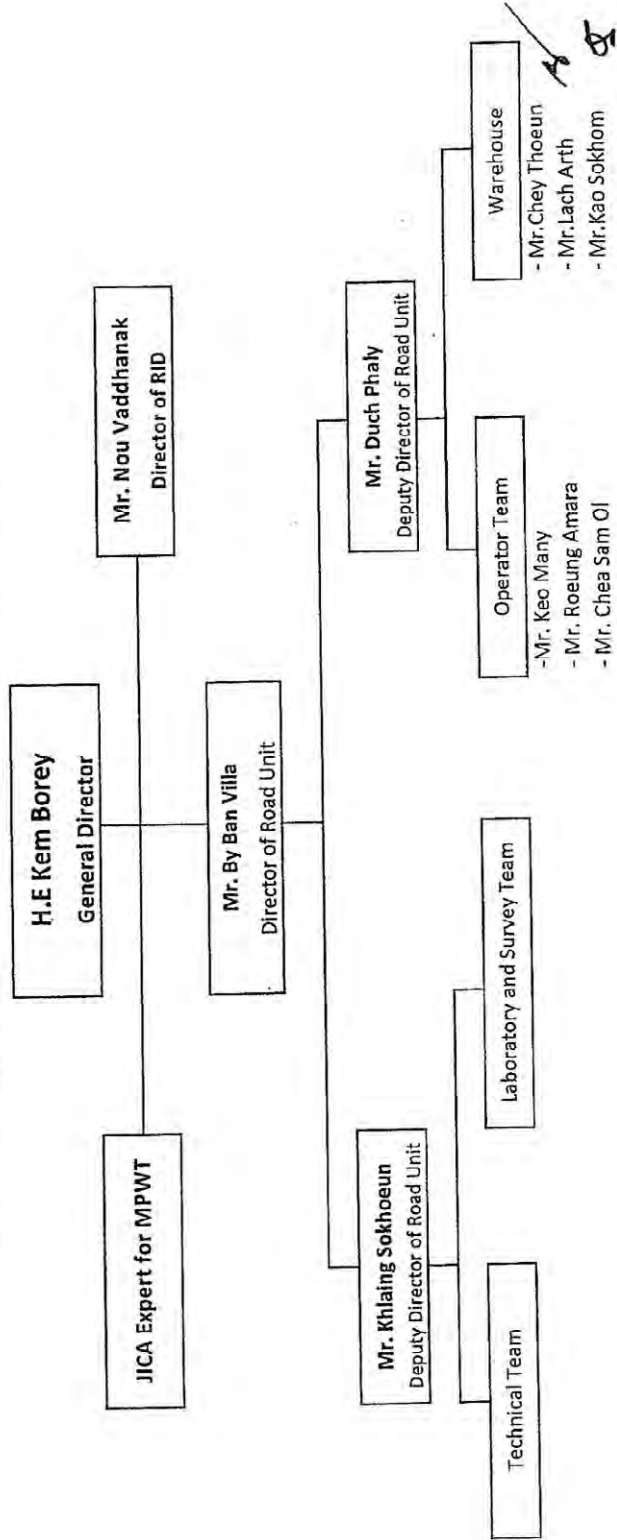


KINGDOM OF CAMBODIA
Nation Religion King
ព្រះមហាក្សត្រ ជាតិ ព្រះមហាក្សត្រ

Ministry of Public Works and Transport
General Directorate of Public Works

Appendix 2

ORGANIZATION CHART OF EMERGENCY FLOOD UNIT





Kingdom Of Cambodia

Nation Religion King

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Ministry of Public Works and Transport

General Directorate of Public works

Appendix 3

List of Equipment to be Supplied to The Emergency Flood Unit

No.	Description	Unit	Step			Total	Remarks
			I	II	III		
1	Excavator	Nos.	1	1	1	3	1st Priority (for step I)
2	Wheel Excavator	Nos.	1	-	1	2	5th Priority (for step I)
3	Motor Grader, Blade 14 Feet	Nos.	-	1	1	2	
4	Motor Grader, Blade 12 Feet	Nos.	1	-	1	2	2nd Priority (for step I)
5	Compactor Roller	Nos.	1	1	2	4	3rd Priority (for step I)
6	3 Wheel Roller	Nos.	R	2	2	4	
7	Pneumatic Roller	Nos.	R	2	2	4	
8	Bulldozer D4	Nos.	-	1	-	1	
9	Bulldozer D5	Nos.	1	-	1	2	4th Priority (for step I)
10	Bulldozer D6	Nos.	-	1	-	1	
11	Crane Truck (5T)	Nos.	1	1	-	2	6th Priority (for step I)
12	Crane Truck (30T)	Nos.	R	-	1	1	
13	Wheel Loader	Nos.	R	1	1	2	
14	Dump Truck	Nos.	R	4	6	10	
15	Water Truck	Nos.	R	1	1	2	
16	Trailer	Nos.	R	1	-	1	
17	Distributor Trailer	Nos.	R	1	-	1	
18	Broom Tractor	Set	R	1	-	1	
19	Air Compressor	Set	R	1	1	2	
20	Generator	Set	R	1	-	1	
	Total :	Nos.	6	21	21	48	

Note:

R: To be Rented from The Private Company for Implementation in the Step I.

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SPECIFICATION AND PRICE OF EQUIPMENT

No.	Description	Mark	Model	Qty	Unit	Unit Price (USD)	Remarks
1	Bulldozer (D4)	KOMATSU	D37EX/PX-22	1	Unit	140,000.00	
2	Bulldozer (D5)	KOMATSU	D51EX/PX-22	1	Unit	180,000.00	4th Priority (for step I)
3	Bulldozer (D6)	KOMATSU	D61EX/PX-15	1	Unit	230,000.00	
4	Wheel Excavator, Bucket capacity 0.86m ³	KOMATSU	PW148-8	1	Unit	336,000.00	5th Priority (for step I)
5	Excavator, Blade 0.7m ³	KOMATSU	PC200-B	1	Unit	125,000.00	1st Priority (for step I)
6	Motor Grader, Blade 12Feet	KOMATSU	GD511A-1	1	Unit	184,500.00	2nd Priority (for step I)
7	Motor Grader, Blade 14Feet	KOMATSU	GD555-3A	1	Unit	268,000.00	
8	Compactor Roller	SAKAI	Operation weight 2.5Tons	1	Unit	75,000.00	3rd Priority (for step I)
9	Pneumatic Roller, Operating Weight 12.5Tons	DYNAPAC	CP224	1	Unit	110,000.00	
10	Tree Wheel Roller, Weight 13Tons	DYNAPAC	CS142	1	Unit	144,000.00	
11	Wheel Loader	KOMATSU	BLADE 1.3M ³	1	Unit	65,000.00	
12	Water Truck, Tank Capacity 1000L-1500L	HINO	CLW5060	1	Unit	90,000.00	
13	Distributor Trailer	BRAND NEW	TANK Capacity: 8,000L	1	Unit	130,000.00	

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14	Dump truck, 20Tons	HINO	YC3250FS2PK	1	Unit	120,000.00	
15	Trailer, Load 25Tons-35Tons	HINO	YC4185H2PE4	1	Unit	150,000.00	
16	Crane truck, 5Tons	DAYU	QLY5Z	1	Unit	70,000.00	6th Priority (for step I)
17	Crane truck, 30Tons	TADANO	TL-300E	1	Unit	300,000.00	
18	Air Compressor	DENYO	DIS 555B	1	Unit	18,900.00	
19	Silent Generator, 60KVA	DENYO	P1144e	1	Unit	12,000.00	
20	Broom Tractor	Kubota		1	Unit	28,000.00	

AS

Draft Final Report Explanation (21 Jul . '12~28 Jul . '12)

**Minutes of Discussions
on the Preparatory Survey
on the Project for Flood Disaster Rehabilitation and Mitigation
in the Kingdom of Cambodia
(Explanation on Draft Final Report)**

In January 2012, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Preparatory Survey Team on the project for flood disaster rehabilitation and mitigation (hereinafter referred to as "the Project") to the Royal Government of Cambodia, and through discussion, field surveys and technical examination of the results in Japan, JICA prepared a draft final report of the study.

In order to explain and consult with the Royal Government of Cambodia on the components of the draft final report, JICA sent to Cambodia the Explanation Team (hereinafter referred to as "the Team"), headed by Mr. Yukinari TANAKA, Assistant Director for Peace Building and Urban and Regional Development Division 2, Economic Infrastructure Department, JICA from 22nd to 27th July, 2012.

As a result of discussions with the concerned officials of the Royal Government of Cambodia, both sides confirmed the main items described in the attached sheets.

Phnom Penh, July 27th, 2012

田中幸成

Yukinari TANAKA
Leader
Outline Design Explanation Team
Japan International Cooperation Agency



H.E. Jauch Chankosal
Secretary of State
Ministry of Public Works and Transport
(MPWT)
Kingdom of Cambodia

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H.E. Nhean Leng
Under Secretary of State
Ministry of Economy and Finance (MEF)
Kingdom of Cambodia

ATTACHMENT

1. Components of the Draft Final Report

(1) Cambodian side agreed and accepted in principle the components of the Draft Final Report of the preparatory Survey (hereinafter referred to as "the Report") explained by the Team. The list of components is shown in ANNEX 1.

(2) Concerning the Improvement of Bridges along National Road No.11, Japanese side agreed to demolish all existing bridges and culverts in response to the request from Cambodian side from the view point of the securing of overall construction schedule.

(3) Both sides confirmed that additional information shall be described in a Final Report in the process of finalization, if necessary.

2. Cost Estimation

The Team explained the project cost estimation as attached in ANNEX 2. Both sides confirmed that the project cost is highly confidential for securing fairness of tender procedure and should never be duplicated or released to any third parties until relevant contracts are awarded by the implementing agency.

3. Schedule of the Survey

The Team will complete the Survey and send the final report in English to the Royal Government of Cambodia around the end of August, 2012.

4. Environmental and Social Considerations

(1) Environmental checklist

MPWT and the Team confirmed information on environmental and social considerations including major impacts and relevant mitigation measures are summarized in the Environmental Checklist attached as ANNEX 3. MPWT confirmed they will inform JICA of any major changes which affect environmental and social considerations made for the Project by revising it in a timely manner.

(2) Monitoring and Report of the monitoring results

(i) MPWT, MEF and the Team confirmed environmental monitoring will be conducted by MPWT in accordance with the Environmental Monitoring Plan described in the

Report.

- (ii) MPWT and MEF confirmed that the results of environmental monitoring will be provided to JICA as a part of Monthly Progress Report by filling in the monitoring form attached as ANNEX 4 until the completion of the Project, provided that there is no outstanding issue regarding the environmental and social considerations during operation of the Project.
- (iii) In case JICA finds that there is a need for improvement in a situation with respect to environmental considerations after the agreed monitoring period. JICA may request to extend the period of monitoring and reporting until JICA confirms the issues have been properly addressed in accordance with the agreement between MPWT and JICA.
- (iv) MPWT, MEF and the Team confirmed internal monitoring proposed in the Abbreviated Resettlement Planning (ARP) will be conducted by MPWT. MPWT agreed that progress of land acquisition and implementation of ARP will be monitored and reported to JICA on a monthly basis as a part of Monthly Progress Report by filling in the ANNEX 5.
- (v) In case there is a remaining issue that needs to be addressed, JICA may request to extend the period of monitoring and reporting until JICA confirms the issues have been properly addressed and solved in accordance with the agreement between MPWT and JICA.

(3) Disclosure of Environmental Monitoring Result

The Team requested MPWT and MEF to disclose the environmental monitoring results to local project stakeholders, and MPWT and MEF agreed to disclose the environmental monitoring results of ANNEX 4 in their filed offices. MPWT and MEF agreed JICA's disclosure of provided environmental monitoring results based on ANNEX 4 in the environmental monitoring form on its website.

(4) Schedule of the preparation for Abbreviated Resettlement Planning (ARP)

Both sides confirmed the progress and schedule of the preparation for ARP (ANNEX 6) as the below;

- Public consultation will have completed by the end of October, 2012.

- Detailed Measurement Survey and Replacement Cost Survey will have completed by the middle of October, 2012.
- Draft updated ARP should be submitted to Japanese side through JICA Cambodia office by the end of November, 2012.
- Japanese side will confirm ARP by end of November, 2012.

(5) Grievance Committee

Cambodia side confirmed that the Grievance Committee would be set up by the end of September, 2012. The copy of the member list of the Grievance Committee will be provided to JICA Cambodia office by the middle of October, 2012.

5. Undertakings to be taken by the Cambodian side for the Project

(1) The Cambodian side confirmed that the following undertakings should be taken by the Cambodian side at the Cambodian expenses.

- (i) Implementation of ARP and Land Acquisition before the construction period
- (ii) Environmental monitoring as mentioned in Article 4 during the construction period
- (iii) Necessary arrangement for traffic and navigation control at necessary sections during the construction period
- (iv) Securing and clearance of the temporary yard for construction works during the construction period
- (v) Relocation and/or removal of existing utilities (power lines, water lines, etc.) from the Project site within three weeks after the request from a consultant or a contractor

(2) The Cambodian side will secure sufficient budget in a timely manner for smooth implementation of the Project.

(3) The Team handed copies of revised draft drawings showing the affected area by the Project to the Cambodian side for the purpose of smooth implementation of the above mentioned undertakings to be taken by the Cambodian side.

6. Demining and Clearance

Both sides agreed that Cambodia side implements the demining and clearance activities

for the land mines and Unexploded Ordnance (UXO) in order not to delay the Project.

7. Other Relevant Issues

JICA will conduct an ex-post evaluation on the Project in three years.

ANNEX 1: The list of components

ANNEX 2: The Project Cost Estimation (CONFIDENTIAL)

ANNEX 3: Environmental Checklist

ANNEX 4: Monitoring Form for Environment

ANNEX 5: Internal Monitoring Form (land acquisition, resettlement)

ANNEX 6: Implementation Schedule of ARP



ANNEX 1

The list of components

Components	Detail of Components																																								
<p>Roads and Drainage Facilities in Kampong Chhnang City</p>	<p><u>National Road No.5 City Center Section</u> Road Section Length: 2.2km Road Pavement: Asphalt Concrete Surface Course (50mm thick) Asphalt Concrete Binder Course (50mm thick) Bituminous Treatment Base Course (80mm thick) Mechanical Stabilized Base Course (200mm thick) Crusher-Run Sub-Base Course (300mm thick) Sidewalk Pavement: Ceramic Tile Surfacing Drainage Facilities: Concrete Pipes (300mm), Side Ditches, Catch Basins, Manholes Ancillary Facilities: Road markings, Gabions</p> <p><u>Streets and Drainage Ways</u> Total Street Length : 2.4km Street Pavement : Asphalt Concrete Surface Course (50mm thick) Bituminous Treatment Base Course (50mm thick) Crusher-Run Sub-Base Course (250mm thick) Public Market: Interlocking Block Pavement Drainage Ways Total Length : 2.6km Drainage Way Surfacing: Aggregate Surfacing (200mm thick) Drainage Facilities: Concrete Pipes (300~1750mm), Catch Basins, Manholes, Ditches Ancillary Facilities: Road Markings</p>																																								
<p>Bridges along National Road No.11</p>	<p style="text-align: center;">Bridge List</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Bridge No.</th> <th>Bridge Name</th> <th>Bridge Length (m)</th> <th>No. of Span</th> </tr> </thead> <tbody> <tr> <td>BR-4</td> <td>Kbal Boeung</td> <td>33.0</td> <td>3</td> </tr> <tr> <td>BR-5</td> <td>Snate</td> <td>40.0</td> <td>4</td> </tr> <tr> <td>BR-7</td> <td>Sam Puthor II</td> <td>44.0</td> <td>4</td> </tr> <tr> <td>BR-8</td> <td>Mebon</td> <td>50.0</td> <td>5</td> </tr> <tr> <td>BR-9</td> <td>Tkov I</td> <td>44.0</td> <td>4</td> </tr> <tr> <td>Clv-1</td> <td>Tkov II</td> <td>20.0</td> <td>2</td> </tr> <tr> <td>BR-11</td> <td>Ek Ream</td> <td>33.0</td> <td>3</td> </tr> <tr> <td>Clv-2</td> <td>Rom Lech</td> <td>44.0</td> <td>4</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total of 8 Bridges</td> <td>308.0</td> <td>29</td> </tr> </tbody> </table> <p>Carriageway Width: 10.0 m Superstructure Type: RC Slab (Integral Type) Foundation Type: Precast Pile (400 mm x 400 mm) Bridge Approach Road Pavement: Asphalt Concrete Surface Course (50 mm thick) Asphalt Concrete Binder Course (50mm thick) Bituminous Treatment Base Course (80mm thick) Mechanical Stabilized Base Course (150mm thick) Crusher-Run Sub-Base Course (250mm thick) Cement Treatment Upper Subgrade (400mm thick) Slope Protection: Sodding, Grouted Riprap Riverbed Protection: Boulders, Gabion Mattresses Ancillary facilities: Guide Posts, Guardrails, Road Markings</p>	Bridge No.	Bridge Name	Bridge Length (m)	No. of Span	BR-4	Kbal Boeung	33.0	3	BR-5	Snate	40.0	4	BR-7	Sam Puthor II	44.0	4	BR-8	Mebon	50.0	5	BR-9	Tkov I	44.0	4	Clv-1	Tkov II	20.0	2	BR-11	Ek Ream	33.0	3	Clv-2	Rom Lech	44.0	4	Total of 8 Bridges		308.0	29
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Clv-2	Rom Lech	44.0	4																																						
Total of 8 Bridges		308.0	29																																						

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ANNEX 2

The Project Cost Estimation

Items		Cost Estimated (Million Japanese Yen)	
Construction Cost	Improvement of roads and drainage facilities in Kampong Chhnang City		
	Improvement of bridges along National Road No.11		
Consultant Fee (Detailed design & construction supervision)			
Total			

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Environmental Checklist National Road No.11

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	① Have EIA reports been officially completed? ② Have EIA reports been approved by authorities of the host country's government? ③ Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? ④ In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	① ② ③ EIA report is not need for the project by Sub-Decree on Environmental Impact Assessment Process(1999). ④ MPWT will get approval of Environmental Management Plan.
	(2) Explanation to the Public	① Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? ② Are proper responses made to comments from the public and regulatory authorities?	① ② The project plan is not completed.
	(1) Air Quality	① Is there a possibility that air pollutants emitted from various sources, such as vehicle traffic will affect ambient air quality? Does ambient air quality comply with the country's ambient air quality standards? ② Where industrial areas already exist near the route, is there a possibility that the project will make air pollution worse?	① This project will not cause increase of traffic volume since the project is reconstruction of existing bridges. ② There are no industrial areas near the route.
2 Mitigation Measures	(2) Water Quality	① Is there a possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? ② Is there a possibility that surface runoff from roads will contaminate water sources, such as groundwater? ③ Do effluents from various facilities, such as stations and parking areas/service areas comply with the country's effluent standards and ambient water quality standards? Is there a possibility that the effluents will cause areas that do not comply with the country's ambient water quality standards?	① There is no possibility of soil runoff and water quality degradation in the project area since the project is reconstruction of existing bridges. ② The surface runoff water from roads is designed to be drained to river which will not contaminate water sources. ③ There is no facility near the project area.
	(4) Noise and Vibration	① Do noise and vibrations from vehicle comply with the country's standards?	① During construction period, generation of noise and vibration can be minimized by the followings: using low noise heavy machineries and construction vehicles, construction with noise and vibration equipment undertaken from 08:00 am to 05:00 pm, making public announcement of construction plan prior to construction.

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Environmental Checklist National Road No. 11

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
3 Natural Environment	(1) Protected Areas	<ol style="list-style-type: none"> 1. Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas? 2. Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? 3. Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? 4. If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? 5. Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock? 6. Is there a possibility that installation of roads will cause impacts, such as destruction of forests, poaching, desertification, reduction in wetland areas, and disturbance of ecosystems due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? 7. In cases where the project site is located at undeveloped areas, is there a possibility that the reconstruction of existing bridges will not cause any significant adverse affect on surface water and groundwater flows? 	<ol style="list-style-type: none"> 1. There are no protected areas in the site. 2. There are no ecological valuable habitats in the site. 3. The protected habitats of endangered species designated by the country's laws or international treaties and conventions have not been identified in the site. 4. No significant ecological impact is anticipated. 5. Since the road is existing road, no disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock is anticipated. If there will be migration route around the site traffic sign will be installed. 6. Since the project is reconstruction of existing bridges, it will not cause destruction of forest and wetland and disturbance of ecosystems and introduction of exotic species. 7. No significant development which will result in extensive loss of natural environment is anticipated.
	(3) Hydrology	<ol style="list-style-type: none"> 1. Is there a possibility that alteration of topographic features and installation of structures, such as tunnels will adversely affect surface water and groundwater flows? 	<ol style="list-style-type: none"> 1. Reconstruction of existing bridges will not cause any significant adverse affect on surface water and groundwater flows.
	(4) Topography and Geology	<ol style="list-style-type: none"> 1. Is there a soft ground on the route that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? 2. Is there a possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? 3. Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff? 	<ol style="list-style-type: none"> 1. There is not soft ground which may cause slope failure or landslide on the route. 2. There is no possibility of slope failure, landslide or soil runoff since the cutting and filling slopes are protected with riprap or turfing.
4 Social Environment	(1) Resettlement	<ol style="list-style-type: none"> 1. Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? 2. Is adequate explanation on relocation and compensation given to affected persons prior to resettlement? 3. Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? 4. Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous people? 5. Are agreements with the affected persons obtained prior to resettlement? 6. Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? 7. Is a plan developed to monitor the impacts of resettlement? 	<ol style="list-style-type: none"> 1. Some small wooden house located in the right of way are necessary to be removed from the construction area where the temporary detours will be constructed during the construction. The plan will be made to minimize the impact. 2. Adequate socialization on reasonable compensation will be given to the affected persons prior to the removal of houses by a committee in accordance with Cambodia regulations and laws and JICA Guidelines for Environmental and Social Consideration. 3. Agreement between the affected persons the committee will be made prior to the removal of houses. 4. The committee to consult with the affected persons will be established by a representative from DPWT and other representatives from concerned ministries institutions. 5. Yes internal monitoring form was developed.

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Environmental Checklist - National Road No.11

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(2) Living and Livelihood	<p>1. Where roads or railways are newly installed, is there a possibility that the project will affect the existing means of transportation and the associated workers? Is there a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood, or unemployment? Are adequate measures considered for preventing these impacts?</p> <p>2. Is there a possibility that the project will adversely affect the living conditions of inhabitants other than the affected inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>3. Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>4. Is there a possibility that the project will adversely affect road traffic in the surrounding areas (e.g. by causing increases in traffic congestion and traffic accidents)?</p> <p>5. Is there a possibility that roads and railways will impede the movement of inhabitants?</p> <p>6. Is there a possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?</p>	<p>(1)-(5) No adverse impact on transportation, livelihood and socioeconomic conditions in the area is anticipated by the project since the project is reconstruction of existing bridges.</p> <p>(3) No significant possibility of communicable disease is anticipated. HIV awareness-rising through education and workshop for workers will be taken in the project.</p> <p>(6) The project will not cause sun shading and radio interference.</p>
	(3) Heritage	<p>1. Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	<p>1. There are no archeological, historical cultural and religious heritage in the site.</p>
	(4) Landscape	<p>1. Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	<p>1. There is no possibility of adverse affect on local landscape by the reconstruction of existing bridges.</p>
	(5) Ethnic Minorities and Indigenous People	<p>1. Where ethnic minorities and indigenous peoples are living in the rights-of-way, are considerations given to reduce the impacts on culture and lifestyle of ethnic minorities and indigenous people?</p> <p>2. Does the project comply with the country's laws for rights of ethnic minorities and indigenous people?</p>	<p>(1)-(2) There is no ethnic minorities and indigenous people having unique culture and lifestyle in the site.</p>

Environmental Checklist - National Road No.11

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
		<p>① Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>② If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>③ If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>(1) Impacts during Construction</p>	<p>① Yes. Adequate measures such as periodical water spray and sheet cover on track will be employed to reduce dust. Equipment will be maintained in good condition by proper maintenance.</p> <p>② No significant adverse affect on natural environment (ecosystem) is anticipated by the construction. The surrounding of the construction site will be restored as before.</p> <p>③ Some small houses in the right of way are probably necessary to be removed from the site during the construction. Adequate socialization on reasonable compensation will be given to the affected persons prior to the removal of houses by the committee.</p> <p>(1) The contractor will provided health and safety education for project personnel including workers.</p>
5 Others		<p>① Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>② Are the items, methods and frequencies included in the monitoring program judged to be appropriate?</p> <p>③ Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget) to sustain the monitoring framework?</p> <p>(2) Monitoring</p>	<p>①②③④ Yes. MPWT will develop Environmental Management Plan by the country's laws or international. MPWT/DPWT shall establish a fund and an office with qualified technical staff, appropriate equipment, methodologies and a well-prepared schedule for monitoring environmental quality in close collaboration with relevant institutions in order to mitigate negative socio-economic and environmental resource impact to a minimum level by the country's laws or international.</p>
6 Note	Reference to Checklist of Other Sectors	<p>① Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects including large areas of deforestation).</p> <p>② Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of power transmission lines and/or electric distribution facilities).</p>	
	Note on Using Environmental Checklist	<p>① If necessary, the impacts to trans boundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as trans boundary waste treatment, acid rain, destruction of the ozone layer, or global warming).</p>	

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.

2) In cases where local environmental regulations are set to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience). Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

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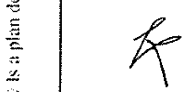
Environmental Checklist Kampong Chhnang

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	<ul style="list-style-type: none"> 1. Have EIA reports been officially completed? 2. Have EIA reports been approved by authorities of the host country's government? 3. Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? 4. In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government? 	<ul style="list-style-type: none"> 1. 2. 3. EIA report is not need for the project by Sub-Decree on Environmental Impact Assessment Process(1999). 1. MPWT will get approval of Environmental Management Plan.
	(2) Explanation to the Public	<ul style="list-style-type: none"> 1. Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? 2. Are proper responses made to comments from the public and regulatory authorities? 	<ul style="list-style-type: none"> 1. 2. The project plan is not completed.
2 Mitigation Measures	(1) Air Quality	<ul style="list-style-type: none"> 1. Is there a possibility that air pollutants emitted from various sources, such as vehicle traffic, will affect ambient air quality? Does ambient air quality comply with the country's ambient air quality standards? 2. Where industrial areas already exist near the route, is there a possibility that the project will make air pollution worse? 	<ul style="list-style-type: none"> 1. This project will not cause increase of traffic volume since the project is improvement of existing road and drainage facilities. 2. There are no industrial areas near the route.
	(2) Water Quality	<ul style="list-style-type: none"> 1. Is there a possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? 2. Is there a possibility that surface runoff from roads will contaminate water sources, such as groundwater? 3. Do effluents from various facilities, such as stations and parking areas/service areas comply with the country's effluent standards and ambient water quality standards? Is there a possibility that the effluents will cause areas that do not comply with the country's ambient water quality standards? 	<ul style="list-style-type: none"> 1. There is no possibility of soil runoff and water quality degradation in the project area since the project is improvement of existing road and drainage facilities. 2. The surface runoff water from roads is designed to be drained to river which will not contaminate water sources. 3. There is no facility near the project area.
	(4) Noise and Vibration	<ul style="list-style-type: none"> 1. Do noise and vibrations from vehicle comply with the country's standards? 	<ul style="list-style-type: none"> 1. During construction period, generation of noise and vibration can be minimized by the followings: using low noise heavy machineries and construction vehicles, construction with noise and vibration equipment undertaken from 08:00 am to 05:00 pm, making public announcement of construction plan prior to construction.

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Environmental Checklist - Kampong Chhnang

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
3 Natural Environment	(1) Protected Areas	<p>① Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?</p> <p>② Does the project site encompass primary forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?</p> <p>③ Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?</p> <p>④ If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?</p> <p>⑤ Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock?</p> <p>⑥ Is there a possibility that installation of roads will cause impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystems due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered?</p> <p>⑦ In cases where the project site is located at undeveloped areas, is there a possibility that the project will affect the ecological features and installation of structures, such as tunnels, will adversely affect surface water and groundwater flows?</p>	<p>① There are no protected areas in the site. There is Tonle Sap Multiple Management Use Area about 10km upstream of Tonle Sap river from the project site. But there is no possibility to affect the protected areas</p> <p>② There are no ecological valuable habitats in the site</p> <p>③ The protected habitats of endangered species designated by the country's laws or international treaties and conventions have not been identified in the site</p> <p>④ No significant ecological impact is anticipated.</p> <p>⑤ Since the road is existing road in the city, no disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock is anticipated</p> <p>⑥ Since the project is improvement of existing road and drainage facilities, it will not cause destruction of forest and wetland and disturbance of ecosystems and introduction of exotic species.</p> <p>⑦ No significant development which will result in extensive loss of natural environment is anticipated.</p>
	(2) Ecosystem		
	(3) Hydrology		<p>① Improvement of existing road and drainage facilities will not cause any significant adverse affect on surface water and groundwater flows.</p>
	(4) Topography and Geology	<p>① Is there a soft ground on the route that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed?</p> <p>② Is there a possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides?</p> <p>③ Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?</p>	<p>① There is not soft ground which may cause slope failure or landslide on the route.</p> <p>② ③ There is no possibility of slope failure, landslide or soil runoff</p>
4 Social Environment	(1) Resettlement	<p>① Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>② Is adequate explanation on relocation and compensation given to affected persons prior to resettlement?</p> <p>③ Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>④ Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous people?</p> <p>⑤ Are agreements with the affected persons obtained prior to resettlement?</p> <p>⑥ Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>⑦ Is a plan developed to monitor the impacts of resettlement?</p>	<p>① Temporary shops located in the right of way are necessary to be removed from the construction area. And land acquisition necessary. The plan will be made to minimize the impact.</p> <p>② ③ ④ Adequate socialization on land acquisition and reasonable compensation will be given to the affected persons prior to the land acquisition and removal of temporary shops by a committee in accordance with Cambodia regulations and laws and JICA Guidelines for Environmental and Social Consideration</p> <p>⑤ Agreement between the affected persons the committee will be made prior to the land acquisition and removal of temporary shops.</p> <p>⑥ The committee to consult with the affected persons will be established by a representative from DPWT and other representatives from concerned ministries/institutions.</p> <p>⑦ Yes internal monitoring form was developed</p>


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Environmental Checklist Kampong Chhnang

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(2) Living and Livelihood	<p>① Where roads or railways are newly installed, is there a possibility that the project will affect the existing means of transportation and the associated workers? Is there a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood, or unemployment? Are adequate measures considered for preventing these impacts?</p> <p>② Is there a possibility that the project will adversely affect the living conditions of inhabitants other than the affected inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>③ Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>④ Is there a possibility that the project will adversely affect road traffic in the surrounding areas (e.g., by causing increases in traffic congestion and traffic accidents)?</p> <p>⑤ Is there a possibility that roads and railways will impede the movement of inhabitants?</p> <p>⑥ Is there a possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?</p>	<p>① ② ③ ④ ⑤: No adverse impact on transportation, livelihood and socioeconomic conditions in the area is anticipated by the project since the project is improvement of existing road and drainage facilities</p> <p>⑥: No significant possibility of communicable disease is anticipated. HIV awareness-rising through education and workshop for workers will be taken in the project.</p> <p>⑦: The project will not cause sun shading and radio interference</p>
	(3) Heritage	<p>① Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	<p>① There are no archeological, historical, cultural and religious heritage in the site.</p>
	(4) Landscape	<p>① Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	<p>① There is no possibility of adverse affect on local landscape by the improvement of existing road and drainage facilities</p>
	(5) Ethnic Minorities and Indigenous People	<p>① Where ethnic minorities and indigenous peoples are living in the rights-of-way, are considerations given to reduce the impacts on culture and lifestyle of ethnic minorities and indigenous people?</p> <p>② Does the project comply with the country's laws for rights of ethnic minorities and indigenous people?</p>	<p>① ②: There is no ethnic minorities and indigenous people having unique culture and lifestyle in the site.</p>

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Environmental Checklist Kampong Chhnang

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
5 Others	(1) Impacts during Construction	① Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? ② If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? ③ If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? ④ If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?	① Yes: Adequate measures such as periodical water spray and sheet cover on track will be employed to reduce dust. Equipment will be maintained in good condition by proper maintenance. ② No significant adverse effect on natural environment (ecosystem) is anticipated by the construction. The surrounding of the construction site will be restored as before. ③ Some small temporary shops in the right of way are probably necessary to be removed from the site during the construction. Adequate socialization on reasonable compensation will be given to the affected persons prior to the removal of shops by the committee. ④ The contractor will provided health and safety education for project personnel including workers
	(2) Monitoring	① Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? ② Are the items, methods and frequencies included in the monitoring program judged to be appropriate? ③ Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? ④ Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	① ② ③ ④ Yes: MPWT will develop Environmental Management Plan by the country's laws or international. MPWT/DPWT shall establish a fund and an office with qualified technical staff, appropriate equipment, methodologies and a well-prepared schedule for monitoring environmental quality in close collaboration with relevant institutions in order to mitigate negative socio-economic and environmental resource impact to a minimum level by the country's laws or international
6 Note	Reference to Checklist of Other Sectors	① Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects including large areas of deforestation). ② Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of power transmission lines and/or electric distribution facilities).	
	Note on Using Environmental Checklist	① If necessary, the impacts to trans boundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as trans boundary waste treatment, acid rain, destruction of the ozone layer, or global warming)	

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.
 In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
 2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located

ANNEX 4

Monitoring Form for Environment

During the construction of the project facilities, the following environmental items will be monitored by the Consultant and reported to DPWT and JICA Cambodia Office monthly.

Monitoring Item	Monitoring Method	Monitoring Result
<p>1. Air and noise pollution mitigation</p> <p>To water routinely on the dusty roads, install dust-collector of plant if necessary, secure distance of base camp from residential area, regulate vehicle speed slower than 40 km/hr and ban overtime work. To clear and vegetate the area where camps were.</p>	<p>To survey air and noise pollution level by field observation and by interview to surrounding local people who complain on deterioration of ambient air quality and increase of the noise level by field observation with surrounding local people.</p>	<p><u>Visual observation</u> Ambient air quality: Noise level:</p> <p><u>Local people's complain</u> on air pollution: on noise:</p> <p>Evaluation:</p>
<p>2. Riverwater pollution prevention</p> <p>To treat polluted water properly, discharge muddy water after clearing, install septic tanks for every camps and treat rubbish properly and not to dump directly to river.</p>	<p>To survey riverwater quality by observation of sampled water visually. To investigate treatment system of polluted water arisen from the Project. To interview to local people who reside downstream of bridge site on riverwater pollution.</p>	<p>Visual observation of sample water:</p> <p>Riverwater pollution mitigation/treatment measures:</p> <p>Local people's complain:</p>
<p>3. Soil pollution prevention</p> <p>To store fuel and oil in a storage, collect waste oil then send to oil treatment plant, collect spilled oil immediately before it discharges to the river by rainwater and treat toxic and hazardous substances in accordance with law and regulation.</p>	<p>To investigate on waste oil and toxic and hazardous substance treatment methods whether they are treated properly or not.</p>	<p>Evaluation:</p>
<p>4. Traffic control and safety</p> <p>To install flag man for transporting heavy equipments, hold safety campaign for students, install warning signs and traffic safety signs and regulate max driving speed to be 40 km/hr.</p>	<p>To survey on traffic disturbance and traffic accidents occurred by hearing at around the sites.</p>	<p>Occurence of Traffic disturbance: Traffic accident:</p> <p>Evaluation:</p>

Monitored by:

Regident Engineer
Consultant

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ANNEX 5

Internal Monitoring Form (Land Acquisition, Resettlement)

Preparation of Resettlement Sites (where necessary)

No.	Explanation of the site (e.g. Area, no.of resettlement HH, etc.)	Status (Completed (date) / not complete)	Details (e.g.Site selection, identification of candidate sites, discussion with PAPs, Development of the site, etc.)	Expected Date of Completion
1				
2				

Public Consultation

No.	Date	Place	Contents of the consultation / main comments and answers
1			
2			

Resettlement Activities	Planned Total	Unit	Progress in Quantity			Progress in %		Expected Date of Completion	Responsible Organization
			During this month	Till the Last Month	Up to this month	During this month	Up to this month		
Preparation									
Establishment of Committee		-							
Implementation of Census Survey		-							
Approval of Relocation		-	Date of Approval:						
Finalization of PAPs List		No. of PAPs							
Progress of Compensation Payment		No. of HHs							
Kampong Chhnang		No. of HHs							
National Road No.11		No. of HHs							
Progress of Relocation of People		No. of HHs							
Kampong Chhnang		No. of HHs							
National Road No.11		No. of HHs							
Progress of Land Acquisition		km ²							
National Road No.11		km ²							

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ANNEX 6

Implementation Schedule of ARP

Activities	2012							2013
	June	July	Aug	Sep	Oct	Nov	Dec	Jan
ARP Preparation	■	■						
Grant Agreement			■					
Set up Grievance Committee				■				
Detailed Design & Tendering			■	■	■	■		
Public Consultation			■		■			
Detailed Measurement Survey & Replacement Cost Study				■	■			
ARP Updating following Detailed Design					■	■		
JICA Approval of Updated ARP						■		
Implementation of the Approved Updated ARP							■	
Commencement of Construction								■

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