AP8.2.3 Record of Stakeholder Meeting 2-2

(1) Presentation Material

- Part I: Introduction
- Part II: Evaluation Method and Procedure for Selecting the Best Alternative to Cross the Mekong River
- Part III: Evaluation Criteria for Selecting the Best Alternative to Cross the Mekong River
- Part IV: Interim Results on IEE-level Social and Environmental Considerations

The Stakeholder Meeting 2-2 for the Construction of the Second Mekong Bridge in the Kingdom of Cambodia

Introduction

December 27-28, 2004
Conference Hall, MPWT

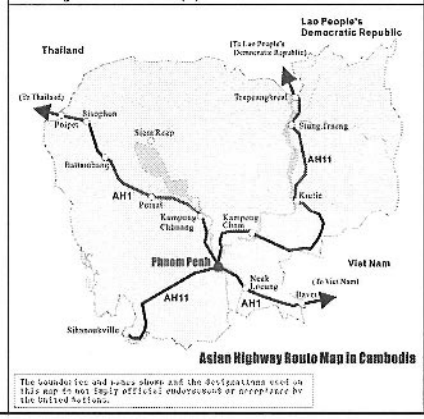
Ministry of Public Works and Transport (MPWT) in cooperation with JICA

Introduction

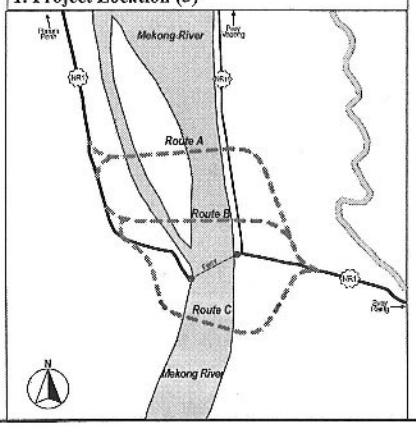
1. **Project Location**
2. **Review on Stakeholder Meeting 2-1**
3. **Objectives of Stakeholder Meeting 2-2**
4. **Explanation on Bulletin Board System of Website**

1. Project Location (1)

1. Project Location (2)



1. Project Location (3)



2. Review on Stakeholder Meeting 2-1

- October 7, 2004: The Stakeholder Meeting 2-1 at Phnom Penh
- October 28, 2004: The Special Stakeholder Meeting for Minority People (Stakeholder Meeting 2-1-a) at Neak Loeung
- The main outcomes of these meetings are that:
  - preliminary alternatives to cross the Mekong river were explained by MPWT;
  - the terms of reference and scoping for the IEE-level social and environmental considerations studies were agreed among all the stakeholders; and
  - the workshop for the village stakeholders was held in order to identify the positive and negative impacts by each alternative.

3. Objectives of Stakeholder Meeting 2-2

PC No.	Stakeholders Meeting	Venue	Study Level	Major Objectives	Timing
1st	Stakeholder Meeting 1-1	Phnom Penh	Kick-off	Introduction of the Project, explanation of the JICA's Guideline and Scoping for IEE	May 24, 2004
	Stakeholders Meeting 1-2	Neak Loeung	Kick-off	Same as above	June 21, 2004
2nd	Stakeholders Meeting 2-1 and 2-1-a	Phnom Penh	IEE	Discussion on Scoping and TOR for IEE	October 7 and 28, 2004
	Stakeholders Meeting 2-2	Phnom Penh	IEE	Presentation of Interim Results of IEE	December 27-28, 2004
	Stakeholders Meeting 2-3	Phnom Penh	IEE	Presentation of Draft Final Report of IEE and Interim Study Report	February 2005 (Planned)
3rd	Stakeholders Meeting 3-1	Phnom Penh	EIA	Discussion of Scoping and TOR for EIA	May 2005 Subject to Results of IEE
	Stakeholders Meeting 3-2	Phnom Penh	EIA	Presentation of Interim Results of EIA	July 2005 Subject to Results of IEE
	Stakeholders Meeting 3-3	Phnom Penh	EIA	Presentation of Draft Final Reports of EIA and Overall Study	September 2005 Subject to Results of IEE

3. Objectives of Stakeholder Meeting 2-2

- To share views among all the stakeholders on the proper evaluation method and procedure as well as evaluation criteria for selecting the best alternative to cross the Mekong River
- To preliminarily explain the interim results for IEE (Initial Environmental Examination) –level social and environmental considerations studies

4. Explanation on Bulletin Board System of Website

- URL
  - www.2ndmekongbridge.com
- Function of BBS (Bulletin Board Service)
  - The function of the BBS (Bulletin Board Service) which enables all the stakeholders to exchange views on the internet is available.
- Sample Pages
  - Sample 1: Page for Bulletin Board System (Khmer)
  - Sample 2: Page for Bulletin Board System (English)

THANK YOU !

for your attention and patience.

Ministry of Public Works and Transport

The Stakeholder Meeting 2-2 for the Construction of the Second Mekong Bridge in the Kingdom of Cambodia

Part I
Evaluation Method and Procedure for Selecting the Best Alternative to Cross the Mekong River

December 27-28, 2004
Conference Hall, MPWT

Ministry of Public Works and Transport (MPWT)
in cooperation with JICA

Part I

1. **Review on Alternatives to Cross the Mekong River**
2. **Explanation on Evaluation Method and Procedure for Selecting the Best Alternative**

1. Review on Alternatives to Cross the Mekong River (1)

No.			Option	Remarks
1 Ferry Option				
	1-1	Ferry	Existing Ferry with Proper Maintenance	Zero Option
	1-2	Ferry	Upsizing of Ferry Boats or Additional Ferry Boats with Additional Pier	
2 Bridge Option				
	2-1	Bridge	Route A	
	2-2	Bridge	Route B	
	2-3	Bridge	Route C	
3. Ferry Option + Bridge Option (The Best Combination of 1-1 / 1-2 and 2-1 / 2-2 / 2-3)				

1. Review on Alternatives to Cross the Mekong River (2)

- **Ferry option will cover the following two alternatives:**
  - –Ferry capacity remains unchanged but the maintenance should be undertaken properly. (**"Do Nothing" or "Zero Option"**)
  - –Ferry capacity is improved as the traffic demand increases. The improvement may cover such plans as up-sizing the existing ferry or additional ferry boats with additional pier.

Image of Ferry Option 1-1 (Zero Option)

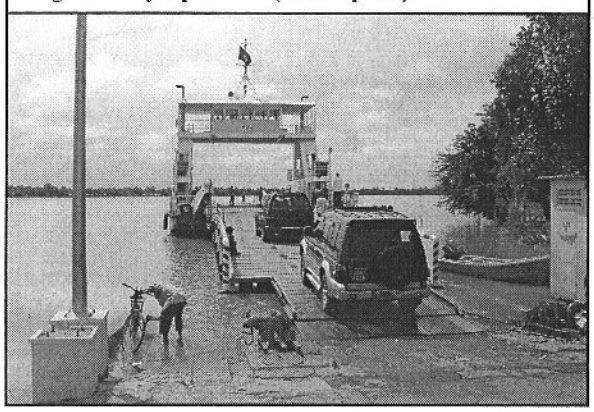
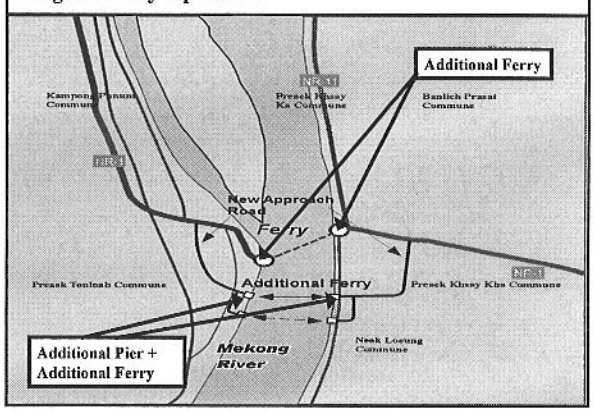


Image of Ferry Option 1-2



1. Review on Alternatives to Cross the Mekong River (3)

- The following three alternative routes were set up paying attention to:
  (a) a total crossing distance over the Mekong River
  (b) a crossing distance over the main stream of the River, and
  (c) a length of the approach road.
  They are considered to significantly affect the cost of construction.
  - Route A: Located to the North of N.L.Ferry route and where the river width of the main streaming is the shortest in the N.L. area.
  - Route B: Located to the North of N.L.Ferry route and intended to minimize the involuntary resettlement in crossing the NR-11 as well as the extension of approach road.
  - Route C: Located to the South of N.L. Ferry route, and intended to minimize the crossing distance over the River.

Image of Bridge Option 2-1 / 2-2 / 2-3

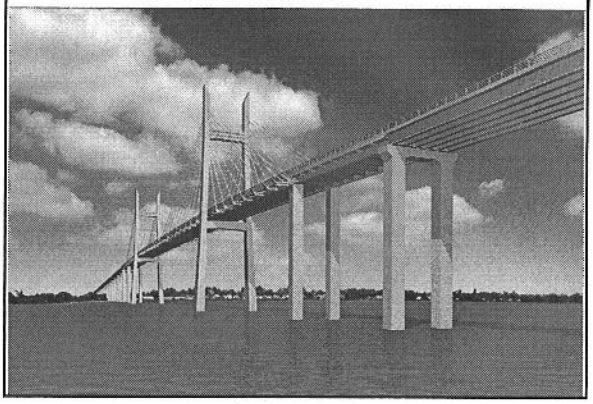
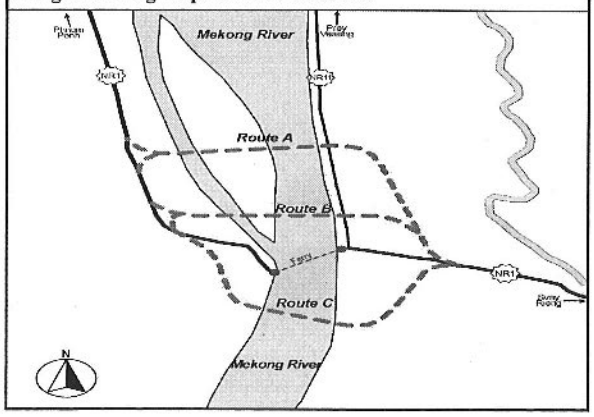


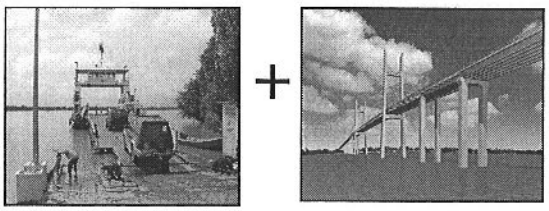
Image of Bridge Option 2-1 / 2-2 / 2-3



1. Review on Alternatives to Cross the Mekong River (4)

- **Combined Option**
  - Combined option of improved ferry and construction of bridge may give as a step-by-step approach. That is, the ferry should be improved to its maximum extent before the bridge construction is proved economically feasible.

Image of Combined Option 3



After a certain period of operating the present and/or improved ferry services, the bridge will be planned.

2. Explanation on Evaluation Method and Procedure for Selecting the Best Alternative

Overall Flow Chart for Selecting the Best Alternative

Setting up Alternatives

⇩

Study on Critical Aspects

⇩

Setting up Alternatives to be Evaluated

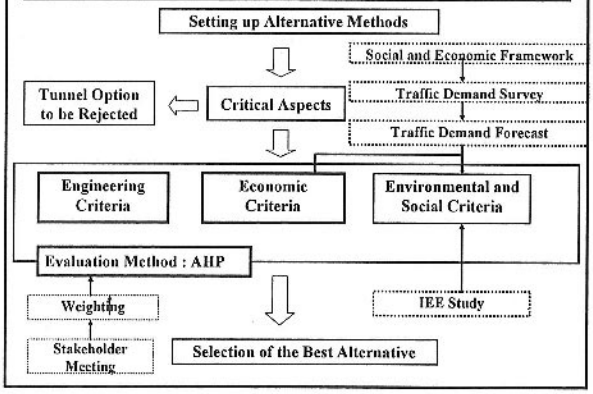
⇩

Evaluation on Alternatives

⇩

Selection of the Best Alternative

Detailed Flow Chart for Selecting the Best Alternative



Explanation on Evaluation Method (1)

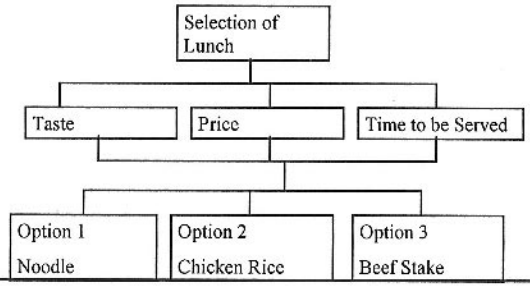
- **AHP (Analytic Hierarchy Process)**
  - –AHP (Analytic Hierarchy Process) is one of suitable methods for selecting the best alternative from the various options under a wide range of criteria.
  - –AHP has the following 3-step procedure.
    - ●The importance (weight) of criteria by evaluators will be relatively examined.
    - ●The importance (weight) of options by evaluators under each criterion will be relatively examined.
    - ●The overall priority evaluation will be conducted in accordance with the designated method.

Explanation on Evaluation Method (2)

- **AHP (Analytic Hierarchy Process)**
  - –AHP will relatively quantify the weight by an evaluator among a wide range of criteria.
  - –The important point is that the weight is subject to change due to the value of each stakeholder. The proposed weight for criteria will be explained by MPWT in the next stakeholder meeting.
  - –The detailed criteria for weighting will be explained in the next presentation Part II.

A Typical Example of AHP (Selection of Lunch)

- **For example, the selection of the best lunch for today has 3 criteria (taste, price, time to be served).**
- **There are 3 options (noodle, chicken rice, beef stake) to be evaluated.**



A Typical Example of AHP (Selection of Lunch)

- **In this case, an example of the weighting system for AHP is as shown in the below table.**

Weight	Definition	Description
1	Same Significance	Both options has the same significance under a certain criteria.
3	A little Bit Significant	A little bit more significant than the option to be compared with.
5	Considerably Significant	Considerably more significant than the option to be compared with.
7	Extremely Significant	Extremely more significant than the option to be compared with.
9	Completely Significant	Completely significant regardless of the option to be compared with.
2, 4, 6, 8		Degree between 1 and 3, 3 and 5, 5 and 7, 7 and 9.

A Typical Example of AHP (Selection of Lunch)

- **The selection of the best lunch for today has 3 criteria (taste, price, time to be served).**
- **The weights among 3 criteria by an evaluator are relatively evaluated as follows.**

Criteria / Criteria	Taste	Price	Time to be Served
Taste	1 (Same)	3 (A Little Bit More Important)	7 (Extremely More Important)
Price	1/3 (A Little Bit Less Important)	1 (Same)	5 (Considerably More Important)
Time to be Served	1/7 (Extremely Less Important)	1/5 (Considerably Less Important)	1 (Same)

A Typical Example of AHP (Selection of Lunch)

- For example, the selection of the best lunch for today has 3 options (noodle, chicken rice, beef stake).
- These 3 options are relatively evaluated under the 1st criterion (taste) as follows.

Option	Noodle	Chicken Rice	Beef Stake
Noodle	1 (Same Taste)	1/3 (A Little Bit Less Tasty)	1/7 (Extremely Less Tasty)
Chicken Rice	3 (A Little Bit More Tasty)	1 (Same Taste)	1/5 (Considerably Less Tasty)
Beef Stake	7 (Extremely More Tasty)	5 (Considerably More Tasty)	1 (Same Taste)

A Typical Example of AHP (Selection of Lunch)

- For example, the selection of the best lunch for today has 3 options (noodle, chicken rice, beef stake).
- These 3 options are relatively evaluated under the 2nd criterion (price) as follows.

Option	Noodle	Chicken Rice	Beef Stake
Noodle	1 (Same)	3 (A Little Bit Cheaper)	7 (Extremely Cheaper)
Chicken Rice	1/3 (A Little Bit More Expensive)	1 (Same)	5 (Considerably Cheaper)
Beef Stake	1/7 (Extremely More Expensive)	1/5 (Considerably More Expensive)	1 (Same)

A Typical Example of AHP (Selection of Lunch)

- For example, the selection of the best lunch for today has 3 options: noodle; chicken rice; and beef stake.
- These 3 options are relatively evaluated under the 3rd criterion (time to be served) as follows.

Option	Noodle	Chicken Rice	Beef Stake
Noodle	1 (Same Timing)	3 (A Little Bit Faster)	7 (Extremely Faster)
Chicken Rice	1/3 (A Little Bit Slower)	1 (Same Timing)	5 (Considerably Faster)
Beef Stake	1/7 (Extremely Slower)	1/5 (Considerably Slower)	1 (Same Timing)

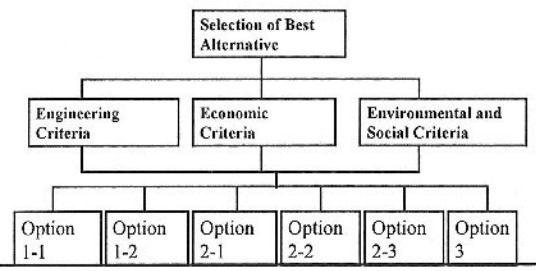
A Typical Example of AHP (Selection of Lunch)

- The priority point will be calculated in accordance with weights of criteria and priorities of options in order to obtain the overall priority.
- The following table is an example of the calculation results.

Criteria / Option	Taste	Price	Time to be Served	Overall Priority
Weight (Sample)	60%	30%	10%	
Noodle	Low Point	High Point	High Point	3rd priority
Chicken Rice	Medium Point	Medium Point	Medium Point	1st Priority
Beef Stake	High Point	Low Point	Low Point	2nd Priority

Application for Actual Evaluation Method

- The selection of the best alternative to cross the best river has 3 areas of criteria (engineering, economic, environmental/social criteria).
- There are 6 options to be evaluated.



THANK YOU !

for your attention and patience.

Ministry of Public Works and Transport

The Stakeholder Meeting 2-2 for the Construction of the Second Mekong Bridge in the Kingdom of Cambodia

Part II Evaluation Criteria for Selecting the Best Alternative to Cross the Mekong River

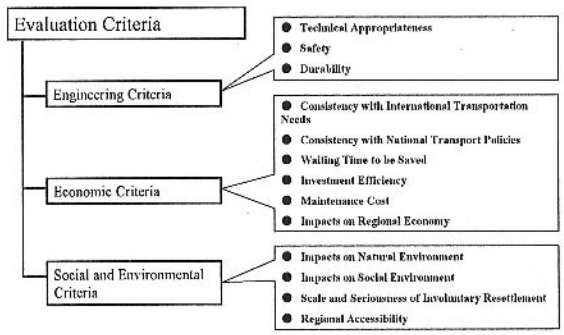
December 27-28, 2004
Conference Hall, MPWT

Ministry of Public Works and Transport (MPWT)
in cooperation with JICA

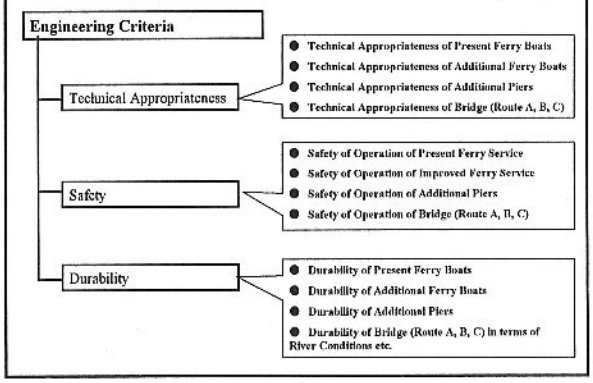
Part II

1. **Explanation on Evaluation Criteria**
2. **Explanation on Traffic Demand Forecast**

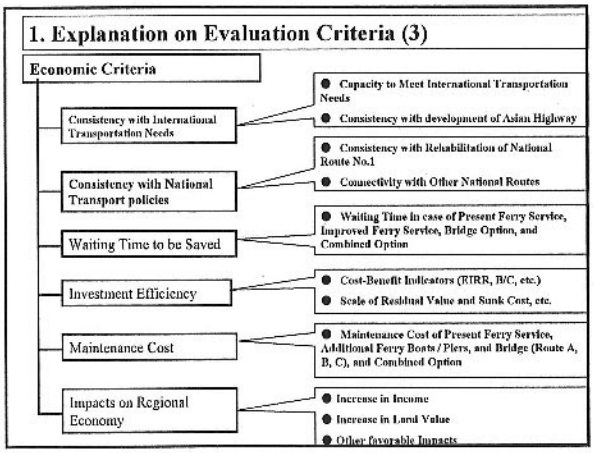
1. Explanation on Evaluation Criteria (1)



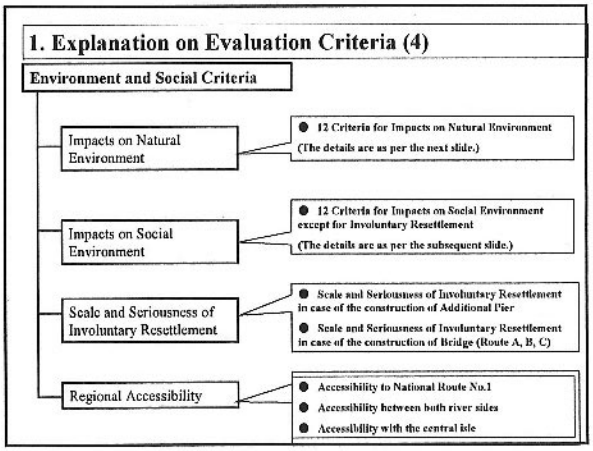
1. Explanation on Evaluation Criteria (2)



1. Explanation on Evaluation Criteria (3)



1. Explanation on Evaluation Criteria (4)



1. Explanation on Evaluation Criteria (5)

Description of Environmental Criteria

No.	Impact to be assessed	Agreed Impacts to be Assessed (Stakeholder Meeting 2-1)	Category of Criteria
1	Air quality	X	Environmental Criteria
2	Water quality	X	Environmental Criteria
3	Soil and sedimentation quality	X	Environmental Criteria
4	Waste disposal	X	Environmental Criteria
5	Noise and Vibration	X	Environmental Criteria
6	Subsidence	X	Environmental Criteria
7	Bad smells	X	Environmental Criteria
8	Topography and Geology	X	Environmental Criteria
9	River bed Materials	X	Environmental Criteria
10	Fauna and flora	X	Environmental Criteria
11	Use of water resources	X	Environmental Criteria
12	Accidents	X	Environmental Criteria
13	Greenhouse effect gas	X	Environmental Criteria

1. Explanation on Evaluation Criteria (6)

Description of Social Criteria

No.	Impacts to be assessed	Agreed Impacts to be Assessed (Stakeholder Meeting 2-1)	Category of Criteria
1	Migration of population involuntary resettlement	X	Social Criteria
2	Impact on local economy (employment, livelihood, etc.)	X	Examined as Economic Criteria (Impact on Regional Economy)
3	Utilization of land and local resources	X	Social Criteria
4	Social institutions (social capital and local decision-making institution)	X	Social Criteria
5	Existing social infrastructure and services	X	Social Criteria
6	Vulnerable social groups	X	Social Criteria
7	Equality of benefits and losses and equality in development process	X	Social Criteria
8	Local conflicts of interests	X	Social Criteria
9	Gender	X	Social Criteria
10	Children's rights	X	Social Criteria
11	Cultural heritage	X	Social Criteria
12	Infectious diseases (HIV/AIDS)	X	Social Criteria

1. Explanation on Evaluation Criteria (7)

- **Weights on Evaluation Criteria**

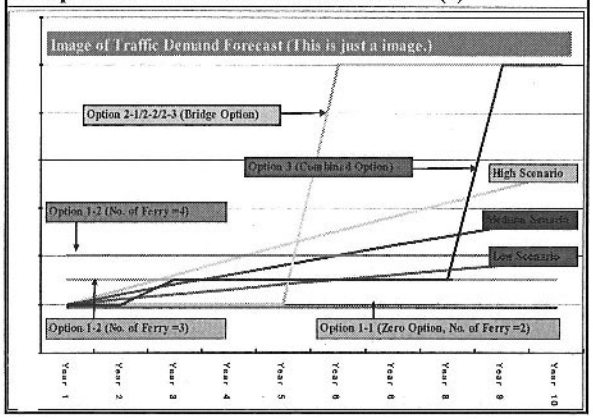
  –The weight of each evaluation criteria will be different from stakeholder to stakeholder.

  –The proposed optimum weight of each criterion will be explained by MPWT and the optimum weight of each criterion will be discussed in the next stakeholder meeting.

2. Explanation on Traffic Demand Forecast (1)

- The traffic demand forecast will be the key presumption to the economic criteria.
- Based on the traffic volume survey, the high, low, and medium scenarios will be forecasted in accordance with the following socio-economic factors.
  - GRDP (Gross Regional Domestic Products) in Neighboring Areas
  - Population in Neighboring Areas
  - Number of Employees in Neighboring Areas
- The result of each scenario will lead to the traffic demand forecast which will be explained by MPWT in the next stakeholder meeting 2-3.
- The subsequent slide will be an image of the comparison between the traffic demand forecast and the capacity of each alternative.

2. Explanation on Traffic Demand Forecast (2)



THANK YOU !

for your attention and patience.

Ministry of Public Works and Transport