

資料

(1) 調査団員氏名・所属

担当	氏名	所属先
総括	戸川 正人	JICA ラオス事務所所長
計画管理	西形 康太郎	JICA 経済基盤開発部運輸交通・情報通信第二課
業務主任/道路計画	今野 啓悟	株式会社オリエンタルコンサルタンツ
維持管理体制強化	高橋 君成	一般財団法人国際開発センター
舗装・道路設計 1	小林 宏昭	株式会社オリエンタルコンサルタンツ
舗装・道路設計 2/道路維持管理	福田 正美	株式会社オリエンタルコンサルタンツ(補強)
自然条件調査(地形・地質)	森本 博行	株式会社オリエンタルコンサルタンツ
環境社会配慮/自然条件調査(水理・水文)	林田 貴範	一般財団法人国際開発センター
施工計画/調達事情/積算	藤熊 昌孝	株式会社オリエンタルコンサルタンツ

(2) 調査日程

1) 第一次調査（現地調査）

業務期間	主な業務内容	業務実施場所
10月15日～16日	<ul style="list-style-type: none"> 10/15 今野・高橋・小林・森本・藤熊渡航（成田→ビエンチャン） 団内会議、資料収集・整理 	ビエンチャン
10月17日～23日	<ul style="list-style-type: none"> 10/18 JICA ラオス事務所打合せ 10/19 MPWT/DOR キックオフミーティング（IC/R 説明・協議） 資料収集、現地再委託準備 10/20 林田渡航（成田→ビエンチャン） 10/23 西形渡航（成田→ビエンチャン） 	ビエンチャン
10月24日～30日	<ul style="list-style-type: none"> 10/24 移動（ビエンチャン→サバナケット） 10/25 サバナケット DPWT（公共事業運輸局）表敬、現地視察（国道9号線） 10/26 サバナケット DPWT 打合せ、サバナケット県庁表敬、移動（サバナケット→ビエンチャン） 10/27 JICA ラオス事務所打合せ、MPWT/DOR 協議・ミニッツ署名、大使館表敬・報告 10/28 JICA ラオス事務所報告 10/29 西形渡航（ビエンチャン→成田） 	ビエンチャン、サバナケット
10月31日～11月6日	<ul style="list-style-type: none"> 11/1 小林、森本移動（ビエンチャン→サバナケット） 国道9号線現場踏査、現地再委託内容整理 道路維持管理に係る情報収集・ヒヤリング 11/5 現地再委託契約（水理・水文調査） 11/4 小林、森本移動（サバナケット→ビエンチャン） 	ビエンチャン、サバナケット

11月7日～13日	<ul style="list-style-type: none"> 11/7 小林移動（ビエンチャン→サバナケット） 11/10 森本、林田移動（ビエンチャン→サバナケット） 現地再委託内容整理 11/12 道路維持管理ワークショップ開催（MPWT） 11/13 森本、林田移動（サバナケット→ビエンチャン） 	ビエンチャン、サバナケット
11月14日～20日	<ul style="list-style-type: none"> 11/16 現地再委託契約（交通状況調査） 11/16 現地再委託入札（地形測量/アスファルト舗装路面調査） 11/17 森本移動（ビエンチャン→サバナケット） 11/17 高橋、藤熊移動（ビエンチャン→バンコク） 国道9号線現場踏査 近隣国（タイ）の維持管理体制調査 11/20 高橋、藤熊移動（バンコク→ビエンチャン） 	ビエンチャン、サバナケット、バンコク
11月21日～27日	<ul style="list-style-type: none"> 11/22 現地再委託契約（地形測量/アスファルト舗装路面調査、地質調査） 11/22 今野、高橋、林田、藤熊移動（ビエンチャン→サバナケット） 11/22 道路維持管理ワークショップ開催（DPWT サバナケット） 11/24 今野、高橋、小林、森本、林田、藤熊移動（サバナケット→ビエンチャン） 現地調査結果概要作成 	ビエンチャン、サバナケット
11月28日～12月4日	<ul style="list-style-type: none"> 現地調査結果概要作成 11/28 高橋渡航（ビエンチャン→11/29 成田） 12/1 林田渡航（ビエンチャン→12/2 成田） 12/2 今野、小林渡航（ビエンチャン→12/3 成田） 	ビエンチャン
12月5日～11日	<ul style="list-style-type: none"> 12/7 藤熊渡航（ビエンチャン→12/8 成田） 現地調査結果概要作成 	ビエンチャン
12月12日～18日	<ul style="list-style-type: none"> 再委託成果品精査 現地調査結果概要作成 	ビエンチャン
12月19日～23日	<ul style="list-style-type: none"> 12/22 森本渡航（ビエンチャン→12/23 成田） 	ビエンチャン

2) 第二次調査（設計方針説明調査）

業務期間	主な業務内容	業務実施場所
2月1日～5日	<ul style="list-style-type: none"> 2/1 今野、高橋、小林渡航（成田→ビエンチャン）。福田移動（ルアンプラバン→ビエンチャン：1/30） 2/2 JICA ラオス事務所打合せ、MPWT 打合せ、日本大使館打合せ 2/3 団内会議、資料整理 2/4 JICA ラオス事務所打合せ 2/5 団内会議、資料収集・整理 	ビエンチャン
2月6日～13日	<ul style="list-style-type: none"> 2/6 移動（ビエンチャン→サバナケット） 2/7 サバナケット DPWT 打合せ、国道9号線現場踏査 2/8 移動（サバナケット→ビエンチャン） 	サバナケット ビエンチャン

	<ul style="list-style-type: none"> 2/9 ミニッツ署名、JICA ラオス事務所への報告 2/9 今野、高橋、小林渡航（ビエンチャン→2/10 成田）。福田移動（ビエンチャン→ルアンプラバン） 	
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3) 第三次調査（現地概要説明）

業務期間	主な業務内容	業務実施場所
5月29日～6月4日	<ul style="list-style-type: none"> 5/29 今野、小林渡航（成田→ビエンチャン）。高橋渡航（（ダルエスサラーム）→ビエンチャン（5/28）～29） 5/30 JICA ラオス事務所打合せ、日本大使館打合せ、MPWT 打合せ・説明 5/31 MPWT ミニッツ協議 6/1 MPWT ミニッツ協議、ミニッツ署名 6/2～6/3 MPWT 環境（IEE）打合せ 6/3～（6/4）今野、高橋渡航（ビエンチャン→（ダルエスサラーム））。小林渡航（ビエンチャン→（ジャカルタ）） 	ビエンチャン

(3) 相手国関係者リスト

氏名	役職	所属先
Department of Roads, Ministry of Public Works and Transport		
Mr. Pothong NGONPHACHANH	Director General	Department of Roads
Mr. Sak DALAT	Director	Road Administration Division
Mr. Litta KHATTIYA	Deputy Director	Road Administration Division
Mr. Phoukham VONGSAY	Engineer	Road Administration Division
Mr. Silong KINGKEO OUDOM	Engineer	Road Administration Division
Mr. Khamseng	Engineer	Road Administration Division
Mr. Viengvilay SOULINTHONE	Engineer	Road Administration Division
Mr. Chansy LUANGAPHAY	Engineer	Road Administration Division
Mr. Thongvern BUTHICHACK	Engineer	Road Administration Division
Ms. Manivone KHAYAVONG	Deputy Director	Technical & Environment Division
Mr. Bounphraseuth	Engineer	Technical & Environment Division
DPWT Savannakhet, Ministry of Public works and Transport		
Mr. Sengthong	Director	
Mr. Ngampasong MEUANMANY	Deputy Director	
Mr. Akhalar INTHAVONGSA	Engineer	
Mr. Davinh	Deputy Chief	Inland Waterway Office
Savannakhet Province		
Dr. Souphanh KEOMIXAY	Vice Governor	

(4) 討議議事録 (M/D)

1) 第一次現地調査 (現地調査)

MINUTES OF DISCUSSIONS
ON THE PREPARATORY SURVEY
ON THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.9
AS EAST-WEST ECONOMIC CORRIDOR
IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

In response to a request from the Government of the Lao People's Democratic Republic (hereinafter referred to as "Lao PDR"), the Government of Japan decided to conduct a Preparatory Survey on the Project for Improvement of National Road No.9 as East-West Economic Corridor (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Lao PDR the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Masato Togawa, Chief Representative, JICA Laos Office, and is scheduled to stay in the country from October 15th to December 3rd, 2010. The Team held discussions with the officials concerned with the Government of the Lao PDR and conducted a field survey in the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

October 27th, 2010



Mr. Masato Togawa
Leader
Preparatory Survey Team
Japan International Cooperation Agency



HE. Mr. Sommad Pholsena
Minister for Public Works and Transport
The Lao People's Democratic Republic

ATTACHMENT

1. Project Title

Both sides agreed that the project title for this survey was “the Project for Improvement of National Road No.9 as East-West Economic Corridor”.

2. Objective of the Project

The objective of the Project is to improve National Road No.9 to fulfill the satisfactory function as an international transport corridor.

3. Project site

The site of the Project is located on National Road No.9 (Savannakhet – Den Savan) as shown in ANNEX 1.

4. Responsible and Implementing Entity

The responsible and implementing entity for the Project is the Ministry of Public Works and Transport (MPWT).

5. Confirmation of the items requested by the Government of the Lao PDR

After discussions with the Team, the requested components were confirmed as below.

- Improvement of National Road No.9 (Savannakhet – Den Savan Section)

JICA will assess the appropriateness of the request with the following policy and will recommend to the Government of Japan for approval.

- determine respective section as “the improvement section” for a large-scale construction work covered by Japan’s grant aid and “the maintenance & repair section” for maintenance work conducted by the Lao side.

- exclude the rehabilitation of bridges.

- apply the asphalt concrete pavement for the improvement section, in principle.

6. Japan's Grant Aid Scheme

6-1. Lao side understands the Japan's Grant Aid Scheme explained by the Team, as described in ANNEX 2.

6-2. Lao side will take the necessary measures, as described in ANNEX 3, for smooth implementation of the Project.

7. Schedule of the Study

7-1. The 2nd preparatory survey team will be dispatched to Laos to explain the result of the 1st survey and design concept around February, 2011.



7-2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around May, 2011.

7-3. JICA will finalize the final report and send it to the Government of Laos by the end of July, 2011.

8. Other issues

1) The procedures necessary for the approval of EIA (Environmental Impact Assessment) shall be implemented by the Lao side by the end of June 2011. In the process of EIA, the Government of Lao PDR shall make full explanation to stake holders about environmental impacts of the Project.

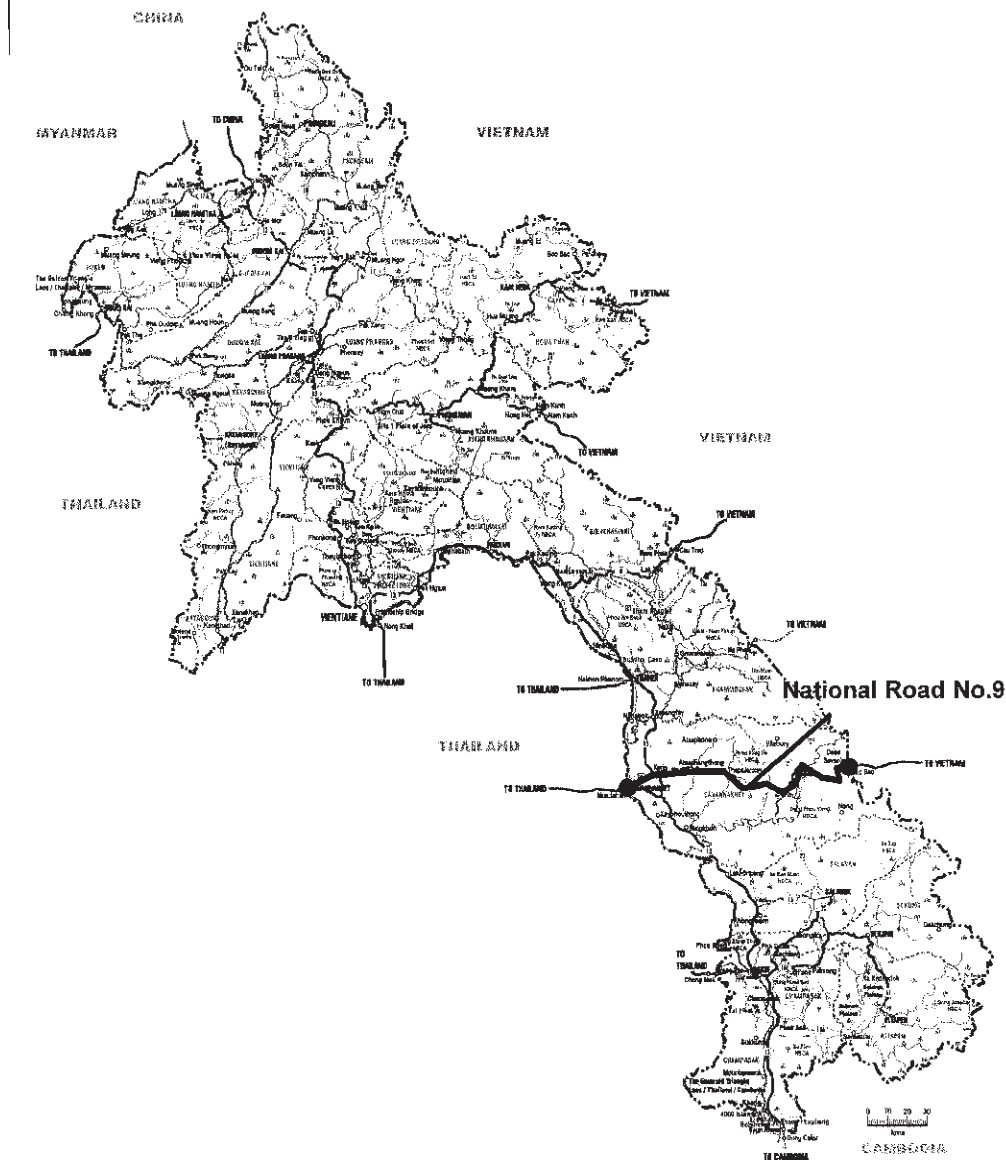
2) The details of tax exemption procedures, especially for reimbursement of VAT (Value Added Tax) will be informed of the Team through this survey period.

3) The Lao side will submit answers to the Questionnaires, which the Team handed to the Lao side, by 15th November, 2010.



ANNEX 1

Site Map



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 a 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 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.

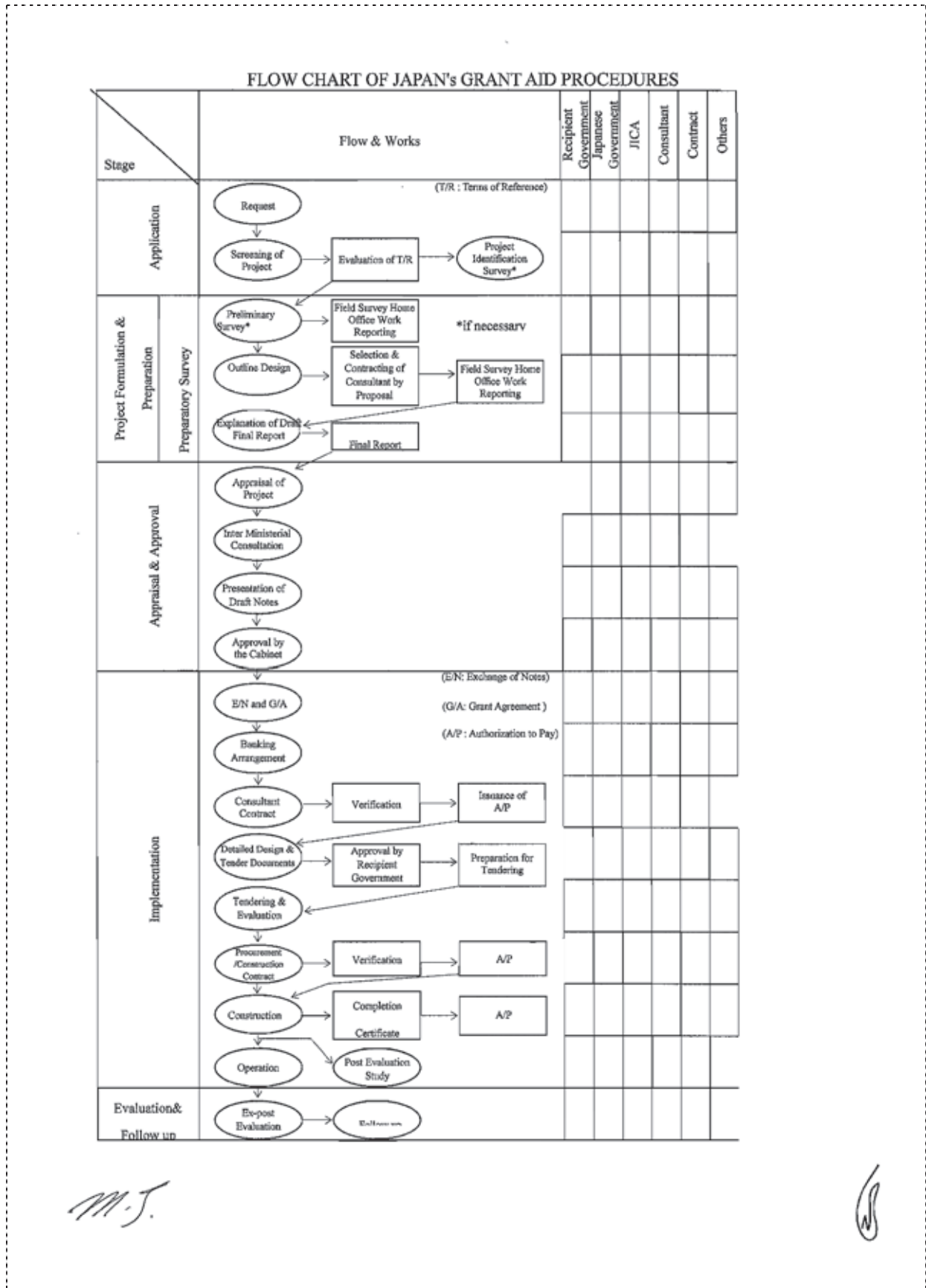
(9) Authorization to Pay (A/P)

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.





ANNEX 3

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] / [lots] of land necessary for the implementation of the Project and to clear the [site] / [sites];		●
2	To ensure prompt customs clearance of the products and to assist internal transportation of the products in the recipient country		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of 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] / [be borne by the Authority without using the Grant]		●
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)

M.S.

W

2) 第二次現地調査（設計方針説明調査）

MINUTES OF DISCUSSIONS
ON THE 2nd PREPARATORY SURVEY
ON THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.9
AS EAST-WEST ECONOMIC CORRIDOR
IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

In October 2010, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Preparatory Survey Team on the Project for Improvement of National Road No.9 as East-West Economic Corridor (hereinafter referred to as "the Project") to the Lao People's Democratic Republic (hereinafter referred to as "the Lao PDR"), and through discussion and field survey in the Lao PDR, and technical examination of the results in Japan, JICA prepared the report on the concept of the outline design of the Project as the draft report.

In order to explain and to consult with the Lao PDR on the components of the report based on the MINUTES OF DISCUSSIONS on October 27th, 2010, JICA sent the 2nd Preparatory Survey Team (hereinafter referred to as "the Team") to the Lao PDR, headed by Mr. Yoshiharu Yoneyama, Senior Representative of JICA Laos Office from February 1st, 2011 to February 9th, 2011

As a result of discussions, both parties confirmed the main items described on the attached sheets.

February 4th, 2011

米山 芳春

Mr. Yoshiharu Yoneyama
Leader
2nd Preparatory Survey Team
Japan International Cooperation Agency



Mr. Laokham Sompeth
Director General
Department of Roads
Ministry of Public Works and Transport
The Lao People's Democratic Republic

ATTACHMENT

1. Project Concept

The Team presented the design concept with several variations as shown in ATTACHMENT 1, and explained their technical advantages and disadvantages to the Lao side. The Lao side finally requested the following project concept to be applied to the Project. In addition, the Lao side strongly requested the Japanese side to complete the Project to satisfy the following design condition.

1-1. Design Condition

The design condition to be applied to the Project was confirmed as below;

- Initial Design Period: 10 years
- Reliability Rate : 80 – 85 percent

1-2. Target Section of the Project

The Team explained the present situation of National Road No.9 (NR-9) and the priority sections to be improved as shown in ATTACHMENT 2. And both sides agreed to determine the target section of the Project based on the following concepts to fulfill the function of NR-9 as the international trunk road;

- Whole section of priority section 1 shall be improved,
- The certain section of priority section 2, where damage is observed very severe, shall be improved, and
- Other sections will be maintained or repaired by Lao side.

In addition, the Team will consider the improvement of the areas with severe pavement destruction, in consultation with the detailed planning survey team on the Project for Improvement of Road Management Capability.

Final target section will be assessed by the Team based on the above concepts.

2. Proper Maintenance of NR-9

As for the road/bridge maintenance and repair issues in the NR-9, the Team recommended the Lao side to take the following actions and requested to report the progress of these actions.

- i. To timely implement daily inspection, routine and periodic maintenance and repair work,
- ii. To prepare the road/bridge maintenance and budget plans through daily inspection/detailed inventory,
- iii. To appropriately monitor and evaluate quality/quantity of the road/bridge maintenance and repair works as agreed in the contract,

- iv. To improve the construction (for contractors) and supervision skill (for public sector) for the maintenance and repair works of the asphalt concrete road, and
- v. To apply the asphalt concrete pavement to rehabilitation of NR-9, instead of Double Bituminous Surface Treatment (DBST).

The Lao side agreed to consider taking the above actions and to report the progress of maintenance by sharing the maintenance report submitted by the Department of Public Works and Transport in Savannakhet Province with JICA Laos Office every quarter of a year.

3. Initial Environmental Examination (IEE)

3-1. IEE procedures

The Lao side explained the IEE procedures may be applied to the Project and usually the IEE procedures are completed within the Ministry of Public Works and Transport. The Team requested the Lao side to provide the detailed procedures of IEE and the Lao side agreed to deliver it to the Team by 9th February, 2011.

3-2. Completion of IEE procedures

Both sides agreed that IEE approval shall be completed by the end of June, 2011.

ATTACHMENT

ATTACHMENT 1: Project Concept Variations Considered by the Team

ATTACHMENT 2: Survey Result of National Road No.9

Project Concept Variations Considered by the Team

Plan0: Improvement plan proposed by the Follow-up Study Team in 2010

[Concept]

- Spot rehabilitation work of all damaged areas and overlay of certain section
- Initial Design Period: 8 years
- Reliability Rate: 50% (for rural road)

[Adaptability]

- As the geological survey was not carried out at that time, the whole pavement structure was not also considered to the design.
- The design condition is not suitable for international trunk road.

Plan1: Ramified improvement plan based on cracks/ repair ratio

[Concept]

- Full improvement of all sections more than certain percentage of cracks/ repair ratio.
- Initial Design Period: 10 years
- Reliability Rate: 80-85% (for international trunk road)

[Adaptability]

- Responsibility of warranty against defects is not cleared at the construction boundary between existing section and newly improved section.
- The small damaged section with deteriorated geological condition will not be improved, and the risk of heavy damage in the near future will be high.

Plan2: Target area extension plan with the relaxation of reliability rate

[Concept]

- Full improvement of the whole section in priority rank 1 and priority rank 2 with the relaxation of reliability rate.
- Initial Design Period: 10 years
- Reliability Rate: 50 % (for rural road)

[Adaptability]

- The responsibility is clear with the fully rehabilitation of a certain length of the road.
- Reliability rate is not suitable for international trunk road.

Plan3: Rehabilitation plan recommended by the Team

[Concept]

- Full improvement of the whole section in priority rank 1 and the certain section in priority rank 2 with the suitable reliability rate.
- Initial Design Period: 10 years
- Reliability Rate: 80-85% (for international trunk road)

[Adaptability]

- The responsibility is clear with the fully rehabilitation of a certain length of the road.
- The reliability of quality assurance and traffic safety for road users as the international trunk road will be secured. The remaining section shall be properly maintained by the Lao side.

3) 第三次現地調査（現地概要説明）


MINUTES OF DISCUSSIONS
ON THE PREPARATORY SURVEY
ON THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.9
AS EAST-WEST ECONOMIC CORRIDOR
IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC
(EXPLANATION ON DRAFT FINAL REPORT)

In October 2010 and February 2011, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Teams on the Project for Improvement of National Road No.9 as East-West Economic Corridor (hereinafter referred to as "the Project") to the Lao People's Democratic Republic (hereinafter referred to as "the Lao PDR"), and through discussions, field surveys and technical examination of the results of the surveys in Japan, JICA prepared a Draft Final Report of the Outline Design.


In order to explain and to consult with the concerned officials of the Government of the Lao PDR on the component of the Draft Final Report, JICA sent the Lao PDR the Preparatory Survey Team for Draft Final Report Explanation (hereinafter referred to as "the Team"), which is headed by Mr. Masato Togawa, Chief Representative of JICA Laos Office, from May 30th to June 3rd, 2011.

And as a result of discussion, both sides confirmed the main items described on the attached sheets.

Vientiane, June 1st, 2011



Mr. Masato TOGAWA
Leader
Preparatory Survey Team
Japan International Cooperation Agency



Mr. Laokham SOMPHETH
Director General
Department of Roads
Ministry of Public Works and Transport
The Lao People's Democratic Republic

ATTACHMENT

1. Title of the Project

The project title at the implementation stage of the Project was agreed as “the Project for Improvement of National Road No.9 as East-West Economic Corridor of the Mekong Region”.

2. Project Components

After the explanation of the contents of Draft Final Report by the Team, the Lao side and Japanese side agreed the project components included in it.

3. Japan's Grant Aid Scheme

The Lao side understood the Japan's Grant Aid scheme and the necessary measures to be taken by the recipient country as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both sides on October 27th, 2010.

4. Schedule of the Study

JICA will complete the final report and send it to the Government of the Lao PDR by the end of July, 2011.

5. Project Cost

The Lao side was informed that the Project cost should not exceed the upper limit of amount agreed on in E/N and G/A and understood that the Project Cost Estimate attached as Annex-1 is not final and is subject to change by the result of examination through revision of the Outline Design.

6. Environment and Social Considerations

(1) Completion of IEE approval procedures

The Lao side explained the IEE study report will be submitted to Water Resources and Environment Administration (WREA) by the middle of June and the approval by WREA may be obtained within one month from the submission of the report.

(2) Environmental check list and monitoring form

Both sides agreed on the contents of environmental check list as shown in Annex-2. And both sides agreed to monitor the procedures in accordance with the monitoring form (Annex-3).

7. Proper Maintenance of National Road No.9

(1) Maintenance of the road sections excluded from the project

The sections not included to the project sections shall be maintained or repaired by the Lao side. And the Team recommended applying the asphalt concrete pavement for repairing.

(2) Operation and maintenance cost

The Team explained the necessary cost for operation and maintenance of the project sections



after the completion of the Project as shown in Article 3, ANNEX 1. The Lao side confirmed the cost and explained that it would be covered by Road Maintenance Fund (RMF). Regarding RMF, the Lao side explained the change of the system of fee collection. The Lao side abandoned the tolling system of national road for RMF, and planned to increase the amount of fuel levy from 350kip/l to 440kip/l. It is enough amounts to secure current RMF.

(3) Soft component plan

The Lao side finally requested the consulting service for the soft component to enhance the capability of the MPWT staffs for the road rehabilitation with the hot-mix asphalt concrete pavement.

(4) Rehabilitation cost for future maintenance

The Team explained the design period of the pavement was 10 years, and the huge rehabilitation of the project sections, such as overlay would be necessary in the future. The Lao side understood and agreed to secure the budget for the future rehabilitation.

8. Other issues

(1) Confidentiality of the Project

The Lao side agreed that all the information related to the Project such as detailed drawings, specifications, and the result of cost estimate shall not be released to a third party before conclusion of all the contract(s) for the Project, because they are confidential documents that contain information related to the tender.

(2) Safety facilities including lighting facilities

As response to the request of the Lao side on lighting facilities, the Team presented the installation plan of safety facilities including lighting facilities. The Lao side agreed the plan and requested the Team to include the description of the safety facilities into the report.

<List of Annex>

Annex-1	Project Cost Estimate (Confidential)
Annex-2	Environmental Check List
Annex-3	Monitoring Form

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Environmental Checklist (1)

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 No. IEE is to be conducted by DoR from March 2011. And WREA approval will be obtained by the end of June. ② Yes. During IEE study, explanation to the affected persons have conducted. And after the commencement of the project, Savannakhet authorities will conduct actual resettlement procedures including detail explanation to the affected persons. ③ So far Lao government has not received any negative comments on the project.
	(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 No. This project is to improve the existing road without any expansion. It has obviously minimum impact comparing with other alternatives.
	(3) Alternatives Evaluation	① Have appropriate alternatives been prepared and evaluated?	① Yes. It is expected that ambient air quality will comply with Lao standards. ② No. Any industrial area is not located near the project site.
2 Mitigation Measures	(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 No. The project includes slope protection, so there is no bare lands section at the newly constructed sections. During the construction phase of the road, soil runoff from construction site should be monitored by the contractor. However, the earthwork will be implemented in dry season only, so soil runoff will be minimized. ② No. The asphalt pavement without any surface runoff will be applied to the road improvement. In addition, roadway drainage will be installed at the terminal flow point by drain facilities in the side ditch. ③ N/A. The project does not include any facilities, such as stations and parking areas/ service areas.
	(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 Yes. The asphalt pavement is most effective pavement for noise and vibration mitigation. ② No. There is no natural protected areas near the objective sections.
	(3) Noise and Vibration	① Do noise and vibrations from vehicle and train traffic comply with the country's standards?	① No. There is no natural protected areas near the objective sections.
3 Natural Environment	(1) Protected Areas	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?	① No. There is no natural protected areas near the objective sections.

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Environmental Checklist (2)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
3 Natural Environment	(2) Ecosystem and biota	① Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? ② Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? ③ If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? ④ Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock? ⑤ 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? ⑥ In cases where the project site is located at undeveloped areas, is there a possibility that the new development will result in extensive loss of natural environments?	The project is to improve the existing road without expansion, and the site does not encompass primeval forest, tropical rain forest and other important habitats. ① No ② No ③ No ④ Yes. Appropriate safe passage measure for local livestock, such as installation of the culverts at a filling section, is to be taken. ⑤ No. The project is to improve the existing road without any change of alignment. ⑥ No.
	(3) Hydrology	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?	① No
	(4) Topography and Geology	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?	① No ② Yes. The project includes slope protection to prevent slope failures. ③ Yes. Prevention measure for waste soil disposal sites and borrow sites will be included to the technical specification of the contract with the contractor.

Environmental Checklist (3)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
(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 peoples?</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 Yes. The number of affected households will be under 50 and RAP is not necessary in accordance with Lao regulations. However, Initial Social Assessment will be conducted in conjunction with IEE.</p> <p>② Yes. Explanation on relocation has already been done in the IEE study. Compensation will be given in accordance with Lao regulation.</p> <p>③ Yes. Savannakhet authorities will conduct resettlement procedures based on the result of the IEE report.</p> <p>④ Yes. All procedures will be completed in accordance with Lao regulations.</p> <p>⑤ Yes. Savannakhet authorities will conduct resettlement procedures based on the result of the IEE report.</p> <p>⑥ Yes. MPWT will assign the project coordinator and he/she will monitor the resettlement process.</p>	<p>① N/A. The project is to improve the existing road.</p> <p>② No. The project is to improve the existing road without expansion.</p> <p>③ No. The project is to improve the existing road without expansion.</p> <p>④ No. The project is to improve the existing road without expansion.</p> <p>⑤ No. The project is to improve the existing road without expansion.</p> <p>⑥ No. The project is to improve the existing road without expansion.</p>
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 cause 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>⑦ 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 No. The project is to improve the existing road without expansion.</p> <p>② No. The project is to improve the existing road without expansion.</p>
(3) Heritage	(4) Landscape	<p>① Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	<p>① No. The project is to improve the existing road without expansion.</p>

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Environmental Checklist (4)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(5) Ethnic Minorities and Indigenous Peoples	<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 peoples?</p> <p>② Does the project comply with the country's laws for rights of ethnic minorities and indigenous peoples?</p>	<p>① N/A. There are no ethnic minorities and indigenous peoples near the target sections.</p> <p>② N/A. There are no ethnic minorities and indigenous peoples near the target sections.</p>
	(6) working conditions	<p>① Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?</p> <p>② Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>③ Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public sanitation) for workers etc.?</p> <p>④ Are appropriate measures being taken to ensure that security guards involved in the project do not violate safety of other individuals involved, or local residents?</p>	<p>① No.</p> <p>② Yes. The safety management activities shall be included to the activities of the contractor.</p> <p>③ Yes. The safety management activities shall be included to the activities of the contractor.</p> <p>④ Yes. The safety management activities shall be included to the activities of the contractor.</p>
5 Others	(1) Impacts during Construction	<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 Yes. Adequate mitigation measures are to be developed within EMP of IEE to be conducted by DoR.</p> <p>② N/A. The project is to improve the existing road without expansion.</p> <p>③ N/A. The project is to improve the existing road without expansion.</p>
	(2) Monitoring	<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>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?</p>	<p>① Yes. EMP is to be developed within IEE to be conducted by DoR.</p> <p>② Yes. Details such as methods and frequencies are to be specified in EMP, mentioned above.</p> <p>③ Yes. same as above</p> <p>④ No. However, DoR will monitor the environmental issues, using the monitoring form attached on the M/D.</p>

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Environmental Checklist (5)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
	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).	① N/A ② N/A
6 Note	Note on Using Environmental Checklist	① If necessary, the impacts to transboundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	① N/A

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 the World Bank Safeguard Policy as a general rule, or the International Finance Corporation Performance Standards for private sector limited or non-recourse project finance cases, or other standards established by other international financial institutions, or other internationally recognized standards or good practices established by developed countries such as Japan regarding environmental and social considerations, the background and rationale for this deviation, and the measures to rectify it if necessary, are to be confirmed. In cases where local environmental regulations are yet to be established in some areas, considerations should be based on comparisons with international standards such as the World Bank Safeguard Policy, and appropriate standards of other countries (including Japan).

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.

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ANNEX 3

MONITORING FORM

- The implementation entity has to implement environmental monitoring based on this monitoring form. In construction phase, the contractor should monitor and report the result to the implementation entity.
- This form could be revised based on the result of IEE study.

1. Pre-construction phase

Monitoring Item	Method	Monitoring Results during Report Period
Adopt implementation resettlement and land acquisition	Interview to PAPs	
Received requests / complaints from PAP*s		
Preparation of resettlement sites/ Progress of payment of compensation		

* PAP: Project Affected Person

2. Construction Phase

- Soil Erosion

Monitoring Item	Method	Measured Value (Occurrence situations)
Occurrence of Soil Erosion from the construction sites (Soil erosion condition)	Visual Check	

- Water Quality

Monitoring Item	Method	Measured Value (Occurrence situations)
Waste water discharge from the construction sites and camp yard (SS, Oil and Grace)	Visual check	

- Noise / Vibration

Item	Method	Measured Value (Occurrence situations)
Construction time (limited or not)	Visual check	(day)
Construction vehicles' speed (under 30km/h)	Visual check	(number)

- Dust

Monitoring Item	Method	Measured Value (Occurrence situations)
Dust at the construction sites	Visual Check	

(5) ソフトコンポーネント計画書

ラオス国

国道9号線（東西経済回廊）改善計画

ソフトコンポーネント計画書

2011年5月

株式会社 オリエンタルコンサルタンツ
一般財団法人 国際開発センター

(ソフトコンポーネント基礎情報)

案件名	: 国道9号線(東西経済回廊)改善計画 The Project for Improvement of National Road No. 9 as East-West Economic Corridor
E/N期間	: 2011年8月 日~2015年3月 日
限度額	: 円
所要経費	: 作業中
実施形態	: マネジメント支援 <u>エンジニアリング支援</u> 相手国負担事業促進
現地要員	: <u>有</u> / 無
実施期間	: 2012年1月~2013年2月
業務完了時期	: 2013年2月28日
支払	: 前払い 有 / <u>無</u>

ラオス国
国道 9 号線（東西経済回廊）改善計画
ソフトコンポーネント計画書

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添付書類

1. ソフトコンポーネントを計画する背景

1.1 本体プロジェクト概要

『ラオス国国道 9 号線（東西経済回廊）改善計画』は、かつて我が国無償資金協力により整備された国道 9 号線の舗装構造に発生した重度の損傷に対する改良工事を主体とするプロジェクトである。

1.2 「ラ」国道路維持管理キャパシティの現状と課題

前回の無償資金協力による道路改修後、主管官庁である公共事業運輸省（MPWT：Ministry of Public Works & Transport）、および実施機関のサバナケット州の公共事業運輸局（DPWT：Division of Public Works & Transport）が、道路維持管理を実施してきた。ここでいう道路維持管理とは、

- ルーティンメンテナンス： 日常的に実施される点検、清掃、軽微な補修等
(通常、官側の直営により実施される)
- ピリオディックメンテナンス： 舗装の設計期間終了後に実施されるオーバーレイや舗装打換え等の大規模工事
(通常、DPWT が工事を発注し、受注した建設会社により実施される)

に大別される。

本来はルーティンメンテナンスの中で「損傷の早期発見→早期補修」を適切に実施することにより、低コスト・軽微な労力で道路の健全な状態を保持することが可能である。しかし、国道 9 号線の場合、軽微な損傷を長期間放置したことにより劣化が進み、舗装構造の深部（上層/下層路盤、路床）にまで重篤な損傷が進行し、よりコストのかかる補修工事（舗装の局所的打換え工事）の実施が余儀なくされている。

DPWT は、現行、国道 9 号線の舗装構造に発生した損傷の補修工事を、地元建設会社へ委託し実施している。しかし、割り当てられる維持管理予算が限られていることから、補修工事ではアスファルトを用いず、簡易舗装の一種である DBST（Double Bituminous Surface Treatment）を代用して局所的打換え工事を実施している。しかし、アスファルト舗装と比較して強度が劣る DBST を用いていることから、補修後、早期の段階で、新たな損傷が補修面に発生する事態となっており、多額の費用を同補修工事に投じているにもかかわらず、路面の状況が改善しないという悪循環に陥っている。

このような事態の打開を図るため、本事業完了後、適切なルーティンメンテナンスと、耐用年数を経過した一定の時期に確実なピリオディックメンテナンスを実施することにより、現行の非効率的な道路維持補修でなく、本来求められる道路維持補修を行うことで、国道 9 号線の長寿命化を図ることが必要とされる。

現在、ルーティンメンテナンスにおいては、技術協力プロジェクト（以下、「技プロ」と

称す)による道路維持管理における技術支援が予定されており、現行悪循環している維持管理サイクルの適正化が図られるものとする。しかし、ピリオディックメンテナンスにおいては、アスファルト舗装で整備された道路自体が依然として少ない「ラ」国において、官民ともに必要とされるアスファルト舗装の維持補修（オーバーレイや全面的な舗装打換え工事）の知識や経験、また、維持管理計画を策定する能力（キャパシティ）は十分に備わっていない。そのため、今般実施される無償資金協力における道路改良工事と相まって、早急にこれらの維持管理能力の改善を行い、長期にわたり事業の効果を維持できる体制を整えることが課題である。

1.3 ソフトコンポーネント実施の必要性

前項で述べたとおり、現在の「ラ」国道路管理者（MPWT および DPWT）および建設会社のアスファルト舗装道路の維持／補修工事を遂行するキャパシティは十分と言えず、具体には、建設会社はアスファルト舗装工事にかかる機材等は持ち合わせているものの、材料の品質管理や現場での出来形・工程の管理が不十分である。同時に DPWT は発注者側の監督者として、アスファルト舗装工事の内容を適切に把握・指導できるだけの十分な知見を有していない。このため、本ソフトコンポーネントでは無償資金協力で実施する本体工事の施工現場を有効活用しながら（我が国企業とは契約上事前了解の下）、実地研修（OJT）を通してアスファルト舗装の施工管理技術の移転を行い、MPWT および DPWT の施工監理能力の向上を図る。このことが将来的に必要とされる国道 9 号線のピリオディックメンテナンス、ひいては他区間・路線における適切なアスファルト舗装道路の改修プロジェクトの実施に大いに役立つものとする。なお、前述した道路維持管理に関する技術協力プロジェクトが併行して実施されるため、両者の間で活動内容が重複しないように、活動項目は以下のとおり区分される。アスファルト舗装による部分補修は、技プロの中でも実施される予定であるが、ソフトコンポーネントで実施される情報／知見の活用や、部分的な技術の実践等、これらの技術の定着を技プロにより支援されることが望まれる。

ソフトコン : 大規模補修工事の施工監理にかかる技術

技プロ : ルーティンメンテナンス（点検・清掃・軽微な補修）技術

2. ソフトコンポーネントの目標

本ソフトコンポーネントでは、以下をプロジェクト目標とする。

ソフトコンポーネント目標

MPWT および DPWT が、アスファルト舗装による大規模補修工事の施工監理を適切に実施するための知識を習得する。

3. ソフトコンポーネントの成果

前述した目標を達成するために、以下の成果を達成する必要がある。

- ① DPWT が適切な施工監理を実施するための知識を得る
 - (1) 材料生産時の適切な品質管理方法およびその監督（検査）方法の理解
 - (2) 適切な出来形管理の方法およびその監督（検査）方法の理解
 - (3) 適切な工程管理の方法およびその監督方法の理解
- ② MPWT および DPWT が適切な道路補修（大規模補修）設計・施工計画/積算にかかる知識を得る。

上記の内、①については、DPWT の監督能力が十分であっても、建設会社に十分な知識がないと適切な実施は困難となることから、かかる活動においては、アスファルト舗装を実施できる（ないしその可能性がある）建設会社にも参加を促し、実地での研修の機会を提供する。

4. 成果達成度の確認方法

前項 3. で定めた成果が達成される度合を確認する方法を以下に設定する。

成	果	達成度確認方法
① DPWT が適切な施工監理を実施するための知識を得る	(1) 材料生産時の適切な品質管理方法およびその監督（検査）方法の理解	品質管理計画書を適切にレビュー・評価できるか As 混合物配合設計結果を適切にレビュー・評価できるか 材料(As 混合物・骨材)品質試験結果を適切にレビュー・評価できるか
	(2) 適切な出来形管理の方法およびその監督（検査）方法の理解	検測結果を適切にレビュー・評価できるか
	(3) 適切な工程管理の方法およびその監督方法の理解	工程計画書を適切にレビュー・評価できるか
② MPWT、DPWT が適切な道路補修(大規模補修)設計・施工計画/積算にかかる知識を得る		設計・施工計画/積算結果が各前提条件を正確に反映させているか 工事数量に対して工期設定が適切か 資機材調達計画（種類、数量等）が適切か

5. ソフトコンポーネントの活動（投入計画）

上記成果を達成するために必要な活動内容（投入計画）は以下のとおりである。

共通①「実施計画策定およびマニュアル・ガイドライン類の整備」

①-1 ソフトコンポーネント活動実施計画の策定

本活動の実施に際して、詳細な工程および実施内容を検討し、活動実施計画書を

作成する。

対象者： MPWT、DPWT

日本側： 舗装技術担当 1名

実施時期： DD 期間 2012 年 1 月～2 月（国内 1.0 ヶ月、現地 0.5 ヶ月）

①-2 各種マニュアル・ガイドライン類の整備

本活動で用いる各種マニュアル・ガイドライン類（施工監理マニュアル、道路補修設計・施工計画/積算マニュアル）のドラフトを作成する。また、本活動実施後、必要な修正を加えて、最終版を作成する。

対象者： MPWT、DPWT

日本側： 舗装技術担当 1名 (DD), 舗装施工担当 1名 (SV)

実施時期： ドラフト作成 DD 期間 2012 年 1 月～3 月（2.5 ヶ月）

（内訳）国内 1.0 ヶ月、現地 1.5 ヶ月

改定・最終版作成 SV 期間 2013 年 2 月（1.0 ヶ月）

①-3 ワークショップの開催

本活動の実施に際して、活動の趣旨やマニュアルに対する理解や共通認識を深めることを目的として、ワークショップを開催する。

対象者： MPWT、DPWT

日本側： 舗装技術担当 1名 (DD), 舗装施工担当 1名 (SV)

実施時期： DD 期間 2012 年 3 月（1 回）

SV 期間 2013 年 2 月（1 回）

成果①「DPWT が適切な施工監理を実施するための知識を得る」

①-1 材料生産時の品質管理の実施

DPWT はコンサルタントの監理業務に OJT 形式で参加し、本工事のために設営されるアスファルトおよび砕石プラントから生産される建設用材料（アスファルト混合物や骨材）の品質管理方法を学ぶ。また、「ラ」国建設会社の技術者を招聘し、我が国企業の品質管理技術者、プラント技術者から指導を受ける。活動中は、随時、活動実施状況のモニタリングを行い、課題の抽出および改善に向けた指導を行う。

対象者： DPWT、建設会社（技術者 5 名程度）

日本側： 舗装施工担当 1 名

実施時期： SV 期間 2012 年 11 月（1.0 ヶ月）

(DPWT 対象)

- 品質管理計画書レビュー手法 0.5 ヶ月
- As 混合物配合設計結果レビュー手法 0.5 ヶ月
- 材料品質試験結果レビュー手法 0.5 ヶ月

(建設会社対象)

- プラント管理 0.5 ヶ月
- 骨材生産管理 0.5 ヶ月
- As 混合物生産管理 0.5 ヶ月

①-2 施工時の工程・出来形管理の実施

DPWT はコンサルタントの監理業務に OJT 形式で参加し、我が国企業による施工管理の状況を確認するとともに、コンサルタントから工程・出来形管理方法を学ぶ。また、建設会社の技術者を招聘し、我が国企業の施工管理技術者から指導を受ける。また実施状況のモニタリングを行い、課題の抽出および改善に向けた指導を行う。

対象者： DPWT、建設会社（技術者 5 名程度）

日本側： 舗装施工担当 1 名

実施時期： SV 期間 2012 年 12 月（1.0 ヶ月）

(DPWT 対象)

- 工程・出来形管理計画書レビュー手法 0.5 ヶ月
- 現場での出来形検測実地 0.5 ヶ月

(建設会社対象)

- 工程・出来形管理 0.5 ヶ月

①-3 ワークショップの開催

OJT による活動実施前に、活動の留意点や内容に関する共通認識を深めることを目的として、ワークショップを開催する。実施時期は品質管理研修時、工程・出来形管理研修時の 2 回を予定している。

対象者： DPWT、建設会社（技術者 5 名程度）

日本側： 舗装施工担当 1 名

実施時期： SV 期間 2012 年 11 月、12 月（2 回）

成果②「MPWT および DPWT が適切な道路補修（大規模補修）設計・施工計画/積算にかかる知識を得る」

②-1 設計・施工計画/積算の演習

将来的に必要なアスファルト舗装道路の大規模補修工事（オーバーレイもしくは舗装打換）を想定した設計・施工計画/積算の演習を DD 期間内に作成したマニュアルを用いて実施する。

対象者： MPWT、DPWT

日本側： 舗装施工担当 1 名

実施時期： SV 期間 2013 年 1 月（1.0 ヶ月）

共通②「ソフトコンポーネント活動のモニタリング・評価の実施」

②-1 モニタリング・評価報告書の作成

活動期間中に実施したモニタリング結果を取りまとめて分析し、活動のモニタリング・評価報告書を作成する。また、OJTを通じた活動を踏まえ、活動の冒頭にて作成したマニュアル類を修正し、最終版を作成する。最後に、評価をフィードバックさせることを目的として、ワークショップを開催する。

対象者： DPWT、MPWT および建設会社

日本側： 舗装施工担当 1名

実施時期： SV 期間 2013年2月（0.5月）

- モニタリング報告書とりまとめ 0.5ヶ月
- ワorkshop開催 2013年2月（1回）

6. ソフトコンポーネントの実施リソースの調達方法

本ソフトコンポーネント業務は、無償資金協力によって実施される国道9号線の舗装工事期間中に、SV実施コンサルタントから2名の日本人技術者を派遣して、OJT形式で「ラ」国政府道路監理者、および現地建設会社のアスファルト舗装道路の大規模補修工事に関するキャパシティの向上を図る。また日本人技術者は、工事実施前に必要なマニュアル類を「ラ」国カウンターパートと共同して作成し、知識の向上を図る。この業務には日本人技術者の業務を補助する目的で、現地傭人で舗装技術者1名と通訳・翻訳者1名を雇用する計画である。日本人技術者の主な担当項目は以下の通りである。

(1) 日本人技術者

(i) 舗装技術

- マニュアル類の作成および現地ワークショップの実施

(ii) 舗装施工

- 施工監理（材料品質管理、工程・出来形管理）のモニタリング・指導
- 設計・施工計画/積算のモニタリング・指導
- マニュアル類の改訂・最終化の実施
- モニタリング報告書の作成および現地ワークショップの実施

(2) 現地傭人

(i) 舗装技術

- 活動全期間における日本人技術者2名の補助

(ii) 通訳・翻訳

- 活動全期間における通訳および文書の翻訳

7. ソフトコンポーネントの実施工程

本ソフトコンポーネント業務の実施工程を表-1に示す。

8. ソフトコンポーネントの成果品

本ソフトコンポーネント業務の成果品は以下の通りとする。

- 施工監理マニュアル（品質管理ガイドライン、工程管理ガイドライン、出来形管理ガイドラインを含む）
- 道路補修設計・施工計画/積算マニュアル
- モニタリング報告書
- 業務実施報告書
- 業務完了報告書

9. ソフトコンポーネントの概略事業費

本ソフトコンポーネント業務の概略事業費を表-2、表-3に示す。

表-2 ソフトコンポーネント概略事業費

名称	金額			備考
	現地貨 (Kip)	米ドル (US\$)	日本円 (¥)	
直接人件費			5,057,000	内訳1
直接経費		51,700.00	3,124,814	内訳2
間接費			6,472,960	内訳3
合計		51,700.00	14,654,774	
円換算		4,478,254	14,654,774	

合計： ¥19,133,000 (千円単位切り捨て)

交換レート

1Kip = 0.0108 円

1米ドル = 86.62 円

表-3 概略事業費内訳

名称	規格	数量	単位	単価		金額			備考
				現地貨 (Kip)	米ドル (US\$)	現地貨 (Kip)	米ドル (US\$)	日本円 (¥)	
1. 直接人件費									
a 実施段階									
舗装技術担当	3号	2.5	人月			778,000		1,945,000	
小計								1,945,000	
b 施工段階									
維持管理担当	3号	4.0	人月			778,000		3,112,000	
小計								3,112,000	
合計								5,057,000	
2. 直設経費									
1)航空運賃		1	式			855,734		855,734	
2)日当+宿泊費		1	式			2,269,080		2,269,080	
3)車輦費		1	式		12,100.00			12,100.00	
4)現地傭人費		1	式		23,700.00			23,700.00	
5)報告書等作成費		1	式		15,900.00			15,900.00	
合計					51,700.00	3,124,814		3,124,814	
3. 間接費									
1)諸経費		1	式			4,551,300		4,551,300	直設人件費×90%
2)技術経費		1	式			1,921,660		1,921,660	(直接人件費+諸経費)×20%
合計						6,472,960		6,472,960	

10. 相手国側の責務

本ソフトコンポーネント業務実施における、「ラ」国側による責務は、以下を予定する。

- 適切なカウンターパートの配置
- 研修施設の提供
- プロジェクト運営管理費用負担

また、業務完了後も、成果が継続的に継承されていくために必要な前提条件を以下のように想定している。

- マニュアルの将来にわたる活用
- モニタリング技術の継承
- 工事实施の予算確保
- 現地業者の育成

(6) 環境チェックリスト

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1. Permits and Explanation	(1) EIA and Environmental Permits	<ol 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? 	1) No. IEE is to be conducted by DOR from March 2011. And WREA approval will be obtained by end of June. In this section, we don't need to do EIA, because is a Road Improvement Project (NR No. 9). According to Decrees by Prime Ministry Office. WREA (PM.WREA) No 697, dated 12 MARCH 2010 on the kinds of IEE and EIA investment. Then, for NR no9 not need to develop EIA report.
	(2) Explanation to the Public	<ol 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? 	<ol style="list-style-type: none"> 1) Yes. During IEE study, explanation to the affected persons have conducted. And after the commencement of the project, DPWT will conduct actual resettlement procedures including detail explanation to the affected persons. 2) So far Lao government not receives any negative comments on the project.
	(3) Alternatives Evaluation	<ol style="list-style-type: none"> 1) Have appropriate alternatives been prepared and evaluated? 	1) No. This project is to improve the existing road without any expansion. It has obviously minimum impact comparing with other alternatives.
2 Mitigation Measures	(1) Air Quality	<ol 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? 	<ol style="list-style-type: none"> 1) Yes. It is expected that ambient air quality will comply with Lao standards. 2) No. There is no industrial area along the target route.
	(2) Water Quality	<ol 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? 	<ol style="list-style-type: none"> 1) No. The project includes slope protection, so there is no bare lands section at the newly constructed sections. 2) No. The asphalt pavement without any surface runoff will be applied to the road improvement. 3) N/A. The project does not include any facilities, such as stations and parking areas/ service areas.
	(3) Noise and Vibration	<ol style="list-style-type: none"> 1) Do noise and vibrations from vehicle and train traffic comply with the country's standards? 	1) Yes. The asphalt pavement is most effective pavement for noise and vibration mitigation.
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? 	1) No. There is no natural protected area near the objective sections.
3 Natural Environment	(2) Ecosystem and biota	<ol style="list-style-type: none"> 1) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? 2) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? 3) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? 4) Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock? 5) 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? 6) In cases where the project site is located at undeveloped areas, is there a possibility that the new development will 	<ol style="list-style-type: none"> 1) No 2) No 3) No 4) Yes. Appropriate safe passage measure for local livestock, such as installation of the culverts at a filling section, is to be taken. 5) No. The project is to improve the existing road without any change of alignment. 6) No.

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
		result in extensive loss of natural environments?	
	(3) Hydrology	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?	1) No
	(4) Topography and Geology	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?	1) No 2) Yes. The project includes slope protection to prevent slope failures. 3) Yes. Prevention measure for waste soil disposal sites and borrow sites will be included to the technical specification of the contract with the contractor.
4 Social Environment	(1) Resettlement	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 peoples? 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?	1) Yes. The number of affected households will be under 50 and they don't need RAP in accordance with Lao regulation. However, Initial Social Assessment will be conducted in conjunction with IEE. 2) Yes. Explanation on relocation has already been done in the IEE study. Compensation will be given in accordance with Lao regulation. 3) Yes. DPWT will conduct resettlement procedures based on the result of the IEE report. 4) Yes. 5) Yes. 6) Yes. DPWT will conduct resettlement procedures based on the result of the IEE report. 7) Yes. MPWT will assign the project coordinator and he/she will monitor the resettlement process.
	(2) Living and Livelihood	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? 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? 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? 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)? 5) Is there a possibility that roads and railways will cause impede the movement of inhabitants? 6) Is there a possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?	1) N/A. The project is to improve the existing road. 2) No. The project is to improve the existing road without expansion. 3) No. The project is to improve the existing road without expansion. 4) No. The project is to improve the existing road without expansion. 5) No. The project is to improve the existing road without expansion. 6) No. The project is to improve the existing road without expansion.
	(3) Heritage	1) Is there a possibility that the project will damage the local archaeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?	1) No. The project is to improve the existing road without expansion.
	(4) Landscape	1) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	1) No. The project is to improve the existing road without expansion.

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(5) Ethnic Minorities and Indigenous Peoples	<ol style="list-style-type: none"> 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 peoples? 2) Does the project comply with the country's laws for rights of ethnic minorities and indigenous peoples? 	<ol style="list-style-type: none"> 1) N/A. There are no ethnic minorities and indigenous peoples near the target sections. 2) N/A. There are no ethnic minorities and indigenous peoples near the target sections.
	(6) working conditons	<ol style="list-style-type: none"> 1) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? 2) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? 3) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public sanitation) for workers etc.? 4) Are appropriate measures being taken to ensure that security guards involved in the project do not violate safety of other individuals involved, or local residents? 	<ol style="list-style-type: none"> 1) No. 2) Yes. The safety management activities shall be included to the activities of the contractor. 3) Yes. The safety management activities shall be included to the activities of the contractor. 4) Yes. The safety management activities shall be included to the activities of the contractor.
5 Others	(1) Impacts during Construction	<ol style="list-style-type: none"> 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? 	<ol style="list-style-type: none"> 1) Yes. Adequate mitigation measures are to be developed within EMP of IEE to be conducted by DOR. 2) N/A. The project is to improve the existing road without expansion. 3) N/A. The project is to improve the existing road without expansion.
	(2) Monitoring	<ol style="list-style-type: none"> 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? 	<ol style="list-style-type: none"> 1) Yes. EMP is to be developed within IEE to be conducted by DOR. 2) Yes. Details such as methods and frequencies are to be specified in EMP, mentioned above. 3) Yes. same as above 4) No. However, DOR will monitor the environmental issues, using the monitoring form attached on the M/D.
6 Note	Reference to Checklist of Other Sectors	<ol style="list-style-type: none"> 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). 	<ol style="list-style-type: none"> 1) N/A 2) N/A
	Note on Using Environmental Checklist	<ol style="list-style-type: none"> 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). 	<ol style="list-style-type: none"> 1) N/A

- 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 the World Bank Safeguard Policy as a general rule, or the International Finance Corporation Performance Standards for private sector limited or non-recourse project finance cases, or other standards established by other international financial institutions, or other internationally recognized standards or good practices established by developed countries such as Japan regarding environmental and social considerations, the background and rationale for this deviation, and the measures to rectify it if necessary, are to be confirmed. In cases where local environmental regulations are yet to be established in some areas, considerations should be based on comparisons with international standards such as the World Bank Safeguard Policy, and appropriate standards of other countries (including Japan).
- 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.

(7) 概略設計図



MINISTRY OF PUBLIC WORKS AND TRANSPORT
LAO PEOPLE'S DEMOCRATIC REPUBLIC

**THE PREPARATORY SURVEY ON
THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD No.9
AS EAST-WEST ECONOMIC CORRIDOR IN LAO PDR**

DRAWINGS

JUNE 2011



JAPAN INTERNATIONAL COOPERATION AGENCY



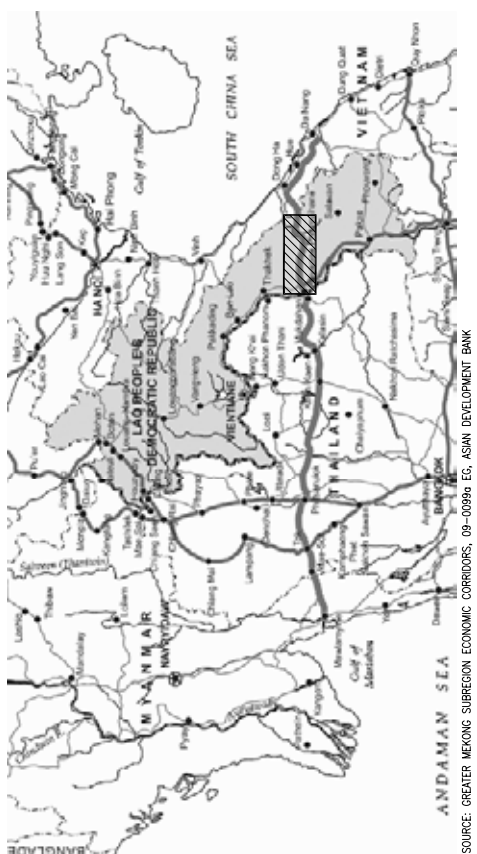
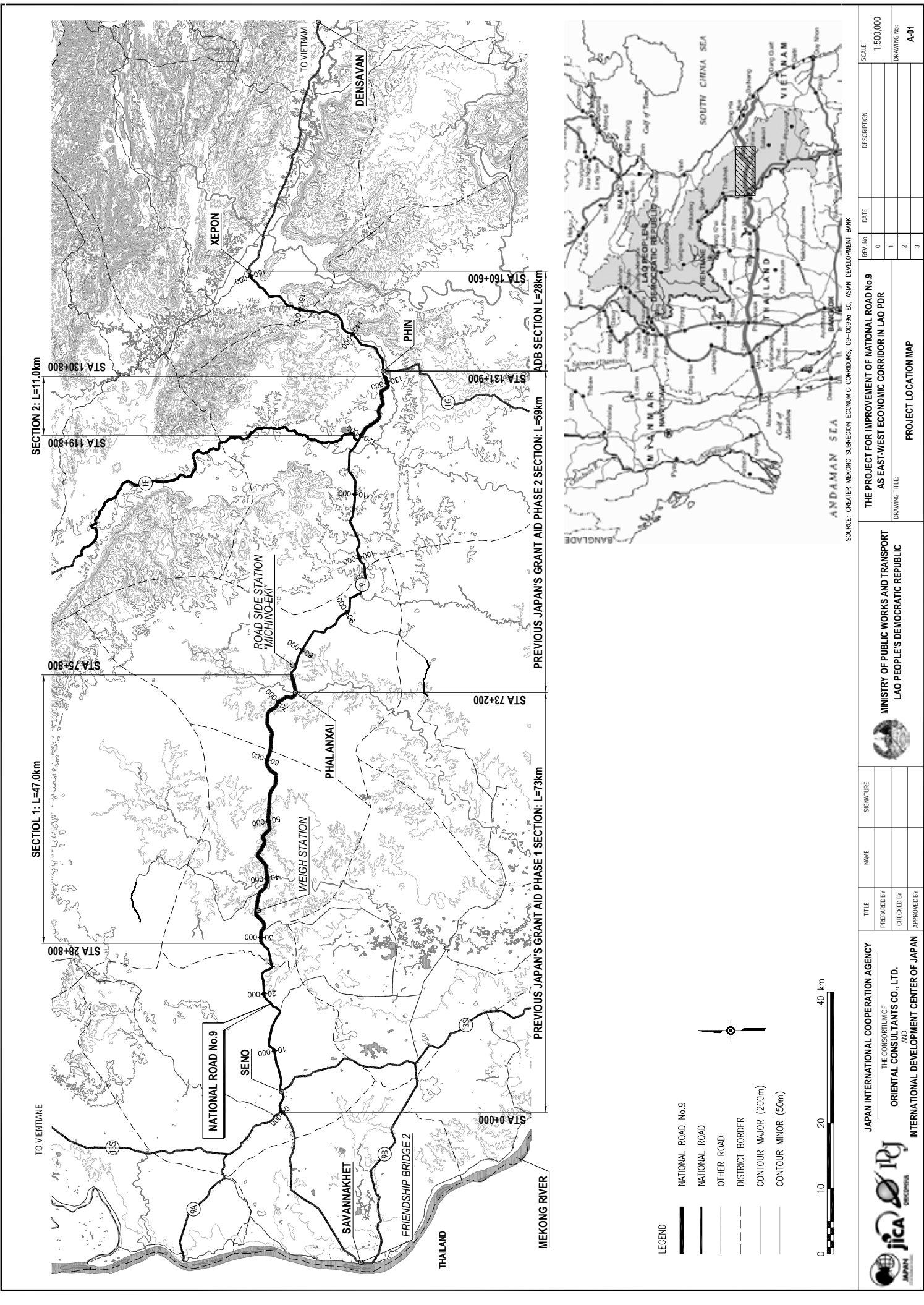
THE CONSORTIUM OF
ORIENTAL CONSULTANTS CO., LTD.

AND



INTERNATIONAL DEVELOPMENT CENTER OF JAPAN INC.





LEGEND

- NATIONAL ROAD No.9
- NATIONAL ROAD
- OTHER ROAD
- - - DISTRICT BORDER
- CONTOUR MAJOR (200m)
- CONTOUR MINOR (50m)

0 10 20 40 km

TO VIENTIANE

TO VIETNAM

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>THE CONSORTIUM OF ORIENTAL CONSULTANTS CO., LTD.</p> <p>INTERNATIONAL DEVELOPMENT CENTER OF JAPAN</p>		<p>MINISTRY OF PUBLIC WORKS AND TRANSPORT</p> <p>LAO PEOPLE'S DEMOCRATIC REPUBLIC</p>		<p>THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD No.9</p> <p>AS EAST-WEST ECONOMIC CORRIDOR IN LAO PDR</p>		<p>SCALE: 1:500,000</p>	
TITLE	NAME	SIGNATURE	REV. No.	DATE	DESCRIPTION	DRAWING No.	
PREPARED BY			0				
CHECKED BY			1				
APPROVED BY			2				
			3				
PROJECT LOCATION MAP							A-01

SOURCE: GREATER MEKONG SUBREGION ECONOMIC CORRIDORS, 09-0096; EG, ASIAN DEVELOPMENT BANK