APPENDIX 8A

Minutes from Stakeholder Meetings[1]

First Stakeholder Meeting for
The Study for Railway Development Alternatives
on North-South Railway Line

1. Date/Time: 9th December2011 / 8:30-12:00

2. Venue: Conference hall, VR Labor union's center for culture, sports and tourism

3. Participants:

- **Vietnamese Side**

1)	Mr. Ngo ThinhDuc	Vice Minister (MOT)
2)	Mr. Nguyen DatTuong	VR General Director
3)	Mr. Tran Quoc Dong	Deputy General Director (VR)
4)	Mr. Ngo Van Tuyen	Deputy Director, Infrastructure Dpt. (VR)
5)	Mr. Binh	Deputy Director, Preparation and Investment Dpt. (VR)
6)	Mr. Tran Viet Ban	Deputy Director, Science and Technology Dpt. (VR)
7)	Ms. Nguyen Kim Dung	Deputy Director, Transportation Business Dpt. (VR)
8)	Mr Pham Xuan Sac	Deputy Director, Urban & Construction Management Dpt. (VR)
9)	Mr. Ngo TrungKien	Deputy Director, Preparation and Investment Dpt. (VR)
10)	Mr. Tran Van Quy	Deputy Director, Finance and Accounting Dpt.
11)	Mr. Nguyen Ngoc Vien	Deputy Director, Rolling-stocks Dpt. (VR)
12)	Ms. Nguyen Thi Thu Thanh	Deputy Director, International Cooperation Dpt. (VR)
13)	Ms. Nguyen Bao Van	Expert, International Cooperation Dpt. (VR)
14)	Mr. Nguyen ManhHien	Expert, International Cooperation Dpt. (VR)
15)	Ms. Tran Thu Thuy	Expert, Preparation and Investment Dpt. (VR)
16)	Mr. Thang	Expert, Personnel Organization Dpt. (VR)
17)	Mr. Do Van Hat	General Director (TRICC)

[1] Note that "Strategic Environmental Assessment (SEA)" noted in this annex imply the comparison of alternatives (alignment and station location) as one step of "Initial Environmental Examination (IEE)" study and does not carry the meaning of SEA as used in other situations.

18) Mr. Vinh	Deputy General Director (TRICC)
19) Mr. Khuong Van Tao	Deputy Chief (NTSC)
20) Mr. Chu Manh Hung	Director, Environment Dpt. (MOT)
21) Mr. Nguyen Viet Cuong	Expert, Environment Dpt. (MOT)
22) Ms. Khue Anh (MOT)	Deputy Director, Science & Technology Dpt.
23) Mr. Le Anh Tuan (MOT)	Deputy Director, Planning and Investment Dpt.
24) Mr. Nguyen Hong Truong	Expert, Transport Infrastructure Dpt. (MOT)
25) Mr. Ngo Xuan Lang	International Cooperation Dpt. (MOT)
26) Mr. Nguyen Van Doanh (MOT)	Deputy Director, Vietnam Railway Administration
27) Mr. Vu Dang Hung	Expert, Architecture Planning Dpt. (MOC)
28) Mr. Hieu	Land Planning Dpt. (MONRE)
29) Ms. Tran Thi Giang Huong (MONRE)	Land Administration General Dpt.
30) Mr. Luu Van Thinh (MONRE)	Deputy Director, Land Administration General Dpt.
31) Mr. Le Nguyen Dat	Expert, Technology & Science Dpt. (MARD)
32) Mr. Pham Duc San	Union of Vietnam Science Associations
33) Ms. Vu Thu Huong	Expert (TDSI)
34) Dr. Khuat Viet Hung Education Cooperation	Director, Centre for International Research and
35) Ms. Thu Huong	Reporter, Vietnam Railways Newspaper
36) Mr. Le Tien Dung	Deputy Chief, Vietnam Railway Newspaper
37) Mr. Quang Hung	Reporter, The People's Newspaper
38) Ms. Hoang Van	"Ban Duong" Newspaper
39) Mr. Pham Anh Minh	Reporter, Investment Newspaper
40) Mr. Duc Dung	Electronic Newspaper
41) Ms. Thu Thuy	Reporter, Transport Newspaper
42) Mr. Ngo Van Thanh	Reporter, Transport Newspaper
43) Ms. Vu Diep	Vietnamnet
44) Mr. Nguyen Giao Linh	Reporter (NTSC)
45) Mr. Le Hong	Expert (National Assembly Office)
46) Mr. Bui Thanh Hai	Labor's Newspaper
47) Mr. Phung Minh Tuan	Youth's Newspaper
48) Mr. Khong Binh Nguyen	DOT (Ha Nam)
49) Mr. Nguyen Huu Mich	Deputy Director, DOT (Nam Dinh)
50) Mr. Thai Dinh Lam (Nam Dinh DOT)	Deputy Director, Appraisal Dpt.
51) Mr. Pham Minh Cuong	Ninh Binh DOT

52) Mr. Nguyen Duy Phong (Ninh Binh DOT)	Deputy Director, Infrastructure Dpt.
53) Mr. Nguyen Ngoc Hoi	Vice Chairman (Thanh Hoa PC)
54) Mr. Trinh Tuan Thanh	Deputy Director (Thanh Hoa DOC)
55) Mr. Nguyen Manh Thuan (Thanh Hoa DOC)	Director, Planning Management Dpt.
56) Mr. Nguyen Van Khanh	Deputy Director (Thanh Hoa DOT)
57) Mr. Nguyen Van Viet	Planning Dpt.(Thanh Hoa DOT)
58) Mr. Nguyen Van Hap	Ha Nam DOT
59) Ms. Pham Thao Nguyen	Expert (Nghe An DONRE)
60) Mr. Pham Hong Quang	Deputy Director (Nghe An DOT)
61) Mr. Tran Van Hai (Ninh Thuan DOT)	Deputy Director, Traffic Dpt.
62) Mr. Le Huyen	Deputy Director (Ninh Thuan DOT)
63) Mr. Nguyen Hong Hai	Deputy Director (Binh Thuan DOT)
64) Mr. Quy	Deputy Director (Dong Nai DOT)
65) Mr. Nguyen Van Vy	Deputy Director (Dong Nai DOT)

- **Japanese Side**

1) Mr. NagaseTOSHIO	Deputy Chief Representative, JICA Vietnam
2) Dr. Phan Le Binh	JICA Officer
3) Dr. Shizuo IWATA	Team leader/ Transport planning
4) Dr. Kiyoharu TAKAGI	Deputy Team Leader/ High Speed Railway Planning
5) Ms. Yuko OKAZAWA	Urban and Regional Development
6) Mr. Takanori SAKAI	Project Coordinator
7) Mr. Tatsuyuki MATSUDA	High Speed Railway Construction
8) Mr. Noboru TAKAHASHI	High Speed Railway Construction
9) Mr. Yoshiyuki ISHIHARA	Alignment Planning
10) Mr. Toshiyuki UJIIE	Environmental and Social Considerations
11) Mr. Tetsuya SAITO	Natural Environment Considerations

4. **Ms. Nguyen Thi Thu Thanh,** Deputy Director of International Cooperation Dpt. (VR) started the meeting with a brief on current situation of Vietnam transport in general and Vietnam railways in particular, as well as an introduction of distinguished representatives and participants.

5. **Mr. Ngo Thinh Duc,** Vice Minister of MOT, continued the meeting by delivering an opening speech with his sincere thanks to the JICA office and the JICA Study Team for closely liaising with VR on making a report to present in today's meeting. He also sent his thanks to representatives from other relevant ministries, local departments and agencies, and the mass media for their attendance.

1) Mr. Duc emphasized the importance of the investment in the development of the North-South railway line with a view to dealing with outstanding matters of existing 1,000 m gauge track

and stated that it would take a long time to conduct a research on the projects, which was the output of an agreement between Vietnamese and Japanese governments.

2) He showed his gratitude to the Japanese government for providing Vietnam with capital and sending a team of experienced experts to Vietnam to cooperate with Vietnam consultancyon carrying out the study.
3) He highly appreciated efforts made by the JICA Study Team to implement site surveys in localities where the expected NS railway line mightpass through (if it was to be constructed) to conduct a thorough study to cover all aspects, among whichenvironmental and social impact assessment was the most vital one.
4) He suggested that the approach of this study should be from lower levels to higher levels, which required an overall assessment of Vietnam existing railway system up to present and detailed considerations of as many improvement and upgrading alternatives and plans as possiblein order to give satisfactory response to Vietnamese people if any question was to be posed.
5) It was advisable for the VR and the Study Team to come up with the most optimal plan based on the comparison between improvement and upgrading options and new construction options regarding both technical and economic terms. The plan might be to construct one new single track line, 1,435 m gauge or double track line, 1,435 mm gauge; the new line may be used for freight trains or passenger trains or both. It was the task of the Study Team and VR to implement a thorough and careful study to cover all aspects.
6) Mr. Duc also requested local authorities of locations, where the expected railway line might run across to lend VR and the Study Team a helping hand so that they can conduct social and environmental impacts assessment for all scenarios and plans.
7) The 1st stakeholder meeting would concentrate on approaching methodology and environmental andsocial considerations.
8) After the meeting, VR, VRA, and Environment Department of MPI were assigned to establish a body in charge of receiving opinions and comments from social organizations and the general public concerning social considerations, which would be incorporated into the study so that VR and the Study Team could have enough information to give satisfactory answers once the project was submitted to the NA and central forum.
9) The JICA Office and the JICA Study Team was also recommended to set up a Public Relations Team to welcome and respond to the public opinions. He showed his hope that the discussion in this meeting shall be a solid background for next meetings and provide fruitful inputs to the study.

6. Mr. NagaseToshio, Deputy Chief Representative of JICA proceeded with the meeting by his brief introduction of JICA:

1) In Vietnam, at the request of Vietnamese government, JICA implemented capital and technical cooperation in a wide range of fields, among which, transport was the most prioritized one to get loans from JICA. He also cited completed projects including National Highway 5, Hai Phong port, Bai Chay bridge, Can Tho bridge, East West Boulevard of HCM city and expected projects like NS high speed road, deep water seaport, urban railway line as examples to support his statement.
2) Besides that, in the form of technical cooperation, JICA assisted Vietnam in many projects such as: drawing up national transport master plan, transport master plans of big cities like Hanoi and HCM city; training human resources for the construction of NS high speed road; enhancing management capacity of NS high speed road; etc…
3) According to VITRANSS II, one of cooperation projects between Vietnam and JICA, transport demand of Vietnam in 2030 would triple that of 2008. Such growth rate required Vietnam to develop transport infrastructure in the forthcoming time. Especially, on the North South axis, due to the presence of many big urban areas like Hanoi and HCM city, transport demand were

very high. In order to meet such high demand, NS high speed road would be constructed section by section. What's more, the long and narrow terrain of Vietnam brought about high long-distance travel demand, which would require railways to share transport burden.

4) In accordance with request from Vietnam's government, in May, 2011, JICA started a study on plans for upgrading railway on North-South axis. The requirements of this study were to come up with a plan for improving speed and transport capacity of existing railway line and analyze the necessity to construct new railway lines in case improvement and upgrading options failed to meet transport demand. To assist the study, JICA sent to Vietnam 30 experienced experts to closely cooperate with VR, MOT and relevant agencies.
5) According to JICA guidelines, environmental and social considerations for big projects required the organization of stakeholder's meetings, in which individuals and agencies potential to be affected by these HSR projects shall be invited to discuss and consult.

Mr. Nagase Toshio ended his speech by showing his hope for a fruitful discussion and comments.

7. Dr. Shizuo IWATAcontinued the meeting with his presentation on the outline of the study on plans for the development of NS railway line.

8. Q&A

1) **Dr. Khuat Viet Hung**, Director, Centre for International Research and Education Cooperation, University of Transport and Communications

Comments on Dr. Iwata's presentation:

(i) He and the Study Team of the University of Transport and Communications were in support of the necessity to study thorough and feasible plans for developing NS Railway line. This project, if implemented, would be a rare chance for helping adjust and complete the master plan for comprehensive socio-economic and transport development along NS corridor.

(ii) He totally agreed with points of view and approaching methodology presented by the Study Team and highly appreciated efforts of the Study Team to come up with a variety of options before a concrete and specific plan for further and extensive study was proposed.

(iii) The comments made by his group and Vietnam Union of Science and Technology Associations (VUSTA) of Investment Report on NS railway line were incorporated into this study.

(iv) **Technology Transfer**: Mr. Hung posed questions about the process of technology transfer between Japan and Vietnam so that Vietnam can master railway technology whichever technology would be proposed (high speed railway technology, technology for train to obtain 350 km/h or 200km/h);the extent to which Vietnam can master the technology;if Vietnam can have its own railway industry or not; how many percentages of a high speed railway section (Vinh - Hochiminh city) can be done by Vietnam itself if experimental section Hanoi - Vinh was constructed before by Japan. In his opinion, this was an important part of the study because it helped people have a better understanding of readiness and preparation of Vietnam for receiving technology transfer prior to proceeding with next steps. The reason why he asked this question was that once railway was built, it would remain for hundreds of years. In addition to NS railway, there were a variety of other railway lines such as railway lines from Hanoi to Northern provinces, and from Hochiminh city to the Mekong River Delta, Vung Tau, etc... Therefore, it would be not good for Vietnam to ask Japan's help in terms of study,

construction, investment, procurement of equipment every time it wanted to construct a new line.

2) **Mr. Do Van Hat**, General Director of TRICC, made some comments on plans for NS railway line development, and provided some additional pieces of information for further study:

   (i) Among all alternatives, he was in favor of scenario 6, in which the improvement of existing railway lines would be combined by the construction of new high speed railway line. With regard to the improvement and upgrading of existing railway lines, the Study Team chose the option for electrifying existing lines and turning them into double track railway, which would have to face many obstacles and could only be done in the distant future. From present to 2020, the chosen option was impossible for reasons as follows:
   - **Vinh - Nha Trang section**: Many projects were being carried out. Once they were completed, train can reach speed of 100 km/h. Ongoing projects include: Replacement of concrete sleepers K1, K2 with pre-stressed concrete sleepers, extension of platform tracks and construction of the 3rd platform track for stations having only 2 platform tracks (hereafter called K1, K2 project); Vinh - Saigon signals and telecommunications project; Improvement of weak bridges on the NS railway line with part of capital from 44 bridges project (JICA) and part of capital from 132 bridges project (Domestic capital). It would take several more years for these projects to be completed. It would be unreasonable for the structures, which was recently improved to be demolished and re-upgraded to 120 km/h. Therefore, in the immediate future, about 10 or 15 years, we had to come to terms with the fact that this section can only be used for the speed of 100 km/h.
   - **Hanoi - Vinh and Hochiminh - Nha Trang section**: Railway network on these two sections failed to meet demands. As a result, it is necessary to construct another track to turn these lines into double track lines. The new track would be constructed first while existing track lines shall be remained to serve current transport demand.
   - **In Summary**, on Hanoi - Vinh and Hochiminh - Nha Trang section, railway would be double track line, while Vinh - Nha Trang section would be kept single track line for the next 10-15 years. That situation would have more or less impact on the planning for proposed alignment of the two sections namely Hanoi - Vinh and Hochiminh - Nha Trang.

   (ii) He showed his willingness to provide further information on ongoing projects if there was any question.

3) **One representative** promised to implement further study on alternatives proposed by the Study Team and give comments later.

   (i) **Station Planning**: He focused on the station planning in the process of improving and upgrading existing railway lines. Vietnam railway system existed for more than 100 years; therefore, before train operation speed could be increased, it would be important to re-consider if distance between current stations was still suitable or not. In addition, it would be necessary to come up with a plan for integrating passenger stations with freight stations.

   (ii) **Logistics and Supporting Services**: He also highlighted railway logistics services and supporting services along the line.

   (iii) **Environmental Considerations:** In the handout, the Study Team mentioned 2 types of reports namely SEA and EIA. It was advisable for the Study Team to make a clear distinction between these 2 terms. According to him, SEA was the report for the whole line while EIA was the report for each section with limited time and space. SEA and EIA should become separated contents and incorporated into strategic planning and planning for each section.

4) **Mr. Le Anh Tuan**, Deputy Director of Planning and Investment Department (MOT)

Comments on Dr. Iwata's presentation:

(i) **Cost Estimation**: He suggested that the Study Team re-calculate the cost of plan A1 and A2. According to rough estimation by MOT, the cost of plan A1 and A2 would be much higher than the number of 1.5 and 1.8 billion US dollar. It was advisable for the Study Team to refer to documents and data on land clearancefor railway safety corridor project. As for the NS railway line, the rough cost of land acquisition was even higher than the total number (1.5 and 1.8 billion US dollars) presented by the Study Team in the handout.

(ii) **Transport Demand**: Although statistics on VITRANSS II was collected in 2010, the Study Team was still suggested to update data on transport demand, both freight and passenger for the forthcoming time.

5) **Mr. Nguyen DatTuong**, General Director of VR :

Comments on Dr. Iwata's presentation:

(i) **Approaching Methodology:**He agreed with approaching methodology proposed by the Vice Minister. In order to carry out such approaching methodology, it was necessary to conduct an overall assessment of current conditions of existing railway lines.

(ii) **Infrastructure Data Included in Assessment of Current Conditions of Existing Railway Lines:**

- The assessment by the Study Team already included infrastructure and alignment data; however, the data given by the Study Team was not so convincing. For example, the number of level crossings given in slide 4 was 1047, which only consisted of official ones. In fact, in addition to official level crossings, there were residential level crossings and unpermitted level crossings, which failed to be added to this number.

(v) **Cost Estimation:**

- He agreed with Mr. Tuan's suggestion that the Study Team recalculated the cost. According to him, the cost of restoring railway safety corridor and constructing frontage roads in order to improve railway safety has already exceeded the number given by the Study Team in plan A1.
- As far as he was concerned, plan A1 was a "do nothing" plan, so what 1.5 billion US dollars would be used for? The Study Team failed to present any basis for him to make comments on this number.

(iii) **Definition of Terms:** He wanted to clarify if the term "train" used in the number of 32 trains; 50 trains; 116 trains and 122 trains per day meant single train or pair of train.

(iv) **Regarding Improvement according to Plan A2:** He wanted to know that once improvement of alignment and level crossings were conducted according to Plan A2, whether the operation capacity of 25 pairs of trains per day can be obtained. This number had previously been presented in VITRANSS II but there were no calculation and argument basis to prove its accuracy.

(v) **Operation Capacity:** He wanted to clarify if the operation capacity was calculated according to the operation of single type of train (passenger train or freight train only) or mixed operation of both type of trains because passenger train and freight train operated at different speeds.

(vi) **Right-of-way Encroachment, Natural Hazards and Climate Change:** In plan A1 and A2, alllevel crossings were still at-grade ones, it was suggested that the Study Team mentioned if railroad right-of-way encroachment situation could be dealt with or not and

incorporated the impact of climate change and floods when weighing the pros and cons of each plan before choosing an optimal plan.

(vii) **Track Improvement:**There were 3 plans for track improvement including: maintenance of single track, 1,000 mm gauge; double track, 1,000 mm gauge; and double track, 1,435 mm gauge. The Study Team is recommended to conduct further study on double track plan, especially in terms of social and environmental impacts, land acquisition and resettlement.At present, even existing single trackfailed to ensure railroad right of way, how could they be expandedto double track?

(viii) **Passenger Transport Demand on NS corridor:** There should be detailed calculation basis and formula for each modal split to support the data provided by the Study Team. Transport demand was very important for the Study Team to decide whether the improvement of existing lines could satisfy the demand or not and if it would be necessary to construct a new line. It was also required to study whether new railway line, if constructed, would be used for passenger or freight transport only or for both; once new line was constructed, which role existing railway lines would play in the development of NS railway corridor.

(ix) **Cost of Plan B2:**Plan B2 required the removal of existing railway lines and constructing a new double track line, 1,435 mm gauge. The cost had to include both the construction of new line and the removal of existing 1,000 mm gauge single track.

(x) **Digital Tools to Choose the Most Optimal Plan:** The line was expected to pass through many provinces and cities, which would have to be incorporated into local planning. Therefore, it was advisable for the Study Team to have digital and modern tools to find the most optimal plan in both technical and socio-economic terms based on thorough comparisons among possible options. Such tools would also help the Study Team give an immediate response to any change made by local authorities.

9. Mr. Toshiyuki UJIIE moved to the next part of the meeting with his presentation on environmental and social considerations.

10. Q&A

1) **Mr. Nguyen Viet Cuong,** Environment Department of MOT suggested the Study Team to refer to the approved Inland Container Depot (ICD) planning during the study in order to choose the most optimal alignment.

2) **Dr. Khuat Viet Hung** gave several questions relating to approaching and studying methods:

(i) **Approaching method**: He totally agreed with the approaching method presented by the Study Team in slide 7;

(ii) **SEA report:** If this study only implemented SEA report pursuant to Vietnamese law, he suggested that the Study Team clearly indicated:

- Which indicators would be studied;
- What expected outputs would be;
- Which outputswere qualitative and which outputswere quantitative;
- Which methods would be used to study each indicator;
- Secondary data and materials collected could help answer which answers; define which indicators;
- What further study should be conducted;

Only by answering such questions could the Study Team determine the amount of work necessary to be done to proceed with the study.

(iii) He said he would transfer documents and materials of this meeting to environmental considerations group of VUSTA for them to have a good grasp of the study and give comments if they had a chance to participate in the next stakeholder meeting.

11. Dr. Shizuo IWATAsummarized the contents of the meeting by sending his thanks to comments given by attendants and giving his response to matters proposed by representatives:

1) He thanked Vice Minister Ngo Thinh Duc for his guidance on approaching methods and showed his hope for a fruitful result by the end of next year.
2) **Technology Transfer**
   (i) The extent to which Vietnam could absorb technology depended on Vietnamese policy, in other words, types of technology transfer embraced by Vietnamese government.
   (ii) Regarding detailed questions of technology transfer, the Study Team would conduct further study and give reply later.
   (iii) In addition to technical matters like purchase of rolling-stocks, the development of human resources should also be highlighted.
3) He emphasized 3 main components of the study including: technology, human resources development (operation and maintenance), and integration of the development of railway and surrounding urban areas. These aspects needed further study before the Study Team could give any specific answers.
4) **Comments on Alternatives A1, A2, B1, B2:** The Study Team would incorporate comments given by representatives on Alternatives A1, A2, B1, B2 into the study.
5) Dr. IWATA asked for further help from VR and TRICCwith regard to improvement of existing railway lines.
6) **Calculation Methods and Formula**: he assured that all calculation methods and formula would be presented in the study and transferred to Vietnamese side.
7) He hoped that in the 2nd stakeholder meeting, attendants would be distributed with a summary of interim report, which could be used as a base for further detailed discussion.
8) **ICD Development Planning:** Dr. IWATA was committed to considering this issue during the study period.
9) **SEA report:** SEA was an integral part of planning, which played an important part in the determination of alignment and station location. As a result, the Study Team would take this into consideration during the choice of the most optimal plan.

12. Mr. Toshiyuki UJIIE gave his feedback to comments by representatives:

1) **Specific Indicators**: The Study Team was now considering 4 alternatives. As soon as a detailed option was selected, he and his group would carry out further study with specific indicators. Only when detailed alignment and station location options were drawn up could the study team make thorough comparisons regarding social and environmental impacts.
2) **SEA report**: Detailed amount of works in SEA report could only be determined after the alignment was chosen.
3) **Data**: Data collection depended on the chosen alignment as well as the amount of data available. He and his group collected a wide range of data and statistics on environment since May and would continue to get more documents and materials from relevant provinces and localities. He showed his hope for support from local authorities. As soon as the Study Team collected all data from relevant localities, they would sort materials out and determine which documents the Study Team were lacking, which site surveys need conducting.
4) He highly appreciated the Dr. Hung's idea to hand the documents of this meeting to VUSTA and showed his hope for comments from them.

13. Mr. Tran Quoc Dong, Deputy General Director (VR) concluded the meeting with his congratulations on fruitful results and thanks for helpful comments from representatives. He also made an appeal to enterprises of the non-state sector for their investment in Vietnam railway development, which was previously the sole responsibility of the State government.

Documentation Report on Second Stakeholders' Meeting

Hanoi City

Date: July 30, 2012
Venue: Railways Trade Union's Center for Cultural, Sports and Tourism
65 Qan Su, Hanoi City
Purpose of the Meeting: Disclosure on Environmental Study and Development the Proposed North-South Railway
Participants: 44 (38 Males; 6 Females)

A. Welcome Address: Mr. Nguyen Minh Hien, Dept. of International Cooperation, VNR

Mr. Nguyen Minh Hien, Department of International Cooperation, VNR opened the session by acknowledging the presence of the participants and introduced the key note speaker.

B. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, Vietnam Railway

Mr. Dong explained the purpose of the meeting which is to provide an update on the HSR study on the alignment and station location, Mr. Dong emphasized that other transports would not be able to accommodate more passengers compared to HSR at the same time minimizing congestion and occurrence of traffic accidents. In Japan, the HSR so far has no record of any accident yet. If the incidence of accident can be reduced, (4,000 accidents in Hanoi alone), that would be a great achievement for the transport sector. He encouraged the participants to give their comments to improve the planning of the HSR.

C. Flow of Activities

The presentation followed the activities as provided in the program. The presentation materials and project information brochure were provided to each participant, along with a questionnaire to allow all participants to give their comments. The presentation was done through power point slides with the following topics:

Part 1: Outline of the Study by Dr. Iwata Shizuo.

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
Mr. Dung, VCCI	He expressed his gratitude for the support from the Japanese government and also agreed with the necessity of the development of high speed railway. He said that the road transportation facilities are now overloaded resulting to traffic congestion and accidents. This is the reason why high speed railway is very important for the country. He expressed hope that the development of infrastructure in the future would create favourable conditions for the entrepreneurs to develop their business. He shared that the existing railway has not fully met the demands of the people and industries, and the investment afforded in the current railway could not comply with the current demand. His inputs to the Study include the following: • The station should be located in Ngoc Hoi. • At present, there is a railway line from Ngoc Hoi to the West and then to Lao Cai. At Yen Vien station, there is line leading to Lang Son. There is a sub-region Mekong project sponsored by ADB, and in this project, there is a Hanoi – Lao Cai railway line. Possibly, the line will be from Ha Dong to Noi Bai airport, to Vinh Phuc, Yen Bai and then to Lao Cai. So, the HSR can strategically run from Lao Cai to Hanoi, then to HCMC. That's the reason	

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
	why Ha Dong is a good location for connecting Hanoi and Lao Cai in the future if the high speed railway will be developed towards the further Northern part.	
Deputy Director, Division of Technology, HAUPA	He also agreed with the necessity of the development of the HSR. It is difficult for the high speed railway to compete with other transportation modes such as bus, road or existing railway. In 2008, Hanoi was merged with Ha Tay Province, and the urban spatial development orientation of Hanoi was approved in July 2011. The general construction plan of Hanoi showed the socio-economic characteristic and criteria of the city and these are very important inputs for this study. In the approved master plan of Hanoi, it indicated the alignment for high speed railway and the satellite cities of Hanoi which are needed to be considered. • The high speed alignment which runs on the west side is suitable. • It is imperative that the high speed railway should not destroy the orientation and the approved development plans of the city. • Hanoi City is now studying the transportation development plan which concretizes the transportation sectoral plan of the Hanoi Master plan such as terminals of national railway, urban railway and land fund for railway in general. So it is suggested that the station should be located in Ngoc Hoi. • Regarding the technical design of urban railway line 1, there should be no competition between the urban railway and high speed railway, that's the reason why there ought to have collaboration with the transport sector. • There is a need to study more about the land fund for high speed railway by collaborating with Hanoi City to clarify on this matter.	The JST confirmed that collaboration between the study team and the city planners will be done.
Mr. Minh Deputy Director, DOT	He shared his experience about railway in Japan during his study tour. He emphasized the importance of high speed railway in other countries in general and in Vietnam in particular. Based on his experience, his inputs for the HSR planning include the following: • The section Hanoi–Vinh should apply the international standards, for example gauge of 1435mm, electric lines. • The ideal distance (miles) of the high speed railway is about 500-600 km (for example: from Hanoi to Da Nang). • The location at Ngoc Hoi is very suitable with the approved plan and transport connectivity. It is 1km far from Ring Road 4; as well as near the Ring Road 3, old NH1 and railway belt. • It is suggested to pay more attention to the approved plans. The alignment should avoid the power station by 500m, Thuong Tin Town, Phu Thuong Industrial Zone, Dau Pagoda, Phu Xuyen Town. • There is a need to study further about the connectivity between high speed railway with other transport modes, its compliance with the road plan, maritime plan, etc. • The implementation of the HSR projects depends on the government and local funds. The study on the alignment and safety corridors should include the scale of land required in order to avoid land encroachment and for land to be secured.	
Mr. Doanh, VNRA	• The alignment by JICA is quite suitable, and ensured that the Dau Pagoda is not affected. The study team tried to minimize the impacts on surrounding area and existing plans. It is not appropriate to share the track of high speed railway and UMRT because it will cause congestion during rush hours. It is suggested that the high speed railway should run underground where appropriate in some areas. • From Ngoc Hoi station to Hanoi station, the existing railway line -1 will be utilized to transport the passengers. It means that the number of passengers using HSR will decrease by 2–3%.	
Representative from DONRE	• She generally agrees with the development of HSR because it would contribute to the socio-economic development and regional connectivity. Regarding environmental effects of the HSR, it is required to conduct Strategic Environmental Assessment (SEA) report for this project that will show impact assessment on the alignment and station location for each alternative. • Alt. 1 is the most suitable option because of its low construction cost and low impact on the environment.	The study team explained that when the HSR projects are approved, EIA will be conducted from the Vietnamese side.

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
	• In selecting the best alignment, it is suggested that the study team should consider other plans such as land use plan, tourism development plan and transportation plan.	

E. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata expressed his sincere thanks to the participants for their convincing comments. He said that the study team would continue updating their study with the other plans of the city.

F. Closing Remarks by Mr. Tran Quoc Dong, Deputy Director General, Vietnam Railway

Mr Dong expressed his appreciation for the attendance and participation. He suggested that the study team should work closely with local authorities as the current source of information is primarily based on secondary data and satellite maps. As such, collaboration with the local authorities is needed to take into account the local plans. The JST needs to update their plan in consultation with the local authorities.

The meeting ended at 5.20 P.M.

G. List of Participants and Pictures

Ha Noi, 30 July 2012

No	Full Name	Agency / Unit	Position
1	Nguyen Tat Vinh	TRICC	Deputy General Director
2	Hoang Anh Dung		Expert
3	Vu Anh Dung	VCCI	Director
4	Pham Truong Thang	Center on Science and Technology, Urban Transportation and Railway	Director
5	Nguyen Thi Thu Thanh	International Cooperation Dept., VR	Deputy Director
6	Tran Viet Ban		
7	Dang Xuan Thuy	RCIC (Railway Consultant)	General Director
8	Nguyen Kim Phuong	VR	Deputy Director, Department of Finance and Accounting
9	Pham Quoc Cuong	Department of Railway	Head of Division
10	Nguyen Van Hoa	VR	Deputy Director, Department of Transportation Business
11	Dang Thi Hanh	DONRE	Deputy Head, Division of Appraisal
12	Ho Thu Thuy	Transportation Newspaper	Reporter
13	Le Ngoc Minh	DPI	Director, Center on Investment Promotion
14	Do Huu Thang	Institute of Science and Technology and Transportation	Deputy Director
15	Tran Quang Dang	DOT	Deputy Head, Division of Appraisal
16	Ngo Van Tuyen	Railway Infrastructure Department	Deputy Director
17	Ngo Quy Tuan	HAUPA	Deputy Director
18	Dao Minh Tam		Infrastructure Division
19	Tran Vu Hai	Construction Planning Institute	Expert
20	Mai Hoa	VN Television	Reporter
21	Chien Son		
22	Ba Trinh		
23	Xuan Thu		
24	Nguyen Tien Thinh	Railway Department	Deputy Head of Planning and Investment Division
25	Cong Trinh	Urban And Economic Newspaper	Reporter
26	Nguyen Vu Diem	Hoang Mai District PC	Division of Urban Management
27	Ngo Dang Hoang Anh	TEDI	Deputy Head, Designing Division of Railway and Urban Transportation
28	Nguyen Tien Minh	DOT	Deputy Director
29	Tran Quoc Dong	VR	Deputy General Director

No	Full Name	Agency / Unit	Position
30	Phan Tien Dung	VR	
31	Nguyen Ngoc Hai	MOT	Department of Planning and Investment
32	Nguyen Manh Hien	VR	
33	Tran Van Truong	Industrial zone management board	Head, Division of Construction Planning
34	Doan Duc Hai	TEDI	Expert
35	Le Hong Ky	Hanoi Urban Railway Board	Deputy Head of Technical Division
36	Tran Thanh Son	VR	
37	Nguyen Anh Thiep	Transportation Newspaper	Reporter
38	Nguyen Van Doanh	MOT	Railway Department, Deputy Director
39	Nguyen Van Diep	DOT	Planning Division
40	Bui Tuan Luong	Hanoi Newspaper	Reporter
41	Nguyen Ngoc Vien	Locomotive Board	Deputy Director
42	Do Viet Quan	Planning Board	Deputy Director
43	Mai Chi	Railway Newspaper	Deputy Editorial Director
44	Vu Trong Thuan	University of Transportation	Teacher

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<tr><td>Opening Remarks
Mr. Tran Quoc Dong, Deputy General Director, VR</td><td>Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team</td></tr>
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<tr><td>Presentation by Mr. Ujiie Toshiyuki, JICA Study Team</td><td>Participants Examining the Alignment</td></tr>
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<tr><td>Representative from HAUPA ask question</td><td>Closing by Mr. Tran Quoc Dong</td></tr>
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Ha Nam Province

Date: July 27, 2012
Venue: Provincial People's Committee, Phu Ly City, Ha Nam Province
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Number of Participants: 34 (30 Males; 4 Females)

A. Welcome Address: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways gave the welcome remarks and introduction of the key speakers. Mr. Tran Quoc Dong highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC-Nha Trang and Hanoi-Vinh.

B. Opening Speech: Mr. Pham Sy Loi, Vice Chairman of Provincial People's Committee

Mr. Loi welcomed the study team to Ha Nam Province for the 2nd Stakeholders meeting. He gave a short briefing about the development plan of the province.

Ha Nam is the considered as the southern gate of Hanoi City. In the recent years, Ha Nam Province has recently formulated their construction plans for the socio-economic development of the province and the region. Many of the sectoral plans have been approved already. There are several plans for transport, especially the plan on roads and waterways network development. For railway sector, the province is looking forward to getting the information about the alignment crossing the province because it relates to their management plan and allocation of land in the province.

He hoped that the meeting would have good results which will promote the effective management of the HSR in the future. He further informed that the participants in the stakeholders meeting comprised of leaders from the province and district to hear about the development of the HSR.

C. Flow of Activities

The procedures of the meeting followed the activities as reflected in the program. This is similar to all activities undertaken in other provinces. The presentation materials were handed out to each participant along with a questionnaire, to allow the participant to give their comments. A project information brochure in local dialect is also given for project information and dissemination. A power point presentation was given which included the following topics:

Part 1: Outline of the Study presented by Dr. Iwata Shizuo.

Part 2: Presentation on the Alternatives through Strategic Environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in the following table.

D. Issues and Responses

Open Forum		Response from Study
Name of Inquirer / Agency	Issues / Comments Raised	
Le Van Quy Director, DOC	An overview of the Provincial plan was presented to brief the participants, using the provincial development map, indicating the areas for current and planned development. The plan was formulated by VIAP from 2030 and Vision 2050. Land area of Ha Nam is about 842 km2. On the North; it borders Hanoi City. On the East, it borders Hung Yen and Thai Binh; On the South, it borders Nam Dinh, and Ninh Binh and on the West it borders Hoa Binh. There are several new roads passing Phu Ly City namely: Expressway Phap Van – Cau Gie – Ninh Binh which has just been put into operation; National	

Open Forum		Response from Study
Name of Inquirer / Agency	Issues / Comments Raised	
	Highway 1A (4 lanes) which will be put into operation by 30 December, 2012. In the North, there is National 38 which is connected with Hung Yen and Hai Duong. The area from NH1 to the Expressway will be developed for industry, services and urban development. In the province, there is 1000ha of industrial land including Dong Van I, II and III, and 1000ha for a university. The province is now advocating with the universities in Hanoi to move to the province. According to the French Consultancy, the high speed railway must be located in the east side of the existing expressway. Some 30ha of land area is reserved for the new station. This station is expected to attract passengers from the Road 21 and from Nam Dinh to Phu Ly. Road 499 runs through the station to the East side up to Thai Binh Province. In the Alt 1 and 2, the high speed railway is located in the West of the NH1A, which will destroy all the plans of the province. In this area, the new administrative building will also be constructed. A 68m road wide is going to be constructed, with assistance from WB. This road will connect with the new high speed railway station. In the Alt 1 and 2, few passengers can access to the station compared to Alt 3. After the briefing, the Director recommended that the study team should consider Alt. 3. It is also recommended that the new station should be located in Liem Tuyen area.	
Vice Chairman of People Committee, Duy Tien District	Duy Tien District plays an important role in the development of Ha Nam Province. During the formulation of the provincial and district plan, land fund has been allocated for the development of high speed railway, and has been identified that the high speed railway should be located in the East of the existing Expressway which is in harmony with the district and provincial plan. The land area for high speed railway and safety corridor is specified at 300m, and no facilities have been allowed to be constructed in these apportioned area. If the high speed railway passes this area, it will not affect the environment and the residents. Whereas, Alt 1 and 2, will pass through urban areas and industrial zones.	
Vice chairman of the City People's Committee	The city is now being developed according to the approved plan. Current plans and projects must be planned carefully so that the approved plans will not be destroyed. Among the three alternatives, Alt 3 seems to be the best one because Alt 1 and 2 will pass through the urban areas and the planned development areas. Regarding station location, Alt 1 and 2 will cause impact on the cultural facilities of the province. It is recommended that the alignment of the high speed railway should be at the East of the expressway. At present, the city and province are constructing roads connecting with the new station.	
Vice chairman of People Committee, Binh Luc District	He expressed his agreement with the Vice chairman of the People's Committee. The high speed will help to reduce the pressure on road and other transportation modes. In Binh Luc, it is suggested that the existing railway will be connected with the new station of the high speed railway.	
Director, DOT	He expressed his agreement with the development of the high speed railway. He gave comments on some issues: Alt. 3 has minimal impacts on the social environment than Alt 1 and 2 because Alt 1 and 2 will pass through many urban areas and industrial zones. Regarding land acquisition, Alt 3 also has limited impacts than Alt 1 and 2. Regarding station location, in Alt 1 and 2, the station is about 2 km away from the existing railway station while Alt 3 is about 4 km away from the existing station. The station in Alt 3 will attract a number of passengers from Thai Binh. Regarding construction cost, Alt 1 and 2, requires more fund in for construction of viaducts passing through residential zones. In Alt 3, it is suggested that the line should be modified or realigned so that it will not cross the expressway twice. The land area between the expressway and high speed railway should be as little as possible.	
Deputy Director, DONRE	The director of DONRE also confirmed and supported the previous comments from other departments. : Regarding the land use plan, 2020 and Vision 2030, Ha Nam province allocated and preserved land area in the East of the expressway Cau Gie –	

Open Forum		Response from Study
Name of Inquirer / Agency	Issues / Comments Raised	
	Ninh Binh specifically for the development of high speed railway. The distance from the edge side of the expressway to the high speed railway is 300m so no facilities are allowed to be constructed on this specified area. . Alt 3 is the most appropriate line, but it should be realigned to the East of the expressway of Cau Gie–Ninh Binh. The land area for the high speed railway development has been reserved, and the cost of land acquisition is considerable lower than that of Alt 1 and 2. The traffic congestion is of great concern at present. If the station is placed as suggested in Alt 1 and 2, the passengers have to utilize the urban roads in the city so, creating traffic congestion in the city. However, if Alt 3 is selected, passengers will use the NH and expressway to continue their travel so traffic will be minimized thus avoiding congestion to occur in the city proper. From the environment viewpoint, Alt 1 and 2 will cause major impacts on the university zones and the urban areas of Phu Ly. The anticipated impact is noise, especially from 8pm to 5am when people are resting. Moreover, the construction of viaducts will affect the city landscape and construction cost is high. In Alt 3, there is minimal impact on environment. It is suggested that the high speed railway be constructed at the East side of the expressway.	
Department of Culture, Sport and Tourism	He emphasized the necessity of the development of the high speed railway which will contribute to the socio-economic development, decrease in traffic accidents, improved connectivity among regions and neighbouring areas. He also expressed his support by selecting Alt 3: Alt. 3 is in compliance with the provincial plan and does not have great impacts on the historical and cultural facilities. The new station is placed at appropriate location which will create the connectivity between Phu Ly and other areas. Alt. 3 is suitable with the development of the tourism sector.	
Deputy Director. Department of Trade and Commerce	He agreed on the necessity of the development of high speed railway crossing Phu Ly City. He emphasized that the construction of high speed railway and new station would contribute to the socio-economic development and the connectivity with other areas. The station located in the Phu Ly City would support the transportation of materials for other sectors and freight transportation.	
Deputy Director, DOLISA	He confirmed his support for the selection of Alt 3 for the alignment based on the following factors: • Alt 3 is suitable for the construction, operation and management because it is in compliance with the provincial plans and does not affect the residential zones and other facilities of the province. • The cost of land acquisition in Alt 3 will be lower than that of Alt 1 and 2. • The operation and maintenance of the high speed railway will be more efficient.	
Director, Department and Science and Technology	He also supported on the selection of Alt 3 for the alignment: It is suggested that Alt 3 should be realigned to run parallel with the Expressway at the East side, and to consider more about the social aspects and management in this study.	
Representative from Youth Union	He expressed his support for Alt 3 for the alignment. Alt 3 does not destroy the provincial and city plans. The construction cost of Alt 3 is the lowest as compared to other alternatives.	

E. Closing Remarks: Vice Chairman of the Provincial People's Committee.

The Vice Chairman expressed his sincere thanks to the participants for their valuable comments. He highly appreciated the study and the report of JICA Study Team and VR which drew a lot of comments from the participants. He agreed that the government should invest in HSR in Vietnam. He agreed that it is impossible to improve the existing railway to be converted to the HSR based on the information presented. He further expressed his agreement to improve the existing railway and a separate development of HSR simultaneously.

He requested the VR to have a plan to improve the existing railway crossing Ha Nam Province, especially the section in Phu Ly City. For example, the construction of viaducts, improvement of railway safety, etc.

Regarding the alternatives of HSR, he agreed with the alignment and station locations in Alt 3 but with some realignment. In particular, the alignment was unanimously recommended to run at the East and the station to be located in Liem Tuyen area.

Some changes on the assessment of the JICA Study Team needs to be reconsidered. The assessment for convenience in Alt 3 should be "A". The environmental and social consideration on Alt. 3 should also be "A" as it will have limited impact on the residents and it would support the development of surrounding areas, and more importantly, it will not destroy the approved plans and projects. Regarding connectivity, he asserted that Alt 3 is highly appropriate one. The cost construction of Alt 3 is also comparatively lower among the alternatives in terms of both construction and land acquisition.

The meeting concluded with emphasis that the alignment should be running along on the east side of the expressway. The Vice chairman offered to give the Study the development map so the team could update and plan the HSR accordingly.

He hoped that the HSR would soon be considered constructed and he suggested that the sections Hanoi–Vinh should be prioritized.

F. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Shizuo thanked the group for their active participation and comments. He said that there are no further comments as clearly, the province's deliberation of their plan is very convincing and are well prepared to accommodate the HSR. The comments will be seriously given consideration and the team will come back again to discuss with the respective departments. He further requested for the provincial regional plans to ensure that the planning of the HSR will incorporate the local plan. Based on experience in local planning, the most serious problem is land acquisition, causing project delays. But Ha Nam is very well prepared. Dr. Shizuo emphasized that this is the first province that has truly showed their plan and this will be acknowledged in the Report

G. Closing Remark: Mr. Tran Quoc Dong, Deputy Director General, Vietnam Railway

Mr Dong commented that the Study Team based their presentation on satellite maps, so the local plan has not been incorporated. However, after the deliberation of the various department heads, the overall conclusion is clear. "No other choice is better than Alt. 3". Mr Dong appreciated their inputs, especially the facilitation of the Vice Chairman of PPC that truly made the meeting participative, as inputs from various leaders were solicited.

The meeting ended at 11.00 a.m.

H. List of Participants and Pictures

Ha Nam Province, 27July 2012

No	Full Name	Agency / Unit	Position
1	Nguyen Van Tien	Phu Ly District PC	Vice Chairman
2	Nguyen Minh Tien	Ha Nam Industrial Zone Management Board	Director
3	Bui Xuan Thanh	Power company	Deputy Director
4	Tran Danh Hung		Deputy Head, Technical Division
5	Pham Hoang Thanh	Duy Tien District PC	Vice Chairman
6	Pham Van Hoa	PPC	Deputy Chief Officer
7	Tran Van Tien	Department of Culture	Deputy Director
8	Nguyen Hai Long	Provincial Communist Youth Union	Deputy Secretary
9	Le Van Quy	DOC	Director
10	Dam Trong Phuc	Department of Trade and Industry	Deputy Director
11	Nguyen Manh Tien	Department of Science and Technology	Director
12	Tran Xuan Duong	Industrial Zone Management Board	Director
13	Nguyen Van Luong		Head, Division of Construction Planning
14	Trinh Ngoc Sinh	DONRE	Deputy Head, Planning Division
15	Lai Thi Que	DOF	Deputy Head, Division of Finance and Investment
16	Pham Minh Thanh	Carrier College	Vice Principal
17	Nguyen Van Khoai	DOT	Director
18	Le Truong Tho	DOT	Head, Planning Division
19	Tran Van Khanh	Phu Ly Station	Director
20	Pham Van Son	Binh Luc District PC	Vice Chairman
21	Vu Van Dien	Department of Information Communication	Deputy Director
22	Nguyen Thi Phuc Thao	DOC	Head of Division
23	Le Van Quy		Director
24	Nguyen Quang Hung	PPC	Head, Transportation Division
25	Nguyen Thi Ha	DPI	Deputy Head of Division
26	Nguyen Thanh Nam	DONRE	Deputy Director
27	Bui Van Tam	DOEI	Deputy Director
28	Pham Hung	DOLWS	Deputy Director
29	Pham Ngoc Anh	TV	Reporter
30	Nguyen Thi Phuong		
31	Nguyen Duy Hai		
32	Vu Xuan Hong		
33	Vu Thi Hoang Anh	PPC	Head of Agriculture Division
34	Nguyen Van Binh		Head of Transportation Division

	
Opening Remarks Mr. Tran Quoc Dong, Deputy General Director, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
2nd SHM in Ha Nam PPC	Representative from Ha Nam asked question
	
Representative from Ha Nam asked question	Mr. Ishikawa Makoto answered the question

Nam Dinh Province

Date: July 26, 2012
Venue: Nam Dinh, DOT
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Number of Participants: 55 (44 Males; 11 Females)

A. Welcome Address: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways gave the welcome remarks and introduction of the key speakers. Mr. Tran Quoc Dong highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC–Nha Trang and Hanoi–Vinh.

B. Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. A questionnaire was provided to allow all participants to give their comments, along with the project profile and presentation materials. The presentation was done through power point with the following topics:

Part 1: Outline of the Study by Dr. Shizuo Iwata.

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item C.

C. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
Le Nghiem Kinh Director, DOT	• Through the two presentations, the participants had good information about the study based on scientific approach. I agree with the road map and the assessment for the development of A1for upgrading to A2, as well as the HSR which is suitable with the financial conditions of Vietnam. It is necessary to fix and upgrade the existing railway to satisfy the increasing demands of the people and formulate the HSR plan at the same time. In the developed and developing countries, HSR plays an important role to create the convenience for the traveling needs of the people. It is important to formulate the HSR plan for the whole North-South line, not only the 2 priority sections. The Government must have a management policy for the HSR. The alignment should be straight and it requires a lot of land to construct stations. If the government does not manage the land fund well, we will face a lot of difficulties in land acquisition in the long run. So it is suggested that we should have a good management plan for the HSR. • It is very necessary to upgrade the existing railway (A1) in order to reduce the number of intersection crossings because Nam Dinh is a province which has the most number of crossings in the country. So to minimize the number of crossings, it is necessary to construct a feeder road. Only by doing so, can we increase the train's speed and improve traffic safety. • Regarding. HSR alignment especially on the north section, it is important that the HSR alignment line passes through Nam Dinh Province because that line will support to not only Nam Dinh itself but also other provinces as well like Thai Binh, etc and the traffic flow in this area is very high. Re station, it is not necessary to have many stations along the line. The high speed train can stop only in several stations because the feeder trains will be used to bring the passengers to the station. Personally, regarding the alignment and station, I agree with the proposed Alt. 1. Alt. 2 and 3 are very close to the existing railway which means that they are very close to the national road where the population	

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
	density is very high so the compensation cost would be very expensive. It is good that the station is located at Dang Xa because this is a good place for future development. It is good if the station is located near the city center for the convenience of the residents. Usually, the station will require a lot of land but it is very difficult to acquire land acquisition in the city and residential zones.	
Nguyen Viet Dung Vice Chairman, City People's Committee	Regarding the overall status of HSR Hanoi-HCMC I agree with the JICA Study Team's assessment. This should have been done several years ago. Because the length of Vietnam is 3000 kms and the length of road is nearly 2000kms. So the investment in railway is very important for Vietnam's landscape and economic development. Although the HSR requires huge funding, it is an effective mode of transport in the future. It is actually a cheap investment at the end. The railway development will connect the cities together and create favorable conditions for economic development. And the railway in Nam Dinh plays a very important role in connecting areas in the Southern part of Red River Delta. I agree with your suggestion to combine the upgrading of A2-B1 and the construction of the HSR sections Hanoi–Vinh and Nha Trang–Ho Chi Minh. These options are suited to the funding capacity of Viet Nam and the national assembly will agree with this. Regarding the alignment and station location, I agree on Alt. 1. And it is good that the station is located at Dang Xa area as this is according to the plan of Nam Dinh for 2025, approved by the Prime Minister, Dang Xa station will be a development area in the future. Regarding the existing railway crossing the city center, it is impossible to develop the station due to limited land area. Surrounding the station are built-up areas and there are many intersection crossings so the traffic safety is at high risk. It is a good idea to realign in the suggested area.	
Tran Thi Thanh Thuy DONRE	I'm interested in the social impacts because when we develop the HSR, it will trigger several social issues. In the presentations, the social issues and benefits are mentioned, for example convenience and socio-economic development, etc. Among the three alternatives, Alt. 1 will result to least negative impacts on social environment. It is suggested that the study team would further explain the social impacts of the various alternatives.	With regards to social impact, we considered to minimize resettlement as much as possible. From the viewpoint of land use, we avoid passing through industrial areas, cemeteries. We have checked whether the alignment will pass through cultural areas and where minorities are living. This is still the pre-FS stage based on topographic map at 1:10,000 scales. We are also concerned about the construction of structure that helps people pass through the railway. This is the interim stage of preparation. We are going to the scoping stage. And we will identify more important issues. We will conduct social assessment on how this will affect the living condition of the people. With the HSR, it will take 30 minutes to travel from Nam Dinh to Hanoi. But the fare might be expensive. The appropriate fare will be considered so that it can benefit the people. We are assuming the HSR is half of the air and two times of the bus fare. We conducted a survey asking the people how much are they willing to pay, which ordinary people can affordsupport. The proposed fare will not be just for the selected people who are using air but also for the public.

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
Trinh Duy Duong Deputy Manager – Division of Road and Railway Transportation Police	Based on the comments of the Directors of DOT and DOC, I agree with the Alt. 1. I think it is suitable in terms of connectivity, socio-cultural and environmental conditions. For the future, HSR is a reliable and safe mode of transport. It is suitable with the shape of Viet Nam. My concern is that, the HSR should not replace the existing railway. I think these two should complement each other and run in parallel. So I agree on the proposal to upgrade the existing railway from A.2 to B.1. If Alt. 2 is chosen, it will affect a lot of people. It should be noted that in Nam Dinh, there are 495 intersection crossings and a lot of feeder roads. The North-South railway runs parallel with National Highway 10 and 21. The intersection crossings do not satisfy the technical standards. So when we implement the A.2, it is necessary to consider the safety on intersection crossings and it is suggested to construct viaducts or feeder roads. Overall, for the structure of the HSR. It is suggested to construct viaduct because it will have less impact on environment and land acquisition.	These are important information. We can still realign or remove it from the city center to other area. This is just a conceptual recommendation because we concentrate on HSR. At the same time how the existing railway can be integrated with the HSR is our main concern.

At this point, it was noted that questions were limited as the participants were generally satisfied with the proposed alignment and location of the station. Instead, Dr. Shizuo asked the question: "The existing railway is passing through the city, is there problem regarding the existing railway?

Response: Regarding the existing station (dotted lines) it crosses to the city center. The surrounding area is well developed. Inside the city people are experiencing a lot of noise, and facing a lot of problems in the crossings, so it is a good idea to realign in the suggested area.

D. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata concluded that there are some important points that the study team should consider but noted that most of the participants agreed with the proposed Alt. 1 which is the recommendation of the JICA Study Team. He further mentioned that explanation on social impacts will be incorporated in the final report. The study team will continue coordinating with the local authorities and if there are more comments, these could be sent to VR.

E. Closing Remarks: Mr. Tran Quoc Dong, Deputy Director General of Vietnam Railway.

Mr. Dong expressed his thanks to the participants. He remarked that the proposed alignment and station location were supported by the province. He requested that the JICA Study Team to further work with local authorities to get the information about the provincial plans in order to update the maps. He emphasized that VR and the JST team would work together to enhance the output of the study. He informed that the third stakeholder meeting will be organized and emphasized on the three issues to be clarified namely: cost of the HSR, funding sources and management. He said that a report will be prepared regarding the feasibility of the selected sections in order to attract the investors under the joint-venture scheme.

The meeting ended at 11.15 A.M.

F. List of Participants and Pictures

Nam Dinh Province, 26 July 2012

No	Full Name	Agency/Unit	Position
1	Pham Dinh Hieu	Ha Ninh Railway Transport Enterprise	Director
2	Dang Van Hai	Ha Ninh Railway Transport Enterprise	Head of Technical Service Dept.
3	Nguyen Duc Cuong	Ha Ninh Railway Transport Enterprise	Nam Dinh Station Master
4	Pham Trong Hien	Ha Ninh Railway Transport Enterprise	Nam Dinh Station Deputy Master
5	Chu Van Linh	Ha Ninh Railway Transport Enterprise	Deputy Head of Finance & Accounting Dept.
6	Trinh Duy Duong	Railroad Traffic Dept	Deputy Head

No	Full Name	Agency/Unit	Position
7	Nguyen Huu Minh	Provincial DOT	Deputy Director
8	La Van Hien	Youth Union	Chief
9	Do Thi Thu Ha	Youth Union	Officer
10	Nguyen Huu Thieu	Provincial DOSCT	Deputy Head of Tourism Dept.
11	Ha Lan Anh	Provincial DPI	Deputy Head of Infrastructure & Industry Dept.
12	Trinh Xuan Loc	Television Station	
13	Phan Ngoc Linh	Provincial DOC	Head of Planning Dept.
14	Nguyen Ngoc Dat	Provincial DOC	Deputy Head of Planning Dept.
15	Pham Van Lanh	Ha Linh Railway Management Company	Head of Technical Dept
16	Nguyen Duc Toan	Ha Linh Railway Management Company	Deputy Director
17	Tran Quy Hung	Provincial DONRE	Deputy Head of Planning Dept.
18	Trang Minh Hoan	Management Board for Industrial Zones	Deputy Director
19	Bui Van Phong	Management Board for Industrial Zones	Officer
20	Vu Dinh Khoa	National Frontier	Vice-Chairman
21	Phan Phuong Dong	Provincial Traffic Safety Committee	
22	Phan Thu Thuy	Provincial Traffic Safety Committee	
23	Tran Linh	Provincial Traffic Safety Committee	
24	Nguyen Xuan Vu	Provincial Traffic Safety Committee	
25	A Quoc Hung	Provincial Traffic Safety Committee	
26	Le Ngoc Khanh	Provincial DOT	Director
27	Nguyen Huu Mich	Provincial DOT	Deputy Director
28	Nguyen The Van	Nam Dinh Television Station	
29	Mai Van Hieu	Nam Dinh Television Station	
30	Phan Van Anh	Labor Union	Vice-Chairman
31	Pham Van Khoi	Provincial DSCT	Deputy Director
32	Vu Anh Cao	PPC	Head of Industry & Construction Dept.
33	Nguyen Chi Linh	Y Yen District PC	Deputy Head of Industrial & Commerce Dept
34	Pham Xuan Nga	Y Yen District PC	Vice Chairman
35	Nguyen Viet Dung	CPC (City People's Committee)	Vice Chairman
36	Do Huy Dung	CPC	Deputy Head of Economics, Agriculture Dept.
37	Nguyen Van Chuyen	CPC	Urban Management Dept.
38	Nguyen Thanh Son	CPC	Natural Resources &Envir Dept.
39	Nguyen Van Thanh	CPC	Labor, Invalids & Social Affairs Dept.
40	Nguyen Khac Sung	Vu Ban District PC	Vice Chairman
41	Nguyen Minh Thuan	Vu Ban District PC	Deputy Head of Natural Resources &Envir Dept.
42	Pham Cong Uan	Vu Ban District PC	Deputy Head of Agriculture Dept.
43	Hoang Van Xung	Vu Ban District PC	Deputy Head of Industry & Commerce Dept.
44	Tran Pham Nghe	Vu Ban District PC	Labor, Invalids & Social Affairs Dept.

No	Full Name	Agency/Unit	Position
45	Tran ThanhThuy	Provincial DONRE	Pollution Control Dept.
46	Dang Van Mich	My Loc District PC	Deputy Head of Agriculture Dept.
47	Tran Tat Nguyen	My Loc District PC	Vice Chairman
48	Ha XuanHuyen	My Loc District PC	Deputy Head of Natural Resources & Envir Dept.
49	Le Anh Tuan	My Loc District PC	Head of Labor, Invalids & Social Affairs Dept.
50	Nguyen Van Thanh	Farmer Association	President
51	Bui Ngoc Lai	Veteran Union	Office Chief
52	Pham Thi Lam	Women Union	President
53	Nguyen Khac Xung	Vu Ban District PC	Vice-Chairman
54	Trieu Thi Hien	DOT's office	
55	Nguyen Thi Thanh Thuy	DOT's office	

	
Opening Remarks Mr. Tran Quoc Dong, Deputy General Director, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Speech of Representative from Ninh Binh Province
	
Exhibition in Ninh Binh	Representative from Ninh Binh asked question

Ninh Binh Province

Date: July 25, 2012
Venue: Hoang Son Hotel, Ninh Bin
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Number of Participants: 21 (19 Males; 2 Females)

A. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director General, Viet Nam Railways gave the welcome remarks and introduction of the key speakers. Mr. Tran Quoc Dong highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC–Nha Trang and Hanoi–Vinh.

B. Opening Remarks: Mr. Pham Minh Cuong, Deputy Director of Ninh Binh Department of Transportation

Mr Cuong gave a warm welcome to all participants in the 2nd SHM of the JICA technical support project for the Study of the North-South High Speed Railway Formulation in collaboration between Vietnam Railway under the assignment from the MOT and Ninh Binh PPC.

Mr. Cuong emphasized the importance of the HSR as an important infrastructure development, as well as for the detailed formulation for the Hanoi–Vinh and HCMC–NhaTrang section, which corresponds to the vision of the 2011–2020 socio-economic development strategy and the Direction for the 5 year development plan of the country during 2011–2015. As pointed out in the XI National Assembly, the focus on the development and the planning of the infrastructure system of the whole country are concentrated on resources for the development and completion of crucial transportation system which are considered priority initiatives for national development. Ninh Binh is considered as strategic place. The province currently has the North-South railway passing through and the expected benefits from the HSR projects upon completion. As such the HSR is considered important and significant to the province. The HSR is viewed to facilitate fast mode to distant places, provides convenience and create for rapid sustainable development to meet the demands of industrialization and modernization of the new era.

On behalf of the province, Mr Cong committed that Ninh Binh would provide favorable support conditions for study team, the Ministry of Transportation, Vietnam Railway and JICA and that the province would facilitate site clearance, security, management, monitoring, etc. and ensures quality and coordinated efforts with the Ministry of Transportation during project implementation.

C. Workshop Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. The presentation materials and project information brochure were provided to each participant, along with a questionnaire to allow all participants to give their comments. The presentation was done through a power point with the following topics:

Part 1: Outline of the Study by Dr. Iwata Shizuo

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Response

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
DOT Director	The DOT Director confirmed that this is the second meeting in Ninh Binh. The DOT Director suggested that the opinions of the participants will be reflected in the questionnaire, which will be given back to the JICA Study Team He generally agreed on the 4 criteria for the selection of the alignment. However, he proposed that the Study Team and VR will send an official request to collect the comments from the provincial departments officially. He further suggested that JICA study team needs to consider the following: • The proposed alternatives should be in line with the provincial plans. Ninh Binh Socioeconomic Development Plan (SEDP) was approved by the Prime Minister in 2011. This plan should be considered and updated in the JICA study and should include other sectoral plans that were revised, including transport development plan and land use plan. The proposed HSR should show how it is integrated with the provincial sectoral development plan. • Many experts in Ninh Binh visited EU and East Asia and are familiar about how the HSR operates. It is highly an advanced transport mode. It is suggested that JICA and VR shall expedite the NSHR development as soon as possible. The proposed roadmap shall be earlier than 2020.	JICA and VR will send the official document to collect opinions from the related agencies. However, comments on the issues presented above are highly appreciated.
Mr. Chu Thanh Ha, DONRE Vice Director	The Director of DONRE also agrees with the necessity and role of HSR in the development of the province. • Alignment. The overall length of HSR in Ninh Binh province is about 20 km. Alt. 1 cuts through Khanh An commune of Yen Khanh District while Alt. 2 and Alt. 3 will traverse through Ninh An commune of Hoa Lu Town, Tan Binh ward, Bao Son ward, Quang Son commune and a part of Tay Son ward of Tam Diep City. Under this condition, both Alternatives 2 and 3 will trigger impacts on highly populated areas. As such the proposed Alt. 1 is more appropriate. as it will have less impact on the localities and the technical aspects are more feasible • Land use. The JICA Study Team has not considered the socioeconomic development and land use plan in HSR assessment. If the HSR projects are approved, land acquisition will be a critical issue. MOT and VR shall approve the HSR and so the province will examine the direction within the framework of the provincial and sectoral plans. • It is proposed that the study team shall cooperate with DONRE to prepare SEA in compliance with the Environment Protection Law, Decree No. 29 and Circular No. 26.	
Mr. Pham Tri Thuc, Vice Director of Ninh Binh Authority for Industrial Parks	• Alignment: The Director of Ninh Binh Authority for Industrial Park generally agrees on Alt. 1 where the starting point is at eastern industrial parks on the province. This is considered as convenient in terms of accessibility of the workers from the industrial parks. It is expected that Khanh Phu IP will attract 10,000–15,000 workers. The end point of Alt. 1 which lies in Quan Son area is also proposed to be an industrial park in the future and this would facilitate easy access for the workers. • The three railway stations (Ninh Binh, Cau Yen and Dong Giao) need to be taken into consideration to ensure the connectivity between the existing railway and the high speed railway. • Alt. 1 is supposed to be a straight line but the development of Ninh Binh airport shall also be taken into account properly. The province considers development of Cat Xi airport, covering 400 ha, which will complement the high speed railway. • The JICA Study Team has not considered the land use plan. HRS development needs to interlink with the provincial socio-economic development plan • Although the plan for HSR is a long-term vision, it is suggested that the project road map shall be implemented earlier.	
Mr. Luong Xuan Bang, Vice Director of Department of Industry and Commerce	• The study team identified the 4 criteria for selecting the alignment; however, it did not mention the interconnectivity between the HSR and other existing facilities It is proposed that the intersection with other facilities shall be considered as additional criteria. • The Director of DIC expressed that Alt. 2 is more convenient since it is	

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
	elevated. Alternatives 1 and 3 will be more complicated. There should also be cost comparison to be able to evaluate the advantages of each alternative. Cost of the Alt. 1 may be much higher since it requires larger areas.	
Mr. Luu Duc Can, DOC Vice Director	• Three (3) alternatives were considered, consisting of Alt. 1 (JICA proposal), Alt. 2 (MOT proposal) and Alt. 3 (KOIKA FS). It should be noted that Ninh Binh Urban Development Plan 2020 was approved by the PPC, which proposed two large-scale cities, namely Ninh Binh and Tam Diep. The beginning section of the HSR will not affect the future plan of Ninh Binh City but the end section from the station to the end point will have significant impacts on the development of Tam Diep City when the alignment crosses at the center Tam Diep City. It is suggested that the Study Team shall consider the alternative which turns right behind Ninh Binh City following Alt. 2 to avoid densely populated residential areas. • The intersection with the completed expressway has not also been considered. The three proposed alternatives will intersect with the expressway. Both HSR and expressway are high speed transport modes. Specifications under these conditions and mitigations need to be ensured.	
Mr. Nguyen Van Hien Head of the Infrastructure Division, DOT	• Based on his experience in working with the railway for three years, Mr Hien, Head of Infrastructure Division (DOT) agrees with comments of DONRE, however, there should be an update on the existing, ongoing and future main roads. Including also the plan on the industrial zones and parks of the province for integration with the development plan. It is noted that the 3 alternatives have tried to avoid the key critical zones of the prov. However, Alt. 1 is my preference. • The intersection with existing railway is almost overlapping with the future crossing of the expressway. This area is also an industrial area of Mai Son district. • The section through Tam Diep crosses almost entirely through an urban area and site clearance will be a problem. • On station location: the province expects that the station should be to the east of the city, this is specified in all documents of the city, which is most similar to Alt. 1, In Ninh Binh transportation plan (2020) we planned this area specifically for this.	
Mr. Tran Quoc Dong, VR	• There were three proposals from 03 different teams and two alternatives (red and blue) from two consultants who had worked with the province. The process was systematic and professional, while the approach by JICA was based on satellite maps without proper consultation with the local authorities, so there are considerable gaps when it comes to local realities and conditions. It is suggested that the JICA Team works closely with the local units to resolve the differences.	

E. Concluding Remarks: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata thanked the group for their active participation and further clarified that this is the initial assessment yet. The Team will continue to work with the province and collaborate for further undertakings. Dr. Iwata expressed that the presentation had provided ample information at this initial stage. In addition, the whole traffic network of roads, common railway, etc. will be integrated with HSR.

Regarding the alignment and station location, the team has received valuable comments. The team will make the best efforts to incorporate them in the future revisions. However, the position of stations and alignment should take into account other provincial requirements, so there may be cases when not all expectations of a specific locality can be addressed, however, efforts to incorporate the suggestions will be done as needed.

F. Closing Remarks: Mr. Tran Quoc Dong, Deputy Director General, Vietnam Railways

Mr. Dong expressed that the representatives had listened to the presentation done by the JICA Team on the HSR and the team had received many valuable comments for future updates. He

suggested that the Consultants work closely with the province to be updated and consider their suggestions. He emphasized that as a protocol requirement, the consultant should consult with the local authorities to get information and work with the respective units, committees, departments and agencies rather than simply using maps or images, so he urged that the JICA team follow the same protocol.

The meeting ended at 11.00 A.M.

G. List of Participants and Pictures

Ninh Binh, 25July 2012

No	Full Name	Agency / Unit	Position
1	Le Ba Giao	Ninh Binh Station	Director
2	Nguyen Van Hien	DOT	Head of Infrastructure Division
3	Chu Thanh Ha	DONRE	Deputy Director
4	Dien Thi Ha		Deputy Head, Planning Division
5	Chu Bang	Department of Trade and Industry	Deputy Director
6	Nguyen Trong Hung		Industrial Management Division
7	Le Xuan Dan	City PC	Deputy Head, Urban Management Division
8	Pham The Thuc	Industrial Zone Management Board	Deputy Director
9	Tran Van Trinh		Head, Investment Division
10	Luu Dac Tai	DOC	Deputy Director
11	Dang Hoang Phuong		
12	Pham Ngoc Minh	DOT	Expert, Division of Transportation Management Division
13	Le Van Dac	DPI	Head, Division of Rural Construction
14	Hoang Quoc Tuan	DOT	Head of Transportation Division
15	Pham Minh Cuong	DOT	Deputy Director
16	Nguyen Xuan Tuyen	DOT	Head of Planning and Financial Division
17	Tran Duc Hoat	DOT	Expert
18	Pham Ngoc Quy	Yen Khanh District PC	Vice Chairman
19	To Van Luu		Deputy Head of Natural Resources and Environment
20	Vu Anh Tuan		Deputy Head of Trade and Industry Division
21	Ngo Ton Quyen	DARD	Expert

	
Opening Remarks Mr. Tran Quoc Dong, Deputy Director General, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Speech of Representative from Ninh Binh Province
	
Participants Examined the alignment in Ninh Binh	Representative from Ninh Binh asked question

Thanh Hoa Province

Date: July 24, 2012
Venue: DOT, Than Hoa
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Number of Participants: 36 (36 Males; 0 Females)

A. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

The welcome speech of Mr. Dong highlighted on the importance of HSR development and prioritized sections in the north. As such, there is signified support of the PPC on the proposed project. He reiterated the need for support and wished that workshop will be successful and the HSR projects will be implemented soon, and that the objectives of the meeting will be generally be achieved.

B. Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. A questionnaire was provided to allow all participants to give their comments. Main activates included the following:

Part 1: Outline of the Study by Dr. Iwata Shizuo

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item C.

C. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Mr. Nguyen Duc Trung, Deputy Director, DOT	DOT studied KOICA alterative on FS on HSR in November 2007. Alt. 3 of this study reflects the KOICA alternative. Regarding the alignment, the following comments are observed: (i) Alt. 1 crosses many residential centers and unfavourable geological conditions, cutting plain area, affecting cultivating land. The compensation cost will be much higher. (ii) Alt. 3: The northern Ham Rong section runs along the border with Ninh Binh Province, crossing Ham Trung and Ham Son new towns as well as densely populated zones, requiring land acquisition which is difficult. (iii) Alt. 2: The northern Ham Rong section of Alt. 2 is the most suitable. It is suggested that the northern Ham Rong section alignment will be selected following Alt. 2. (iv) The southern Ham Rong section from Thanh Hoa station to Truong Lam and Nghe An, Alt. 1 is the most appropriate. The more it is moved to the west the more convenient it is since the elevation is high. It is further proposed to combine two alternatives 2 and 3 for the alignment: Alt. 2 for the northern Ham Rong section and Alt. 3 for the southern Ham Rong section Regarding station locations: Alt. 1 is proposed at the location near Ham Rong Bridge while Alt. 2 at the northern existing railway station industrial park and Alt. 3 at the eastern Rung Thong Mountain. Alt. 2 is only 6 km from the existing railway station and will affect seriously the northern station industrial park. Alt. 3 is the most appropriate since the location is near the North-South expressway which will facilitate easy access to Thanh Hoa City center, which is only 4 km. In addition, it is proposed that another station will be constructed at	In JICA study, the alignment is considered to ensure the most convenient conditions for passenger accessing the HSR. The comparison results show that KOICA station location alternative is far from the city center and the existing railway station, causing difficult accessibility for people. Moreover, the alignment was studied carefully to meet the minimum curve radius of 6,000 m for high speed train operation. JICA proposed alignment also avoided mountain crossing which would require tunnel and longer bridge.

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
	Truong Lam to improve connectivity to Nghi Son and Hoang Mai Industrial Parks.	
Mr. Le That Thiep, Thanh Hoa DOC	High speed railway development is very important to the socio-economic development, especially that Vietnam is stretched over 1,700 km from the north to the south in S-shape. HSR development will contribute to reduce travelling time to 1hour between Hanoi and Vinh and 1.5 hours between HCMC and Nha Trang, as well as to 5.4 hours between the north and the south, respectively, which could not be provided by air transport. Moreover, HSR will contribute to improve the overall transport services. It is proposed that the Study Team will further clarify the selection of Alt. 1 in terms of (1) impacts of Hanoi – Vinh expressway to HSR; (2) viaduct development at densely populated areas, especially ROW, elevation and safety corridor which will affect urban development in the province; and (3) impacts on Thanh Hoa new towns, especially Bim Son Town (urban class III), Ha Trung Town (Urban class IV) and Thanh Hoa City (urban class I) as well as some areas in Bim Son where the high speed railway traverses. 1. Station Location: The proposed location is near the city center but is blocked by the existing railway. The study team shall take this issue into account to improve convenience for the passengers. Station location Alt. 3 is preferred since it is connected appropriately to the main urban corridor (Le Loi street) which will be expanded to the planned station location. 2. Alignment: I agree with DOT comment to combine two alternatives: the northern Ma River will follow Alt. 2 and the southern one will follow Alt. 3.	JICA study team explained that the station locations are considered to provide the best convenience for the passengers. The existing railway will function as feeder of the high speed railway as well as serving the short travelling requirement. Future demand was analysed. Convenience and accessibility were considered as the most advantage of the high speed railway compared to airway so the station is proposed near the city center. Japan's experience proved that if the station is developed far from the city center, the development progress tends to be in slow pace, including development of areas surrounding the station. Moreover, high speed railway is a long-term project which is proposed to commence after 2020 so the province has time to secure the land. In addition, the proposed alternative avoided rivers and mountain crossing to shorten the length of the entire route. The final report will provide an estimated cost for each alternative to make comparison.
Mr. Tran Quoc Dong, VR	I highly appreciate the comments from the stakeholders of the province. It should be noted that HSR plays a different role, serving long-distance transport. Airports are often far from the city center but HSR stations shall not be 30-40 km from the city center. However, 3-4 km distance from the city center is acceptable. The station locations near the city center will save traveling time for passengers. Moreover, the more straight the alignment the shorter the length, saving more time for passenger. The shorter the length also means smaller land acquisition, contributing to less construction cost. Taiwan experience shows that HSR could be developed under BOT form. Investors from economic sectors are attracted to develop HSR. They allow operating the land around the stations. Thus, the stations are often located at places which are suitable for urban development. Favorable conditions shall be provided to investors to improve feasibility of the HSR. New towns will be developed around the stations so the barren land around the proposed stations will become a densely populated towns in the future. The locality shall consider which is the most important criteria to select the alignment and station location appropriately.	
Mr. Le Van Dung, Vice Director of Planning Division, DOT	HSR will be developed in long-period after 2020. The locality shall save land for the project implementation in the future. It is proposed that the JICA Study Team shall update related plans of the province properly. Regarding station location, the Prime Minister approved the Thanh Hoa City construction plan up to 2020 and Vision to 2025 based on Decision 84/2009. Thanh Hoa City development will be developed towards the east, merging to Sam Son Town along Ma River, stretching 19 km long. The 3 proposed locations are not in the city center. It is noted that the connectivity with the city center of three alternatives are similar. However, Alt. 3 will not affect the city plans. Alt. 2 and Alt. 1 will break the city plans and existing facilities, especially the city construction plan up to 2020. Alt. 3 connectivity should be updated to further improve the people's accessibility to the station, including western ring road, NH47 and eastern road among others. It is requested that VR and the JICA Study Team shall send the official explanation on the proposed alternative to Thanh Hoa Province so based on that, related departments will comment officially.	

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Mr. Nguyen Manh Tuan, Deputy Director of Infrastructure Division, DOT	(1) HSR Alignment: It is suggested that the study team shall compare the expressway development, the high speed railway development and the airway development scenarios appropriately to clearly clarify the necessity of the high speed railway development. My perception is that the high speed railway only provides passenger transport service. So it should be better to consider "Alternative B2" to promote both passengers and freight transport. (2) The study team shall consider the economic viability of the HSR projects. B2 Alternative costs US$ 27.7 billion while the preliminarily cost of the high speed railway development is US$ 38 billion, excluding locomotives and car cost. (3) The operation cost shall be taken into account besides the construction cost. (4) The study team emphasizes the importance of the connectivity of the existing railway (existing railway) with the high speed railway. In fact, the existing railway shares only 7-8% travelling demand in Vietnam so the demand is not significant as compared to demand on road, expressway and airway.	B1 means upgrading the existing railway to operate at 120 kph, serving both passengers and freight. B2 is upgrading the existing railway to operate at 150 kph but it is not considered as the high speed railway since the minimum speed of the high speed railway is 200 kph. It will not satisfy the future transport demand and does not compete to expressway and airway but rather supportive. High speed railway shall be developed while the existing railway shall be converted to feeder servicing and to meet short-distance travelling demand. The estimated cost submitted to the national assembly is about 40% of GDP. JICA will further consider the investment cost and share in GDP at the construction implementation time appropriately. Taiwan, China and Korea lessons show that high speed railway could be developed early. So it is proposed to implement the HSR projects from 2020. However, the preparatory works need to commence as soon as possible.

D. Concluding Remarks: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata thanked the participants appreciating their active comments. The JICA study team will incorporate the comments in the final report. Proper station location will contribute greatly to the urban development of the city and it should be in compliance with the local plans. It is requested that the locality shall provide updated plans to the study team for updating the report. The study team will review and conduct further study and discussion to resolve the prevailing issues.

E. Closing Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

In closing, Mr. Tran Quoc Dong, VR thanked the province for their comments. The meeting at the province is one of 6 meetings to be held at the 6 provinces in the north where the prioritized section would traverse. Mr. Cuong emphasized that the active participation of related departments proves the success of the meeting. Based on these comments, the study team and VR will finalize the report to submit to the National Assembly in 2013.

The meeting ended at 11:20 a.m.

F. List of Participants and Pictures

Thanh Hoa Province, 24 July 2012

No	Full Name	Agency / Unit	Position
1	Nguyen Manh Tuan	DOC	Deputy Head, Technical Infrastructure Management Division
2	Ho Huu Thiet	Mai Linh company	Director
3	Tran Nam Hai		Assistant
4	Le Trong Hung	Nong Cong District PC	Vice Chairman
5	Tran Van Hue		Deputy Head, Division of Trade and Industry
6	Bui Khac Hung	Vinh Nguyen Company	Deputy Director
7	Tran Van Thu		Deputy Head, Planning and Technical Division
8	Hoang Ngoc Thanh		Head, Business Division
9	Le Dinh Thinh	DONRE	Expert
10	Nguyen Van Khanh	Vinh Nguyen Company	Expert

No	Full Name	Agency / Unit	Position
11	Tran Xuan Viet	Bim Son District PC	Deputy Head, Urban Management Division
12	Mai Xuan Liem	DOT	Deputy Director
13	Nguyen Duc Trung		Deputy Director
14	Le Tuan Dung		Head, Division of Finance and Organization
15	Pham Van Chung		Expert
16	Nguyen Huu Hung	Planning Institute	Expert
17	Vuong Kha Son	Bim Son station	Director
18	Dang Van Tho		Deputy Head, Planning and Economic Division
19	Le Minh Tuan	Thanh Hoa railway management company	Deputy Director
20	Do Xuan Thanh		Head, Technical Division
21	Phan Tien Dung		Deputy Head, Technical Division
22	Nguyen Thanh Hai	Thanh Hoa railway enterprise	Director
23	Nguyen Duc Cuong		Planning Division
24	Le Hong Son	Provincial Farmer Union	Head of Social Board
25	Duong Van Giang	Ha Trung District PC	Vice Chairman
26	Ngo Xuan Nhan	Division of Vietnam Industry and Trade	Branch Director
27	Le Van Luyen	Provincial Tourism Union	Chairman
28	Le Van Nhuan	Hoang Hoa District PC	Vice Chairman
29	Le Van Toan	City PC	Head, Division of Urban Management
30	Nguyen Minh Ton	PPC	Deputy Head, Industrial Division
31	Le Ba Ung	Dong Son District PC	Head, Division of Trade and Industry
32	Le Dinh Khoa	Quang Xuong District PC	Head, Division of Trade and Industry
33	Trinh Ngoc Toan	Thanh Hoa Station	Director
34	Nguyen Thi Lien	Provincial Women Union	Head, Society and Family Board
35	Nguyen Van Dong		Expert
36	Tu Thiep	Construction Planning Institute	Director

	
Representative from Thanh Hoa Province	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Participants Examining the Alignment in Thanh Hoa
	
Representative from Thanh Hoa asked question	Closing by Mr. Tran Quoc Dong

Nghe An Province

Date:	July 23, 2012
Venue:	People's Committee, Nghe An Province North Vietnam
Purpose of the Meeting:	Disclosure on the Environmental Study and Development Alternatives on the Proposed North-South Railway (Hanoi-Vinh and Ho Chi Minh Nha Trang Sections
Number of Participants:	52 (50 Males; 2 Females)

A. Welcome Address: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Dong gave the welcome remarks and introduction of the key speakers. He highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC-Nha Trang and Hanoi-Vinh. He encouraged the participants to listen attentively and give their feedbacks as inputs to HSR planning.

B. Opening Remarks: Mr. Huynh Thanh Hien, Vice Chairman of Nghe An PPC

The Vice Chairman gave acknowledgement and welcomed the study team. He emphasized on the importance to know the policies and issues of the province regarding the HSR. He perceived the HSR as the answer to the demand of the people for an efficient and faster mode of transport. Following the General Assembly meeting last year, the province kept high hope that the HSR will materialize. A brief background on the current transport situation of the province was deliberated. Currently, from Hanoi to Vinh Province, there exists a small railway and train from Hanoi is often overloaded. Reservation for tickets takes a long time and oftentimes runs out of tickets which indicate the high demand of commuters. For road transport, there are about 100 buses, travelling to and fro in Hanoi and three flights daily. Buses, airplanes and trains are overloaded. The location of Nghe An is strategic, the two nearby provinces, Thanh Hoa and Ha Tinh, industrial parks are developing rapidly, attracting many tourists. These developments will trigger socioeconomic development and would expect a sharp increase in population and visitors in the future, putting pressure on road and transport. In Nghe An, there are popular beaches attracting millions of visitors, 13 bio reserved to the west of province which is recognized by UNESCO.

Taking into account the local characteristics of the province, improving the existing railway is considered not enough for travel demand in the future. The importance of HSR is viewed as very important for the economic development of the central region. This point, the vice chairman shared his experience in Japan on HSR. Saving on time (2.5 hours for 450 km) was viewed as an important factor in transport and should be the kind of transport mode envisioned by the province in the future.

Initial steps have been undertaken by the province regarding HSR development by coming up with certain agreements with the MOT and VR regarding location of stations and the alignment, which have been planned on the east side.

Overall, there was signified commitment to support the project and the Vice chairman expressed his thanks to the JICA study team for the workshop activity.

C. Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. A questionnaire was provided to allow all participants to give their comments, along with a project information brochure in local dialect and presentation materials. The presentation was done using power point slides which included the following:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr.

Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Mr. Huynh Thanh Hien, Vice Chairman of Nghe An PPC	Alignment of alternative selection: (1) The selection of the alignment was decided with careful and thorough discussion with the MOT and other agencies. The alignment will pass to some hilly areas and some sections with many industrial zones. Overall, the alignment through a mountainous area does not affect the existing plans of the province. Some sections on the west side of the existing railway runs through low lying rice fields. (2) There are certain parts that are prone to flooding so a viaduct is suggested. With the proposed Alt 1, this will require a large area of land as a new bus station is also planned to connect to the station. (3) Alternatives 1 and 2 will affect too many people and current plans. On the other hand, the land acquisition cost for Alt. 3 is much lower because the land to be acquired is mostly hilly and compensation cost is low. (4) The analysis of variables on slide 25 requires revision as it does not reflect the local condition is suggested that JICA sends a team to study further in order to come up with a good analysis of the site.	The most important criteria when the Study Team selected the alignment alternatives are the connectivity to existing railway. In Japan, upon leaving the HSR, a passenger can get on common railway to continue travelling right away. Stations far away from common railway proved to be failures in railway planning in Japan. The study team also went by car along the Hanoi Vinh railway line to investigate and studied maps to analyse. Residential areas, cemeteries and industrial zones were avoided to arrive at the alignment proposed. The blue alignment requires a 3km tunnel, so that's why the study team selected the red alignment to avoid that.
	(1) The red alignment (JICA's) proposed alignment has many curves, which is also long. As such construction cost would be more expensive. (2) Currently the travelling time from Hanoi to Vinh is 6 hours, with the proposed HSR it would be about 2 hours, thus time saved would be about 4 hours. By converting the time saved into amount we can estimate by dividing the amount by 4 to estimate the amount per hour. (3) If the alignment will destroy the current plans, the cost would be much higher. (4) In the future, the HSR will extend to the South anyway so the decision to select a suburban railway should not be a hindrance factor.	In the history of development in Japan, there has never been a HSR terminal too far away from the urban area either. But when an HSR train arrives, about 1000 passenger will get off, is the capacity of taxis and other transportation enough for all of them?
	(1) The location of the station is very well-connected to the 3 roads of Vinh City and the HSR can accommodate very well the large number of passengers which would not be a problem. If passengers arrive in Vinh and want to travel further south, they can travel by bus. (2) If we adjust the alignment and position the station somewhere in the city, it will be very expensive to extend the alignment to the south in the future.	All the criteria of the local province will be considered when we select the station location. Regarding historical sites, the An Duong Vuong Temple was avoided in the proposed alignment. With regards to the industrial development plans, we do not have this information so please provide us with this information.
The Department of Culture, Sports and Tourism	The alignment should go to the West side of the existing railway so it would not require complication. Whereas it if runs to the East side of the existing railway, it would create a lot of crossings and land acquisition and will have to deal more with social concerns. There should be comparative information between HSR vis-a-vis, airway or waterway. The connectivity between North-South expressway and HSR has to be considered so that land acquisition and interconnectivity can be considered appropriately. Prioritization of project needs also to be considered because HSR will take considerable time requiring human resources, technologies and more fund.(VND 38 billion) It would be difficult to implement both at the same time, so it is recommended that the North-South expressway should be given priority.	Regarding land acquisition or environmental concerns, we will try to minimize them. Comparing to other transport modes, HSR is most environmental friendly and causes least environmental problem. We also have provided an analysis pertaining to transport demand by various modes in the future on the North – South railway, besides HRS, the improvement of other modes are also needed.
Nghe An Railway	It is suggested that the railway should be elevated to avoid	

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Management Company	obstructions such as animals. Alt. 2 is considered as the best option. However, the province has the main decision regarding alternative. For sections that are not elevated, the corridor must have some sort of protective measures to avoid obstruction.	
Provincial Union of Science Associations	With regards to climate change, sea levels will rise by 0.5m, have the consultant considered this? JICA highly values social and environmental aspects and Alt. 3 is the best option reflecting these aspects, why is Alt. 3 not recommended then? Ii is suggested that Alt. 1 and Alt. 3.can both be combined	The tunnel will be 25 meters above the sea level so it will not be affected. The JST explained that the 3 alternatives used satellite images to see how many buildings are affected and counted those to select the best option. The alignment was considered by taking into account many aspects, not only terrain, the selection of a station is not only on location based on how it is interconnected with the whole transport system as well. The JST will take note of the suggestion of combining two alternatives.
Follow up comment	Can we consider another station between Thanh Hoa and Vinh? The province is a focal industrial development area of Vietnam, The province has constructed a big road to Thai Hoa Town, if a station could be constructed here, it would help the development greatly, and the location is also very suitable between Thanh Hoa and Vinh (Hong Mai station). In this area, a Japanese firm will establish a Kobe steel plant and two industrial parks, for Thanh Hoa. There is also the Japanese Nghi Son cement plant, and 4 other Japanese investors have just committed to invest in this area as well, so, it is appropriate to put a station in this area.	JST will consider the suggestions and study further to select the best option.

E. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata thanked the group for their active participation. He briefly summarized the need for the HSR with due consideration on the cost and others issues that need to be resolved. The task of the study is how to arrive at the best and doable plan for the HSR projects. This process is strategic and requiring compliance to the laws of the country. So the comments are kept by the study team and will be incorporated in the next study. An important issue is the location of the stations to maximize connectivity with the HSR and the benefits of the location where the HSR passes through.

F. Closing Remarks: Mr. Tran Quoc Dong, Deputy General Director, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways appreciated the participants and gave assurance that the study team will continue to coordinate with the province in updating their report.

The meeting ended at 5.30 p.m.

G. List of Participants and Pictures

Nghe An Province, 23 July 2012

No	Full Name	Agency/Unit	Position
1	Nguyen Huu Tuy	Quynh Luu District PC	Vice Chairman
2	Nguyen Son Ha		Head Division of Trade and Industry
3	Pham Van Hao		Deputy Head, Division of Natural Resources and Environment
4	Hoang Xuan Truong	Federation of Scientist and Technical Union	Vice Chairman
5	Nguyen Van Hung	Company for Vinh Signal Center for Railway	Deputy Director
6	Nguyen Nam Dinh	DPI	Deputy Director
7	Ho Anh Thang	Division of Finance and Planning	

No	Full Name	Agency/Unit	Position
		Management	
8	Vo Minh Duc	Safe Traffic Board	Chief Officer
9	Tran Khac Xuan	DOT	Head, Division of Infrastructure Management
10	Nguyen Hong Son	Nghe An Farmer Union	Vice Chairman
11	Nguyen Hong Nhi	Provincial Fatherland Front Committee	Chairman
12	Le Vinh Hung	Vinh City PC	Deputy Head, Division of Economy
13	Le Ngoc Mai	Nghe An TV	
14	Le Van Dao	Provincial Labor Federal	Vice Chairman
15	Dinh Van Nam	DOT	Head, Division of Motor Vehicles
16	Phan Duy Hai	DPI	Deputy Head, Division of Industry
17	Huynh Thanh Dien	Nghe An PPC	Vice Chairman
18	Nguyen Hong Ky	DOT	Director
19	Nguyen Duy Bieu	Ngh Loc District PC	Deputy Head, Division of Trade and Industry
20	Nguyen Duc Hoang	DOC	Expert
21	Ho Viet Vinh	DOT	Deputy Director, PMU
22	Dinh Thi Quyen	DOT	Expert
23	Mai Thi Ngai	DOT	
24	Nguyen Si Dong	DOT	
25	Nguyen Hoang Nam	DOT	
26	Tam Van Luyen	Dien Chau District PC	Vice Chairman
27	Hoang Van Ba		Head, Division of Trade and Industry
28	Le Van Thuan		Head, Division of Natural Resources and Environment
29	Tran Ba Ha	Nghe Tinh Railway Company	Deputy Director
30	Cao Tien Hung	"	Head, Technical Division
31	Doan Van Hong	"	Deputy Head, Technical Division
32	Tran Quoc Toan	Vinh railway carriage enterprise	Deputy Director
33	Nguyen Minh Nhuan	DOT	Deputy Head, Division of Infrastructure
34	Tran Thanh Tung	Vinh Station	Director
35	Pham Hong Nam	Nghe Tinh Railway transportation enterprise	Director
36	Doan Van Nam	Nghe An Dept. of Culture and Tourism	Head of division
37	Tran Ngoc Thau	Vinh Locomotive enterprise	Head of Technical Division
38	Nguyen Anh Ta	Architecture Planning Institute	Deputy Director
39	Tran Quoc Tho	City PC	Head of Labor Division
40	Tran Quoc Tuan	Department of Labour	Deputy Head of Division
41	Nguyen Duc Dinh	DOH	Chief Officer
42	Pham Huy Tram	DOT	Head of Planning Division
43	Mai Xuan Son	Road Management Board No.4	Deputy General Director
44	Luu Hung Son		Deputy Head of Technical Division
45	Le Hong Vinh	DOT	Deputy Director
46	Ho Khac Thanh	DOT	Deputy Head, Division of Appraisal
47	Ho Quang Canh	DOT	Division of Appraisal
48	Bui Thanh Le	Nghe An Newspaper	
49	Phan Thi Nhu Quynh	DOT	
50	Nguyen Thanh Hai	Nghi Loc District PC	Vice Chairman
51	Nguyen Van Thang	DOT	Expert
52	Le Huy Hoang	DOT	Division of Safe Traffic

	
Representative from Nghe An Province	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	2nd SHM in Nghe An DOT
	
Representative from Nghe An Province asked question	Closing Remarks by Mr. Tran Quoc Dong

Ho Chi Minh City

Date: August 10, 2012
Venue: Department of Tourism
Purpose of the Meeting: Disclosure on the Environmental Study and Development Alternatives on the Proposed North-South Railway (Hanoi-Vinh and Ho Chi Minh Nha Trang Sections
Number of Participants: 49 (47 Males; 2 Females)

A. Welcome Address: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong welcomed the participants and introduced the purpose of this meeting which was to report the up-to-present results of the study on alignment and station location. He expressed his hope that the participants would give comments to contribute to the study.

B. Opening Speech: Mr. Bui Xuan Cuong, Deputy Director, DOT

Mr. Bui Xuan Cuong introduced the purpose of the meeting and hoped that all the participants would provide valuable comments for the study team. He further mentioned about the various categories of participants which include private sectors and representatives from districts 2 and 9, universities and mass organizations.

C. Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. A questionnaire was provided to allow all participants to give their comments, along with the project profile and presentation materials. The presentation was done through power point slides with the following topics:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item C.

D. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
Truong Loi Khue Institute of Development Plan	In the Alt 1 and 2, the alignment and location of Thu Thiem Station is in compliance with the approved plan. In Alt 2, there has been a plan for Hoa Hung station. It is suggested to use another station in the West side and consider whether the passenger route and freight route can share the same route. Regarding the roadmap: it is suggested to subdivide the roadmap into smaller period. It is suggested to consider the ROW of metro line and HSR.	
Pham Ngoc Truong Association of Science and Technique of HCMC HCMC University of Transport	He shared that he also participated in the KOICA project. After 1975, he joined the study for the improvement of the railway from Da Nang to HCMC. Before the report was submitted to the National Assembly, the MOT sent the report to the Association of Science and Technique and the Association which provided a 15-paged document. He disclosed some information as follows: • The National Assembly did not reject the HSR project. In fact the NA recommended further study on HSR project by MOT. Reasons for non-approval of the HSR were that, (i) the Minister of Transportation did not emphasize on the necessity of the HSR and the proper timing. The Minister said that the construction would be started in 2020, which was impossible. Regarding construction cost, the Minister estimated that it would cost 57 million USD. • It is suggested that the study team should refer to the lessons learnt in 2010.	

Open Forum		Response from Study
Name of Inquirer	Issues / Comments Raised	
	• The construction time should be in 2040. • By 2020, A1 and A2 should be finished, and after 2020, B1 would be upgraded. He suggested that after the improvement of existing railway, the new HSR would be constructed. • The number of passenger from Nha Trang to Ho Chi Minh is high, so this railway section should be given priority to upgrade to the speed of 170 km/h. • The existing railway section from Nha Trang to Sai Gon can be upgraded to B1 and B2. The railroad from Sai Gon to Can Tho will be upgraded to the speed of 200 Km/h for both passenger and freights, which was approved by the Prime Minister. • The railway terminal plan will be submitted to the Government by the MOT. • For Thu Thiem staion, the city haws reserve 25ha for development, but now the land area is only 17ha. Is it enough for the HSR station? • Why does the construction cost 37 billion USD excluding rolling stocks? In 2030, the construction cost will be 100 billion USD. • It is suggested that the study team and VR clarifies the road map. • He expressed his agreement on the crossing through Long Thanh airport. • On the section from Long Thanh to Phan Thiet, it is suggested that there should be one station located here because the distance form Long Thanh to Phan Thiet is quite long.	
People's Committee, District 3	• In the future, existing railway will be replaced by HSR due to high demand. It is suggested that HSR fee should be affordable for the people. If the fee is high, people will chose the road instead of HSR, so traffic congestion will occur.	
Mr. Quang HCM University of Transportation	• It's important to develop the HSR. As presented by the JICA, some section should be updated to level A1 and A2, and some sections to B1. The section of Nha Trang–Ho Chi Minh and Hanoi–Vinh should be prioritized. It is recommended to consider the GDP of Vietnam for construction on priority sections. Other recommendations include: • JICA study team provides Japanese examples of HSR • The JICA Study team consults and coordinates with VR about the roadmap. • Review the construction cost of Alt. 1 as this shows higher than the KOICA's recommendation. • Update the comments by Mr. Truong.	
Mr. Cuong Deputy Director, DOT	• He expressed his thanks to participants for providing comments to the study team. His recommendations include: • The JST shall includes reference on other studies and plans in order to avoid overlapping such as: + KOICA study HCM–Nha Trang • + Detailed plan of railway terminal of HCMC (invested by Department of Railway and consulted by TEDI South) + Railway of Trang Bom–Hoa Hung + Railway section HCMC–Can Tho • HCMC is the center of transport connection. It is appropriate to ensure the regional connection. The HSR station is located in Thu Thiem and the city has already reserved land area for HSR alignment. The city is conducting the site clearance. • It is expected that the depot will be located in District No.9.	

E. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata expressed his sincere thanks to the participants for their convincing comments. He summarized the following issues that were discussed and those that need to be addressed as follows:

- There is necessity for the HSR, and clearly, future demand will be required for high speed services. The HSR is very expensive and how to balance between timing, cost, demand and

financial resources are the three aspects that are considered in the study.

- With regards to GDP, in 1964 for the 500 km of HSR in Japan, the GDP was 2% at that time, while in Korea, HSR is 2.3% of GDP. If we consider the GDP of Viet Nam by 2030, it would be about 2%. It is difficult to justify but if it is a priority section it can be justified.
- Fare level is important. If fare is decreased, it can attract a lot of people. But this needs to be balanced with financial capacity. It is assumed that fare is 25% less of airfare.
- HCMC is clear about the plan of the city. Regarding direct connection to the airport and necessity of additional station, the JST will review the existing plan and will incorporate in the final report.

F. Closing Remark: Mr. Tran Quoc Dong, Deputy Director, VR

He highly appreciated the awareness and attendance of the participants. He expected that the 3rd stakeholders' meeting will be organized by the end of this year and all the participants would be invited to that meeting. He also encouraged that the use of internet may be utilized to examine how other countries fare along with their HSR.

He also highlighted that the funding will not be fully borne by the government but partnership with other private sectors will be explored such as a joint venture scheme. For the third stakeholders meeting, some private investors will be invited to give them the idea for possible partnership in the future.

The meeting ended at 5.25 p.m.

G. List of Participants

Ho Chi Minh City, 10 August 2012

No	Full Name	Agency/Unit	Position
1	Pham Ngoc Dang	Sai Gon Guest Transportation Company	Deputy General Director
2	Le Ba Luong	Railway Management Board Area No.3	Deputy Director
3	Nguyen Hong Linh	VR	Expert
4	Tran Huu Chien	Sai Gon Railway Management Company	Director
5	Nguyen Huu Khanh Nguyen		Deputy Head, Technical Division
6	Dinh Xuan Lang	Sai Gon Carriage enterprise	Deputy Director
7	Thai Van Truyen	Sai Gon Station	Deputy Director
8	Ha Ngoc Truong	Union for Bridge, Road and Port	Vice Chairman
9	Pham Ngoc Thu	Sai Gon Railway Depot Company	Deputy Director
10	Mai Khac Son		Deputy Head, Export and Import Business Division
11	Nguyen Ba Hoang	University of Transportation	Vice Principal
12	Nguyen Minh Hieu	Urban Management Division	Expert
13	Truong Loi Hue	City Institute of Development Studies	Head of Transportation Division
14	Nguyen Minh Triet	Phu Nhan District PC	Expert
15	Tran Van Ngoc	PDI	Deputy Head, ODA Project Management
16	Bui Ngoc Son	University of Transportation	
17	Ta Ngoc Duong		
18	Hoang Van Tuan		
19	Nguyen Cong Hiep	EPC (Environmental Company)	
20	Vu Trung Hung	Department of Architecture and Planning	Infrastructure Division
21	Do Minh Long	District PC No.3	Division of Urban Management
22	Nguyen Thi	University of Transportation	
23	Trinh Trong Loi	DOT	Expert, Division of Construction Management
24	Nguyen Hieu Thuong	Union on Environ and Natural Resource Protection	Expert
25	Vo Van	FBNC TV	Reporter
26	Vo Van Phuoc		Camera man
27	Tran Quoc Dong	VR	Deputy General Director

No	Full Name	Agency/Unit	Position
28	Nguyen Ngoc Hung		
29	Tran Thanh Son		
30	Bui Hoang Vu		
31	Phan Tien Dung		
32	Nguyen Huy Thuc	Union for Bridge, Road and Port	
33	Dang Minh Hai	TEDI South	Deputy General Director
34	Duong Ngoc Thang	Sai Gon Railway Signal Company	Head, Division of Technique for Safety
35	Nguyen Hoang Thang	Binh Thanh District PC	Division of Urban Manegement
36	Pham Quang Huy	TEDI South	Deputy Director
37	Nguyen Quang Khanh	Urban Railway Management Board	Deputy Head, Technical Division
38	Pham Tran Hai	DONRE	Expert, Division of Planning
39	Le Van Anh		
40	Nguyen Quoc Hien	University of Transportation	Head,Department of Transportation Work
41	Tran Hai	Union for Bridge, Road and Port	Senior Engineer
42	Bui Xuan Cuong	DOT	Deputy Director
43	Hoang Le Quan	DOT	Division of Construction Management
44	Pham Khanh Hai	DOT	
45	Le Van Trung Dung	University of Transportation	
46	Nguyen Nhat Thien		
47	Vu Van Xuyen	District PC No.2	Division of Urban Management
48	Luong Quy	District PC No.1	
49	Vu Duc Tien	Railway Management Board Area No.3	Deputy Director

Dong Nai Province

Date: July 13, 2012
Venue: DOT Office, Dong Nai
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway.
Participants: 29 (23 Males; 6 Females)

A. Welcome Address: Mr. Nguyen Minh Hien, Dept. of International Cooperation, VR

Mr. Nguyen Minh Hien, Department of International Cooperation opened the session by welcoming the participants. He, then introduced the keynote speaker.

B. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways also welcomed the participants. He proceeded by highlighting the importance of the study of the proposed prioritized HSR of HCMC-Nha Trang and Hanoi-Vinh sections.

C. Flow of Activities

The presentation followed the activities as provided in the program, similar to all activities undertaken in other provinces. A questionnaire was provided to allow all participants to give their comments along with a project information brochure in local dialect. Main activates included the following:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative Alignments through Strategic environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Response

Open Forum		Response from Study
Name of Participant/Agency	Issues and comments	
Vice Chairman PPC	"I have to leave at 9.30, thus I will authorize the Director of DOC and Director of DOT to discuss with the team." The National development depends largely on transport development. Normally, cities are developed first and then, to link them together, transportation network is developed. However, for HSR, it is not always the case where the line can connect all existing cities and towns. For example, the proposed line from HCMC to Nha Trang is rather far from Bien Hoa City. From Phan Thiet to Long Thanh, it is quite far, but there is no HSR station in between. I hope that the Consultant team can find an adequate location for station development, for example in Cam My, or Xuan Loc, where we can formulate urban development plans accordingly. The presentation showed an example in Japan where HSR station development triggered urban development in the area. Besides, the proposed timing for HSR development is 2020-2030 yet. This timing is suitable for development planning for the related areas. Of the three alternatives, Alt2 and Alt3 stations are just next to the residential area, which is mainly to support Long Thanh airport in the future. Considering Long Thanh airport capacity of 100 million passengers in the future, no other mode of transport but HSR could support this demand adequately. Therefore, Alt1 which runs through the airport center (red line) is more appropriate, as more passengers would come directly to the airport itself, not to the town beside it. Moreover, there will be another urban line connecting from HCMC to the airport, at exactly the airport center. As Long Thanh Airport is planned to start operation by 2020, it is suggested that the HCMC – Long Thanh sub-section should be developed first to support the airport activity.	
Mr. Phuong, DOT	We support the idea that the HSR will be the main transport mode to connect	

Open Forum		Response from Study
Name of Participant/Agency	Issues and comments	
	cities, as if cities are dependent on roads, they will get more and more congested. As the distance from Long Thanh and Phan Thiet is quite long, 117km, there is a need for another station to be added. The potential area can be in Long Khanh or Cam My areas. At the moment, there are no towns there, but we will be able to formulate urban development plans accordingly. We agree with the criteria and suggestions for selection of Alt1, which is in line with the conditions in the province. For the road map, the sub-section of HCMC-Long Thanh should be developed first, as it would in one hand support the airport activities in the future and also help to avoid transport problems in the cities. We will come back to the office and compare the alternatives with our available plans, and then provide comments later.	
Vice Chairman	The expressway HCMC to Dau Giay is expected to start operation by end of 2013. This plan should be updated and reflected in the HSR plan, which include other connectivity such as the Dau Giay – Phan Thiet expressway which will also be developed under PPP scheme. The HSR and Expressway plans should coordinated in the best manner.	The Dau Giay – PhanThiet expressway plan has been updated, and in fact the red line (Alt1) runs parallel to Dau Giay – Phan Thiet Expressway.
	Can Dau Giay area be a place for station development? If it is too short in terms of distance to Long Thanh, Xuan Loc could be better technically. But Xuan Loc area will be more difficult for urbanization.	
From DOT	It is suggested to provide another station close to NH56 (pointed on map) in order to attract and support passengers to/from Ba Ria Province, and it is also close to Long Khanh Town. With that location selected for station development, passengers from Ba Ria would not have to come to HCMC to travel north, and vice versa.	
From DOT	DOT has discussed with the team before, and thus I suggest the team to continue updating and take into consideration local plans where the line crosses. I agree with alignment of Alt 1 but needs to know more where it crosses. What you propose is that it crosses right through the center of the airport, and MOT supported this idea. But it is suggested to consider more security requirements here in the airport, especially when a large number of HSR passengers get down from the train to the airport terminal. Passengers to this station are not only to reach the airport but also to travel to other stations along the line. It will impose pressure on airport roads itself. I prefer the green line (Alt3), as it supports well the nearby residential area and the airport. I also suggest to add another station between Long Thanh – Phan Thiet, somewhere near Long Khanh area, near HH56 (Ba Ria), NH20 (Lam Dong) and NH1.	
VR Administration (Mr. Doanh)	The team should look at the intersection on NH51. KOIKA's output has been updated regarding this intersection plan. Apart from the NH51, there will be another expressway (new NH51) running in parallel to it, while there is another railway line from Bien Hoa to Vung Tau along NH51. For horizontal access, we have one expressway under construction, and we also expect the HSR. We have had several meetings to discuss development plan of this intersection (upper) in which order and access of related roads and (existing) railways have been identified. Now the red line is set to intersect with NH51 at this location (lower), it should be then updated to the related plans and ongoing projects. In other words, we have to formulate another intersection plan for it; otherwise no land will be preserved during development process of the related projects.	
	For Thu Thiem station, (refer to slide 14) the green station (developed by KOIKA) has been fixed for Thu Thiem station where plans have been formulated properly. From this station, there is a railway line too. Now the proposed station has been moved (to the red location), this may generate serious problem, including re-alignment of the existing railway line.	The reason for difference in locations of red and green stations is because Koika uses 1:50.000 map while JICA team uses 1:10,000. In fact, they are all at the same location.
Mr. Dung - VR	Why are the lines at Long Thanh Airport close to each other, while at the left side, the Alt2 and Alt3 are still close to each other and the red line (Alt1) is far	It has to be aligned that way because the Alt1 station is set

Open Forum		Response from Study
Name of Participant/Agency	Issues and comments	
	away? Is the line along Long Thanh Airport section elevated or underground?	to the center of the airport. It is at-grade, but on a sort of cut surface rather than on a high embankment. The team has discussed with Long Thanh airport personnel regarding this matter.
	It is impossible for a train to run at-grade in the middle of the airport because it will still need electricity poles to supply power and the required air clearance. The airport will never allow that type of high structure in the area.	The station location, though it looks like settled in the middle of the airport, but in fact it is at the edge of the airport (phase 1) while for phase 2, the airport will expand to the other side.
DOT	In the airport plan, the track will not be on the ground but neither underground. Actually it is within a kind of ditch. The airport will have four major terminals, and there will be a big square in between. The station will be right at the center.	

E. Closing Remarks: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr Iwata thanked the participants and concluded that the purpose of this consultation meeting was to collect ideas that would enable the study team to move forward for further study. He also emphasized on the importance of the HSR. With regards to the alignment and location of station, the study team will carefully analyse and take into consideration the suggestions which emanated from this activity. The Study team will continue to coordinate with each respective province for specific information before finalizing the alignment.

The meeting ended at 10:10 a.m.

F. List of Participants and Pictures

Dong Nai Province, 13 July 2012

No	Full Name	Agency /Unit	Position
1	Nguyen Vu Thanh	Regional Railway PMU 3	Director
2	Hoang Tam	Regional Railway PMU 3	Head of Planning Dept.
3	Tran Tuan Chinh	Cam My District	Head of District's DONRE
4	Nguyen Tan Duc	Nhon Trach District	Head of District's DONRE
5	Nguyen Ngoc Hung Minh	Cam My District	Deputy Head of District's Economics – Infrastructure Dept.
6	Vu Xuan Du	Provincial DOT	Senior Expert
7	Tran Van Vinh	PPC	Vice – Chairman
8	Le Hoang Son	PPC's Office	Expert
9	Le Quang Binh	Provincial DOT	Deputy Director
10	Nguyen Van Sang	Provincial DOF	Expert
11	Le Kiet	Dong Nai's Television Station	
12	Pham Anh Dung	Nhon Trach District	Deputy Head of District's Urban Management Dept.,
13	Tran Vu Hai	Urban Management Dept.,	Expert
14	Tran Thao Que	Dong Nai's Informatics Portal	
15	Hoang Dong Phuong	Long Khanh District	Head of District's Urban Management Dept.
16	Tran Tuan Viet	Long Khanh District	Deputy Head of District's DONRE
17	Dao Cong Tung	Provincial DPI	Senior Expert

No	Full Name	Agency /Unit	Position
18	Tran Dinh Tuong Lan	Dong Nai's Television Station	
19	Ly Thanh Phuong	Provincial DOC	Deputy Director
20	Trang Thanh Liem	Provincial DOC	Deputy Head of Planning Management Dept.
21	Pham Thi Thuy Trang	Provincial DOC	Senior Expert
22	Nguyen Thanh Tung	Provincial DOC	Senior Expert of Planning Management Dept.
23	Nguyen Tat Nhien	Provincial DOC	Senior Expert Planning Management Dept.
24	Nguyen Tuan Minh	Provincial DOC	Deputy Head of Infrastructure Dept.
25	Nguyen Kieu Hanh	PPC's Office	Expert
26	Le My Loan	PPC's Office	Expert
27	Tran Van Hung	PPC's Office	Expert
28	Tran Nam Hung	PPC's Office	Expert
29	Nguyen Cong Phong	Vietnam News Agency	Reporter

	
Speech by Mr. Tran Quoc Dong, Deputy General Director, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Representative from Dong Nai asked question
	
Representative from Dong Nai asked question	Mr. Nguyen Van Doanh, Deputy Director, Department of Railway, MOT

Binh Thuan Province

Date: July 12, 2012
Venue: DOT, Phan Thiet, Binh Thuan
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Participants: 23 (23 Males; 0 Females)

A. Opening Remarks: Mr. Le Tien Phuong, Chairman of the PPC.

The welcome speech of the Chairman of the PPC was rather short but straightforward as he highlighted on the difficulty in transport demand and other infrastructures of Phan Thiet. As such, there is signified support of the PPC on the proposed HSR projects. As Chairman, he reiterated the need for support and wished that workshop will be successful and implementation soon, and that the objectives of the meeting will be generally be achieved.

B. Flow of Activities

Presentation materials of the workshop topics were handed out to each participant which were further explained through power point presentation by each presentor. The first part was generally focused on the outline of the study, while the 2nd part pertained to the results on the preliminary assessment on the socioeconomic and environmental alternative scenarios. The presentation was done through power point slides with the following topics:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative Alignments through Strategic Environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

C. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Name of Inquirer: From DOT	DOT commented on Alt. 2 presented in 2009, requiring due considerations on three issues: (i) it should avoid crossing the industrial park; (ii) it should not cross through Phu Long and Phu Hai residential areas in order to lower the construction cost., (3), one more station shall be considered at Tan Nghia where many new towns are planned, including Ladi, Thanh Cong, etc. to make proper station location at the interval of 60 km. Re alignment: in June, as a response to the JICA team's design on alternative 1. DOC also made comments on the alignment and stations locations. The alignment in Binh Thuan Province is divided to two sections: one from Dong Nai to Phan Thiet and the other from Phan Thiet to Tuy Phong. The alignment from Dong Nai to Phan Thiet was modified to the eastern side, that split several urban towns, especially Tan Nghia and Thuan Nam Town and NH1A. The alignment shall be at the western side, parallel to the existing railway to avoid residential areas. DOT generally agreed with the alignment of the section from Phan Thiet to Tuy Phong considering cost of construction cost and the perspective of the railway going on straight line.. Re: location of station : The study proposed the stations location at Phan Thiet and Hoa Minh, where Phan Thiet station is near the new existing railway station. It is suggested to move the station in Phan Thiet toward Muong Man station. In addition, taking the interval between stations into account, one more station shall be considered at Tan Nghia where various new towns are being developed to justify the interval of 60 km. At that meeting it was informed that if the HSR goes to the east of the national road it will cross protected area and residential area.	
Chairman of PPC	Railway is developed to improve the people mobility. Binh Thuan People have to access the high speed railway at the station. For example, Binh Thuan has 9 districts and people have to access the railway through Phan Thiet or Tuy Phong stations though they live behind the railway. They cannot access the high speed	JICA study team reiterated that the alignment was updated and which t goes along the expressway.

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
	trains somewhere in the middle even if they live beside it. So that's why HSR alignment should not be along the existing railway, and located in the western side instead it should be moved to the east side of NH1A. 1. If the HSR runs along the existing railway it will save a lot of money for land acquisition and if it is on the west side of the road. 2. The HSR is impossible to access if people live under the viaduct. Avoid residential areas and land acquisition. 3. It is suggested that the location should be on the west side and it should be linked properly with the existing railway station with additional one more station to facilitate the need of the people.	A review of the alignment was highlighted on the map to indicate the updated alignment.
Comments from VR	The alignment of HCMC-Nha Trang section was considered thoroughly to minimize impacts on residential quarters, and considering the development of Dau Giay – Phan Thiet expressway into account. Development of additional station could be considered in the study. In comparison to last meeting, JICA team already adjusted the alignment and avoided residential area. It is understood that JICA study wants to use the existing station but it will cross the industrial park. A kind of viaduct/elevated railway to lessen the impact on residential and industrial areas but It may affect the plan for small industries on the north and residential areas where the line is expected to cross. VR agrees with the suggestion from DOT that one more station shall be considered.	
Comments from Binh Thuan PC	Regarding comparison of social considerations between alternatives, both alternatives are assessed at "B", which is not appropriate. Resettlement of Alt. 2 should be the least one since it crosses the sand bar. The alternative 3 is assessed at "C" but it is on west so why is it "C"? The assessment shall be assessed objectively to make it more accurate. The province already has 4 towns (3 district towns and 1 provincial town) in this area. Moreover, 3 industrial parks are planned, covering 4,000 ha. The traveling demand will be high in the future. So one more station shall be developed. The station locations shall be moved towards the west or outside the existing area since the provincial plan considered the distance from the new existing railway station to the city center appropriately (5-7 km), avoiding Phan Thiet industrial park and Phu Long Town. Tuy Phong station location could be appropriate since it is located in the planned town but the development is not promoted yet and the plan could still be modified. Regarding Phat Thiet – TuyPhong section alignment, Alt. 2 is selected, crossing the area with good geological conditions but proper erosion prevention methods shall be taken into account. The social and environmental impacts are insignificant sine the population density in this area is small. In general, the alignment crosses NH1A at several points. It should study the alignment toward Phuong Long area at the western side of NH1A to avoid splitting the province.	
Mr Dung, Vice Director of VRA	In June 2010, Pre-FS study on HSR Development Plan was submitted to the national assembly. Various comments from NA and related agencies were raised on the issue why the existing railway is not utilized. The main reason is that there are many curved sections on the existing line that make the total length to 1720 km. The high speed railway need a straight line with the curve radius of <600 mts, reducing the total length to 1,500 km. Some sections of the existing line may be utilized.	
Mr. Dong, VR	More information is required to discuss the alignment in detail. In general, the eastern side of the province is appropriate for agricultural and industrial development while the alignment in the eastern side will be more straight, reducing the length and subsequently, the construction cost. Moreover, the NH crossed sections are elevated sections so the impacts are insignificant. Moreover, North-South expressway and high speed railway will contribute to lessen the traffic volume on NH1A.	
Mr. Doanh, VRA	We agree that all of the line should be moved to west but the minimum radius shall be secured. The alignment shall not cross through protected area or religious heritages. In the general, the alignment shall be moved to the west. However, the construction cost shall be taken into account.	

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Binh Thuan PC Chairman	Binh Thuan Province stretches along NH1. The high speed railway shall be designated at the western side to avoid curved sections of NH1A. The shortening of the high speed railway line shall be justified based on securing and improving living conditions of the local people because at the end the HSR is to serve the people themselves. The people in Binh Thuan are already familiar with the existing railway line for many generations. So if another line is run along with the existing line, the people are well adjusted already with that condition. The proposed alignment will cut NH1 at six sections which would split Binh Thuan Province. The crossing sections should be minimized. The construction cost could be higher but more beneficial to the people in the province. It is proposed that VR and JICA study team shall further study about the alignment. If there is already detail alignment it will be easy for us to imagine.	
Mr. Dung	The reason why the chairman proposes that the alignment of HSR be moved to the west side is that the project will impact on many residential areas. The HSR projects should try to avoid as it will disturb the well-established living condition. Cost of the development of the alignment in the western side will be cheaper. It should be noted that the cultivated land in the southern central coastal region is limited so it should be saved for the farmers. If the alignment crosses the sand bar it will be straight and reduce the construction cost. It is suggested that the study team shall consider the alignment properly to avoid the farm land and to shorten it to less valuable land. It should be noted that the study team are doing their best and are sharing your concerns here.	
Binh Thuan PC	If the alignment is moved to the proposed location of Koica's study, it will be only a few hundred meters away from the proposed bypass road. If the alignment is maintained at the eastern side it will spoil Ham Thuan Nam district	
VR	It should be noted that the traveling time from Phan Thiet to HCMC will be reduced to about 40 minutes and will contribute to promote tourism in Phat Thiet. KOIKA's selected the station location at the barren and unused land area while JICA approach considers the convenience for the passengers. 4 criteria are considered to select proper design. Alt. 2 (Blue Line) is more expensive since it requires viaduct. The two other alternatives are developed on the embankment which may be risky due to sweeping flood, so long-term cost may be higher. Moreover, embankment requires more land stock than viaduct development. The cost will be more expensive due to land acquisition. That shall be further studied to select the optimum alternative. Station locations shall be convenient for the people accessing the HSR. However, the impacts on existing urban areas shall be minimized	
Binh Thuan PC Chairman	Phan Thiet new railway station doesn't have enough land for expansion in the future. How is HSR connected to the existing railway at this station? Residential housing has been developed densely in this area so land acquisition will be very difficult.	
VR Comment	HSR is a dual track line that not required several tracks for train accessing like the existing railways. Moreover, only passenger transport services will be provided so the land requirement is insignificant. In addition, most of HSR stations are elevated one so the area will not be large.	
Binh Thuan PC Closing Remark	The chairman did not attend the previous meeting so the comments made before and now have some gaps. However, Binh Thuan PC highly appreciated the study team's initiatives and efforts in studying the 3 alternatives, showing its advantages and disadvantages. JICA study team gave us the chance to contribute comments and opinions for the selection of best alternative.. Based on the presentation, Binh Thuan would like to officially conclude the following: Regarding the alignment in the province area,- it is proposed that it should be shifted to the west of existing as well as future NHs, which will be beneficial for the province, especially improvement on the living conditions of the provincial farmers. Though the construction cost is not estimated in details but the compensation cost will be much cheaper than that of other alternatives. 1. The study team shall consider alternatives which would reduce the number of crossing over the existing NH. The more crossing we have the more complicated to the development of provincial districts and commune.	

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
	2. The alignment should be straight, reducing the curve sections, except for cases where the line would cross the industrial and residential areas otherwise. 3. For the alignment from Dong Nai to Phan Thiet, alternative 1 or 2 is almost same. So either alternative could be selected. For the section from Phan Thiet to the boundary of Binh Thuan, alternative No. 1 is preferred. It is not about the geology cost but it is surely more beautiful in straight line. In this area it is better to be at the west of NH1. 4. Regarding station development, one more station is suggested at Tan Nghia which will connect with southern towns of the province. 5. Regarding Phan Thiet station, although there is new station but the land availability for expansion in the future is limited. It is suggested that it should be shifted closer to the proposed NH. This bypass will be developed not until 2020. In the mean time the province will have a new road (Le Duan Road) to connect to this area. With this new road and the bypass road of Phan Thiet City in the future, the people will have better connection in the future. 6. Finally, on behalf of the provincial leadership, The Chairman highly appreciated the study team preparatory work and visit to the province. Although there are still gaps between expectation of the province and proposal of the study team, but it do hope the study team considering and incorporating the comments and opinions of of the province to develop an appropriate and beautiful HSR.	

D. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr Iwata thanked the participants and gave a short briefing on the history of the HSR. “One of the critical issues in the planning is location of the stations. Based on history we have to deal with connectivity which is very important for the development in the future. The study team will review and conduct further study and in the coming month we can have another discussion to resolve these issues.”

VR – On behalf of VR Mr Dung thanked the province for the comments and giving assurance that all the comments will be taken into consideration for the next steps. He gave a closing challenge that although the plan for HSR is set on 2020 yet, but we still there are lots of things to do. “We cannot deny the responsibility”.

The meeting ended at 10:45 a.m.

E. List of Participants and Pictures

Binh Thuan Province, 12 July 2012

No	Full Name	Agency / Unit	Position
1	Tran Viet Hung	PPC	Commissioner
2	Le Tien Phuong	PPC	Chairman
3	Nguyen Ngoc	PPC	Vice-Chairman
4	Phan Minh Hai	Ministry of Military Command	Deputy Commander
5	Ngo Minh Hung	Provincial Department of Trades & Industries	Deputy Director
6	Chau Dinh Quang	Ham Thuan Nam District’s PC	Vice – Chairman
7	Nguyen Huu Nhan	Ham Thuan Nam District’s PC	Head of Economic Infrastructure Dept.
8	Phan Viet Cuong	Provincial DOF	Deputy Director
9	Van Quoc Toan	PPC’s Office	Expert
10	Nguyen Minh Tri	Ham Thuan Bac District’s PC	Vice-Chairman
11	Nguyen Huu Phong	Binh Thuan’s Television Station	
12	Le Ngoc Sanh	Tuy Phong District’s PC	Vice-Chairman
13	Vo Ky Tap	People’s Council	Head of State Budget & Economics Dept.
14	Kieu Duyen	Provincial DPI	Deputy Director

15	Nguyen Hong Hai	Provincial DOT	Deputy Director
16	Vo Van Hoa	PPC's Office	Deputy Head
17	Ho Lam	Provincial DONRE	Deputy Director
18	Tran Van Tuan	Provincial DOC	Director
19	Ngo Thai Khoa	Binh Thuan Newspaper	Reporter
20	Nguyen Thanh Ba	Provincial Police	Deputy Head of Economic Police
21	Nguyen Huu Trung	Provincial DOT	Head of Traffic Dept
22	Le Tuan Phong	Municipal People's Committee	Vice-Chairman
23	Truong Tuan Hung	Ham Tan District's PC	Head of Economic Infrastructure Dept.

	
Speech by Mr. Le Tien Phuong, Chairman, Binh Thuan PPC	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Provincial leaders discussed about alignment
	
Representative from Binh Thuan asked question	Closing by Mr. Tran Quoc Dong, Deputy General Director, VR

Ninh Thuan Province

Date: July 11, 2012
Venue: People's Committee, Ninh Thuan Province, Vietnam
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway (Hanoi-Vinh and Ho Chi Minh Nha Trang Section
Participants: 43 (39 Males; 4 Females)

A. Welcome Address: Mr. Nguyen Minh Hien, Dept. of International Cooperation, VR

Mr. Nguyen Minh Hien, Department of International Cooperation opened the session by welcoming the participants and introduced the keynote speaker.

B. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways gave the welcome remarks and introduction of the key speakers. Mr. Tran Quoc Dong highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC-Nha Trang and Hanoi-Vinh.

C. Flow of Activities

The presentation followed the activities as provided in the program. A questionnaire was provided to allow all participants to give their comments along with a project information brochure in local dialect. Main activates included the following:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative Alignments through Strategic Environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Responses

Name of Inquirer	Issues Raised	Response from Study
Mr. Tran Van Hai, Manager Transport Management Division	Station location: I prefer that the current design is on same location of the existing station Road safety especially for the corridor must be considered. What is the standard clearance to ensure how much corridor will be needed to ensure safety? Do we have enough land on the North – South corridor as we currently have national highway, expressway, existing railway, and in the future, high speed railway? Do we have enough land to provide the standard safety requirement safety as well as for other transport need? Due to land conditions where high speed railway is to be developed, the construction of embankments should be high, it is better to develop viaducts. We should do away with embankment, because if the speed has to be maintained 350km/hr, the slopes, should be avoided. The construction of the embankments must is high from end to end and so it will not affect the surface and ground water. In the south coastal area, land is affected by radioactive elements. If we use a lot of land pile, there is possible exposure to soil containing radioactive elements. How can this be managed?	Embankment: for water and ground water. At this stage the focus is on assessment of alternatives. There are no details yet on ground water and surface water. We will examine further from the hydrology point of view. More details on this will be dealt in the coming SEA study. We are conducting viaduct in some area. If necessary we will consider viaduct. Now our study is preliminary but tentatively we consider the ROW for embankment at 32 meters and viaduct at 15 meters.
	Regarding greenhouse gas emission, the HSR will be powered by electricity which means no greenhouse gas. However, we need land to develop the power plants and fuel to run the plants, so our consumption for electricity will be high. The HSR is good if it will be developed, however one concern is the cost of development. For the cost of VND 14 billion, can this be justified and where would the source come from? The location of stations will affect urban development significantly. The distance of 30-70 km between is ideally the standard distance for a major station. For logistical requirement for stations to handle the service cars and cargos,	Green house gas, I agree the HSR will use much electricity, and depends on future for electricity production. But greenhouse emission produced by HSR is less than that produced by cars. Regarding cost, we are now examining cost for the HSR projects, it will be discussed. Viaduct cost is much higher than embankment. We focus on connectivity with existing

Name of Inquirer	Issues Raised	Response from Study
Representative from the Department of Transportation	Alt. 1 is better than Alt. 3. If we target 2020, these 3 stations will be considered in that perspective. Alt. 3 is closed to the expressway and other roads so it will be well integrated with other roads, providing convenience. The availability of land for Alt. 1 is difficult for residence is dense already. So it is suggested that the study team should assess more carefully when comparing the Alt. 1 and 3	railway. We take your comments for consideration in alternative comparison. Re facilities for stations. We are now supplementing such information to the comparison contents
Ms. Chuong, Vice Chairperson of the Industrial Board	What is the final option among the alternatives? I suggest that the JST should add more aspects in selecting the best option such as: (1) Consider urban drainage, especially for areas where the alignment crosses into urban and residential area. The Study team did not consider this issue. (2) Urban transport connectivity, especially the air clearance and convenience where the alignment will cross. There may be such requirements for the new alignment when it crosses the town. If these aspects are considered now, when the project is implemented, it will be successful and there will be no negative impact on local conditions. When we use the embankment or viaduct, the height of facilities will have to be considered as the ground level or surface level of new facilities might be different from existing ones.	Drainage: In the alignment. When crossing urban area, Alt. 1 is planned with viaducts. We considered viaduct for drainage issue. Anyway we will consider your comments. Regarding connectivity and convenience with other modes. Alt. 1 and 2 will be connected efficiently with existing railway. Do you have another transport mode to be connected? Specific issues will be done during the detailed study stage will consider transportation mode connectivity, viaduct and embankments, etc.
Comment from participant (Not identified)	I think the HSR should be implemented as soon as possible. We know that Vietnam is quiet hot. We are trying to handle the transport problems. But we have not been able to balance development among different areas in the country. Regarding transport we need to pay attention to passengers and freight. The most favourable mode for enterprises and the people is road transport. Demand for transport has not been resolved yet. The HSR is the most appropriate among the modes of transport. Regarding freight transport. Vietnam has a good advantage but we have not considered plan for coastal shipping. Why don't we pay attention to coastal shipping for freighting? Vietnam is divided by three major cultures. Dong Son, Sa Huynh and Cham. These are different cultures. Dong Son culture is from the mountain forests. While central and southern cultures believe man came from the island. That's why development of transportation is different in the north and the south. For the North, the development of Hai Phong port was considered during the Mac dynasty But even before that, in the south and central regions, coastal shipping was popular for a long time. That's why in the south central region, most cities are settled along the coasts. But that kind of historical advantage has not been made used of as a cost effective means of transport. That said, HSR is still highly necessary for national transport development. It will redistribute workforce and advantages in each town. Comments on Questionnaire: Part A and B are well done, but for C and D, the questionnaire is not clear enough. For example, on environmental consideration, the criteria are "significant" or "insignificant", this is too general. More clarification is needed to provide more accurate answers.	
Mr. Tran Van Hai, Manager Transport Management Division	Regarding location of stations – Residential concentration is heavy in Tuy Phong. It is not quite clear and I wonder if these three alternatives will be affected by hazards. Even in-migration, it is not clear here. If it goes on embankment it will provide impact than viaduct. Overall, Alt. 1 and 3 will have more impact on land use than Alt. 2. Designing an embankment will make use of the land for re-development; it cannot be used for other development. But if we use viaduct for alternative 2, we can still use the land. For the suggestions of assessment, the impacts on living condition after completion of the HSR projects should be considered, for example, with embankment, it will seriously impact on the current living conditions and change the way of life of people. Without the HSR projects, people are connected, but with the HSR projects, they will be separated, affecting their social network. The 2nd potential problem is disasters in the future. With embankment, it will be come as a dike, the city would look like "all dikes"	

Name of Inquirer	Issues Raised	Response from Study
	Regarding the current situation, there is occurrence on constant flood on the west, the use of embankment is not appropriate. As such, Alt. 2 will be more favourable. I do not agree on the impacts on point 2 for Alt. 1 because alternative 1 and 3 will have significant impacts as well. I think we should select Alt. 2, and for some sections, Alt. 1 and 2 could be combined. If Thap Cham station will be is will trigger adverse impact on the people living along this area. There will not have enough land surrounding this station to facilitate space to accommodate people. Why don't we just shift the station to north-east so we will be able to maintain the connectivity and also the railway? It is only 300 meter away and merges with Alt. 1 and 3. As for the general section on the south, I do not know about with the other province but in Ninh Thuan we will recommend Alt. 2. The characteristic in the central region comprise of mostly low land and the availability of land is limited and narrow. Cultivated land is less compared to other provinces in the North. So, it this implies if we get land from the families this will push them into poverty. The project will have less land acquisition with viaducts. The elevation from east to west is made up of considerable slopes. The coastal area is now affected by disaster and the poor are affected heavily. We do not want to make their condition more difficult. If we choose the embankment, they will be affected with water flooding. They will not have enough land for cultivation. How much land will they have to contribute? If each farmer should have 1 hectare of land for cultivation. In our province, the average cultivation land area per person is only 1000 m2 and we can only supply enough water. for about 400m2 of land per person. Saving of land is the top priority for the central region. We recommend not choosing cheap option which will lead to more losses at the end for the people	
VR : Mr Dung	As a person responsible for railway management, I agree with the comments raised. As you know, 60% of the world's HSR runs on embankments, such as the HSR in Korea and Taiwan where their system was developed in the 2000s, they do use viaducts. For the rest, when crossing rivers or mountains, they use mountains and tunnels. This makes up about only 40%. We agree that embankment will provide significant impact on living condition. Before the embankment the area is a unified community – afterwards, the embankment it will their social network, and will also affect the students as access to schools will be separated. There are a lot of problems that will lead us not to choose the embankment option. We recommend that the Consultants provide more information on viaducts and identify these sections, consider about the cost also. Regarding funding, the government will try to allocate appropriate funding by soliciting counterpart funds from all national enterprises. The national assembly did not approve the project because of huge investment needed. The huge figure was originally designed to develop the whole alignment from Hanoi to Saigon. Now we focus on 2 sections only so that it is acceptable and feasible for real implementation. But what is important is we have to think that railway should come from state funding. HSR funding could be considered to come from joint venture scheme. Currently we have two options; (i) the government will develop the track system. The locomotives will be funded by some companies. We want participation from other economic participants so they will join together. By doing so we will lessen the burden on state budget. (2) A joint venture with private companies having total responsibility. The state will have a certain amount to share. The state can contribute with land and other resources for example. We don't have to establish a full state company then publicize it later, but we will create a joint stock venture in the beginning right away	

E. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Iwata thanked the group for their active participation. He briefly summarized issues raised that must be taken into consideration. The task of the study is how to arrive at the best and doable plan for the HSR projects. The consultation process is strategic and required by the laws of the

country, so all comments are documented and will be incorporated in the next study.

Among important issue is the location of the stations to maximize connectivity with the HSR and the benefits of the location where the HSR passes through. There are 2 additional criteria for choosing: How close the HSR should be to the urban cities to be integrated? How best are other urban transport are connected to HSR?

Regarding the impact on embankment and viaduct, this is a critical issue because it relates to land acquisition and natural disasters. The Study team will provide the best combination for embankment and viaducts. The cost is also a very important aspect which we have to the national assembly.

We will have to mobilize all possible sources including government and private sectors and from the people. Financial analyses will also be conducted as to what extent the revenue will cover the cost. The critical area is how to cover initial investment. We can recommend the best option for cost recovery from the experience of other countries.

The meeting ended at 5.25 p.m.

F. List of Participants and Pictures

Ninh Thuan Province, 11 July 2012

No	Full Name	Agency / Unit	Position
1	Dong Nang Thuan Toanh	Provincial Labour Invalids – Social Affairs (DOLISA)	Office Deputy Head
2	Tran Hoai Huong	Television Station	
3	Huynh Minh	Ninh Hai District	Head of District's DONRE
4	Nguyen Van Ngoc	Ninh Hai District	Head of District's DOLISA
5	Le Van Ngoc	Ninh Hai District	Deputy Head of District's DARD
6	Tran Dang Thuy Huong	PPC's Office	Expert
7	Nguyen Ngoc Dinh	DOLISA	Head of DOLISA
8	Bui Van Loc	Provincial DOSCT	Deputy Director
9	Vo Chi	Ham Thuan Bac District's PC	Vice – Chairman
10	Nguyen Nghia	Ninh Hai District	Deputy Head of Economic Dept.
11	Nguyen Van Hieu	Ham Thuan Bac District	Head of District's DONRE
12	Vu Duc Hai	Thap Cham Car Mechanics Center	Director
13	Le Hung Hien	Ninh Phuoc District's PC	Vice-Chairman
14	Dam Truong Thanh	Thap Cham Car Mechanics Center	
15	Ngo Khanh	Ninh Phuoc District	Head of Economic Dept.
16	Pham Van Nhan	Provincial People's Council	Vice-Chairman
17	Phan Ke Vu	Ninh Son District	Deputy Head of District's DARD
18	Luu Ngoc Le	Thuan Nam District	Deputy Head of District's DARD
19	Le Xuan Vinh	DONRE	Expert
20	Phan Tuan Anh	Thuan Hai Railway Management Company	
21	Le Quoc Dat	PPC's Office	
22	Ha Manh Cuong	Thuan Hai Railway Management Company	Deputy Director
23	Bui Van Phu	People's Committee of Phan Rang – Thap Cham City	Vice-Chairman
24	Nguyen Van Mai	People's Committee of Phan Rang – Thap Cham City	Deputy Head of Municipal DOLISA
25	Truong Thi Lieu	Management Board of Industrial Zones	Deputy Director
26	Tran Van Hai	Provincial DOT	

No	Full Name	Agency / Unit	Position
27	Nguyen Ngoc Toan	CEMA	
28	Do Huu Nghi	PPC	Vice- Chairman
29	Tran Van My	Provincial DARD	Deputy Director
30	Nguyen Anh Thuc	Ninh Thuan Newspaper	
31	Bui Van Ky	Provincial DOH	Deputy Director
32	Pham Phu Bong	Provincial DOST	Deputy Director
33	Dinh Van Canh	Thuan Hai Railway Management Company	Head of Planning Dept.
34	Su Dinh Vinh	Provincial DOC	Deputy Director
35	Le Ngoc Thach	Provincial DONRE	Deputy Director
36	Nguyen Chau Canh	Thuan Bac District	Deputy Head of District's DARD
37	Tran Duc Lang	Thuan Nam District	Head of District's DOLISA
38	Hoang Van Sang	National Frontier	Standby Member
39	Nguyen Tien Duc	Economic Development Office	Head of Investment Dept.
40	Le Hoai Nam	Municipal Urban Management Dept.	
41	Chu Thi Thanh Van	Flood Control Committee	Deputy Head of Irrigation Sub-Department
42	Han Tan Vinh An	Thuan Nam District PC	Deputy Head of District's DONRE
43	Nguyen Tan Loc	Thuan Nam District PC	Deputy Head of District's Economic Infrastructure Dept.

	
Opening by Mr. Tran Quoc Dong, Deputy General Director, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	2nd SHM in Ninh Thuan DOT
	
Representative from Ninh Thuan asked question	Discussion

Khanh Hoa Province

Date: July 9, 2012
Venue: Que Huong Hotel, Khan Hoa,
Purpose of the Meeting: Disclosure on Environmental Study and Development Alternatives on the Proposed North-South Railway
Participants: 54 (48 Males; 6 Females)

A. Welcome Address: Mr. Nguyen Minh Hien, Dept. of International Cooperation, VR

Mr. Nguyen Minh Hien, Department of International Cooperation opened the session and introduced the keynote speaker.

B. Opening Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Tran Quoc Dong, Deputy Director, Viet Nam Railways gave the welcome remarks and introduction of the key speakers. Mr. Tran Quoc Dong highlighted on the importance of the study of the proposed prioritized HSR sections of HCMC-Nha Trang and Hanoi-Vinh.

C. Flow of Activities

The presentation followed the activities as provided in the program. A questionnaire was provided to allow all participants to give their comments along with a project information brochure in local dialect. Main activates included the following:

Part 1: Outline of the Study by Dr. Shizuo Iwata

Part 2: Presentation on the Alternative Alignments through Strategic Environmental Assessment (SEA) by Mr. Ujiie Toshiyuki

This was followed by a discussion and comments from the participants as documented in item D.

D. Issues and Responses

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Name of Inquirer: Mr. Dihn, Director, Department of Transport	In terms of demand, the demand for HSR is not considered appropriate at the moment. The road transport is still considered to have greater demand. It is expected that Alt A-I should be completed by 2015 and development of the A.1 will be finished between 2012-2020. The cost is $VND 1.8 billion. With regards to fare, the cost of HSR is nearly twice as much compared to bus fare, and 60% lower compared to air fare. Vietnamese has preference for bus transport because this mode allows them to get off or get on to their destination regardless of distance. With the provision of only 26 stations, this will pose constraints, putting limit to get down on the next station even if their destination is probably in-between two stations.	Response from Dr. Iwata Shizuo. This year (2010) the development of road is most important. The focus is to first remove the bottleneck identified in various points (as shown in slide 7). Once A1 is completed, it can proceed to A2 After workshop with VR/MoT, it was agreed that the HSR projects would be implemented in 2020. One of the considerations of the study is on how to connect the HSR with other mode of transport so that commuters can have varying options, linking various modes with the HSR.
Mr Tran Quoc Dong, Deputy Director General, VR	With regards, to development of A1 the expected travel time is planned from 29.1 hours to 28 hours. The Plan is now considered and a Committee has been formed to look into this matter. In many countries, HSR is already operative and more countries are bidding now for similar project. If we don't do it, ten years from now we will be behind among other developing countries. There are many advantages of HSR; speed is almost similar to aircraft; It can also go inside the city but expensive in terms of fare for short distance section of 60 km which can provide options for passengers to get down from between 2 sections. In order to reduce construction cost, it is suggested to construct viaducts rather than embankment.	In principle, the use of both an embankment and viaducts will be constructed where necessary.
Mr. Le Huy Toan, Vice Chairman, People's	It is important to also determine the exact location and land area of the stations.	About the location and land area of the stations, the study team is using the map at

Open Forum		Response from Study
Name of Inquirer	Issues Raised	
Committee	Regarding alignment (slide 26) alignment in Alt 2 and 3 are coinciding, and they are located in the West. The Alt 1 is located in the East of Alt 2 and 3. There are residents living in the East which is more crowded. In the analysis, Alt 2 runs parallel with Alt 3 while the assessment of Alt 2 and Alt 3 are different. So the assessments on noise, vibration, land use and resettlement are not appropriate. It is requested that the study team should clarify this point. Regarding the speed of the train, it is suggested that the study team explains the reason why the speed of 350km/h is chosen. The implementation progress is very slow: the high speed railway will be constructed in 2020 and operated in 2030. It is needed that the study team explains why the progress is that slow. Regarding the comparison of construction cost, it is suggested that the study teams provide the specific figures and costs.	scale 1:10,000. Since this is still on pre-feasibility study so it is difficult to specify the exact location and land area of the stations. Regarding the assessment on alternatives, the study team overlaid maps with satellite image in order to determine how many people or buildings will be affected. The base map used is at the scale of 1:10,000. The reason why Alt 2 and Alt3 are more affected is that the railway section in these alternatives is longer than the section in Alt. 1. In Alt 2 and 3, the railway passes through many industrial areas already planned so it will cause more impact than in Alt 1. Regarding the construction cost, the study team will assess the cost based on the structure of the physical works and the cost will be clarified in the final report. For the speed of the train, 350 is the maximum speed while 300 is the average speed. Many people think that the speed of 200 km/h is enough. We calculated the demands for either 200 km/h or 300km/h. according to the analysis, if the train runs at the speed of 300 km/h, the demand will increase by 30% while the construction cost increase by 5% only. Regarding the slow roadmap, if we had enough financial sources, we could do this right now. But these are big and expensive projects so it requires carefully financial and economic analysis.
Mr. Kha (Department of Construction)	Now the city is expanding to the East. In the future, the proposed alignments will affect much in the city areas in 2030. The HSR projects will be implemented in 20 or 30 years, so it is necessary to reserve the land fund for the project, which will affect the lives of local people. Is there any other alternative in which the alignment does not pass across the city center? Regarding station location, Alt. 1 is suitable with the present condition, but in the long term (20-30 years) Alt. 2 seems to be more suitable.	The study team will analyse more on the alignment and the station location as well.

E. Conclusion: Dr. Shizuo Iwata, Team Leader, JICA Study Team

Dr. Shizuo concluded that in general, the JICA Study Team revised and modified the alignment and location according to the comments by the Vice Chairman in the previous meeting. The study team will do a more careful research on the location of the stations. The selection of speed, construction cost, roadmap, and other issues in slide 26 will be explained more clearly in the final report.

F. Closing Remarks: Mr. Tran Quoc Dong, Deputy Director General, VR

Mr. Dong affirmed that the Study Team will continue to coordinate with the province in to consider the alignments and the station in line with the local condition.

The meeting ended at 5.00 p.m.

G. List of Participants and Pictures

Khanh Hoa Province, 09 July 2012

No	Full Name	Agency / Unit	Position
1	Nguyen Van Cuong	Phu Khanh Company	President of Trade Union
2	Dao Cong Thien	Provincial DARD	Director
3	Tran Van Minh	Ninh Hoa Town People's Committee	Vice-Chairman
4	Vuong Xuan Phuong	Management Board of Van Phong Economic Zone	Deputy Head of Construction Planning Dept.
5	Nguyen Van Nhuong	CEMA	
6	Le Huy Toan	Municipal People's Committee (MPC)	Vice – Chairman
7	Nguyen Cong Dinh	Provincial DOT	Director
8	Nguyen Tuan Giang	Provincial DOT	Head of Traffic Dept.
9	Nguyen Thanh Hien	Provincial DOT	Deputy Head of Traffic Dept.
10	Le Thi Ngoc Suong	Provincial DOLISA	Office Deputy Head
11	Nguyen Anh Duy	Tourism Association	Executive Board Member
12	Nguyen Van Hai	Provincial Labour Federal	Vice – President
13	Nguyen Huu Hao	Cam Lam District's PC	Vice – Chairman
14	Nguyen Huu Duy Kha	Provincial DOC	Deputy Head of Planning Dept.
15	Nguyen Ngoc Loan	Management Board of Cam Danh Peninsula Tourism Area	Director
16	Huynh Ngoc Tuan	Provincial DPI	Officer
17	Vo Sy Huynh	Cam Ranh Municipal People's Committee	Deputy Head of MPC's Office
18	Nguyen Van Thien	Cam Ranh Municipal People's Committee	
19	Le Tien Vinh	Cam Ranh Municipal People's Committee	Head of Urban Management Department
20	Huynh Duc Hien	Provincial DOST	Expert
21	Tran Quang Tien	DOLISA	Expert
22	Nguyen Xuan Hai	PPC's Office	Officer
23	Le Xuan Huong	Khanh Hoa Railway Service Business Enterprise	Deputy Director
24	Nguyen Dinh Tam	Phu Khanh Railway Transport Enterprise	Director
25	Phan Huy Lam	Phu Khanh Railway Transport Enterprise	Deputy Head of Planning Dept.
26	Nguyen Ngoc Tuan	Phu Khanh Railway Transport Enterprise	Head of Organization Dept.
27	Vo Huu Tin	Phu Khanh Railway Transport Enterprise	Deputy Head of Technical Standards
28	Nguyen Thi Kim Oanh	Phu Khanh Railway Transport Enterprise	Officer of General Affair Dept.
29	Nguyen Ngoc Duc	Phu Khanh Railway Management Company	Deputy Head of Technical Dept.
30	Trinh Van Nho	Phu Khanh Railway Management Company	Director of Service Enterprise
31	Ho Phuoc Viet	Phu Khanh Railway Management Company	Officer of General Affair Dept
32	Nguyen Thanh Viet	Viet Phuong Transport Construction Company	Director
33	Luong Than Phuong	Phu Khanh Enterprise	Deputy Director
34	Tran Thi Kim Lien	Provincial People's Council	Vice-President
35	Le Tien ANh	Phu Khanh Railway Management Company	Deputy Head of Technical Dept
36	Tran Van Quan	Phu Khanh Railway Management Company	Technical Dept
37	Vu Xuan Thin	Provincial DONRE	Deputy Director
38	Nguyen Van Ngon	DONRE	Head of DONRE
39	Dao Xuan Toan	Urban Management Dept.	Expert
40	Huynh Van Giang	National Frontier	Director
41	Nguyen Duc Manh	Nha Trang Station	Station Master

No	Full Name	Agency / Unit	Position
42	Tran Van Tan	Nha Trang Station	Deputy Master
43	Tran Huu Quang	Nha Trang Station	Head of Planning Dept.
44	Vo Tan Than	Provincial DPI	Director
45	Kieu Lam	Provincial DPI	Deputy Director of Investment Promotion Center
46	Ngo Duc Anh	Nha Trang Station	Head of Statistic & Economic Dept.
47	Truong My Hanh Linh	Nha Trang Station	Deputy Head of General Affair Dept.
48	Phan Thanh Truc	Provincial DOSCT	Deputy Director
49	Tran Van Ot	Phan Rang City's PC	Deputy Head of Economic Dept.
50	Dang Thi Ninh Thuan	Provincial DOT	Office Deputy Head
51	Bui Man	VUSTA	President
52	Nguyen Van Hao	Phu Khanh Railway Management Company	Deputy Director
53	Hoang Dinh Phi	Management Board of Van Phong Economic Zone	Deputy Director
54	Nguyen Thai Nhu Tri	Provincial Flood Control Committee	Office Head

	
Opening by Mr. Tran Quoc Dong, Deputy General Director, VR	Presentation by Dr. Iwata Shizuo, Team Leader, JICA Study Team
	
Presentation by Mr. Ujiie Toshiyuki, JICA Study Team	Exhibition in Khanh Hoa
	
Representative from Khanh Hoa asked question	Closing by Mr. Tran Quoc Dong, Deputy General Director, VR

Record of Plenary Session of 2nd Stakeholder Meetings

for

The Study on the Formulation of High Speed Railway Projects

for Hanoi- Vinh and Ho Chi Minh- Nha Trang Sections

Date/Time: 14 September, 2012/ 8:00 – 12:00
Venue: Meeting room, 65 Quan Su, Hanoi City
Participants:

No.	Type		Agency	
1	Central Government	Lê Văn Dương	Ministry of Transport	Construction and Traffic Work Quality Management Dept.
2		Nguyen Van Doanh	Ministry of Transport	Deputy Director, Vietnam Railways Administration
3		Hoàng Đình Tuấn	National Safe Traffic Board	Expert
4		Đặng Kim Nhung	Ministry of Agriculture and Rural Development	Institute of Irrigation Planning
5		Trần Quốc Đông	Vietnam Railways Corporation	Deputy General Director
6		Trần Phú Hiệp	Vietnam Railways Corporation	Deputy Director, Infrastructure Management Board
7		Nguyễn Thi Ṭhu Thành	Vietnam Railways Corporation	Deputy Director, International Cooperation Board
8		Nguyễn Thanh Chỉ	Vietnam Railways Corporation	Internal Control Board
9		Phạm Văn Sắt	Vietnam Railways Corporation	Deputy Director, Construction Management Board
10		Nguyễn Xuân Tháp	Vietnam Railways Corporation	Deputy Director, Center on railway transportation operation
11		Trần Thanh Sơn	Vietnam Railways Corporation	Investment preparation board
12		Lê Trọng Tuấn	Vietnam Railways Corporation	Director, Technology Board
13		Nguyễn Ngọc Viên	Vietnam Railways Corporation	Deputy Director, Locomotive Board
14		Ngô Trung Nhân	Vietnam Railways Corporation	Investment preparation board
15		Nguyễn Thanh Bình	Vietnam Railways Corporation	Investment preparation board
16		Phan Tiến Dũng	Vietnam Railways Corporation	Office
17		Lương Văn Vinh	Vietnam Railways Corporation	Expert
	Local Government	Hanoi		
18		Trần Quang Đặng	Department of Transport	Division of Appraisal
19		Vũ Văn Thơ	Department of Planning and Investment	Deputy Director, Division of International Cooperation
20		Đinh Văn Thắng	Department of Labor, War Invalids and Social Affair	Expert
21		Đào Minh Tâm	HAUPA	Deputy Director, Infrastructure Division
		Ha Nam		
22		Nguyễn Xuân Đông	Provincial People's Committee	Vice Chairman
23		Nguyễn Văn Bình	Provincial People's Committee	Expert, Transportation Division
24		Nguyễn Văn Tiến	City People's Committee	Vice Chairman
25		Nguyễn Văn Khoái	Department of Transport	Director
26		Lê Trường Tho ̣	Department of Transport	Planning Division
27		Đỗ Quang Nha	Department of Construction	Deputy Director
28		Nguyễn Lê Nam	Department of Construction	Expert
29		Nguyễn Văn Truyện	Department of Natural Resources and Environment	Deputy Director
30		Phạm Văn Sinh	Department of Natural Resources and Environment	Expert
31		Bùi Hồng Thanh	Department of Planning and Investment	Deputy Director
32		Trần Văn Tiến	Department of Culture, Sport and Tourism	Deputy Director
33		Nguyễn Văn Huỳnh	Department of Labor, War Invalids and Social Affair	Deputy Director
		Nam Dinh		

No.	Type		Agency	
34		Nguyễn Quốc Hùng	Department of Transport	Deputy Director
35		Đinh Văn Phương	Department of Transport	Head, Division of Technical Appraisal
36		Phạm Quốc Khánh	Department of Planning and Investment	Deputy Director
37		Trịnh Văn Hoàng	Department of Planning and Investment	Expert
38		Bùi Thị Hằng	Department of Planning and Investment	Expert
		Ninh Binh		
39		Đinh Văn Thứ	City People's Committee	Vice Chairman
40		Bùi Văn Hiệp	City People's Committee	Site Clearance Board
41		Nguyễn Ngọc Thạch	Department of Transport	Director
42		Phạm Minh Cường	Department of Transport	Deputy Director
43		Vũ Nam Tiến	Department of Agriculture and Rural Development	Deputy Director
44		Lê Trọng Hùng	Department of Construction	Deputy Director
45		Vũ Văn Cẩn	Department of Health	Deputy Director
46		Lê Xuân Thịnh	Department of Planning and Investment	Deputy Director
47		Bùi Minh Đức	Department of Planning and Investment	Head, Division of Foreign Trade
		Thanh Hoa		
48		Lê Văn Toàn	People's Committee of Thanh Hoa City	Manager of Urban Management Division
49		Lê Đức Thảo	People's Committee of Thanh Hoa City	Deputy-manager of Urban Management Division
50		Nguyễn Văn Trung	Department of Transport	Deputy director
51		Phạm Văn Chung	Department of Transport	Finance and Planning Division
52		Nguyễn Minh Huân	Department of Construction	Deputy director
53		Nguyễn Công Huy	Department of Labor, War Invalids and Social Affair	Deputy director
54		Nguyễn Ngọc Thu	Department of Labor, War Invalids and Social Affair	Job Direction Center
55		Lê Văn Bình	Department of Natural Resources and Environment	Vice-chief of Environmental Protection Branch
56		Pham Duy Phương	Department of Culture, Sport and Tourism	Deputy director
57		Trần Quang Trung	Department of Agriculture and Rural Development	Deputy director
58		Nguyễn Trọng Dũng	Department of Agriculture and Rural Development	Evaluation Division
		Nghe An		
59		Nguyễn Hồng Kỳ	Department of Transport	Director
60		Phạm Huy Trâm	Department of Transport	Deputy director
61		Phạm Văn Toàn	Department of Natural Resources and Environment	Inspection Division
62		Vũ Đình Lợi	Department of Construction	Deputy director
63		Hoàng Thanh Ngọc	Department of Construction	Manager of Infrastructural Management Division
64		Bùi Đình Long	Department of Health	Deputy director
65		Nguyễn Thế Quân	Institute of Urban Architecture and Planning	Expert of Planning Division
66		Lương Bá Quang	Institute of Urban Architecture and Planning	Director
67	Professional Associations	Phạm Bích San	Vietnam Union of Science & Technology Associations	
68		Vũ Hoan	Hanoi Union of Science &	

No.	Type		Agency	
			Technology Associations	
69		Trần Đình Trí	Hanoi Union of Science & Technology Associations	
70		Vũ Tuấn Anh	Vietnam Social and Science Union	
71		Nguyễn Văn Bảo	Thanh Hoa Union of Science - Technology Association	Chairman
72		Hoàng Công An	Thanh Hoa Union of Science - Technology Association	Chief Secretariat
73		Bùi Danh Liên	Transportation Union	Chairman
74	Business Associations	Trần Văn Trường	Ha Nam Industrial zone Management Board	Head, Planning Division
75		Phạm Thế Thức	Nam Dinh Industrial zone Management Board	Deputy Director
76		Trần Văn Trịnh	Nam Dinh Industrial zone Management Board	Expert
77		Vũ Viết Thiệu	Nam Dinh Industrial zone Management Board	Expert
78		Võ Văn Hải	Nghe An Industrial zone Management Board	Manager
79		Vũ Chính Đông	Hanoi Tourism Association	Deputy General Secretary
80		Vũ Anh Dũng	Vietnam Chamber of Commerce and Industry (branch)	Director of membership board
81		Nguyễn Thị Hòe	Investment Promotion Center	
82		Nguyễn Đình Mạnh	Investment Promotion Center	
83		Võ Văn Quang	Center of Science - Technology Application	Director
84	Social Association / NGOs	Bùi Tân Tiến	Vietnam Fatherland Front	Chairman
85		Lê Kim Oanh	Ha Noi City Fatherland Front	Vice Chairman
86		Nguyễn Văn Minh	Thanh Hoa Fatherland Front Committee	Vice-chairman
87		Hà Văn Thọ	Thanh Hoa Fatherland Front Committee	Vice-chief of General Administration Division
88		Hà Thị Minh Tâm	Ha Nam Women's Union	Chairman
89		Phạm Thị Lan	Nam Dinh Women Union	Chairman
90		Vũ Hùng Quân	Hanoi Youth Union	Deputy Director
91		Trịnh Quang Đông	Ninh Binh Flood Protection Board	Expert
92		Lê Đình Long	Nghe An Flood Protection Board	Deputy chief of General Administration Division
93		Bùi Văn Huy	Thanh Hoa Committee of Ethnic Affairs	Deputy manger
94		Nguyễn Vân Hảo	Transport Development and Strategy Institute (TDSI)	Expert
95		Lê Hải Hà	Hanoi University of Transportation	Director, Railway Department
96		Lê Ngọc Thuấn	Hanoi University for Natural Resources and Environment (HUNRE) under MONRE	Teacher
97	Mass Media	Trương Đình Chiến	Nghe An TV	
98		Lê Ngọc Mai	Nghe An TV	
99		Lê Công Vinh	Nghe An TV	
	Others	Kubo	JICA Vietnam	
			Japan Embassy	
100		Đỗ Văn Hạt	TRICC	General Director
101		Nguyễn Tất Vinh	TRICC	Deputy Director
102		Nguyễn Trường Thành	TRICC	Expert
	JICA Study Team			
1		Shizuo IWATA	Team Leader/Transport Planning	

No.	Type		Agency	
2		Tatsuyuki MATSUDA	Hgh Speed Railway Construction	
3		Noboru TAKAHASHI	Hgh Speed Railway Construction	
4		Toshiyuki UJIIE	Environmental and Social Considerations	
5		Tetsuya SAITO	Natural Environment Considerations	
6		Yuko OKAZAWA	Urban and Regional Development	
7		Nguyen Tien Phuc	Environmental and Social Considerations	

1. Mr. Vu introduced the purpose of the meeting and participants from Vietnamese and Japanese side.
2. Mr. Dong delivered the opening remark which explained the background of this project. He shared that after many meetings with cities and provinces, the JST had updated the information and revised the alignment based on the discussions and comments given from the provinces. He explained that this meeting was to reach to an agreement on high speed railway alignment and station locations among participants. He expressed his sincere thanks to all people for their attendance.
3. Mr. Iwata continued the meeting by his presentation on the “Overall explanation of the study”
4. Mr. Ujiie made presentation on the “Summary of 2nd SHM in cities/provinces and reflection of comments from participants”.
5. The 3rd presentation on “In-depth study on common topics for the selection of optimal alternatives” was given by Mr. Takahashi.
6. The meeting was continued by the presentation by Mr. Matsuda on the “Optimum alternative for alignment and station locations for the North section”.
7. Matter discussed

   (a) Mr. Nguyen Van Khoai, Director, DOT, Ha Nam province provided comments as follows:

   - He shared that Ha Nam province had already sent an official letter No.1531 dated 13 September 2012 to JST. Regarding the alignment, he said that the province agreed with the red alignment proposed by JST. However, the province made the plan for HSR which ran to the east side in order to avoid passing through Honda Factory. It was suggested that the section form Hanoi to Ha Nam should follow the alignment by KOICA, then continued by the red line by JICA.
   - For the section in Ha Nam province, the province totally agreed with the alignment presented.
   - He also shared that the province agreed with the proposed station location.

   (b) Here are some comments by Nam Dinh, DOT

   - He shared that he kept the same opinions as agreed in the previous meeting between JST and Nam Dinh Province. He expressed that he agreed with the Alt. 1 by JST.
   - Regarding the station, he explained that Nam Dinh Station would serve not only Nam Dinh Province but also Thai Binh and its vicinities. Moreover, he said that Nam Dinh had just been approved to be a City Class I and a center of the delta in the South of the Red River. Therefore, he strongly suggested that Nam Dinh Station should be a big-scale station in order to be suitable with its position in the region.

(c) Mr. Nguyen Ngoc Thach, Director, DOT, Ninh Binh

- Regarding the alignment, he expressed his agreement on the alignment proposed by JICA. He shared that, basing on the KOICA alignment, the province had formulated a plan of HSR. Therefore, he suggested that the JST should report to the competent authorities for approval of alignment as soon as possible so that Ninh Binh Province could adjust the plan of North-South HSR. Particularly, at the section crossing Day River, the province had already approved the construction project of river ports in Khanh An area. He said that if there was no specific plan of HSR for this area, the construction of HSR would not be feasible when the river ports were already completed in the future.
- He agreed with the connectivity between HSR and existing railway in order to increase the effectiveness of transportation modes. However, he said that the station location is the crossing among expressway Hanoi – Vinh, NH1A and North-South railway. He recommended that the JST should have further study about this area.

(d) Mr. Trung, Vice Director, Thanh Hoa DOT

- He shared that in the meeting dated 24 July 2012, Thanh Hoa Province had sent an official letter to the JST in order to provide comments on the HSR projects; and in the beginning of September, Thanh Hoa Province organized a meeting which invited not only departments in Thanh Hoa Province but also JST. Also, on 10 September 2012, Thanh Hoa Provincial People's Committee sent an official letter No. 6445 to MOT, VR and JST which expressed their comments on the alignment.
- He expressed his disagreement on the section from the south of Ma River to the end of Nong Cong District. This section was about 30km. He noted his agreement on KOICA alignment on this section. According to the Decision No.84 by the Prime Minister on the development plan of Thanh Hoa City in the East and South, the alignment of the section from the south of Ma River to the end of Nong Cong District proposed by JICA is not appropriate because (i) it would affect the plan approved by the Prime Minister, (ii) the geological condition in Nong Cong District was not good enough, and the geological condition in the West of existing railway was better. He suggested that JST should revise the section from the south of Ma River to the end of Nong Cong District.
- Regarding station, he expressed that the province prefer the station location as proposed by KOICA which was 4km far from Thanh Hoa City because it was in accordance with the Decision No.84 by the Prime Minister.
- He was not convinced by the idea of connecting HSR and existing railway because in reality, there were very few feeder trains in Vietnam. He said that the stations of HSR were almost the same with stations of existing railway; therefore, it is not feasible for the existing railway to play a role as a feeder train.

(e) Nguyen Hong Ky, Director, DOT, Nghe An province

- He shared that the province already provided comments on alignment and station locations in the stakeholder meeting and in the document sent to the JST.
- At Hoang Mai area, the Hoang Mai industrial zone was already approved by the Prime Minister. Nghe An province provided comments about this section in the stakeholder meeting and proposed that the alignment should run in the West of existing railway.
- In the North-South economic zone, the province had secured 200m-300m wide for the development of HSR and also in Nam Cam industrial zone. He said that the Alt. 1 might cross cement factory and some other industrial zones.

- To conclude, he suggested that the alignment should run in the west side of existing railway as proposed by KOICA. He agreed with JST's suggestion of development of a new station in Hoang Mai. He suggested that JST should consult with Nikken Sekkei who was working on the city plan. He hoped that the alignment and station location would be finalized soon so that the province could continue their plans and development.

(f) Mr. Le Van Duong, Construction and Traffic Work Quality Management Dept. , MOT

- He expressed his agreement with the comments by the Vice Director of Thanh Hoa DOT in regard to the connection between HSR and existing railway. The ultimate purpose of HSR development was to transport passenger and freight effectively. However, he did not agree with the opinion that "due to mass transit nature of HSR, even transferring by buses to distant station may not be efficient" because the JST did not specify the distance to the station. He said that it was needed to consider the customs of Vietnamese people. For example, in Thanh Hoa, in order to gather passenger within the radius of 20-30km, it would be very difficult for people if they did not use buses, taxi or other personal vehicles. In Western countries, using the existing railway to transfer to HSR at the airport is not practiced. The station should be located near the city center so that resident can access by cars, buses or other vehicles. He raised his doubts that passengers using existing railway to access to HSR or to other places after using HSR is not realistic. He suggested that JST should have further study about the connection between HSR and roads, airport and other transportation modes so that we could fully take advantages of HSR.

(g) Mr. Tran Quoc Dong, VR

- He shared that JST had received the comments in the meetings with provinces/cities and reflected those comments in the revision of alignment. He said that the most important point was the compliance with the plans. He expressed that JST tried to comply with cities/provinces' plans as much as possible because the route in each province could affect each other and railway plan is a national one.
- He explained the nature of this project. We have to work out all the scenarios of HSR, whether we could utilize the existing railway, upgrade the existing railway or construct a new railway. He shared that some delegates in the National Assembly thought that it was not necessary to construct a new railway and what is more important and urgent is to upgrade the existing railway. If a new railway would be constructed, there should be cooperation between HSR and existing railway in order to satisfy the demands in the future.
- He advised that the JST considers all the comments by participants and reflect them in the revision of alignment.

(h) A representative (VR)

- He agreed with the importance role and necessity of HSR; the utilization and connection of HSR with existing railway. And he agreed that the HSR station would be located near the city center where residents could have easy access.
- He wondered why the stations in Thanh Hoa and Phu Ly were quite far from the city center. He provided an example of Giap Bat station where many passengers waited outside the station instead of inside the station. The reason was that this station was not convenient for the passengers.
- He expressed his agreement with the idea of constructing a new railway. But many people think that upgrading the existing railway was enough. He suggested that JST should be the one to further explain and provide convincing arguments.

(i) Mr. Iwata

- He thanked all participants for providing comments and summarized the comments. He said that JST and provinces had reached a certain agreement after many meetings and discussions. He informed the participants that the final decision would be made by the Vietnamese Government rather than the Japanese side. He provided explanation about the connection between HSR and existing railway; the upgrading of existing railway in the future, and the differences between Japanese and Korean HSR, and the preservation of land for HSR development.

(j) Mr. Dong expressed his sincere thanks for the attendance and comments by participants.

Record of Plenary Session of 2nd Stakeholder Meetings

for

The Study on the Formulation of High Speed Railway Projects

for Hanoi- Vinh and Ho Chi Minh- Nha Trang Sections

Date/Time: 17 September, 2012/ 13:30 – 17:00
Venue: Meeting room, Victory Hotel, 14 Vo Van Tan, HCMC
Participants:

No.	Type	Name	Agency	Title
1	Central Government	Đào Tiến Dũng	Ministry of Natural Resources and Environment	General Affair Dept, Representative Office of Institute for Environmental Science & Technology in HCMC
2		Nguyễn Hùng Khu	Ministry of Culture, Sports and Tourism	Chief Representative, Representative Office of Institute for Environmental Science & Technology in HCMC
3		Nguyễu Vũ Thành	Vietnam Railways Corporation	Director, Railway PMU - Region3
4		Lê Bá Lượng	Vietnam Railways Corporation	Deputy Director, Railway PMU - Region3
5		Lê Anh Tuấn	Vietnam Railways Corporation	Deputy Master, Saigon Station
6		Hoàng Quang Vinh	Vietnam Railways Corporation	Director, Saigon Locomotive Enterprise
7		Trần Quốc Đông	Vietnam Railways Corporation	Deputy Director
8		Phan Tiến Dũng	Vietnam Railways Corporation	VR Office
9		Ngô Trung Kiên	Vietnam Railways Corporation	Deputy Head of Investment Preparation Dept
10		Trần Văn Sơn	Vietnam Railways Corporation	Deputy Head of Investment Preparation Dept
11		Bùi Hoàng Vũ	Vietnam Railways Corporation	International Cooperation Dept
12		Nguyễn Đức Mạnh	Vietnam Railways Corporation	Station Master, Nha Trang Station
13		Ngô Đức Anh	Vietnam Railways Corporation	Expert, Nha Trang Station
14		Bùi Minh Chính	Vietnam Railways Corporation	Director, Phu Khanh Railway Management Company
15		Nguyễn Thanh Hùng	Representative Office of Institute for Environmental Science & Technology in HCMC	Chief Representative
	Local Government	HCMC		
16		Nguyễn Văn Tám	Department of Transport	Construction Work Dept
17		Nguyễn Thanh Long	Department of Planning and Investment	Infrastructure Dept
18		Phan Trường Sơn	Department of Construction	Head of Urban Development Dept
19		Pham Trần Hải	Department of Natural Resources and Environment	Planning Dept
20		Phạm Thành Nam	Department of Culture, Sport and Tourism	Heritage Dept
21		Phan Thanh Liêm	Department of Health	Deputy Head, Planning & General Affairs Dept
22		Nguyễn Thị Thương	Department of Agriculture and Rural Development	Flooding Control Committee
		Dong Nai		
23		Nguyễn Thái Hòa	Bien Hoa City People's Committee	Deputy Head of Urban Management Dept
24		Lê Quang Bình	Department of Transport	Deputy Director
25		Vũ Xuân Dự	Department of Transport	Expert
26		Nguyễn Kim Trung	Department of Planning and Investment	Basic Construction Dept
27		Nguyễn Cảnh Tiến	Department of Natural Resources and Environment	Head of Planning Dept

No.	Type	Name	Agency	Title
28		Nguyễn Đình Giang	Department of Natural Resources and Environment	Expert of Planning Dept
29		Mã Quốc Việt	Department of Agriculture and Rural Development	Deputy Head
30		Trần Thanh Liêm	Department of Construction	Deputy Head of Planning Management Dept
31		Hoàng Văn Chi	Department of Health	Office Head
32		Nguyễn Hồng Ân	Department of Culture, Sport and Tourism	Head of Cultural Professional Dept
		Phan Thiet		
33		Nguyễn Hồng Hải	Department of Transport	Deputy Director
34		Mai Kiều	Department of Agriculture and Rural Development	Deputy Director
35		Nguyễn Thanh Hải	Department of Construction	Deputy Director
36		Bùi Trường Sơn	Department of Construction	Head of Planning Dept
		Ninh Thuan		
37		Trần Xuân Hòa	Ninh Thuan Provincial People's Committee	Vice chairman
38		Trần Minh Nam	Phan Rang City People's Committee	Chairman
39		Cao Văn Mão	Department of Transport	Director
40		Lê Huyền	Department of Natural Resources and Environment	Deputy Director
41		Phan Tuấn Cảnh	Department of Construction	Deputy Director
42		Lỗ Minh Tâm	Department of Culture, Sport and Tourism	Deputy Head of Preservation Museum
43		Lê Minh Định	Department of Health	Director
		Khanh Hoa		
44		Lê Huy Toàn	Nha Trang City People's Committee	Vice chairman
45		Nguyễn Tuấn Giang	Department of Transport	Head of Traffic Dept
46		Nguyễn Việt Hùng	Department of Construction	Head of Economics Dept
47		Hà Ngọc Trường	HCMC Association for Unions of Science and Techhnology Association	Vice chairman
48		Nguyễn Văn Thanh	HCMC Association for Roads, Bridges and Ports	Member of the Executive Board
49	Business Associations	Nguyễn Tấn Định	HCM Industrial Zone Management Authority	Deputy Head
50		Cao Tấn Sĩ	Dong Nai IZ Management Board	Senior Expert
51		Nguyễn Mạnh Văn	Dong Nai IZ Management Board	Leadership
52		Hoàng Văn Trương	Dong Nai IZ Management Board	Senior Expert
53		Giang Công Tuyên	Phan Thiet IZ management board	Deputy Director
54		Ngô Văn Chương	Tourism Union	Chairman
55		Huỳnh Thị Bích Phượng	Tourism Union	General Secretary
56		Đàm Danh Hùng	Dong Nai Vocational Training College	
57		Trịnh Văn Cần	Dong Nai Vocational Training College	
58		Huỳnh Thị Cẩm Tú	Khanh Hoa Investment Promotion Center	Chief Representative
59	Social	Nguyễn Ngọc Đức	Fatherland Front	Vice chairman

No.	Type	Name	Agency	Title
60	Associations / NGOs	Đỗ Thị Bích Liên	National Frontier in Ninh Thuan	Chairman
61		Nguyễn Anh Tuấn	National Frontier in Ninh Thuan	Standby Member
62		Nguyễn Việt Hà	Women's Union	Association Head
63		Lê Thị Hường	Women's Union	Vice chairman
64		Ms. Nguyễn Hồng Lương	Women's Union	Office Head
65		Phạm Hồng Sơn	Youth Union	Standby Member
66		Trần Hải Đoàn	Youth Union	National Frontier Dept
67		Quý Nhân Hòa	HCM Famer Association	Head of Consultation Dept
68		Lê Hữu Thiện	Dong Nai Famer Union	Vice chairman
69		Châu Văn Hai	HCM Committee for Ethnic Minority	Deputy Head
70		Phạm Đình Nhân	Flooding Control Committee	Office Head
71		Nguyễn Hồng Tâm	Flooding Control Committee	Expert
72		Nguyễn Duy Quang	Khanh Hoa Flooding Control Committee	Deputy Head
73		Đinh Tuấn Hiếu	Khanh Hoa Flooding Control Committee	Expert
74	Academic Society	Trịnh Văn Chính	HCMC Transport University	Transport Planning Subject
75		Đoàn Hồng Đức	HCMC Transport University	Lecturer
76		Trần Quang Duy	HCMC Transport University	Lecturer
77		Nguyễn Bá Hoàng	HCMC Transport University	Deputy Head Master
78		Ms. Phạm Minh Châu	HCMC Transport University	Lecturer
79		Đỗ Thị Hân	HCMC Transport University	Lecturer
80		Khuất Thị Hạnh	HCMC Transport University	Lecturer
81		Trịnh Bảo Long	HCMC Transport University	Lecturer
82		Phùng Thế Long	HCMC Transport University	Lecturer
83		Lê Duy Khải	HCMC Technology University	Deputy Faculty
84		Đàm Danh Hùng	Dong Nai Vocational Training College	Deputy Dean
85		Trịnh Văn Cần	Dong Nai Vocational Training College	Planning Dept
86		Lê Văn Phận	Phan Thiet University	Deputy Master
87	Mass Media	Nguyễn Bá Sơn	Youth Newspaper	Reporter
88		Hoàng Anh Tuấn	Vietnam Information Agency	Reporter
89		Phan Tư Doãn	Transport Newspaper	Reporter
90		Mr. Hoàng Phước Bửu	Vietnam News	Reporter
91		Ms. Ánh Nguyệt	Labor Newspaper	Reporter
92	Others	Yamada	Long Thanh International Airport Team	Chief Representative
93		Nguyễn Hữu Nghị	TEDI South	Deputy Director, Work & Soil Enterprise
94		Lữ Thi Toàn	TEDI South	Head of Technical Dept, Work & Soil Enterprise
95		Phạm Quang Huy	TEDI South	Expert, Work & Soil Enterprise
96		Nguyễn Nam Sơn	EPC	Director
97		Nguyễn Công Hiệp	EPC	Senior Expert
98		Nguyễn Văn Lợi	EPC	Senior Expert
	JICA Study Team			
1		Shizuo IWATA	Team Leader/Transport Planning	

No.	Type	Name	Agency	Title
3		Noboru TAKAHASHI	Hgh Speed Railway Construction	
4		Toshiyuki UJIIE	Environmental and Social Considerations	
5		Tetsuya SAITO	Natural Environment Considerations	
6		Yuko OKAZAWA	Urban and Regional Development	
7		Nguyen Tien Phuc	Environmental and Social Considerations	

1. Mr. Vu introduced the purpose of the meeting and participants from Vietnamese and Japanese side.
2. Mr. Dong delivered the opening remark which explained the background of this project. He shared that after many meetings with cities and provinces, the JST had updated the information and revised the alignment based on the discussions and comments given from the provinces. He explained that this meeting was to reach to an agreement on high speed railway alignment and station locations among participants. He expressed his sincere thanks to all people for their attendance.
3. Mr. Iwata continued the meeting by his presentation on “The overall explanation of the study”.
4. Mr. Ujiie made presentation on the “Summary of 2nd SHM in cities/provinces and reflection of comments from participants”.
5. The 3rd presentation on “In-depth study on common topics for the selection of optimal alternatives” and “Optimum alternative for alignment and station locations (South Section)” was given by Mr. Takahashi.
6. Matter discussed

   (a) Mr.Nguyễn Tấn Định, IZ management board , provided comments as follows:

   - He wanted JICA Study Team to explain further about the failure in Taiwan, and he shared his experience of visiting Taiwan. He said that the Taiwanese Government subsidized by constructing 100-ha commercial area and elevated expressway to connect the international airport and the station. He suggested that we needed to consider the fare so that people can afford. He provided an example that if the fare on Trung Luong expressway was increased, the number of passengers would decrease.
   - He agreed with the necessity of HSR but mentioned the need to consider the demand and affordability of people. He emphasized on the importance of station location due to the convenience of residents and he said that the station should be located near the city center.

   (b) Mr. Lê Quang Bình, DOT, Dong Nai

   - He said that a comment by Dong Nai had not been reflected in the revised alignment which is that the HSR alignment should be on the same corridor with expressway HCM – Dau Giay, Bien – Phan Thiet in order to minimize land acquisition. He suggested that the JICA Study Team updated the intersection between HSR and local roads, especially with expressway.
   - He expected that the JICA Study Team would send the file of final maps to the province for study and reference.

   (c) Mr. Nguyễn Hồng Hải, DOT, Binh Thuan

   - He saw that most of the comments by Binh Thuan Province had been reflected in the

study.

- He shared that the JICA Study Team idea was to place HSR station the location of existing station. But in the previous meeting, the Provincial People's Committee requested to shift the HSR station towards the west side. In order to ensure the connectivity, the province planned to construct an arterial road of 49m wide to connect with the city center, and in the future, the HSR station area would become a developed center of Phan Thiet.
- Shifting the HSR station to the west would result in the shift in alignment towards the west. This shift in the alignment would reduce the impacts on industrial zones, residential zones.
- He expected that the JICA Study Team would send files and documents to the province so that the province could collect comments from other departments.

(d) Mr. Cao Văn Mão, DOT, Ninh Thuan

- He said that Ninh Thuan Province had already sent an official comment to JICA Study Team before the meeting.
- He explained that in Ninh Thuan, the slope is steep from the west to the east. Therefore, in addition to safety, flood drainage must be considered.
- He agreed with the Alt. 1 and the station location at the existing station.
- In order to reduce land acquisition, flood drainage and traffic safety, he agreed with the construction of viaducts in residential zones.
- He expected that the JICA Study Team would send files and documents so that the province could provide specific comments.

(e) Mr.Nguyễn Tuấn Giang, DOT, Khanh Hoa

- He said that Khanh Hoa province had already sent an official comment to JICA Study Team before the meeting.
- Regarding the station location, he shared his agreement with the Alt. 1 and he suggested combining the HSR station and existing station.
- About the alignment, he suggested that JICA Study Team should combine JICA alignment and Pre-FS alignment. The HSR passing Cam Duc and Cam Ranh, HSR runs on the East side of existing railway. Land fund in this area is very limited and provincial's plans currently follows KOICA alignment. This is the reason why the revised alignment could destroy the plans.
- Regarding depot, he suggested that the JICA Study Team presents the connection between Nha Trang station and depot because this was a populated area. He noted that the depot area is a flood prone area.

(f) Mr. Ha Ngoc Truong, Association of Science and Technology, HCMC

- He said that this report had reflected many comments from previous meeting and explained when the investment should be and why.
- He provided the information that the city had sent a letter to MOT and Department of Railway which explained that Thu Thiem station was an ending station of HSR. There would be no connection with Can Tho province and no extension. HCMC suggested that Tan Kien Station would be extended to Can Tho in order to avoid crossing the city center. Total land area of Thu Thiem station was 17ha.
- He expressed his agreement with the alignment in Alt. 1.

- He put emphasis on the place of an additional station between Long Thanh station and Phan Thiet station.
- Regarding the roadmap, he thought that the submission to National Assembly would not be feasible because of the economic difficulties in Vietnam. The total cost for two sections would be around 20 billion which was too high compared to the recently low GDP. He advised that JICA Study Team should reconsider the submission timing to the National Assembly.

(g) Mr. Trinh Van Chinh, HCM University of Transportation

- He highly appreciated the study presented today.
- He suggested that the JICA Study Team should provide further explanation about the actual demand on the most important corridor, North-South Corridor, of Vietnam. He explained that according to their study, the increase in the passengers on this corridor is much higher than the growth of GDP.
- He recommended that the JICA Study Team should make a table showing the time needed to construct HSR based on demands and the feasibility in terms of financial capacity.
- He expressed his opinion that the target year should be earlier than 2030 rather than be fixed in 2030 because the demand on North-South corridor will be increased more and more.

(h) Nguyen Quoc Viet, HCM University of Transportation

- He agreed with Mr. Chinh's opinion on the careful study about demands on the North-South Corridor. It was needed to consider the changes in the transportation system, not only railway but also airway, road, waterway.
- He raised the question why JICA Study Team didn't mention test tracks in the presentation.

(i) Mr. Iwata

- He thanked all participants for providing comments and summarized the comments. The JICA Study Team would reflect the comments from provinces and cities as much as possible.
- He explained about the necessity and construction time of HSR and the future demand.
- Regarding test track, he explained that test tracks are not only for engineering aspect but also for the ready for human resources, regulations, etc.

(j) Mr. Dong expressed that the study team would consider all the comments carefully. He closed the meeting by expressing his sincere thanks for the attendance and comments by participants.

APPENDIX 8B

Presentation Materials for 1st Stakeholder Meeting

Part I Outline of the Study

STUDY FOR RAILWAY DEVELOPMENT ALTERNATIVES ON THE NORTH-SOUTH RAILWAY LINE

Outline of the Study

9 December 2011
Hanoi

JICA Study Team

Progress of the Study

- **Meetings**
  - 1st Steering Committee on May 18th (Inception Report)
  - 2nd Steering Committee on September 28th (Progress Report)
  - Various meetings with Vietnam Railways, related agencies, and local governments
- **Site Survey**
  - 1st : 26 May – 30 May (Hanoi-Vinh)
  - 2nd : 3 Jun. – 4 Jun. (Hanoi-Vinh)
  - 3rd : 15 Aug. – 19 Aug. (Ha Nam-Vinh)
  - 4th : 31 Aug. – 1 Sep. (Hanoi-Vinh)
  - 5th : 31 Aug. – 14 Sep. (HCMC-Nha Trang)
- **Main Activities Undertaken**
  - Data collection from provinces
  - Topographic mapping (1/10,000)
  - Supplemental survey (traffic)
  - Discussions on alternative scenarios
  - Study on existing railways

Assessment of Existing North-South Railway

- **Old facilities , old rolling stocks**
  - Single tracked, non-electrified
  - Weak roadbed, weak track structure
  - 700 bridges to be rehabilitated
- **Poor alignment**
  - R < 800m sections total to 253.4km, or 15% of the whole line
  - 1047 level crossings
  - Operational bottle necks Hai Van Pass, Khe Net Pass
- **Low service level**
  - Long travel time: Hanoi - Saigon 30 hours by the fastest train
  - Low frequency : 5 pairs of through passenger trains / day
- **Losing transportation market share**
  - Passenger 13.2 % (1990) → 6.5 % (2007)
  - Freight 4.8 % (1990) → 3.1 %(2007)

Assessment of Existing North-South Railway(2)

Railway section in Hanoi

Level Crossing

Assessment of Existing North-South Railway(3)

Railway bridges in North-South Railway

Alternative Scenarios for Improving of Existing Railway

- Converting existing railway to high speed operation is not advisable, though this scenario is subject for farther study.
- Existing railway is important because:
  - (i) To share different role from HSR such as freight and local passenger transport
  - (ii) To provide connecting services during and after the construction of HSR
- Need to determine the target level of improvement for existing railway in integration and coordination with HSR and stage development by section

- **Redefined Alternative Scenarios**

Alternative A1:	**Baseline, minimal improvement to ensure safe operation**
Alternative A2:	**Maximization of existing single track transportation capacity**
Alternative B1:	**Strengthening of transportation capacity through double tracking and increase in maximum operating speed to 120 km/h**
Alternative B2:	**Double tracking and increase of maximum operating speed to 150 km/h or more (semi high speed)**

Comparison of Alternative Scenarios for Existing Railway Improvement

		A1	A2	B1	B2
Railroad track	Single-track, Double-track	Single	Single	Double	Double
	Gauge (m)	1.000	1.000	1.000	1.435
	Minimum radius of curvature (m)	100m (existing)	100m (existing)	800m	1,200m
	Withstand load (ton)	14t (existing)	14t (existing)	14t (existing)	17t (same as BA17)
Maximum speed (km/h)	Passenger (km/h)	90 (existing)	90 (existing)	120	150
	Freight (km/h)	60 (existing)	60 (existing)	70	Container: 120 Bulk: 90
Facilities	Alignment improvement	• Same as existing	• Improvement of 2 locations including Hai Van Pass	• Substandard curvature • Improvement of 3 locations	• Substandard curvature • Improvement of 3 locations
	Effective length for station (m)	Minimum 350 (existing)	Minimum 350 (existing)	450	450
	Crossing	Level crossings (existing)	Automated level crossings	Automated level crossings	Grade separation
	Signaling	• Automatic interlocking system / semi-automatic block system in some stations (existing)	• Automatic interlocking system in all stations • Semi-automatic block system	• ATS • Automatic interlocking system in all stations • Automatic block system	• ATS • Automatic interlocking system in all stations • Automatic block system
Electrification Rolling stocks		Non-electrified Diesel – electric locomotive	Non-electrified Diesel – electric locomotive	Non-electrified Diesel – electric locomotive	Electrified Electric train (passenger) Electric locomotive (freight)
Frequency		• 32 trains/ day (existing)	• 50 trains/ day[1]	• 116 trains/ day[1]	• 122 trains/ day[1]
Estimated Investment (approximately) (US$ Million)		• 1,500[2]	• 1,800	• 14,500	• 27,700

1) Maximum frequency based on the improvement of 18 new intermediate stations
2) Based on the traffic demand analysis on 2030 year 3) Improvement of some projects to maintain the operation speed and safety

Current National Development Orientations

Railway System

- To complete the renovation and upgrading of existing railways up to national- and regional-railway technical standards with a speed of 120 km/h
- To build new express railways and high-speed railways
- To prioritize the building of the north - south express railway with a speed of 350 km/h
- To rapidly develop rail transport in urban centers and suburbs as a core mass transit, firstly in Hanoi capital and Ho Chi Minh City

Railway Industry

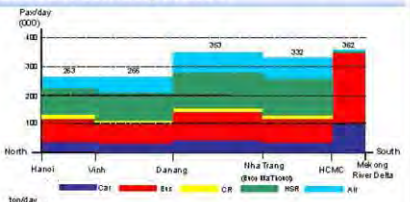
- To build modern and comfortable passenger cars and cargo carriages of diversified types for domestic use and export
- To manufacture parts and accessories for assembly of modern locomotives.

Target Indicators

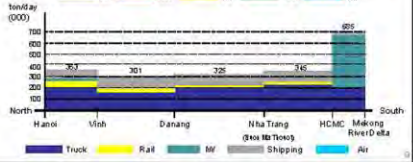
- Up to 2020: to achieve 13% of passenger traffic and 14% of freight traffic share
- Up to 2030: to achieve 20% of passenger traffic and 20% of freight traffic share

Results of the Study in VITRANSS2 (Intermodal Balance along North-South Corridor) in 2030

Passenger Transport Demand with NSR
- Balanced modal share with NSR



Freight Transport Demand (Do nothing)
- Need for existing railway to share truck traffic



Main Points for Consideration in the Study

1. Need for investment
2. Qualitative and quantitative comparisons of scenarios
3. Assessment on NSR demand
4. Consistency with existing plans
5. Urban development
6. Resettlement issues
7. Technical system and alignment selection
8. Implementation solutions
9. Environment impact assessment
10. Total investment cost and project viability
11. Management capacity

➡ **Questions and comments will be farther collected and elaborated for study**

Study on Related Plans of Provinces and Cities located along the North-South Railway (NSR)

Basic Considerations

- Coordinate with provincial and city plans
- Analyze the impact of NSR development
- Promote understanding of local governments of provinces and cities along NSR

Output

- Proposals on regional/urban plans for the provinces/cities located along NSR (current situation, impact, development orientation and conceptual plan, implementation strategy, etc.)
- Stakeholder meeting in provinces/cities for shared understanding

Main Points for Necessary Coordination

(a) Hanoi : Defined role of NSR in the current Hanoi master plan, integration with urban transport plan, terminal location and configuration, land for depot, etc

(b) Provinces along NSR in the North (Ha Nam, Nam Dinh, Ninh Binh, Thanh Hoa, Nghe An): Defined role of NSR in SEDP, coordination with transport plan and environmental plan and urban plan with regard to the location of NSR stations

(c) Provinces along NSR in the South (Dong Nai, Binh Thuan, Ninh Thuan, Khanh Hoa): Same with above

(d) HCMC: Defined role of NSR in the current urban plan and transport master plan, terminal location and configuration, land for depot, etc.

(e) Possibility and orientation of integrated urban development at and around the proposed NSR stations

Next Steps

- Submission and discussion of Interim Report in February 2012 (tentative)
  - Discussion of alternative scenarios for North South Railway development
  - Selection of the most appropriate scenario
- Second Stakeholder Meeting: around April 2012
  - Explanation and discussion on SEA (selection of optimal option among alternatives)

Part II Environmental and Social Considerations

STUDY FOR RAILWAY DEVELOPMENT ALTERNATIVES ON THE NORTH-SOUTH RAILWAY LINE

Environmental and Social Considerations

9 December 2011
Hanoi

Contents

- Basic Approach for Environmental and Social Considerations
- Environmental and Social Considerations of this Study
- Stakeholder Meetings
- Resettlement Policy Framework

Basic Approach for Environmental and Social Considerations

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To propose important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is 'Environmental and Social Considerations'?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

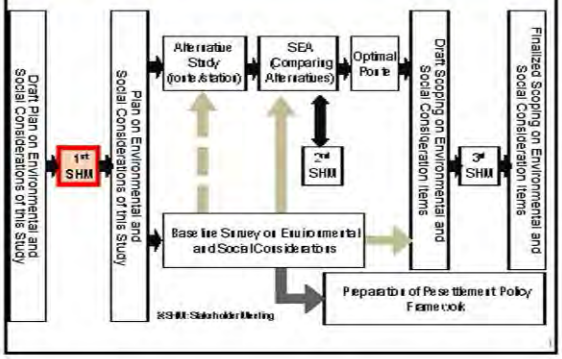
Major Important Laws & Guidelines for Reference

(1) Vietnamese Laws and Regulations
- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines
- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Environmental and Social Considerations of this Study

Flowchart for Environmental and Social Considerations under the Study



Baseline Survey of Environmental and Social Considerations

(1) Collection and Analysis of the Secondary Information

- Natural conditions
  Ex: Protected areas, forest, geology, ecosystem
- Pollution conditions
  Ex: Air quality, water quality, noise and vibration
- Socio-economic conditions
  Ex: Population density, cultural heritages, land use, city development plan Distribution of ethnic minorities,
- Related laws and regulations
  Ex: Laws and regulations on SEA/EIA, environmental standards, resettlement and land acquisition

(2) Utilization of the Results of Previous Studies

- VITRANSS2 by MOT/JICA
- Pre F/S by VR

SEA Application of this Study

Item	Brief Descriptions
Objectives	To select the optimal option from alternatives.
SEA Target Sections	The north section (Hanoi – Vinh) The south section (HCMC – Nha Trang).
Alternatives	Alignment options and station location options, together with zero option.
Items to be Considered for Alternative Comparison	1) Environmental and Social Aspects - Natural environment: importance for conservation, natural hazard, etc. - Pollution: potential impacts by noise and vibration, etc. - Social environment: consistency with city master plans, impact on resettlement and land acquisition, impact on cultural heritages, etc. 2) Other Aspects - The technical feasibility in terms of railway engineering - The economical and financial feasibility.
Stakeholder Meeting	To be held as a part of the process of SEA.

EIA Scoping of this Study

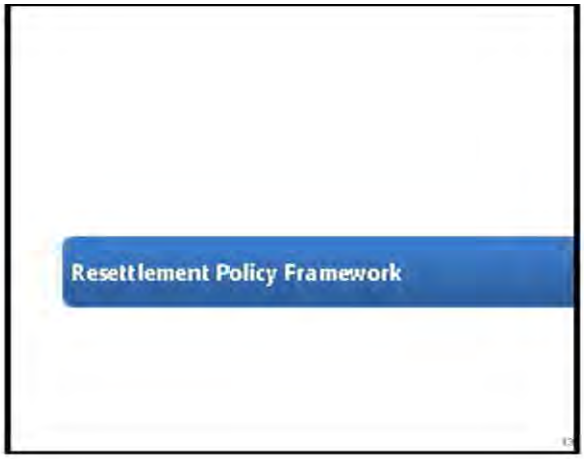
Item	Brief Descriptions
Objectives	Identification of environmental and social consideration items to be studied for the selected optimal route.
Target Sections	The selected optimal route of the north section (Hanoi – Vinh) and the south section (HCMC – Nha Trang)
Scoping for EIA	- IEE level study based on the secondary data and information - Proposal of the methodologies for data collection, estimation and evaluation of potential impacts of the scoped items. - Preliminary study on mitigating impacts (avoid/minimize/compensate) and on monitoring methodologies.

Stakeholder Meetings

Stakeholder Meetings for Environmental and Social Considerations of this Study

Three stakeholder meetings will be held to share and consult the information of the study with the stakeholders.

Stage	Schedule (approx)	Objectives/Venue
Planning stage of environmental and social considerations study	Dec/ 2011	Objectives: Explanation and discussion on approach to environmental and social considerations Venue: in Hanoi
SEA stage (as a part of SEA process)	Apr/ 2012	Objectives: Explanation and discussion on SEA (selection of optimal option among alternatives) Venue: in Hanoi and HCMC
Scoping Stage	Jul-Aug/ 2012	Objectives: Explanation and discussion on the result of SEA (selected optimal option) and draft scoping result Venue: in Provinces of target sections of NSR (Hanoi-Vinh and HCMC-Nha Trang)


Resettlement Policy Framework


Preparation of Resettlement Policy Framework
Items to be Studied for Resettlement Policy Framework
• Process of formulation and approval of resettlement action plan
• Expected number of resettlement
• Compensation for losses of assets and recipient eligibility of livelihood restoration supports and programs
• Compensation process for losses of assets at full replacement cost
• Livelihood restoration supports and programs to improve affected household's standard of living, income opportunities, and production levels, or at least to restore these to pre-project levels
• Grievance redress mechanisms (the authority and the procedures)
• Specified responsible agencies for resettlement and their duties
• Implementation schedule for resettlement after compensation for loss of asset
• Cost and financial resources
• Monitoring framework by implementing agency (indispensable) and the one by independent agency (if necessary)
• Strategy for public participation/involvement from the stage of formulation to the one of implementation of resettlement action plan

Presentation Materials for 2nd Stakeholder Meeting

Part I Outline of the Study

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI – VINH AND HO CHI MINH – NHA TRANG SECTIONS

Seminar on North South Railway Development 2nd Stakeholder Meeting

JICA Study Team

Contents

- **Part 1 Outline of the Study**
  - Background and objectives
  - Overall Study progress
  - Main findings
- **Part 2 The Alternative Study through SEA**
  - Alternative routes and station Locations
  - Discussions
  - Future actions to be taken by Province
- **Summary and Next Steps**

Part 1 Outline of the Study

Background and Objectives

Background

- Vietnam has achieved remarkable economic growth in the past decades and requiring expanded and improved transport services to meet rapidly increasing demand and thus promote further socio-economic development
- During 2007-2010, "The Comprehensive Study on the Sustainable Development of Transport System in Vietnam" (VITRANSS2) was conducted with technical assistance of JICA to formulate transport development strategy
- During the same period, Pre-feasible study of NSHSR was conducted by Vietnam Railways and discussed in National Assembly in June 2010
- Upon the request of the Government of Vietnam, "Study for the Formulation of High Speed Railway Projects on the Hanoi-Vinh and HCMC-Nha Trang Sections " is being conducted with technical assistance of JICA

Objectives

- To formulate a basic plan for north-south railway development on priority sections of NSHSR
- To formulate an investment plan based on demand analysis, preliminary design, system plan, cost estimate, construction plan, economic and financial evaluation, as well as financing plan
- To prepare necessary documents for environmental and social considerations
- To formulate draft technical standards and a preliminary capacity development plan for high-speed railway construction, operation and maintenance

Overall Study Progress

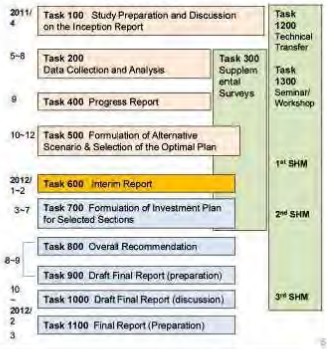
Up to Interim Report

- Study on the potential role of railway in overall transportation network
- Study on the constraints and opportunities of existing railway
- **First stakeholder meeting** held on December 8th in Hanoi
- Study and recommendation of the development of HSR along the north-south corridor

Up to Draft Final Report

- Conduct of detailed study for Hanoi-Vinh and HCMC-Nha Trang sections
- Formulation of step-wise development plans

◂ Study Flow ▸



Approach to the Study

◂ Alternative Scenarios discussed in National Assembly ▸

Alternatives Scenarios discussed in National Assembly
↓
Study on Existing Railway
↓
Roles of Existing Railway and HSR
↓
Study on HSR for Hanoi-Vinh and HCMC-Nha Trang sections

Alternative	Existing Line	New Line
Scenario 1	• Upgrading to double track with dual gauge (meter + standard) • Current maximum speed • For passenger and freight	None
Scenario 2	• Upgrading to double track (standard gauge) • Maximum operating speed of 200 km/h (electrification) • For passenger and freight	None
Scenario 3	• Improvement of existing line (single track) • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of 200 km/h • For passenger and freight
Scenario 4	• Improvement of existing line (single track) • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of 300 km/h • For passenger only
Scenario 5	• Improvement of existing line (double track) • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of 200 km/h • For passenger and freight service
Scenario 6	• Improvement of exiting line (double track) • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of 300 km/h • For passenger only

Capacities and Operating Speed of Existing Railways are Constrained due to Bottlenecks

- **Long distance between stations on single track** for the whole line
  - ➡ results in limitation of number of trains
  - ➡ need for improvement of bottlenecks which requires long travel time
- Reduction in train speed due to **degraded structures (bridge, tunnel, road bed, track) and level crossings without safety measures**
- Reduction in train speed due to **substandard alignment sections** including:
  - (i) Hoa Duyet – Thuan Luyen (Km 357-370)
  - (ii) Khe Net (Km 414 – 423)
  - (iii) Hai Van (Km 750 – 777)

  Note: Km starting from Hanoi St.
- Waste of time on **switch back at Danang Station and on loop at Nha Trang Station**

◂ Location of Bottlenecks ▸

Upgrading of Existing Railway to HSR Standards is Difficult

- **Conversion of Existing Railway to Dual Gauge**
  - There are no cases dual gauge is applied for the long route (such as 1,700 km)
  - Speed limits by mixed operation (passenger and freight) and at turnouts
  - Operational suspension of existing railway caused by the construction work
  - High construction cost (more than the construction of new line) for the replacement of bridges, tunnels and track layout at stations and high O&M cost
- **Upgrading Existing Railway for Train Operation at Maximum Speed of 200 km/h**
  - High Construction cost for widening tracks, improving alignment, and elevating crossings (nearly equal to the construction of new line)
  - Operational suspension of existing railway caused by the construction work
- **Mix operation of Passenger and Freight Train at Maximum Speed of 200 km/h**
  - Technological difficulty of freight train operation at more than 120 km/h
  - Problems related to the security and the train operation diagram

➡ **None of these plans are recommendable**

Alternative Improvement Plans on Existing Railway for Farther Verification

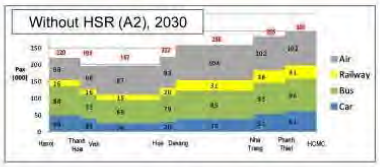
		A1 (on –going improvement)	A2 (maximization of single track capacity)	B1 (double tracking with max speed of 120 km/h)	B2 (double tracking with max speed of 150 km/h)
Railroad track	Track	Single	Single	**Double**	**Double**
	Gauge (mm)	1,000	1,000	1,000	**1,435**
	Min. radius of curvature (m)	100m (existing)	100m (existing)	**800m**	**1,200m**
	Withstand load (ton)	14 (existing)	14 (existing)	14 (existing)	17 (same as EA17)
Maximum speed	Passenger (km/h)	90 (existing)	90 (existing)	**120**	**150**
	Freight (km/h)	60 (existing)	60 (existing)	70	Container: 120, Bulk: 80
Travel Time (h) (Hanoi-Saigon)		**29.1**	**25.4**	**15.6**	**12.7**
Capacity (no. of trains/day)		**32** (existing)	**50** [1]	**170**	**170**
Estimated Investment (approximately) (US$ Million)		-	**1,800**	**14,500**	**27,700**

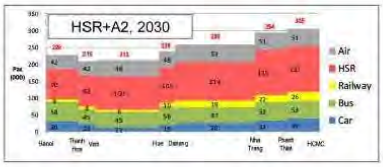
1) Maximum frequency based on the improvement of 18 new intermediate stations

Upgrading to A2 level is the most appropriate, though, for some sections with high demand, B1 level would be justifiable.

Future Demand along the North South Corridor is more for Quality of Services with Higher Speed and Reasonable Fare

- Compared to "Without HSR Case", HSR will be utilized by all of other transport modes
  - Share of air transport would decrease
  - More existing railway users would change to HSR
- HSR is competitive with the fare level which is half of air fare and double of bus transport (proper fare level will be further studied)





Summary of the Role of Railway Transport along the North-South Coastal Corridor

- **Significant increase in overall passenger travel demand**
  - ➡ All modes of transport (national roads, expressways, air and railway) must be strengthened
- **Railway demand including freight service will exceed single track capacity but not large enough to require double tracking because the demand is not in quantity but quality (higher speed service)**
  - ➡ Need for high-speed services
- **Higher speed operation using existing railway is not recommendable**
  - ➡ Upgrade of existing railway is at A2 level with partial double tracking sections where local demand can justify
- **HSR is irreplaceable mode of future transport along the north-south corridor** by reducing an excessive load to air transport and providing quality transport capacity in the areas where farther construction of land consuming roads and expressways is difficult (e.g. central region)

Recommendation on Existing Railway Development

- **Urgent completion of A1 level improvement**
- **Improvement to A2 level for the entire section is by around 2020** with top priority given to the improvement of bottleneck: Khe Net, Hai Van, Hua Duyet – Thanh Luyen, at-grade crossings (Hanoi, HCMC, Da Nang), switchback/loop section (Da Nang, Nha Trang), intermediate stations, etc.
- **Improvement to B1 level for specific sections** where the demand is high and can justify the investment (suburban commuter services, freight transport, etc.)

Orientation for North-South High Speed Railway Development

- **HSR is necessary** and a highly competitive transport mode which can meet transport demand efficiently and effectively along the north-south corridor
- **Step-wise implementation** is inevitable in HRS development. The road map must focus not only on engineering aspect but also those on operation and management, human resource development, technical standard, related institution building, and funding
- **Proposed test track** to ensure preparedness for HSR development

Concept Plan for NSHSR

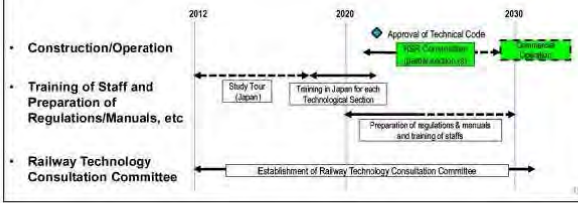
- Terminals: Hanoi and HCMC
- Route length: 1,570 km
- No of Stations: 26 with average distance between stations of 63km
- Maximum Design Speed : 350km/hour
- Travel Time between Hanoi and HCMC: 5h40 min (in case stopping at 6 priority stations only)
- Investment Cost: US$38 billion (preliminary) excluding rolling stock, contingency and taxes

Rolling Stock(E954 Type)

Development around Shin-Yokohama Station

Preliminary Road Map for HSR Development

- It is assumed that the HSR construction (partial section(s)) will start in 2021 and the operation will start in around 2030.
- Preparatory work, especially including development of human resource and regulations, is essential in the earliest stage.
- In order to attend various matters which must be resolved in the preparatory stage, it is proposed to establish a Railway Technology Consultation Committee.



Expected Benefits of HSR

Transport Benefit

- Increased mobility for passengers (high speed and high frequency) (Hanoi and Vinh and Ho Chi Minh and Nha Trang is connected in 1.1 hours and 1.3 hours respectively)
- Mitigation of heavy traffic load on other modes (roads and air)
- Availability of safe and reliable transport

Socio-and Economic Activity Benefit

- Promoted economic activity in the provinces along HSR
- Increased urban development opportunities around HSR stations
- Revitalization of railway industry

On-going Main Work for Priority Sections of North-South High Speed Railway

- **Demand Forcast**
  - Update of socio-economic indicators
  - Modification of traffic demand model
  - Estimation of traffic demand for priority sections
- **Alignment Planning**
  - Review of existing plans (KOICA, VITRANSS2 and TRICC Study)
  - Alignment planning (review of related information (topography, geology, and existing plans, location of stations, comparison of alignments)
  - Formulating alignment plan based on updated topographic map
- **Study on Technical Norms**
  - Analysis of practices of Japan and other counties
  - Preparation of technical norms on HSR
- **Study on human resource development and test track**
  - Identification of basic direction and required tasks
  - Formulation of road map and action plan
- **Conducting environmental and social considerations**

End of Part 1

Thank you for your attention

Part II The Alternative Study through SEA
HA NOI

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG
SECTIONS

The Alternative Study through SEA

30 July 2012
Ha Noi, Ha Noi City

Contents

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

Major Important Laws & Guidelines for Reference

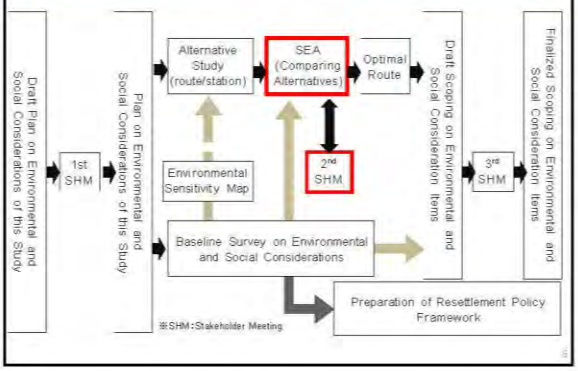
(1) Vietnamese Laws and Regulations

- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines

- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

➢Total Length : Approximately 300km
➢Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
➢Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

➢Total Length : Approximately 370km
➢Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
➢Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - ✓ The alignment has to be as straight as possible to secure "speediness"
  - ✓ Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - ✓ Station Location: In urban area with integrated development in and around station area
  - ✓ Alignment: 1) To consider the cost efficient balance of viaduct and embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - ✓ Station Location: In urban area
  - ✓ Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - ✓ Station Location: In suburban area avoiding existing city area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) cheaper

* Both structures will be developed with elevated structures or box culverts taking into consideration traffic movement and water flow

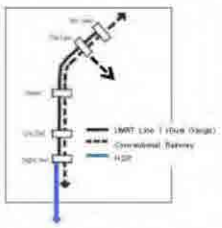
Station Location in North Section for SEA

- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - ✓ Provincial Capitals, if alignment allows.
  - ✓ Larger towns (ex. class III) along the alignment.
  - ✓ Special location for passengers' convenience
  - ✓ Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

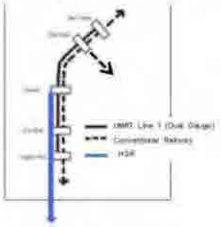
Alternatives in This Province

Options of HSR Terminal in Hanoi City

- **Conceivable Options for HSR Terminal in Hanoi City**



Option 1: Ngoc Hoi Terminal



Option 2: Hanoi Terminal

Options of HSR Terminal in Hanoi City

- **Conceivable Options for HSR Terminal in Hanoi City**

Options	Sub-options	Remarks
Option 1 (Ngoc Hoi)	1-1. Final destination of both HSR and UMRT Line 1	
	1-2. Through operation of HSR to Hanoi Station	HSR uses UMRT track
	1-3. Through operation between HSR and UMRT Line 1	HSR uses UMRT track while UMRT use HSR track
Option 2 (Hanoi)	2-1. Approach to Hanoi Station through underground	To be developed as new HSR independent line (Ngoc Hoi – Hanoi)
	2-2. Approach to Hanoi Station through viaduct	

Options of HSR Terminal in Hanoi City

- **Preliminary Comparison of Options for HSR Terminal in Hanoi City**

Opt.	Engineering			Passenger Convenience	Env. & Social	Remarks
	Construction Difficulty	Construction Cost	Operation System			
Opt. 1-1	A	A	A	C	A	- Smooth transfer is required
Opt. 1-2	B	B	C	B	A -	- HSR operation is limited - Improvements of security system of conventional railway and URMT facilities are required
Opt. 1-3	B	B	C	B	A -	- In addition to above, improvement of security system of HSR is required
Opt. 2-1	C -	C -	A	A	B	- Construction cost is high
Opt. 2-2	C	C	A	A	C -	- Land acquisition is difficult

A: Better, B: Good, C: Fair

Alternatives set in Ha Noi Section

- Station Location (Alts. 1-3)
  - ✓ HSR is assumed to be connected with the existing railway and URMT Line 1 at Ngoc Hoi Station (Option 1-1).
- Alignment:
  - ✓ Alt 1: Western side of the existing railway and NH1A
  - ✓ Alt 2: Similar to Alt.1
  - ✓ Alt 3: North-similar to Alt1, South-along the expressway, eastern side of the existing railway and NH1A

Alignment Alternatives of Ha Noi Section

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

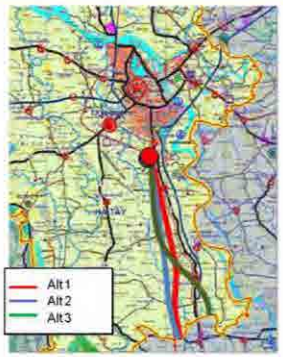
Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

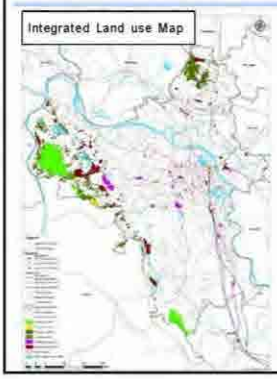
The table below shows preliminary relative comparison of alternatives

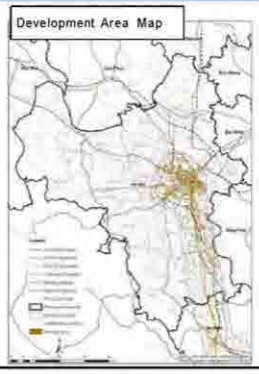
Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	A	A
b) Distance from main centers	A	A	A
c) Availability of land for integrated development	A	A	A

Note : A- Better
B- Good
C- Fair

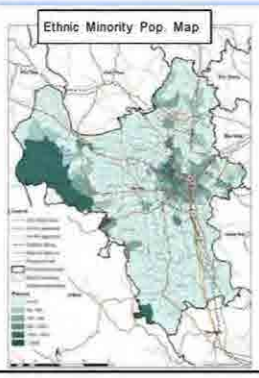


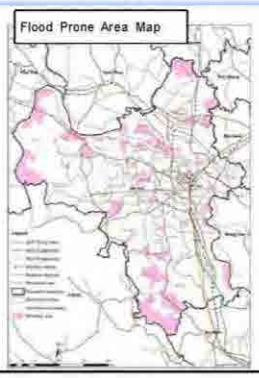
Overlay with Environmental Sensitivity Maps





Overlay with Environmental Sensitivity Maps





Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

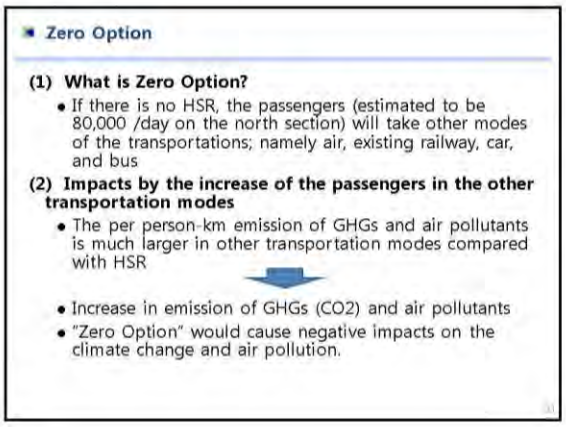
Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	A
d) Hazard	A	A	A
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	A	A
g) Land use	A	A	A
h) Resettlement	A	A	B
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

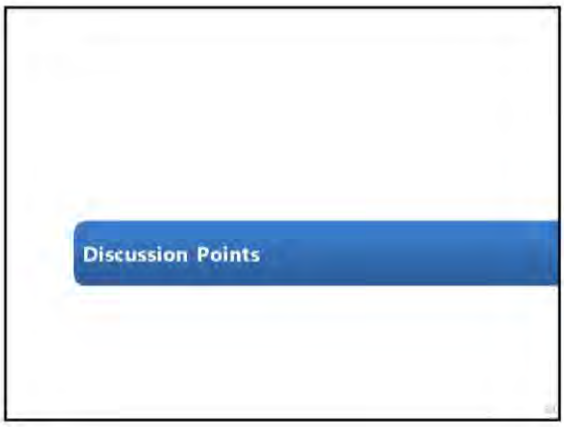
Note : A- Better, B- Good, C- Fair

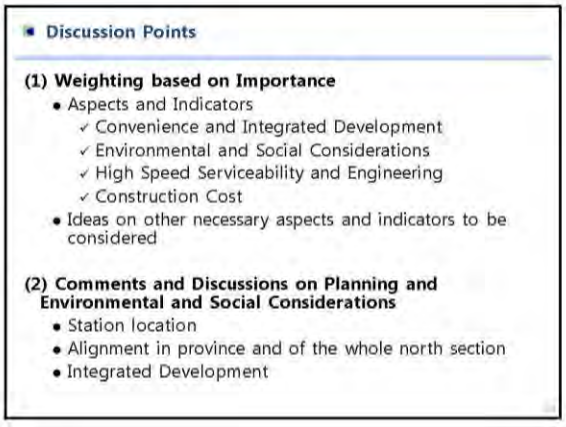
Preliminary Comparison of Alternatives (Overall South Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Good	Summary of provincial base assessment
2) Environmental and Social Considerations	Better	Good	Good	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The north section base
4) Construction Cost	Average	High	Low(*)	


Zero Option
(1) What is Zero Option?
• If there is no HSR, the passengers (estimated to be 80,000 /day on the north section) will take other modes of the transportations; namely air, existing railway, car, and bus
(2) Impacts by the increase of the passengers in the other transportation modes
• The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR
• Increase in emission of GHGs (CO2) and air pollutants
• "Zero Option" would cause negative impacts on the climate change and air pollution.


Discussion Points


Discussion Points
(1) Weighting based on Importance
• Aspects and Indicators
✓ Convenience and Integrated Development
✓ Environmental and Social Considerations
✓ High Speed Serviceability and Engineering
✓ Construction Cost
• Ideas on other necessary aspects and indicators to be considered
(2) Comments and Discussions on Planning and Environmental and Social Considerations
• Station location
• Alignment in province and of the whole north section
• Integrated Development

Part II The Alternative Study through SEA
HA NAM PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

27 July 2012
Phu Ly, Ha Nam Province

Contents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

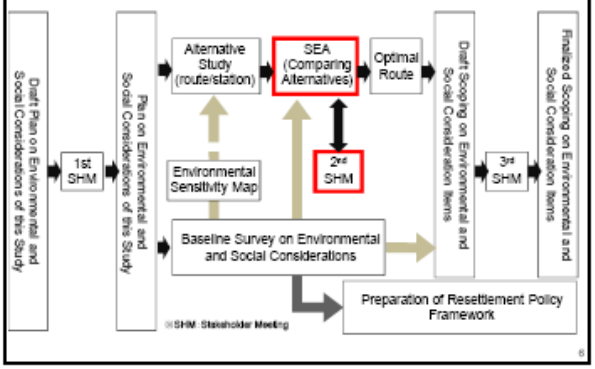
This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

Major Important Laws & Guidelines for Reference

(1) Vietnamese Laws and Regulations
- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines
- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - The alignment has to be as straight as possible to secure "speediness"
  - Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - Station Location: In urban area with integrated development in and around station area
  - Alignment: 1) To consider the cost efficient balance of viaduct and embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - ✓ Station Location: In suburban area avoiding existing city area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) cheaper

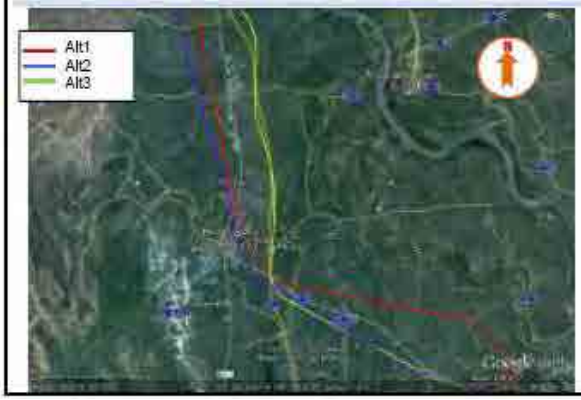
* Both structures will be developed with elevated structures or box culverts taking into consideration traffic movement and water flow

Station Location in North Section for SEA

- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - Provincial Capitals, if alignment allows.
  - Larger towns (ex. class III) along the alignment.
  - Special location for passengers' convenience
  - Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

Alternatives in This Province

Overview of Alternatives of Ha Nam Section



Station Location Alternatives of Ha Nam Section

Alternatives set in Ha Nam Section

- Alt1
  - Station location: In the city development area where the new road/bridge are under construction, about 2km away from the existing railway station
  - Alignment: North-eastern side of the existing railway, South-northern side of the existing railway
- Alt2
  - Station location: Inside the city development area, about 1.5km away from the existing railway station
  - Alignment: North-eastern side of the existing railway, South-southern side of the existing railway
- Alt3
  - Station location: Outside the city area, to be connected with the planned relocated station of the existing railway
  - Alignment: North-along the expressway, South-southern side of the existing railway

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

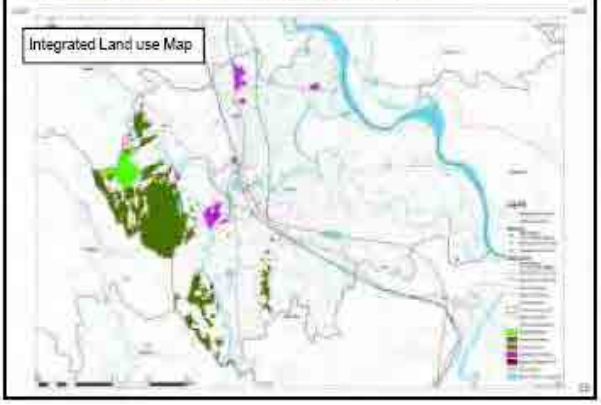
Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	B	B	A
b) Distance from main centers	A	A	B
c) Availability of land for integrated development	A	B	A

Note: A- Better
B- Good
C- Fair

Overlay with Environmental Sensitivity Maps



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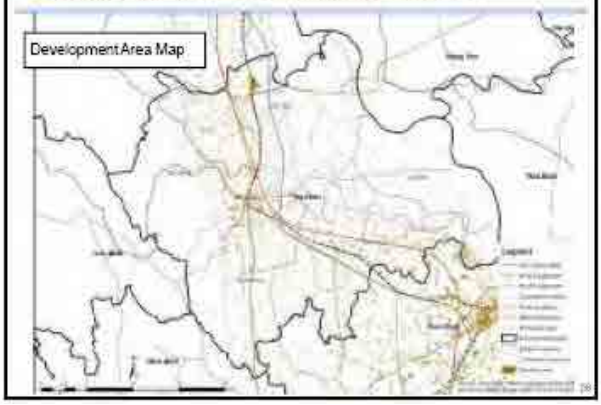


Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	A
d) Hazard	A	A	A
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	A	A
g) Land use	A	B	A
h) Resettlement	A	A	B
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

Note: A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall North Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Good	Summary of provincial base assessment
2) Environmental and Social Considerations	Better	Good	Good	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The north section base
4) Construction Cost	Average	High	Low(*)	

Zero Option

(1) What is Zero Option?

- If there is no HSR, the passengers (estimated to be 80,000 /day on the north section) will take other modes of the transportations; namely air, existing railway, car and bus

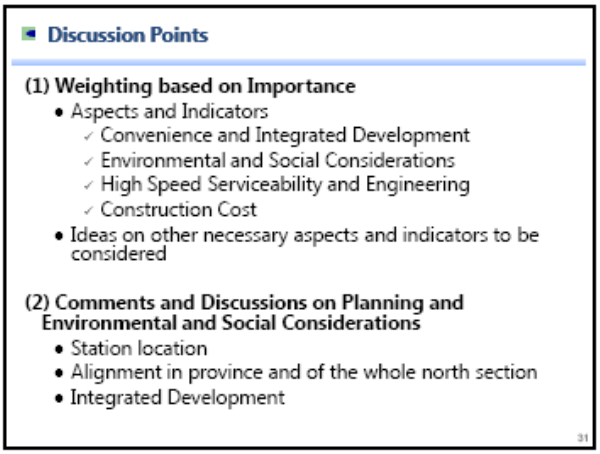
(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

⇒

- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points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• Ideas on other necessary aspects and indicators to be considered
(2) Comments and Discussions on Planning and Environmental and Social Considerations
• Station location
• Alignment in province and of the whole north section
• Integrated Development
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Part II The Alternative Study through SEA
NAM DINH PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

26 July 2012
Nam Dinh, Nam Dinh Province

Contents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
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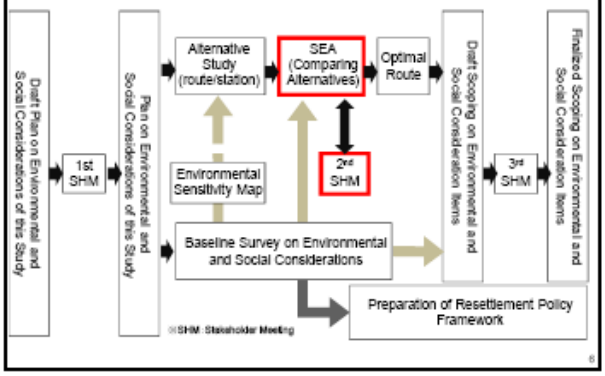
Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length: Approximately 300km
- Major Cities: Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref.: Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - The alignment has to be as straight as possible to secure "speediness"
  - Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
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- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - Station Location: In suburban area avoiding existing city area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) Higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) Cheaper

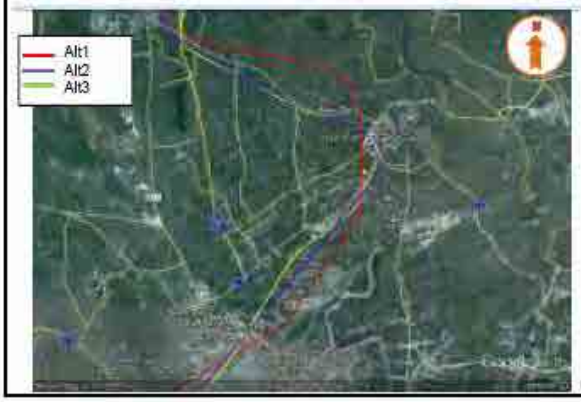
* Both structures will be developed with elevated structures or box culverts taking into consideration traffic movement and water flow

Station Location in North Section for SEA

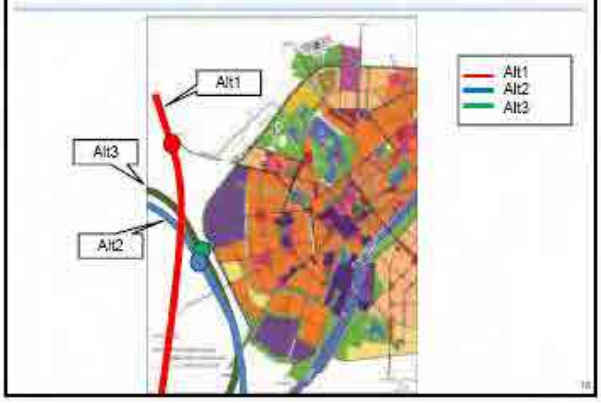
- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - Provincial Capitals, if alignment allows.
  - Larger towns (ex. class III) along the alignment.
  - Special location for passengers' convenience
  - Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development

Alternatives in This Province

Overview of Alternatives of Nam Dinh Section



Station Location Alternatives of Nam Dinh Section



Alternatives set in Nam Dinh Section

- Alt1
  - ✓ Station location: HSR and the existing railway to be connected with the planned new station, in the suburban area in the north of the city
  - ✓ Alignment: North/Northern side of the existing railway and NH1A, South/Southern side of the existing railway and NH1A
- Alt2 and 3
  - ✓ Station location: Western side of city area, in the industrial zone
  - ✓ Alignment: Southern side of the existing railway and NH1A

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

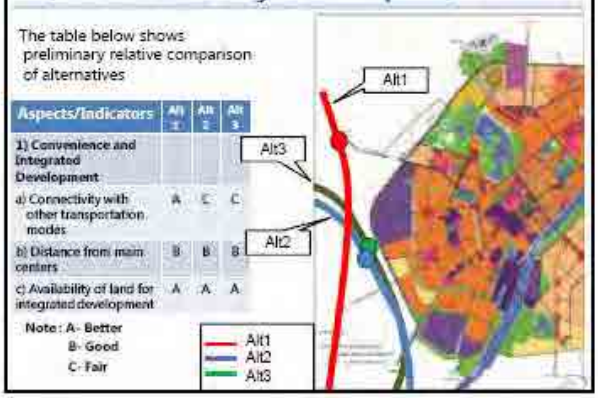
Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

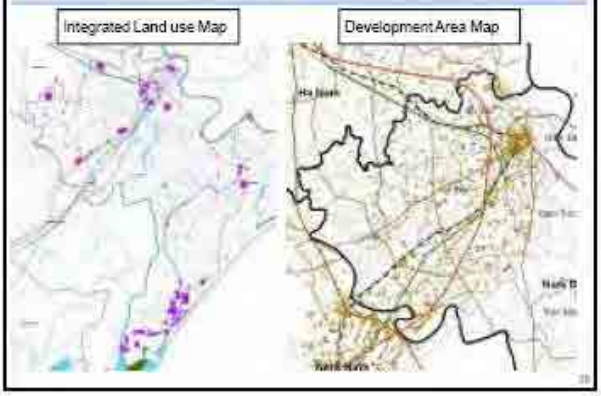
The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	C	C
b) Distance from main centers	B	B	B
c) Availability of land for integrated development	A	A	A

Note: A- Better
B- Good
C- Fair



Overlay with Environmental Sensitivity Maps



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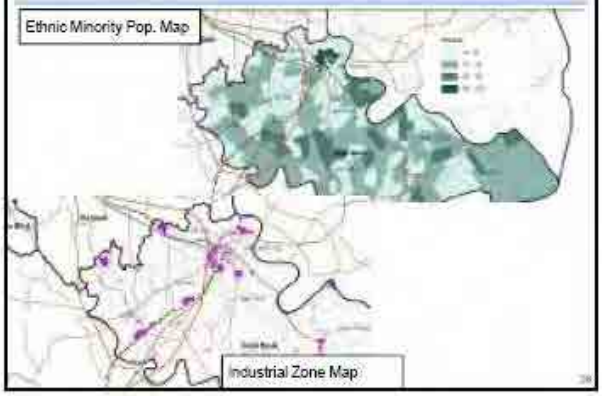

Preliminary Comparison of Alternatives (Environmental and Social Considerations)

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Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	A
d) Hazard	A	A	A
e) Protected areas and forest	A	A	A
f) Noise and Vibration	B	B	B
g) Land use	B	C	C
h) Resettlement	B	B	B
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall North Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
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Zero Option

(1) What is Zero Option?

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(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

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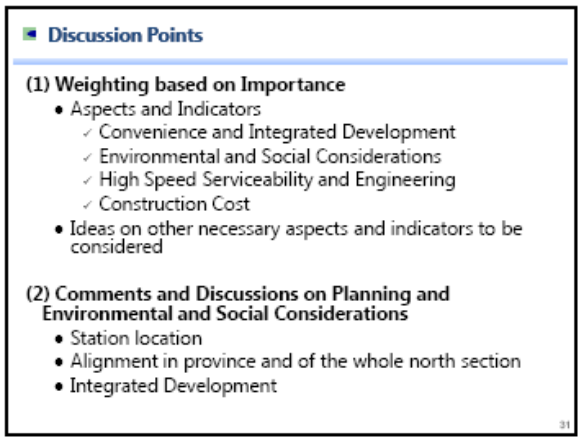
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Thank you for your attention.

Part II The Alternative Study through SEA
NINH BINH PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

25 July 2012
Ninh Binh, Ninh Binh Province

Contents

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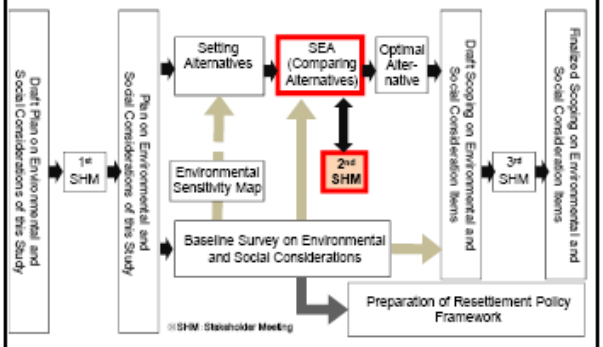
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines
- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - The alignment has to be as straight as possible to secure "speediness"
  - Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - Station Location: In urban area with integrated development in and around station area
  - Alignment: 1) To consider the cost efficient balance of viaduct and embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - Station Location: In suburban area avoiding existing city area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) Higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) Cheaper

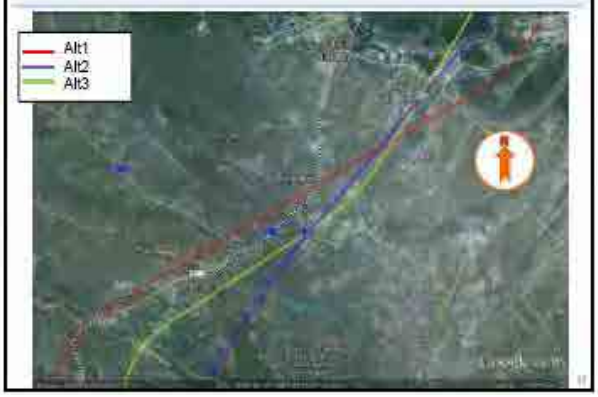
* Both structures will be developed with elevated structures or box culverts taking traffic movement and water flow into consideration

Station Location in North Section for SEA

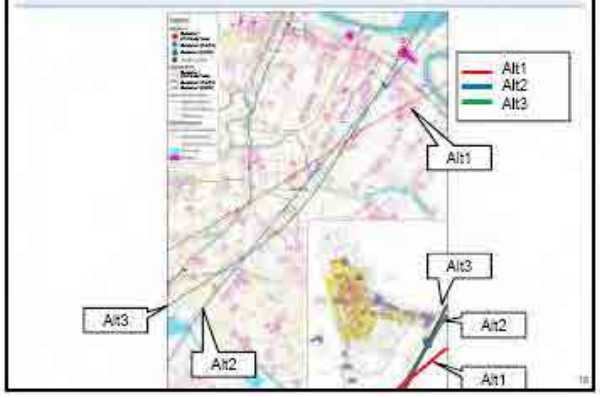
- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - Provincial Capitals, if alignment allows.
  - Larger towns (ex. class III) along the alignment.
  - Special location for passengers' convenience
  - Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development

Alternatives in This Province

Overview of Alternatives of Ninh Binh Section



Station Location Alternatives of Ninh Binh Section



Alternatives set in Ninh Binh Section

- Alt1
  - ✓ Station location: HSR and the existing railway to be connected at the planned new station in suburban area in the south of the city
  - ✓ Alignment: North- Eastern side of the existing railway and NH1A, South- Western side of the existing railway and NH1A
- Alt2
  - ✓ Station location: Suburban area in the east of the city
  - ✓ Alignment: Eastern side of the existing railway and NH1A
- Alt3
  - ✓ Station location: Suburban area in the east of the city
  - ✓ Alignment: Eastern side of the existing railway and NH1A

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest 2) Living environment: f) Impacts by noise and vibration 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long span bridges, long tunnels)
4) Construction Cost	Construction cost

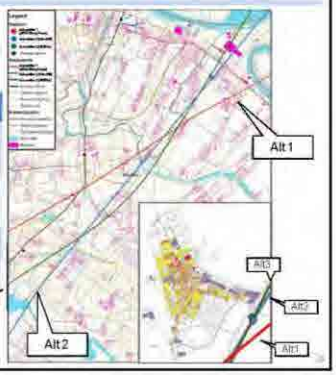
Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

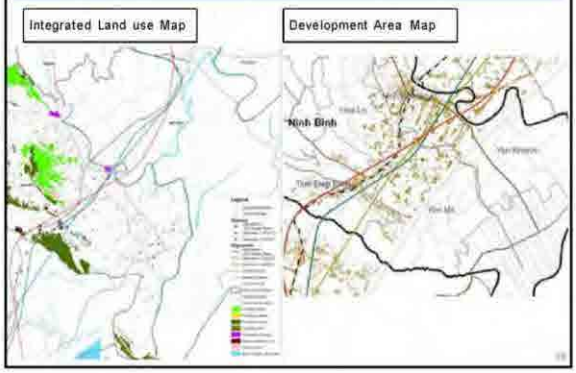
The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	C	C
b) Distance from main centers	B	B	B
c) Availability of land for integrated development	A	A	A

Note : A- Better
B- Good
C- Fair



Overlay with Environmental Sensitivity Maps



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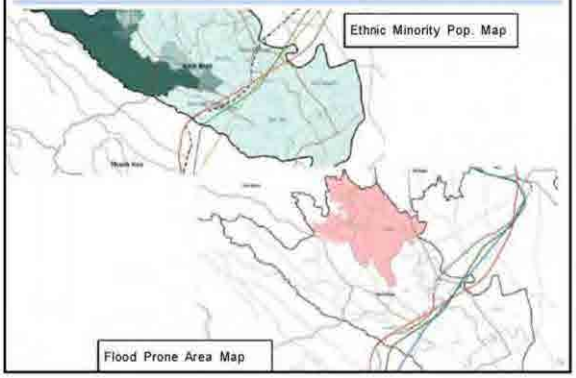

Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	A
d) Hazard	A	A	A
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	B	A
g) Land use	A	A	A
h) Resettlement	A	B	B
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall North Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Good	Summary of provincial base assessment
2) Environmental and Social Considerations	Better	Good	Good	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The north section base
4) Construction Cost	Average	High	Low(*)	

*** If appropriate measures are taken for the soft ground area, the cost would be higher.**

Zero Option

(1) What is Zero Option?

- If there is no HSR, the passengers (estimated to be 80,000 /day on the north section) will take other modes of the transportations; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points

Discussion Points

(1) Weighting based on Importance

- Aspects and Indicators
  - ✓ Convenience and Integrated Development
  - ✓ Environmental and Social Considerations
  - ✓ High Speed Serviceability and Engineering
  - ✓ Construction Cost
- Ideas on other necessary aspects and indicators to be considered

(2) Comments and Discussions on Planning and Environmental and Social Considerations

- Station location
- Alignment in province and of the whole north section
- Integrated Development

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Thank you for your attention.

Part II The Alternative Study through SEA
THANH HOA PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

24 July 2012
Thanh Hoa, Thanh Hoa Province

ContentsContents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

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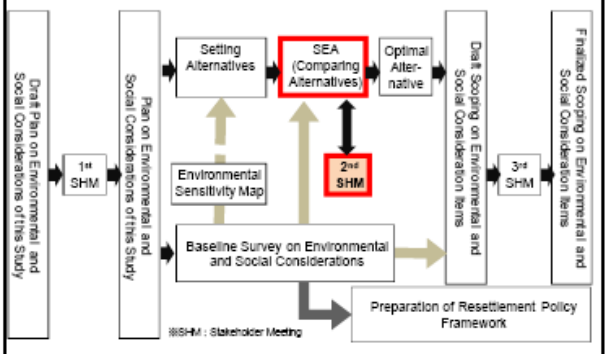
Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
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Ha Noi – Vinh Section

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: Study Area

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Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
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  - ✓ Location of stations are also the part of the overall alignment

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- The HSR planning requires the deep understandings among the provinces along the alignment.
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Setting Alternatives

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Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
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- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) Higher cost
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Station Location in North Section for SEA

- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - ✓ Provincial Capitals, if alignment allows.
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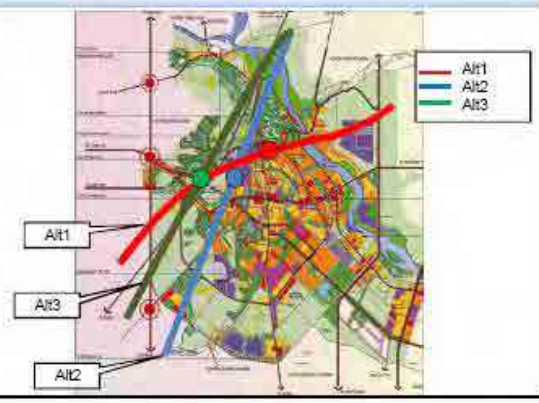
Alternatives in This Province

Overview of Alternatives of Thanh Hoa Section

Station Location Alternatives of Thanh Hoa Section



Alternatives set in Thanh Hoa Section

- Alt1
  - ✓ Station location: HSR and the existing railway to be connected at the planned new station
  - ✓ Alignment: Western side of NH1A (in the northern part) and the south of Ham Rong Mountain
- Alt2
  - ✓ Station location: about 600m west from the existing station inside the city area
  - ✓ Alignment: Western side of NH1A and Ham Rong Mountain
- Alt3
  - ✓ Station location: Outside the city area
  - ✓ Alignment: Western side of NH1A and Ham Rong Mountain

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	B	B
b) Distance from main centers	A	B	B
c) Availability of land for integrated development	B	B	B

Note: A- Better
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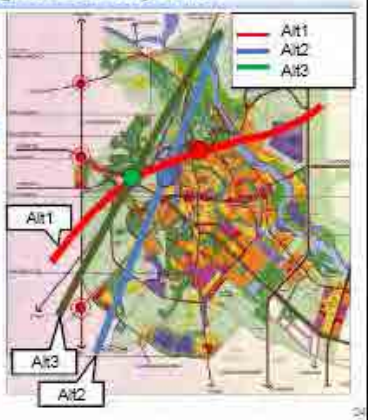
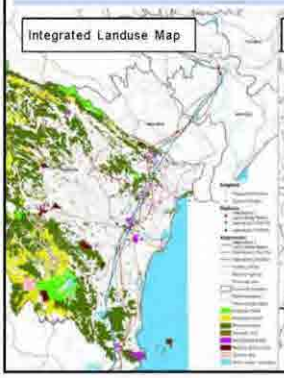


Overlay with Environmental Sensitivity Maps

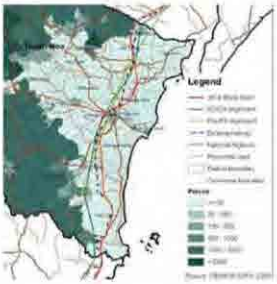
Integrated Landuse Map



Development Area Map

Overlay with Environmental Sensitivity Maps

Ethnic Minority Pop. Map



Flood Prone Area Map

Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	A	A	A
c) Hydrology	A	B	B
d) Hazard	C	B	B
e) Protected areas and forest	A	B	B
f) Noise and Vibration	C	C	C
g) Land use	B	B	B
h) Resettlement	B	B	C
i) Cultural heritages	A	B	A
j) Ethnic minorities	A	A	A

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall North Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
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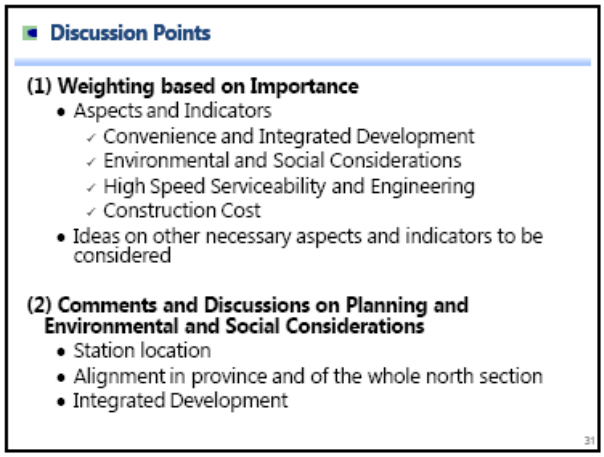
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• Station location
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31

Part II The Alternative Study through SEA
NGHE AN PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

23 July 2012
Vinh, Nghe An Province

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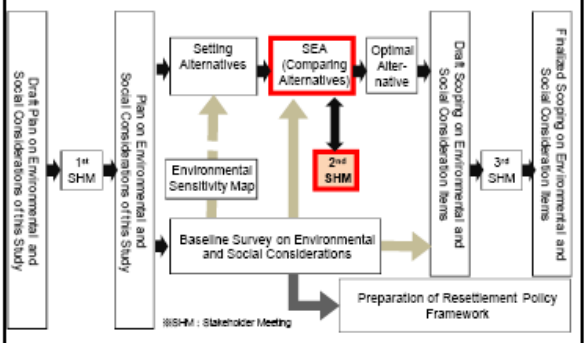
Flowchart for Environmental and Social Considerations under the Study



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- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - ✓ Station Location: In urban area with integrated development in and around station area
  - ✓ Alignment: 1) To consider the cost efficient balance of viaduct and embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - ✓ Station Location: In urban area
  - ✓ Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - ✓ Station Location: In suburban area avoiding existing city area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) Higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) Cheaper

* Both structures will be developed with elevated structures or box culverts taking into consideration traffic movement and water flow

Station Location in North Section for SEA

- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - ✓ Provincial Capitals, if alignment allows.
  - ✓ Larger towns (ex. class III) along the alignment.
  - ✓ Special location for passengers' convenience
  - ✓ Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

Alternatives in This Province

Overview of Alternatives of Nghe An Section

Station Location Alternatives of Nghe An Section

Alternatives set in Nghe An Section

- Alt1
  - ✓ Station location: HSR and the existing railway to be connected at the existing station
  - ✓ Alignment: Along with NH1A and eastern side of the existing railway
- Alt2
  - ✓ Station location: Inside the city area
  - ✓ Alignment: Western side of NH1A and the existing railway
- Alt3
  - ✓ Station location: Outside the city area, beside the planned expressway
  - ✓ Alignment: Western side of NH1A and the existing railway

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

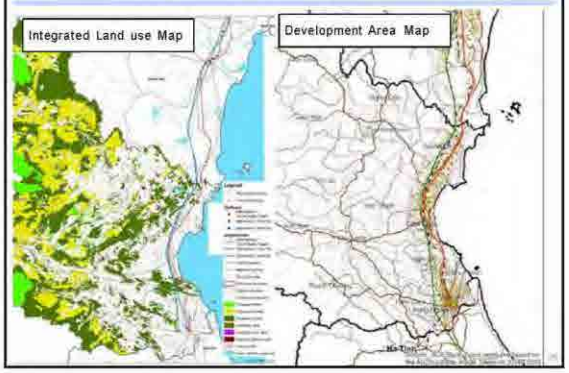
Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	B	B
b) Distance from main centers	A	B	B
c) Availability of land for integrated development	B	B	A

Note : A- Better
B- Good
C- Fair

Overlay with Environmental Sensitivity Maps



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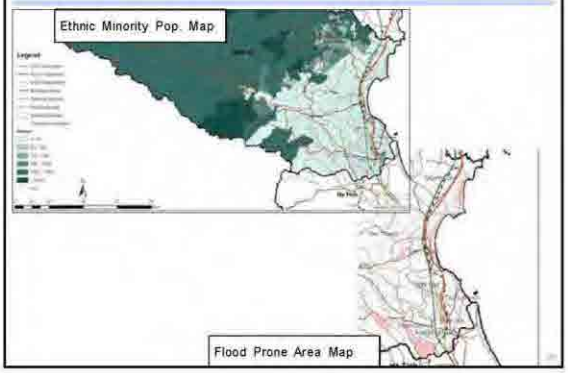


Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	B	B	B
c) Hydrology	A	B	B
d) Hazard	B	A	A
e) Protected areas and forest	A	A	A
f) Noise and Vibration	B	C	B
g) Land use	B	A	B
h) Resettlement	B	C	C
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall North Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Good	Summary of provincial base assessment
2) Environmental and Social Considerations	Better	Good	Good	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The north section base
4) Construction Cost	Average	High	Low(*)	

*** If appropriate measures are taken for the soft ground area, the cost would be higher.**

Zero Option

(1) What is Zero Option?

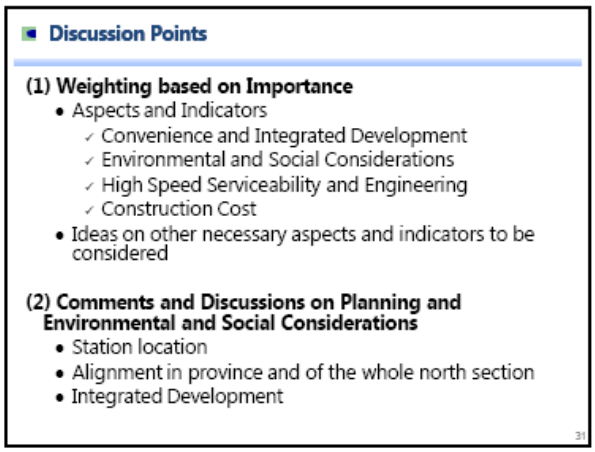
- If there is no HSR, the passengers (estimated to be 80,000 /day on the north section) will take other modes of the transportations; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points


Discussion Points
(1) Weighting based on Importance
• Aspects and Indicators
✓ Convenience and Integrated Development
✓ Environmental and Social Considerations
✓ High Speed Serviceability and Engineering
✓ Construction Cost
• Ideas on other necessary aspects and indicators to be considered
(2) Comments and Discussions on Planning and Environmental and Social Considerations
• Station location
• Alignment in province and of the whole north section
• Integrated Development
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Part II The Alternative Study through SEA
HO CHI MINH CITY

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

10 August 2012
Ho Chi Minh, Ho Chi Minh City

Contents

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

Major Important Laws & Guidelines for Reference

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- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
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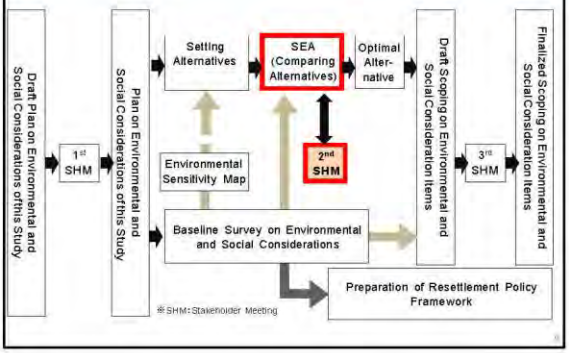
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines

- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi- Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - ✓ The alignment has to be as straight as possible to secure "speediness"
  - ✓ Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the cities/provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in cities/provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - ✓ Station Location: In urban area with integrated development in and around station area
  - ✓ Alignment: 1) To consider the cost efficient balance of viaduct and embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - ✓ Station Location: In urban area
  - ✓ Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - ✓ Station Location: In suburban area avoiding existing city area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

Setting Alternatives

(3) Applicable Structures

Alternatives	Viaduct	Embankment
Alt1	- City areas including stations - Populated areas - Soft ground areas	- Not populated areas - Stable ground areas
Alt2	- Almost whole the section	- Not populated areas - Mountainous areas
Alt3	- City areas including stations - Soft ground areas (limited)	- Almost whole the section

- **Viaduct**: 1) Narrower Right of Way (ROW), 2) More appropriate in soft ground areas, 3) higher cost
- **Embankment**: 1) Wider ROW, 2) More construction time in soft ground areas, 3) cheaper

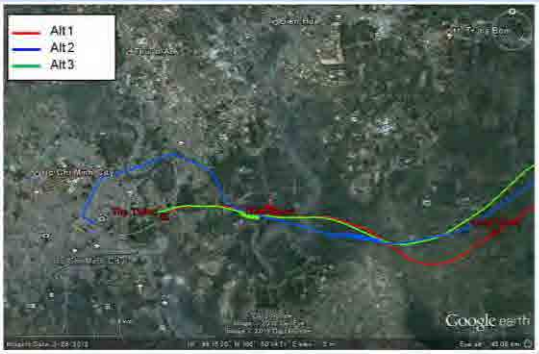
* Both structures will be developed with elevated structures or box culverts taking into consideration traffic movement and water flow

Alternatives and Potential Stations in South Section

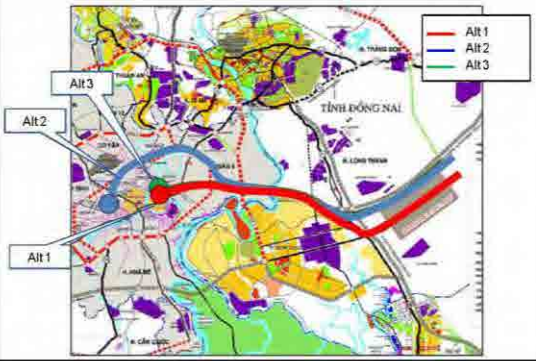
- **In total, 6 stations, which are located based on the following reasons, are considered on each alternative in SEA**
  - ✓ Provincial Capitals, if alignment allows.
  - ✓ Larger towns (ex. class III) along the alignment.
  - ✓ Special location for passengers' convenience
  - ✓ Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

Alternatives in This City

Overview of Alternatives of Ho Chi Minh Section



Station Location Alternatives of Ho Chi Minh Section



Alternatives set in Ho Chi Minh Section

- Alt1
  - ✓ Station location: New station will be situated in Thu Thiem new development area, with the connection with planned urban railway
  - ✓ Alignment: along the expressway under construction (and in the center of planned Long Thanh Airport)
  - ✓ Structure: All of the section is viaduct considering soft ground.

Alternatives set in Ho Chi Minh Section

- Alt2
  - ✓ Station location: Current Saigon Station in Hoa Hung area, with the connection with existing railway and planned urban railway
  - ✓ Alignment: along the existing railway (and along the edge of planned Long Thanh Airport)
  - ✓ Structure: All of the section is viaduct. Inside the city area, Alt2 is considered to go parallel with the improved existing railway (plan of upgrading existing railway to double track elevated structure)
- Alt3
  - ✓ Station location: Thu Thiem Area, the same as the Alt1
  - ✓ Alignment: along the expressway under construction (and along the edge of planned Long Thanh Airport)
  - ✓ Structure: Combination of flyovers/bridges for crossing roads/rivers, and embankment

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each city/province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

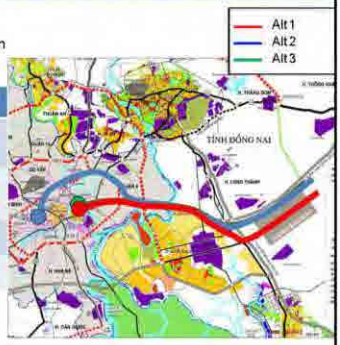
Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	A	A
b) Distance from main centers	A	B	A
c) Availability of land for integrated development	A	C	A

Note : A- Better
B- Good
C- Fair



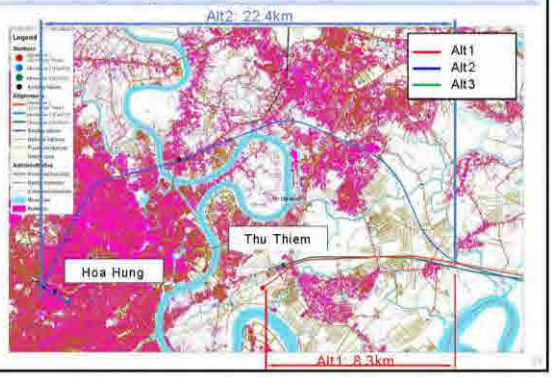
Details of Alternatives Comparison (Station)

The options regarding station location are compared as follows.

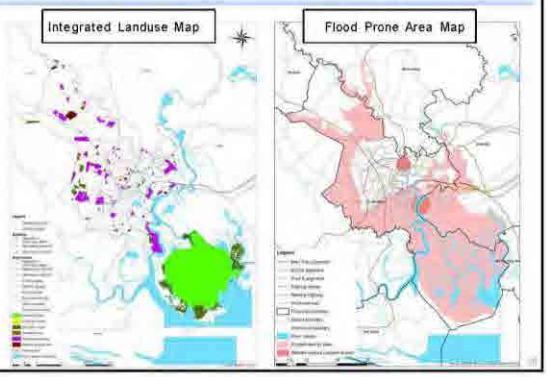
	Alt1 and 3 (Thu Thiem)	Alt2 (Hoa Hung)
Connectivity of other transportation modes	- Urban Railway No.2	- Upgraded Existing Railway - Urban Railway No.2
Distance from main centers	- Administrative center: < 1-3km - Business center:< 1-3km - Residential development:<1km	- Administrative center:<1km - Business center:< 1-3km
Availability of land for integrated development	- Spacious - Easy land acquisition - Compatible with urban development plan (Thu Thiem New Town Development Plan)	- Available, but not as spacious as Thu Thiem - Difficult land acquisition - Incompatible with urban development plan

Supplemental Indicators	Alt1 and 3 (Thu Thiem)	Alt2 (Hoa Hung)
Accessibility	Smooth (East-West Avenue, Thu Thiem Tunnel)	Difficult by cars/bikes (Congested narrow streets around the station area)
Extension to the South	Easy	Difficult

Details of Alternatives Overlaid with Environmental Sensitivity Map (Developed Area)



Overlay with Environmental Sensitivity Maps



Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

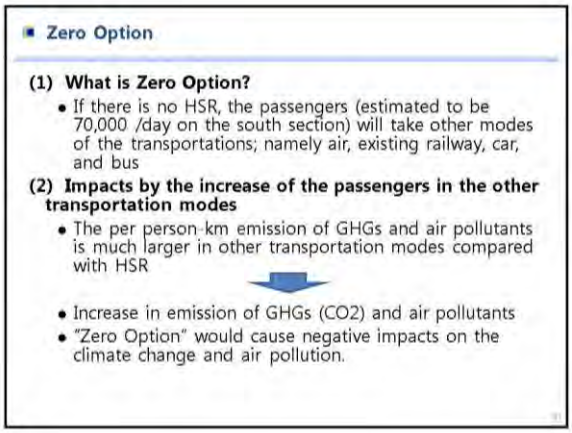
Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	A
d) Hazard	A	C	B
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	C	A
g) Land use	A	B	B
h) Resettlement	B	C	B
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	A	A

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall South Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared by summarizing provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Fair	Summary of provincial base assessment
2) Environmental and Social Considerations	Minor	Significant	Average	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The south section base
4) Construction Cost	Low	High	Low	


Zero Option
(1) What is Zero Option?
• If there is no HSR, the passengers (estimated to be 70,000 /day on the south section) will take other modes of the transportations; namely air, existing railway, car, and bus
(2) Impacts by the increase of the passengers in the other transportation modes
• The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR
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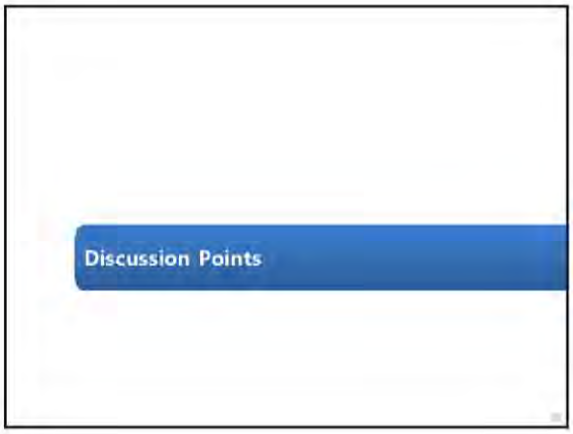
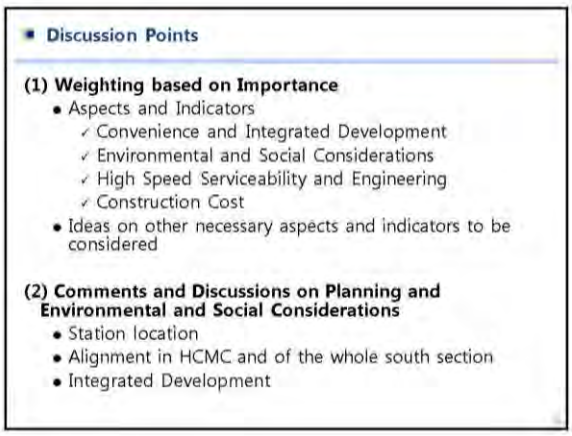

Discussion Points


Discussion Points
(1) Weighting based on Importance
• Aspects and Indicators
✓ Convenience and Integrated Development
✓ Environmental and Social Considerations
✓ High Speed Serviceability and Engineering
✓ Construction Cost
• Ideas on other necessary aspects and indicators to be considered
(2) Comments and Discussions on Planning and Environmental and Social Considerations
• Station location
• Alignment in HCMC and of the whole south section
• Integrated Development

Part II The Alternative Study through SEA
DONG NAI PROVINCE

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

13 July 2012
Bien Hoa, Dong Nai Province

ContentsContents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
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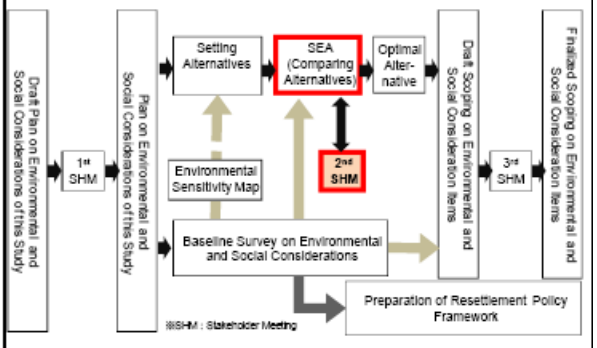
- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
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Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref.: Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref.: Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - ✓ The alignment has to be as straight as possible to secure "speediness"
  - ✓ Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - ✓ Station Location: In urban area with integrated development in and around station area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - ✓ Station Location: In urban area
  - ✓ Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - ✓ Station Location: In suburban area avoiding existing city area
  - ✓ Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

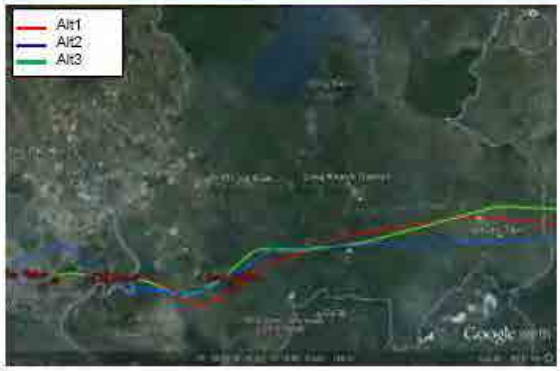
- **Zero Option**, namely the without project case is also analyzed

Alternatives and Potential Stations in South Section

- Totally six stations are planned on each alternative

Alternatives in This Province

Overview of Alternatives of Dong Nai Section



Station Location Alternatives of Dong Nai Section

Alternatives set in Dong Nai Section

- Alt1
  - ✓ Station location: Connection with planned urban railway and the new Long Thanh airport
  - ✓ Alignment: passing through southern side of the existing railway including the center of the airport
- Alt2
  - ✓ Station location: At the edge of the airport and closer to the city development area (plan)
  - ✓ Alignment: passing through southern side of the existing railway
- Alt3
  - ✓ Station location: At the edge of the airport and closer to the city development area (plan)
  - ✓ Alignment: passing through southern side of the existing railway

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

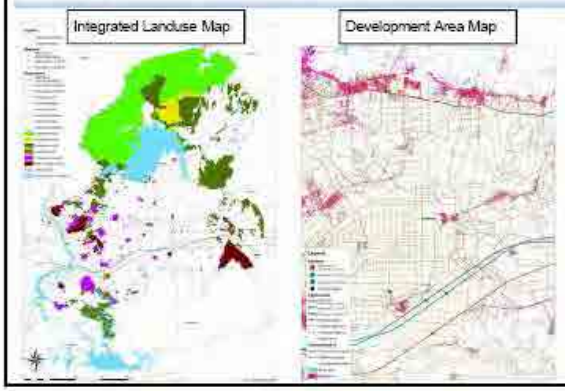
Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	B	B
b) Distance from main centers	C	B	A
c) Availability of land for integrated development	A	A	A

Note : A- Better
B- Good
C- Fair

Overlay with Environmental Sensitivity Maps



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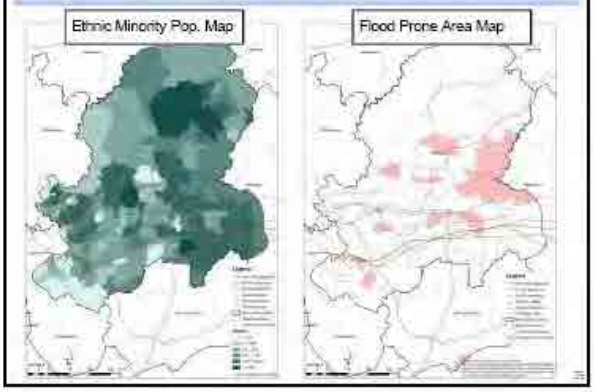

Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	C	C	C
c) Hydrology	A	A	B
d) Hazard	A	A	A
e) Protected areas and forest	B	A	B
f) Noise and Vibration	A	A	A
g) Land use	A	C	A
h) Resettlement	A	A	A
i) Cultural heritages	A	A	A
j) Ethnic minorities	B	C	B

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall South Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared as the summary of provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Fair	provincial base
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4) Construction Cost	Low	High	Low	

Zero Option

(1) What is Zero Option?

- If there is no HSR, the passengers (estimated to be 200,000 /day on the south section) will take other modes of the transportations; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR
- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points

Discussion Points

(1) Weighting based on Importance

- Aspects and Indicators
  - ✓ Convenience and Integrated Development
  - ✓ Environmental and Social Considerations
  - ✓ High Speed Serviceability and Engineering
  - ✓ Construction Cost
- Ideas on other necessary aspects and indicators to be considered

(2) Comments and Discussions on Planning and Environmental and Social Considerations

- Station location
- Alignment in province and of the whole south section
- Integrated Development

Part II The Alternative Study through SEA
BINH THUAN PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

JICA

The Alternative Study through SEA

12 July 2012
Phan Thiet, Binh Thuan Province

Contents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in 'JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment

Major Important Laws & Guidelines for Reference

(1) Vietnamese Laws and Regulations

- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
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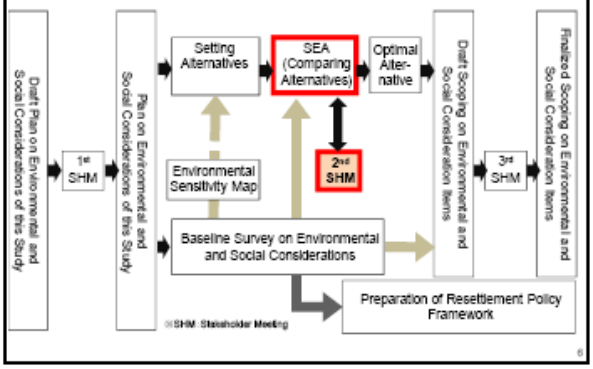
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines

- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - The alignment has to be as straight as possible to secure "speediness"
  - Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - Station Location: In urban area with integrated development in and around station area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

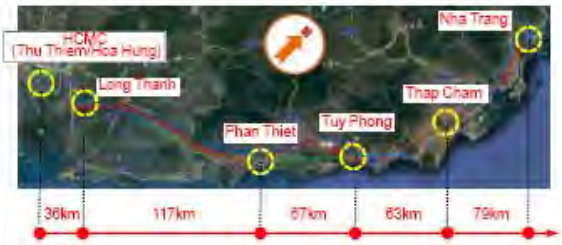
- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - Station Location: In suburban area avoiding existing city area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

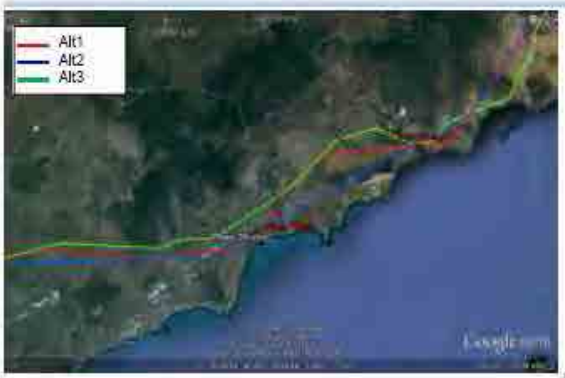
Alternatives and Potential Stations in South Section

- Totally six stations are planned on each alternative

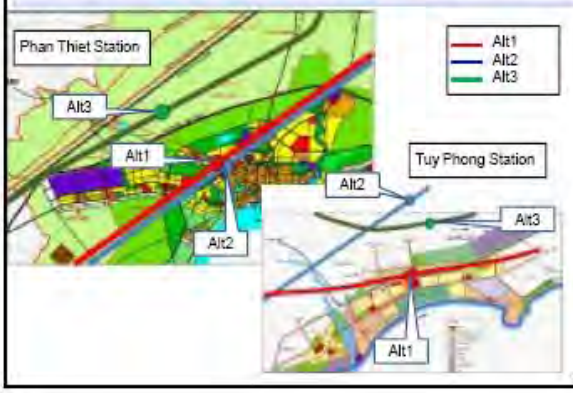


Alternatives in This Province

Overview of Alternatives of Binh Thuan Section



Station Location Alternatives of Binh Thuan Section



Alternatives set in Binh Thuan Section

- Alt1
  - Station location: [Phan Thiet] Connection with the existing railway at the new Phan Thiet station [Tuy Phong] In the urban area and along the national highway (NH)
  - Alignment: avoiding sandy area, along the NH
- Alt2
  - Station location: [Phan Thiet] Connection with the existing railway at the new Phan Thiet station [Tuy Phong] In the suburban area
  - Alignment: straight and passing through sandy area
- Alt3
  - Station location: [Phan Thiet and Tuy Phong] In the suburban area
  - Alignment: avoiding sandy area, along the NH

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest 2) Living environment: f) Impacts by noise and vibration 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	A	C
b) Distance from main centers	A	A	C
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Note : A- Better
B- Good
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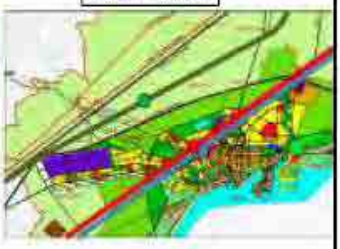
Phan Thiet Station



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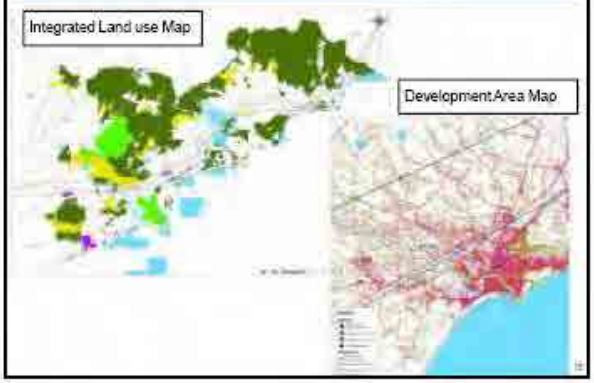
Tuy Phong Station

Overlay with Environmental Sensitivity Maps



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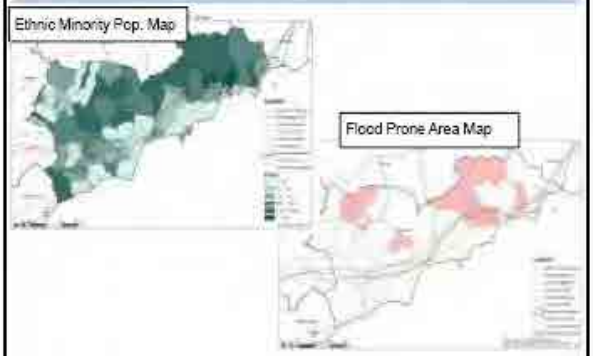

Preliminary Comparison of Alternatives (Environmental and Social Considerations)

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Aspect/Indicators	Alt1	Alt2	Alt3
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(1) What is Zero Option?

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⇒

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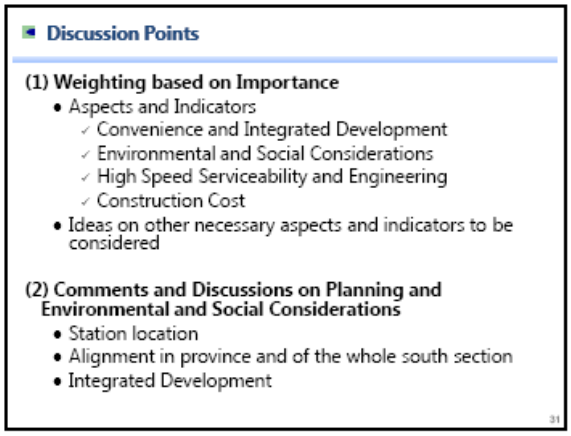
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Thank you for your attention.

Part II The Alternative Study through SEA
NINH THUAN PROVINCE

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

The Alternative Study through SEA

11 July 2012
Phan Rang - Thap Cham, Ninh Thuan Province

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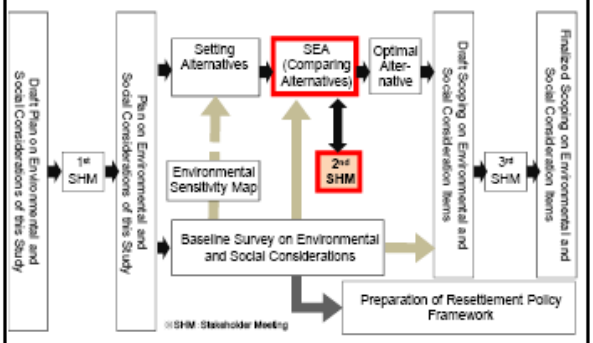
Flowchart for Environmental and Social Considerations under the Study



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: Study Area

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- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

- Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007
  - Station Location: In suburban area avoiding existing city area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

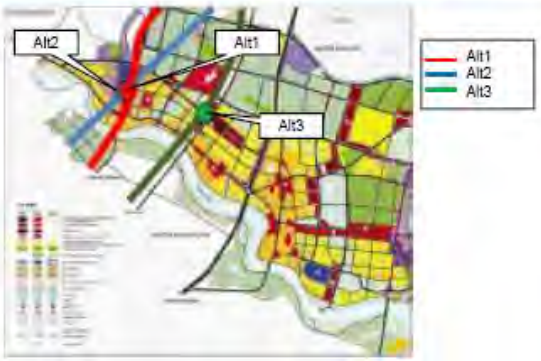
- Zero Option, namely the without project case is also analyzed

Alternatives and Potential Stations in South Section

Alternatives in This Province

Overview of Alternatives of Ninh Thuan Section

Station Location Alternatives of Ninh Thuan Section



Alternatives set in Ninh Thuan Section

- Alt1
  - Station location: HSR and the existing railway to be connected at the existing station
  - Alignment: Along with the existing railway near the city area
- Alt2
  - Station location: HSR and the existing railway to be connected at the existing station
  - Alignment: Straight line for the approach to the city area
- Alt3
  - Station location: In the city area, but distant from the existing station, where new residential area is planned
  - Alignment: passing through eastern side of the existing railway in-between the Pham Rang and Thap Cham areas

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
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3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration. 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
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4) Construction Cost	Construction cost

Preliminary Comparison of Alternatives for Discussions

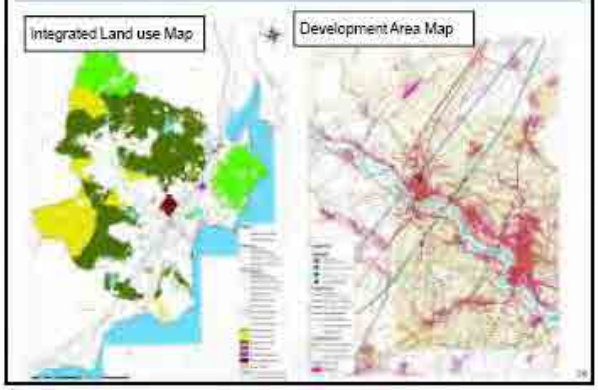
Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

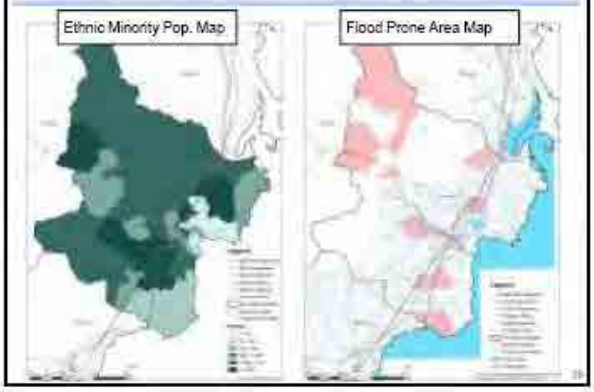
Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	A	C
b) Distance from main centers	A	A	A
c) Availability of land for integrated development	B	B	A

Note : A- Better
B- Good
C- Fair

Overlay with Environmental Sensitivity Maps



Overlay with Environmental Sensitivity Maps



Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	A	A	B
c) Hydrology	B	A	A
d) Hazard	A	A	B
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	B	A
g) Land use	A	A	A
h) Resettlement	A	A	A
i) Cultural heritages	A	C	A
j) Ethnic minorities	B	C	C

Note: A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall South Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared as the summary of provincial base assessment.
- The table below shows preliminary relative comparison of alternatives on each aspect.

Aspects	Alt1	Alt2	Alt3	Remarks
1) Convenience and Integrated Development	Better	Good	Fair	provincial base
2) Environmental and Social Considerations	Minor	Minor	Significant	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The south section base
4) Construction Cost	Low	High	Low	

Zero Option

(1) What is Zero Option?

- If there is no HSR, the passengers (estimated to be 200,000 /day on the south section) will take other modes of the transportations; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points

Discussion Points

(1) Weighting based on Importance

- Aspects and Indicators
  - ✓ Convenience and Integrated Development
  - ✓ Environmental and Social Considerations
  - ✓ High Speed Serviceability and Engineering
  - ✓ Construction Cost
- Ideas on other necessary aspects and indicators to be considered

(2) Comments and Discussions on Planning and Environmental and Social Considerations

- Station location
- Alignment in province and of the whole south section
- Integrated Development

Part II The Alternative Study through SEA
KHANH HOA PROVINCE

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

JICA

The Alternative Study through SEA

9 July 2012
Nha Trang, Khanh Hoa Province

Contents

- Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative
- Setting Alternatives
- Alternatives in This Province
- Approach for Alternative Comparison
- Preliminary Comparison of Alternatives for Discussions
- Discussion Points

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment

Major Important Laws & Guidelines for Reference

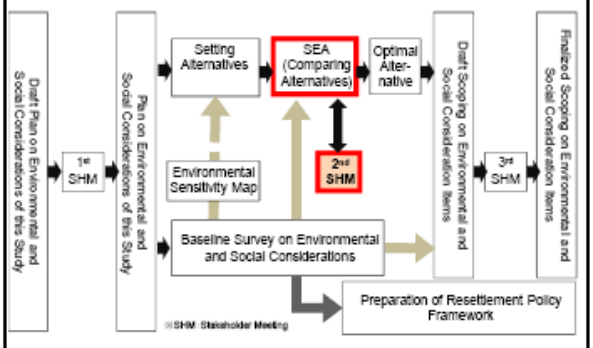
(1) Vietnamese Laws and Regulations

- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines

- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc - Pollution: impacts on living environment by noise and vibration etc - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Overview of North Section

Ha Noi – Vinh Section

- Total Length : Approximately 300km
- Major Cities : Hanoi, Phu Ly, Nam Dinh, Ninh Binh, Thanh Hoa and Vinh
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Overview of South Section

HCMC – Nha Trang Section

- Total Length : Approximately 370km
- Major Cities : HCMC, Phan Thiet, Thap Cham and Nha Trang
- Technical Ref. : Design Speed 350km/h, 1,435mm Double Track, New Line

: Study Area

Characteristics of HSR Plan

(1) Holistic System

- Railway in general and especially HSR is planned as one total system.
  - The alignment has to be as straight as possible to secure "speediness"
  - Location of stations are also the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives

Setting Alternatives

To conduct SEA, following alternatives are set for comparative analysis

(1) Setting of Three Alternatives

- **Alternative 1 (Alt1): Station location and alignment based on this JICA study**
  - Station Location: In urban area with integrated development in and around station area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius =6,000m
- **Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009** (submitted to the national assembly)
  - Station Location: In urban area
  - Alignment: 1) Free to choose alignment by application of elevated structures more, and 2) Minimum Curve Radius=6,000m

Setting Alternatives

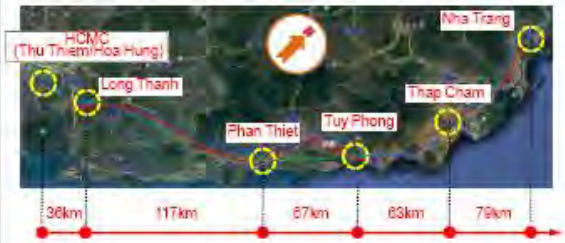
- **Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007**
  - Station Location: In suburban area avoiding existing city area
  - Alignment: 1) To reduce construction cost by choosing the alignment by embankment, and 2) Minimum Curve Radius=5,000m

(2) Setting of Zero Option

- **Zero Option**, namely the without project case is also analyzed

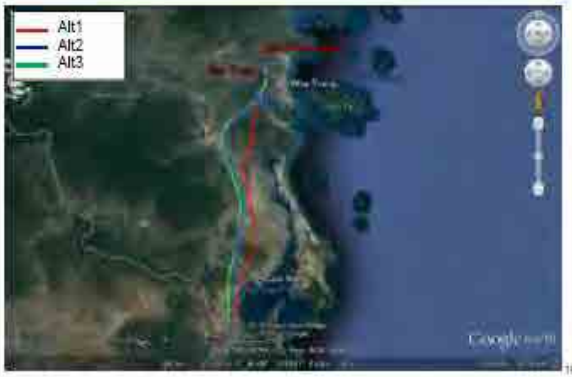
Alternatives and Potential Stations in South Section

- In total six stations are planned on each alternative

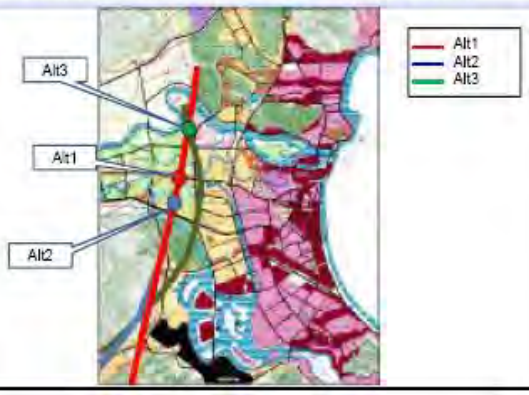


Alternatives in This Province

Overview of Alternatives of Khanh Hoa Section



Station Location Alternatives of Khanh Hoa Section



Alternatives set in Khanh Hoa Section

- Alt1
  - Station location: HSR and the existing railway to be connected at the planned new station and planned 60m wide road to Lam Dong
  - Alignment: passing through eastern side of the existing railway
- Alt2
  - Station location: near the planned development area under the provincial master plan
  - Alignment: along the existing railway
- Alt3
  - Station location: rather far from the city centers
  - Alignment: along the existing railway

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from subjective and comprehensive view points, four aspects were selected.

Aspects	Reasons	Target
1) Convenience and Integrated Development	- Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest 2) Living environment: f) Impacts by noise and vibration 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

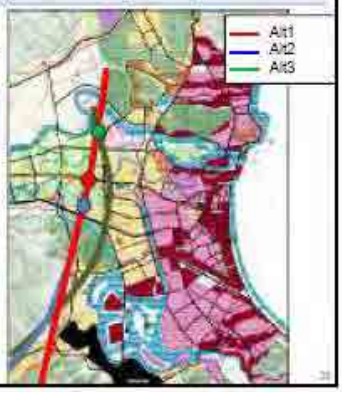
Preliminary Comparison of Alternatives for Discussions

Preliminary Comparison of Alternatives (Convenience and Integrated Development)

The table below shows preliminary relative comparison of alternatives

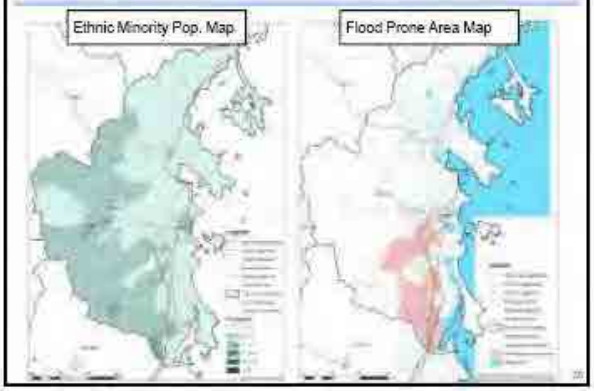
Aspects/Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	C	B
b) Distance from main centers	A	A	C
c) Availability of land for integrated development	B	B	B

Note : A- Better
B- Good
C- Fair



Overlay with Environmental Sensitivity Maps

Overlay with Environmental Sensitivity Maps



Preliminary Comparison of Alternatives (Environmental and Social Considerations)

The table below shows preliminary relative comparison of alternatives

Aspect/Indicators	Alt1	Alt2	Alt3
2) Environmental and Social Considerations			
a) Topography	A	A	C
b) Geology	A	A	B
c) Hydrology	B	C	C
d) Hazard	B	B	B
e) Protected areas and forest	A	A	A
f) Noise and Vibration	A	A	B
g) Land use	A	B	B
h) Resettlement	B	B	C
i) Cultural heritages	A	A	A
j) Ethnic minorities	A	B	C

Note : A- Better, B- Good, C- Fair

Preliminary Comparison of Alternatives (Overall South Section)

- Since the HSR is the holistic system, 3) and 4) below are to be compared as the section base, while 1) and 2) below are to be compared as the summary of provincial base assessment.
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1) Convenience and Integrated Development	Better	Good	Fair	provincial base
2) Environmental and Social Considerations	Minor	Significant	Average	
3) High Speed Serviceability and Engineering	Better	Good	Fair	The south section base
4) Construction Cost	Low	High	Low	

Zero Option

(1) What is Zero Option?

- If there is no HSR, the passengers (estimated to be 200,000 /day on the south section) will take other modes of the transportations; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR
- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution.

Discussion Points

Discussion Points

(1) Weighting based on Importance

- Aspects and Indicators
  - ✓ Convenience and Integrated Development
  - ✓ Environmental and Social Considerations
  - ✓ High Speed Serviceability and Engineering
  - ✓ Construction Cost
- Ideas on other necessary aspects and indicators to be considered

(2) Comments and Discussions on Planning and Environmental and Social Considerations

- Station location
- Alignment in province and of the whole south section
- Integrated Development

Presentation Materials for 2nd Stakeholder Meeting (Plenary)

Part I Outline of the Study

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI – VINH AND HO CHI MINH – NHA TRANG SECTIONS

JICA

Seminar and 2nd Stakeholder Meeting on North South Railway Development

Date: 14 September, 2012
Hanoi City
JICA Study Team

Purpose and contents of Seminar & SHM

- Consultation with key stakeholders on opportunities and directions on the development of north-south railways
- Part 1 Outline and progress of the study
- Part 2 Results of the Study on alternative alignments and locations of stations (Selection of Alternatives through SEA)
- Part 3 Optimum alternative alignment and station location

◂ NSHSR ▸

Part 1 Outline and Progress of the Study

Background and Objectives of the Study

Background

- During 2007-2010, **"The Comprehensive Study on the Sustainable Development of Transport System in Vietnam" (VITRANSS2)** was conducted to formulate overall transport development strategy for the country
- During the same period, **"Pre-feasibility study of NSHSR"** was conducted by Vietnam Railways and discussed in National Assembly in June 2010
- Upon the request of the Government of Vietnam, **"Study for the Formulation of High Speed Railway Projects on the Hanoi-Vinh and HCMC-Nha Trang Sections "** is being conducted with technical assistance of JICA

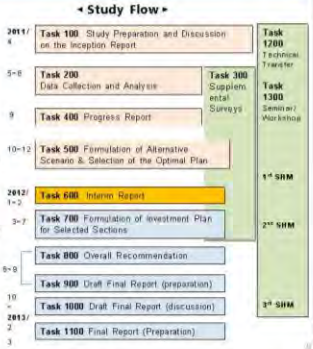
Objectives

- To formulate a basic plan for north-south railway development on priority sections of NSHSR (Hanoi-Vinh and HCMC-Nha Trang) based on demand analysis, preliminary design, system plan, cost estimate, construction plan, economic and financial evaluation, as well as financing plan
- To formulate a road map and investment plan
- To prepare necessary documents for environmental and social considerations as a part of SEA

Overall Study Progress and Main Activities Conducted

- Interim Report Submitted: 16 May
- Technical Workshop with VR/MOT held: 6 June
- Official comments on Interim Report received: 14 June
- 6th JICA Advisory Committee held: 3 July
- 2nd Stakeholder Meetings conducted
  - in the south: 9 - 13 July and 9 August (HCMC)
  - in the north: 23 - 30 July (first) and 3 – 13 August (second)
- 7th JICA Advisory Committee held: 31 July
- Technical Workshop with VR/MOT held: 1 August
- Steering Board Meeting: 14 August

◂ Study Flow ▸



Approach to the Study based on Alternative Scenarios discussed in National Assembly

1. Initial Alternative Scenario
2. Study on Existing Railway
   - Bottlenecks of Existing Railway
   - Constraints to Updating of Existing Railway
   - Options for Improvement of Existing Railway
3. Roles of Existing Railway and HSR
4. Study on HSR for Hanoi-Vinh and HCMC-Nha Trang sections

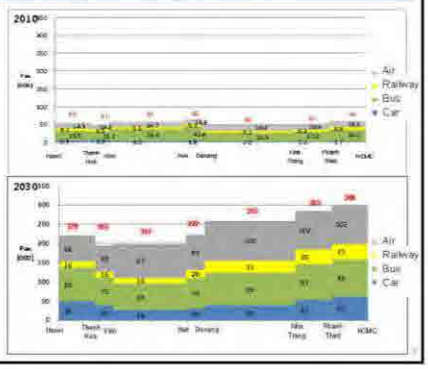
Alternative Scenarios discussed in National Assembly

Alternative	Existing Line	New Line
Scenario 1	• Upgrading to **double track with dual gauge (meter + standard)** • Current maximum speed • For passenger and freight	None
Scenario 2	• Upgrading to **double track (standard gauge)** • Maximum operating speed of 200 km/h (electrification) • For passenger and freight	None
Scenario 3	• Improvement of existing line **(single track)** • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of **200 km/h** • For passenger and freight
Scenario 4	• Improvement of existing line **(single track)** • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of **300 km/h** • For passenger only
Scenario 5	• Improvement of existing line **(double track)** • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of **200 km/h** • For passenger and freight service
Scenario 6	• Improvement of exiting line **(double track)** • For local passenger and freight	• Double track with standard gauge • Maximum operating speed of **300 km/h** • For passenger only

Future transportation demand along North-South Corridor is significant for passenger and freight services

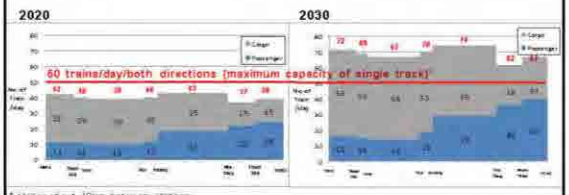
Passenger

- National Growth
  Pax 3.0 times
  Pax-km 3.9 times
  GDP 3.4 times
- Growth in North-South Corridor:
  4-5 times



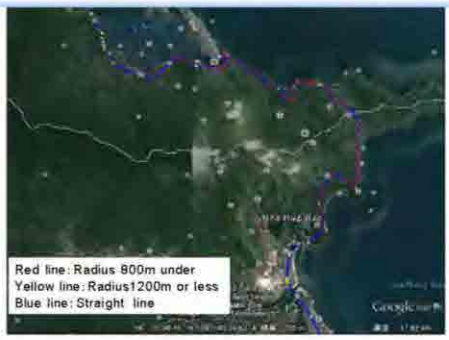
Improvement of existing railway can meet traffic demand up to 2020-25

- In 2030 the demand will exceed 50 trains/day/both directions which is the maximum capacity of single track in all section.
  ➡ This improvement will not accommodate the future demand



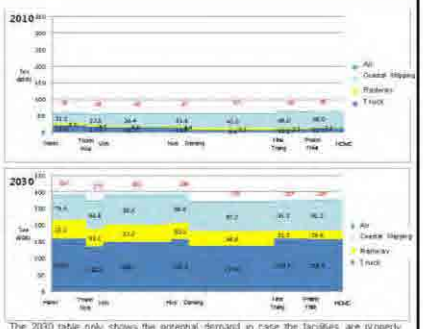
* Under about 10km between stations

Hai Van Pass Section



Freight

- National Growth
  Ton 2.7 times
  Ton-km 3.1 times
  GDP 3.4 times
- Growth in North-South Corridor:
  4-5 times



The 2030 table only shows the potential demand in case the facilities are properly developed.

Bottlenecks of existing railway constrain capacities and operating speed

- Reduction in train speed due to **degraded structures (bridge, tunnel, road bed, track) and level crossings without safety measures**
- Reduction in train speed due to **substandard alignment sections** with small curvature (400 m or less, 84 locations with a total of 903km) as well as following bottlenecks:
  (i) Hoa Duyet – Thuan Luyen (Km 357-370)
  (ii) Khe Net (Km 414 – 423)
  (iii) Hai Van (Km 750 – 777)
  Note: The three bottleneck sections with a total of 44.2km require about 2 hours.
- Waste of time on **switch back at Danang Station and on loop at Nha Trang Station**
- **Long distance between stations on single track** for the whole line, resulting in the limitation of number of trains

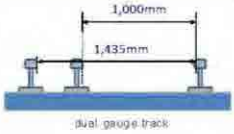
➡ **Expected reduction in travel time from 30 hrs to 25 hrs between Hanoi-HCMC**

◂ Location of Bottlenecks ▸

Possibilities of upgrading of existing railway to HSR standards: Three main issues

(1) Conversion of existing railway to dual gauge

- Passenger for standard gauge
- Freight for meter gauge



dual gauge track

(2) Upgrading of existing railway for train operation at maximum speed of 200 km/h

(3) Mixed operation of passenger and freight trains at maximum speed of 200 km/h

Conversion of the entire existing line to dual gauge for Hanoi – HCMC is difficult and not advisable because:

- High speed operation is impossible on dual gauge.
  eg. Akita Shinkansen, maximum speed is 130km/h and average speed is 85 km/h
- Most bridges have to be reconstructed due to the shift of load center
- Many station spatial layouts have to be remodeled due to the shift of construction gauge
- Maintenance cost will increase for dual gauge track
- Train operation will be suspended during construction period. Direct operation between Hanoi and HCMC becomes impossible for long period
- There is no cases dual gauge is applied for such a long route (1,700km)

Upgrading of existing railway for train operation at 200 km/h is difficult and not advisable because:

- Most curved sections need to be upgraded to those with 2,000 meter radius at more than 1,500 locations
- Level crossings at roads need to be grade separated at more than 2,000 locations
- Maximum speed for narrow gauge is limited to around 160 km/h
- Renewal of electric, signaling·safety facilities, rolling stock is necessary
- Suspension in operation of existing railway due to construction work for long time.
- Double tracking, standard gauge and electrification requires almost the same level of investment as new line construction.

Converting narrow gauge track into standard one: Experiences in Japan

In case of Akita Shinkansen, it took 5 years to complete a track conversion.
Distance: 127.3km (single track 75.6km + double track 51.7km)
Maximum speed: 130km/h, however Average speed: 85 km/h due to alignment

Mixed operation of passenger and freight train at maximum speed of 200 km/h is difficult and not advisable because:

- Technological difficulty of freight train operation at more than 120 km/h
- Problems related to the safety and the train operation diagram

Four Options for improvement of existing railway

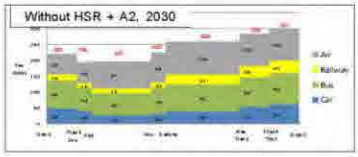
		A1 (on -going improvement)	A2 (maximization of single track capacity)	B1 (double tracking with max speed of 120 km/h)	B2 (double tracking with max speed of 150 km/h)
Railroad track	Track	Single	Single	**Double**	**Double**
	Gauge (mm)	1,000	1,000	1,000	**1,435**
	Min. radius of curvature (m)	100m (existing)	100m (existing)	**800m**	**1,200m**
	Wiltichard load (ton)	14 (existing)	14 (existing)	14 (existing)	17 (same as EA17)
Maximum speed	Passenger (km/h)	90 (existing)	90 (existing)	**120**	**150**
	Freight (km/h)	40 (existing)	40 (existing)	70	Container 120, Bulk 90
Travel Time (h) (Hanoi-Saigon)		**28.0**	**25.4**	**15.6**	**12.7**
Capacity (no. of trains/day)		**32** (existing)	**50** [1]	**130**	**170**
Estimated investment (approximately) (US$ Million)		**1,500**	**1,900**	**14,500**	**27,700**

1) Maximum frequency based on the improvement of 11 new intermediate station

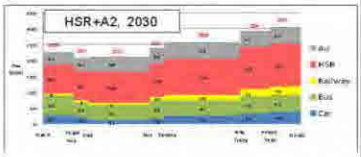
Upgrading to A2 level is the most appropriate, though, for some sections with high demand 81 level would be justifiable.

Future demand along the North South Corridor "with" and "without" HSR

- Without HSR, future demand cannot be met by roads (car/bus) and air. Demand for existing railway is not significant.



- HSR is competitive with the fare level which is half of air fare and double of bus transport



Summary of the role of railway Transport along the North-South Coastal Corridor

- Significant increase in overall passenger travel demand
  - → All modes of transport (national roads, expressways, air and railway) must be strengthened in the appropriate mix of modes
- Upgrade of existing railway at A2 level with partial double tracking sections where local demand can justify are required for short to long period
- Railway demand including freight service will exceed single track capacity of existing railway but not large enough to require double tracking. The demand is not in quantity but quality (higher speed service)
  - → HSR is irreplaceable mode of future (medium to long-term) transport along the north-south corridor by reducing an excessive load to air transport and providing quality transport capacity in the areas where farther construction of land consuming roads and expressways is difficult (e.g. central region)

Recommendation on existing railway development

- Urgent completion of A1 level improvement
- Improvement to A2 level for the entire section is by around 2020 with top priority given to the improvement of bottleneck: Khe Net, Hai Van, Hua Duyet – Thanh Luyen, at-grade crossings (Hanoi, HCMC, Da Nang), switchback/loop section (Da Nang, Nha Trang), intermediate stations, etc.
- Improvement to B1 level for the entire section is not advisable especially when HSR is constructed. It is considered for specific sections where the demand can justify the investment (suburban commuter services, freight transport, etc.)
- Connectivity with future HSR must be duly considered

Economic viability and orientation for NSHSR development

- HSR is a highly competitive transport mode which can meet transport demand efficiently and effectively along the north-south corridor
- Timing of NSHSR development
  - Year EIRR exceeds 12% is around 2040 for entire section
  - Impact on macro-economy must be considered

% of First HSR Project Cost to GDP

	Year Opened	% GRDP@year of	
		Approval	Operation
Japan (515km)	1964	2.4%	1.3%
Korea (411km)	2004	3.7%	1.5%
Taiwan (345km)	2007	3.3%	3.7%

➡ Step-wise implementation is inevitable. Two priority sections (Hanoi – Vinh and HCMC – Nha Trang) were selected for detailed study.

Detailed Study was conducted for priority sections:

- **Updating of data**
  - Preparation of 1/10,000 topographic map
  - Preparation of updated information on environmental and social sensitivity along the route
  - Traffic demand survey
  - Boring survey
  - Construction cost data
- **Review of past studies**
  - Pre F/S
  - KOICA Study
- **Consultation with Provinces**
  - Stakeholder meetings
  - Field survey and technical meetings
- **Comparison of HSR experiences**
  - Experience of other countries
  - Comparison of related technologies
  - HSR management and funding
- **Traffic demand analysis**
- **Route planning**
- **Comparative analysis and selection of appropriate systems and technologies**
- **Economic/ financial analysis**
- **Funding**
- **Operation, management and human resource development**
- **Institutional development**
- **Road map towards implementation**

Implementation of Stakeholder Meetings

Section	Province	HSR Station	Date	No. of Attendance			
				Province	MOT	VR	JICA Study Team
South	Khanh Hoa	Nha Trang	9/7	54	1	4	6
	Ninh Thuan	Thap Cham	11/7	43	1	4	6
	Binh Thuan	Tuy Phong, Phan Thiet	12/7	23	1	4	6
	Dong Nai	Long Thanh	13/7	29	1	4	6
	HCMC	Thu Thiem /Hoa Hung	10/8	49	0	6	9
North[1]	Nghe An	Vinh	23/7 (3/8, 12/8)	52 (2)	8	6	9 (5)
	Thanh Hoa	Thanh Hoa	24/7 (6/8, 5/8)	36 (4)	0	6	9 (5)
	Ninh Binh	Ninh Binh	25/7 (8/8)	55 (9)	0	6	9 (5)
	Nam Dinh	Nam Dinh	26/7 (7/8, 11/8)	21 (8)	0	8	9 (5)
	Ha Nam	Phu Ly	27/7 (7/8)	34 (4)	0	8	9 (5)
	Hanoi	Ngoc Hoi	30/7 (8/8, 13/8)	31 (14)	4	8	13 (5)

1) For the north section, second round of follow-up meetings have been conducted.
2) Figures in parenthesis refers to those of second round SHM in northern provinces.

Outline of Selected Routes

Stations in the North Section

Station	Structure	Distance (km)
Ngoc Hoi	Elevated	-
Phu Ly	Elevated	45.6 km
Nam Dinh	Elevated	27.0 km
Ninh Binh	Embankment	35.5 km
Thanh Hoa	Elevated	51.5 km
Vinh	Elevated	129.2 km

Civil Structures in the North Section

Structure Type	Length (m)	Ratio (%)
Station	4,385	1.5
Viaduct	136,433	48.0
Bridge	6,090	2.1
Embankment	111,930	39.5
Cut	9,860	3.5
Tunnel	15,400	5.4
Total	284,098	100.0

Stations in the South Section

Station	Structure	Distance (km)
Thu Thiem	Elevated	-
Long Thanh	Open cut	36.1 km
Phan Thiet	Elevated	117.2 km
Tuy Phong	Embankment	67.3 km
Thap Cham	Elevated	63.2 km
Nha Trang	Elevated	78.5 km

Civil Structures in the South Section

Structure Type	Length (m)	Ratio (%)
Station	4,735	1.3%
Viaduct	48,825	13.3%
Bridge	6,090	1.7%
Embankment	169,490	46.3%
Cut	102,831	28.1%
Tunnel	34,279	9.4%
Total	284,098	100.0

Economic Viability of HSR Priority Sections

- **Demand**
  No. of passenger is large in the north section, while passenger-km is large in the south section
- **Economic Viability of NSHSR**
  Priority sections (Hanoi-Vinh & HCMC-Nha Trang) will be economically viable in early 2030s.
- **Investment cost to 2030 GDP**[1)]
  - Hanoi-Vinh section: 2.6%
  - HCMC-Nha Trang section: 3.7%

  1) Case of Japan, Taiwan, Korea = 2%-4%

HSR Section		Hanoi-Vinh	HCMC-Nha Trang
HSR Construction Cost (US$ bil)[1)]		8.9	12.5
Demand (2030)	No. of Pax (000/day)	80.8	69.3
	Pax-km (mil/day)	12.2	19.0
Year when EIRR become 12%		around 2030	around 2030

1) Based on pre-F/S (2009) including infrastructure, rolling stock, land acquisition, consultation services, tax and contingency

Either one section is economically justifiable for operation around 2030.

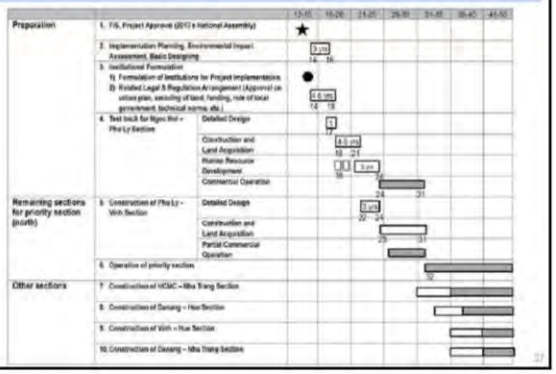
Comparison of HSR Management in the World: Importance of Public Sector's Initiative

		Japan	Taiwan	Korea	Germany	France (Original)
Operation		JR (Private)	THSRC (established as private, but public share was increased)	Korail (Public)	Deutsche Bahn (Shares owned by public) SNCF (Shares owned by public) and etc.	
Maintenance	Rolling stock					
	Super Structure (Rail, station, signal)				DB Netz (100% subsidiary of DB)	RFF (Public) and / or Concessionaire (Private)
	Sub Structure (Land, tunnel, bridges)					
Ownership	Rolling stock				Deutsche Bahn (Shares owned by public)	SNCF (Shares owned by public)
	Super Structure (Rail, station, signal)	JRTT (Public)		KR (Public)	DB Netz (100% subsidiary of DB)	RFF (Public)
	Sub Structure (Land, tunnel, bridges)					

Infrastructure is developed and invested by public bodies in most countries.

Note 1 : In France, a part of infrastructure is invested by private concessionaires.
Note 2 : DB (Germany) is a private joint stock company and SNCF (France) is an industrial and commercial public institution (EPIC) both wholly owned by governments.

Proposed Road Map (tentative)



Part II Summary of 2nd SHM in Cities/Provinces and Reflection of Comments from Participants

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG
SECTIONS

Plenary Session of 2nd Stakeholder Meetings

Part II
Summary of 2nd SHM in Cities/Provinces and Reflection of Comments from Participants

JICA Study Team

Contents

- SEA for Selecting the Optimal Alternative
- Initial Alternatives Set for 2nd SHM in Cities/Provinces
- Approach for Alternative Comparison
- 2nd Stakeholder Meetings in 11 Cities/Provinces
- Results of 2nd Stakeholder Meetings in 11 Cities/Provinces
  - ✓ Common issues
  - ✓ General response from stakeholders (North section, South Section)
  - ✓ Result of questionnaires
- Reflection of Comments from Stakeholders

Strategic Environmental Assessment (SEA) for Selecting the Optimal Alternative

Basic Principle of Environmental and Social Considerations of this Study

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning
- To identify important environmental and social consideration items to be studied in the further stage of full-scale EIA
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders

What is "Environmental and Social Considerations"?

This term is used in "JICA Guidelines for Environmental and Social Considerations" and other international donors' documents, which covers the concept and process to avoid/minimize/compensate the negative impacts on natural and social environment.

Major Important Laws & Guidelines for Reference

(1) Vietnamese Laws and Regulations

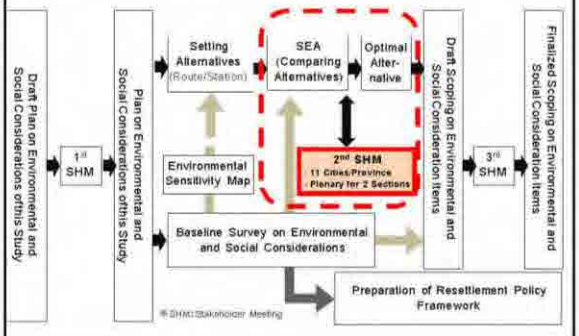
- Law on Environmental Protection, 2005
- Decree No.29/2011/ND-CP on strategic environmental assessment, environmental impact assessment and environmental protection commitment
- Circular No.26/2011/TT-BTNMT, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP
- Law on Forest Protection and Development, 2004
- Environmental Standards (QCVNs)
- Other related laws and regulations

(2) JICA and related Guidelines

- JICA Guidelines for Environmental and Social Considerations (2004 and 2010)
- Safeguard Policies of World Bank

Requires three times SHMs during the study

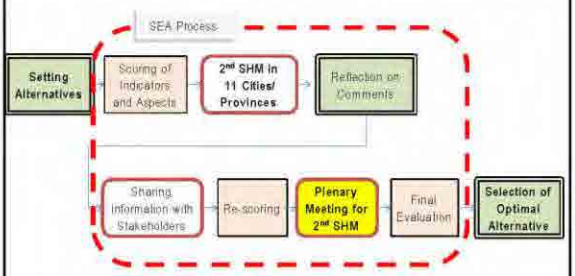
Flowchart for Environmental and Social Considerations under the Study



SEA Application of this Study

Item	Brief Descriptions
Objective	To select the optimal alternative with due considerations of various aspects and comments from stakeholders
SEA Target Sections	The north section (Hanoi– Vinh) The south section (HCMC – Nha Trang)
Alternatives	Station locations and alignments together with zero option
Aspects to be Considered for Alternative Comparison	1) Convenience and integrated development 2) Environmental and social aspects - Natural environment: impacts on flora and fauna, ecosystem, natural hazard prone areas, etc. - Pollution: impacts on living environment by noise and vibration, etc. - Social environment: impacts on land acquisition and resettlement, cultural heritages, etc. 3) High speed serviceability and engineering difficulty 4) Construction cost

Detail Process of SEA of this Study



Overview of North Section Study Area

Ha Noi – Vinh Section: Total Length : Approximately 300km

➢Major Cities and its demography

Major City	Hanoi	Phu Ly	Nam Dinh	Ninh Binh	Thanh Hoa	Vinh
Population (,000 in 2011)	6,779	83	246	112	212	309

: Study Area

Overview of South Section Study Area

HCMC – Nha Trang Section: Total Length : Approximately 370km

➢Major Cities and its demography

Major City	HCMC	Phan Thiet	Tuy Phong	Thap Cham	Nha Trang
Population (,000 in 2011)	7,521	218	143	163	396

: Study Area

Initial Alternatives Set for 2nd SHM in Cities/Provinces

Characteristics of HSR Plan

(1) Holistic System

- Railway in general, especially HSR, is planned as "one total system".
  - ✓ The alignment has to be as straight as possible to secure "speediness"
  - ✓ Location of stations are the part of the overall alignment

(2) Planning Requirements

- The HSR planning requires the deep understandings among the provinces along the alignment.
- The considerations on alignment as well as location of stations need the consistency as the one system of the section (ex. Hanoi-Vinh and HCMC-Nha Trang) and the individual parts in provinces.

Setting Alternatives and Potential Station Locations

(1) Setting Station for SEA

i. Provincial Capitals, if alignment allows.
ii. Larger towns (ex. class III) along the alignment.
iii. Special location for passengers' convenience

Stations Set with Criteria (North and South Sections)

Station	I	II	III	Station	I	II	III
Ngoc Hoi	✓	✓	✓	Nha Trang	✓	✓	
Phu Ly	✓	✓		Thap Cham	✓	✓	
Nam Dinh	✓	✓		Tuy Phong		✓	
Ninh Binh	✓	✓		Phan Thiet	✓	✓	
Thanh Hoa	✓	✓		Long Thanh			✓
Vinh	✓	✓		Thu Thiem	✓	✓	✓

✓ Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

Initial Alternatives Presented in 2nd SHM in City/Province

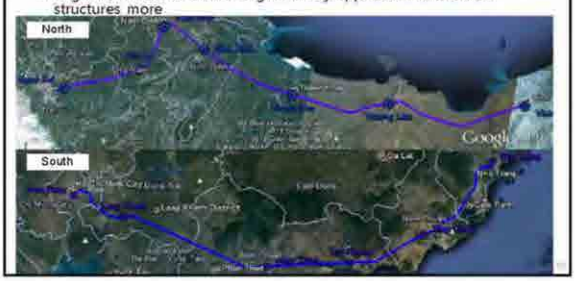
(2) Alternative 1 (Alt1): Station location and alignment based on this JICA study (Minimum Curve Radius=6,000m)

- Station Location: In urban area with integrated development in and around station area
- Alignment: To consider the cost efficient balance of viaduct and embankment

Initial Alternatives Presented in 2nd SHM in City/Province

(3) Alternative 2 (Alt2): Station location and alignment based on Pre-FS in 2009 (submitted to the national assembly, Minimum Curve Radius=6,000m)

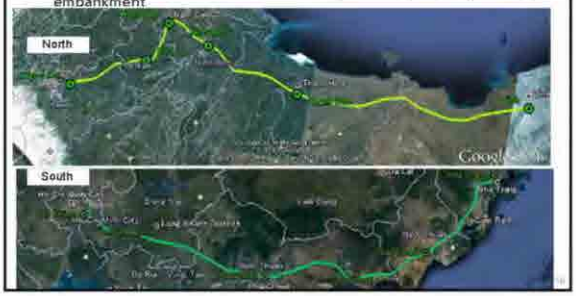
- Station Location: In urban area
- Alignment: Free to choose alignment by application of elevated structures more



Initial Alternatives Presented in 2nd SHM in City/Province

(4) Alternative 3 (Alt3): Station location and alignment based on KOICA study in 2007 (Minimum Curve Radius=5,000m)

- Station Location: In suburban area avoiding existing city area
- Alignment: To reduce construction cost by choosing the alignment by embankment

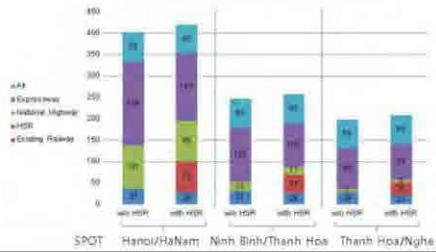


Setting Alternatives

(5) Setting of Zero Option (without HSR)

- **Zero Option** is also analyzed, comparing the Green House Gas emission based on the estimated demand in 2030.

Estimated Spot Traffic Volume of Passenger (,000)
Example of North Section in 2030



Initial Alternatives and Potential Stations (Summary)

Ha Noi – Vinh Section

HCMC – Nha Trang Section

Approach for Alternative Comparison

Approach for Alternative Comparison (1/2)

To compare alternatives from objective and comprehensive view points, four aspects were selected.

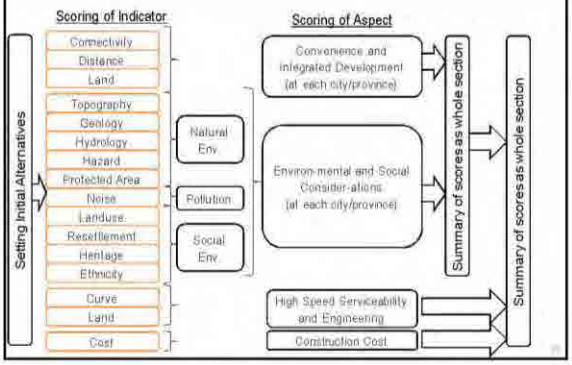
Aspects	Reasons	Target
1) Convenience and Integrated Development	Convenience is the key to achieve high ridership with the satisfaction of the passengers. - Integrated development of the neighborhood area of the station enhances 1) convenience and 2) benefit for the regional economy and society.	Summary of Provincial wise (each province)
2) Environmental and Social Considerations	- The station and alignment should be planned to avoid and mitigate the negative impacts on natural, living and social environment.	
3) High Speed Serviceability and Engineering	- High speed serviceability is the key to maximize shortening effect of traveling time. - Potential difficulties in construction works.	Section wise (North Section/ South Section)
4) Construction Cost	- Cost is important factor for the feasibility.	

Approach for Alternative Comparison (2/2)

The four aspects are to be assessed from following indicators.

Aspects	Indicators
1) Convenience and Integrated Development	1) Connectivity with other transportation modes 2) Distance from city centers 3) Availability of land for integrated development
2) Environmental and Social Considerations	1) Natural environment: a) Topography, b) Geology, c) Hydrology, d) Hazard, and e) Protected areas and forest. 2) Living environment: f) Impacts by noise and vibration 3) Social environment: g) Sensitive land use, h) Land acquisition and resettlement, i) Cultural heritages, and j) Ethnic minorities.
3) High Speed Serviceability and Engineering	1) Ratio of the curve with less than radius=6,000m 2) Areas of difficulty in construction (ex. soft ground, long-span bridges, long tunnels)
4) Construction Cost	Construction cost

Scoring Method for Alternatives Comparison



Scoring Method for Alternatives Comparison

(1) Scoring of each indicator

Each indicator is scored by 5 grades by objective method.

- Connectivity (example)

Score	Scoring
5	with both conventional railway (CR) or urban railway (UR, including plans) and other transportation modes (TM)
4	with CR/UR (including plans)
3	with TM
2	no connection, but plan for connection
1	no connection or plan including unrealistic plans

- Hazard (example)

Score	Scoring
5	Less than 4 hazard prone commune along the alignment
4	5-8 hazard prone commune
3	9-12 hazard prone communes
2	13-16 hazard prone communes
1	more than 17 hazard prone communes

Scoring Method for Alternatives

(2) Scoring of each aspect

For each aspect , summarizing the result of scoring of the indicators.

- Natural Environment (example)

Score	Indicator
A	Total score is more than 18 and all indictor is more than 3 (including 18 and 3 respectively)
B	Total score is more than 18 and some indictor is less than 2 (including 2)
C	Total score is 15-17
D	Total score is < 15

(3) Comparing each alternative

- To sum the points of four aspects and compare the alternatives.

2nd Stakeholder Meetings in 11 Cities/Provinces

Collaboration and Discussion with Cities/Provinces

- **JST collaborated with the Cities/Provinces by following steps for each section.**

Section	Steps taken by JST
North and South (Common)	- Collection and review of the latest **regional and urban plans** of the cities/provinces (July-September 2011) - Collection and review of the latest **natural and social environmental regulations and information** by visiting DONRE/DARD/DOCST for all cities/provinces (June-December 2011) - **1st Stakeholder meeting** on 9th December, 2011, inviting representatives from the target cities/provinces
North	- **2nd Stakeholder Meetings** from 23rd July – 30th July, 2012 in all target provinces - **Follow-up meetings** from 3rd August – 13th August, 2012 in all target provinces (most DOT and DOC of target provinces)
South	- Visiting city/provincial government during the field work - **Explanation and discussion on alignment and station** in all target provinces (from 18th May – 8th June, 2012) - **2nd Stakeholder Meetings** from 9th July – 10th August, 2012

Meeting with City/Provinces in Cities/Provinces

➢**Summary of SHM held in each City/Province**

Section	Province	HSR Station	Date	No of Attendance								
				TOTAL (excl. JST)	Local Gov.		Business Association	Social Association	Academic Society	Press/TV	Central Gov't/VR	JICA Study Team
					Prov.	City/ Dist.						
North	Hanoi	Ngoc Hoi	26/7/2012	44	9	1	8	0	2	9	16	13
	Ha Nam	Phu Ly	27/7/2012	40	23	3	3	0	1	4	6	6
	Nam Dinh	Nam Dinh	26/7/2012	62	26	17	7	3	0	3	6	9
	Ninh Binh	Ninh Binh	25/7/2012	27	16	4	1	0	0	0	6	3
	Thanh Hoa	Thanh Hoa	24/7/2012	42	11	9	14	2	0	0	7	9
	Nghe An	Vinh	23/7/2012	68	20	10	10	1	1	2	6	9
South	Khanh Hoa	Nha Trang	9/8/2012	46	16	6	14	1	0	0	7	6
	Ninh Thuan	Thap Cham	11/7/2012	60	21	21	11	3	0	2	7	6
	Binh Thuan	Tuy Phong, Phan Thiet	12/7/2012	41	20	11	0	0	0	3	7	6
	Dong Nai	Long Thanh	13/7/2012	25	10	4	2	0	0	2	7	6
	HCMC	Thu Thiem, Hoa Hung	10/8/2012	48	9	14	6	1	11	1	8	9

Result of Initial SEA Comparison (at Province)

1. Result of Comparison [Example in Thanh hoa]

Aspects/ Indicators	Alt 1	Alt 2	Alt 3
1) Convenience and Integrated Development			
a) Connectivity with other transportation modes	A	B	B
b) Distance from main centers	A	B	B
c) Availability of land for integrated development	B	B	B

Aspect/Indicators	Alt 1	Alt 2	Alt 3
2) Environmental and Social Considerations			
a) Topography	A	A	A
b) Geology	A	A	A
c) Hydrology	A	B	B
d) Hazard	C	B	B
e) Protected areas and forest	A	B	B
f) Noise and Vibration	C	C	C
g) Land use	B	B	B
h) Resettlement	B	B	C
i) Cultural heritages	A	B	A
j) Ethnic minorities	A	A	A

Note : A- Better
B- Good
C- Fair

Result of Initial SEA Comparison shown in 2nd SHM

1. Result of Initial Comparison **[North Section]**

Aspects	Alt1	Alt2	Alt3
1) Convenience and Integrated Development	Better	Good	Good
2) Environmental and Social Considerations	Better	Good	Good
3) High Speed Serviceability and Engineering	Better	Good	Fair
4) Construction Cost	Average	High	Low(*)

** If appropriate measures are taken for the soft ground area, the cost would be higher.*

2. Result of Initial Comparison **[South Section]**

Aspects	Alt1	Alt2	Alt3
1) Convenience and Integrated Development	Better	Good	Fair
2) Environmental and Social Considerations	Minor	Signifi -cant	Average
3) High Speed Serviceability and Engineering	Better	Good	Fair
4) Construction Cost	Low	High	Low

Result of Initial SEA Comparison (Zero-Option)

(1) What is Zero Option?

- If there is no HSR, the passengers will take other transportation modes; namely air, existing railway, car, and bus

(2) Impacts by the increase of the passengers in the other transportation modes

- The per person-km emission of GHGs and air pollutants is much larger in other transportation modes compared with HSR

⇩

- Increase in emission of GHGs (CO_2) and air pollutants
- "Zero Option" would cause negative impacts on the climate change and air pollution (ex. 680 kt CO_2/year more is estimated to be released into air).

⇩

- Thus, Zero Option will not be recommended.

General Responses from Stakeholders [Common Issues]

Common Issues Raised in Provinces: Schedule

- **Major Issues(1): Comments on Project Schedule**

Comments	Reflection on Comments
-Comments on the timing of investment for HSR such as "it should be developed as soon as possible, and "it should be considered more in the future".	-The timing of the investment is to be carefully studied , based on the demand, the growth of GDP and individual income level. - In terms of the demand, HSR is considered to be required by 2030 to bear the high demand of traffic along the north-south corridor.

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Common Issues Raised in Provinces: Structures

- **Major Issues(2): Comments on Structures**

Comments	Reflection on Comments
- Application of viaduct in city area - Concerns on embankment such as division of community and flooding considering the existing embankments (ex. National highways)	- Viaduct will be applied in populated areas. - Proposed embankment for HSR: box culverts to be applied to ensure the mobility of people and water flow so that community integrity will not be affected and flood will not be worse.

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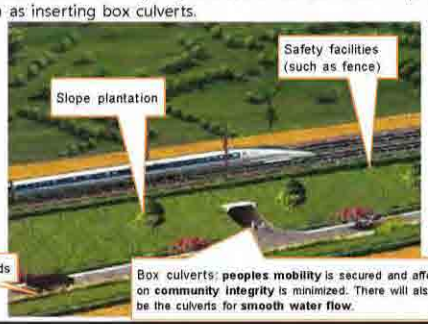
Common Issues Raised in Provinces: Embankment

- **The embankment structure for HSR** will be designed with due considerations on mitigating environmental and social impacts, such as inserting box culverts.



Common Issues Raised in Provinces: Resettlement

- **Major Issues(3): Comments on Resettlement**

Comments	Reflection on Comments
-Comments based on the tendency of demography such as "to the eastern side of the province, more residents", "more population near the national highway".	- Resettlement was evaluated by **the actual counting of affected buildings** based on the **latest** topographic map (1:10,000). -The other sources of **updated information** were utilized for **avoiding populated areas**.

Avoided villages/residential areas
Affected villages/residential areas

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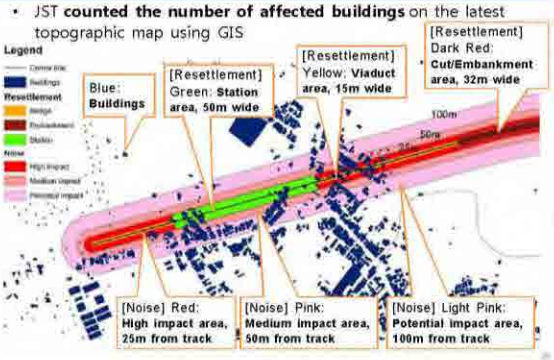
Common Issues Raised in Provinces: Evaluation Method of Resettlement and Noise)

- JST **counted the number of affected buildings** on the latest topographic map using GIS



Common Issues Raised in Provinces: Connectivity

- **Major Issues(4): Comments on Connectivity with Existing Railway**

Comments	Reflection on Comments
- Indifference to the connectivity - A few km distance of stations (HSR and Existing) - Connectivity with expressway	- Since **HSR needs to compete against other transportation modes, the connectivity and convenience is the key of successful HSR.** - In this connection, immediate transfer at the station is necessary. -Due to **mass transit nature of HSR**, even transferring by buses to distant station may not be efficient. -The current condition of the **existing railway** will be **improved** at A2 level and it will function as **the feeder for the HSR**. - Integrated development will be easier at the station with high convenience.

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Common Issues Raised in Provinces: New Stations

- **Major Issues(5): Comments on Station Location (New Station)**

Comments	Reflection on Comments
- Request of new stations	- Current potential stations are selected based on the following criteria; **1)Provincial Capitals, if alignment allows** **2) Larger towns (ex. class III) along the alignment** **3) Special location for passengers' convenience.** - Other stations may be developed later if there is **1) enough demand with 2) potential of integrated development.** - Station development will be further discussed.

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General Responses from Stakeholders [North Section]

Comments in Northern City/Provinces (1)

■ **Ha Noi City (Ngoc Hoi Station)**

Comments	Response of JICA Study Team
HSR is important for the development of the country. It will be appropriate for the long stretching country like Vietnam.	- Noted. HSR and socio economic development will be discussed in DfR and FR.
Ngoc Hoi is considered to be appropriated for the terminal station in Hanoi City.	- Noted. JICA Study Team mainly considers Ngoc Hoi as the terminal station of the north section, while preliminary study on Hanoi Station option will also be included in this study.
HSR plan needs consultation with UMRT Line 1 regarding Ngoc Hoi station and connection.	- Noted. JICA Study Team had several meetings already and will continue sharing information.
Ha Tay Province (which was merged with Hanoi City in 2008) responded and prepared comments on the plan proposed by KOICA and Pre-FS. JICA Study Team can refer to these comments for reference.	-Alignment will be re-considered.
Though all may not be avoided completely, but industrial zones, development areas, religious places, touristic places and etc. should be avoided.	- Alignment will be re-considered based on the latest plans.

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Comments in Northern City/Provinces (2)

■ **Ha Nam Province (Phu Ly Station)**

Comments	Response of JICA Study Team
The significance of the development of HSR was recognized among the participants as trigger for regional development, especially given the province's location in vicinity to Hanoi City.	- Noted. JST will consider the best alignment and station location for the integrated development.
Existing Provincial Master Plan and Phu Ly City General Plan which incorporate the HSR alignment and station location based on KOICA study were explained as follows: (i)New development area is planned between the expressway and NH1A. (ii)If the HSR station is located in this area, connectivity with roads leading to other provinces is better. (iii)New bus terminal is also planned in this area so that HSR passengers transfer easily. (iv)300m wide land area is secured for HSR along the east side of the expressway.	- Considering the existing plans with the province's effort in land acquisition, JST revised alignment of the alternative 1 to the east side of the city area along the expressway. - However, the location of the station may not be at exactly the place in the plan of the province in order to keep the high speed serviceability (namely, minimum curve radius: R=6,000m). JST explained the limitation of the alignment planning to the province in the follow-up meeting.

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Comments in Northern City/Provinces (3)

■ **Nam Dinh Province (Nam Dinh Station)**

Comments	Response of JICA Study Team
The development of HSR is the effective investment to meet the increasing transport demand in the long-term, serving for overall socio-economic development of the region as well. Improvement of the existing railway is also important.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future
Placing the alignment through Nam Dinh Province will also bring about benefits to Thai Binh Province which beholds a large population.	- Noted. HSR will serve for regional development as well.
Alternative 1 was preferred with the following reasons: (i) the least environmental and social impact especially on resettlement, (ii) the planned HSR station is located near Dang Xa Station which will ensure good connectivity with the existing railway. Dang Xa area is also one of the prime areas to be developed under the provincial plan.	- Noted. HSR station area will have integrated development plan as well.
Fast action is expected before land acquisition becomes more difficult in the future.	- This issue will be also proposed by JST in DfR and FR of this study.

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Comments in Northern City/Provinces (4)

Ninh Binh Province (Ninh Binh Station)

Comments	Response of JICA Study Team
Necessity of HSR was agreed among the participants with emphasis on an opening schedule earlier than 2030.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future.
As for the alignment, the alignment should not affect major industrial parks and tourism attraction areas in the province.	- Noted. Finalized alignment will consider such areas.
The section passing through Tam Diep City should be reconsidered as it is expected to become an important urban center in the province along with Ninh Binh City in the future.	- Noted. The alignment is modified to avoid Tam Diep City area.
Currently official plans in the province incorporate the station in the east side of the city based on KOICA study. After the decision, necessary changes shall be reflected to these plans, especially land use plans.	- Noted. After the plan is more concrete, it is suggested for the province to start land acquisition including the limitation on landuse.
As the province has 3 existing railway stations, accessibility with these stations is important.	- Noted. The existing railway needs to be improved as the feeder for HSR so that convenience of people along the alignment will be maximized.

Comments in Northern City/Provinces (5)

Thanh Hoa Province (Thanh Hoa Station)

Comments	Response of JICA Study Team
Necessity of HSR and its early construction are consented among participants.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future.
The conditions of the south from Ham Rong Bridge were explained as follows: (i)In eastern side of NH1A, there exists low land where agricultural and residential areas are located which requires high compensation costs. (ii)Geological conditions are considered to be better in western side of NH1A	- Noted. JST will consider these comments and modifies the alignment.
The conditions of the north from Ham Rong Bridge were also explained that populated areas are limited in western side of NH1A.	- Noted. JST will consider these comments and modifies the alignment.
Even the station is planned in suburban are like Alternative 3, distance to existing VR station is about 4 km and is no problem because they can be connected with good road.	- See Major Issues(4). Transfer by bus is not practical due to mass transit nature of HSR. Transfer by other modes such as LRT will require further large investment.

Comments in Northern City/Provinces (5)

Nghe An Province (Vinh Station)

Comments	Response of JICA Study Team
An emphasis was expressed on the importance of HSR connecting Hanoi and Vinh.	- Noted. JST recommends that it should be a part of the North South Corridor by connecting the HSR with existing railway
Alignment and station location of HSR has been integrated in the Provincial Master Plan, which was approved by MOT, based on the KOICA study. Urban plan has also been formulated by incorporating this idea, considering (i) the least cost of land acquisition, and (ii)straight and shorter alignment.	- Noted. JST will modify the alignment so that it will be more straight. However, the connectivity at the terminal station is crucial and JST will recommend the HSR station at the location of the existing station from the long history of HSR in Japan and in the world.
Even HSR station is located in suburban area, distance between the HSR station and existing VR station is about 4-5 km which will be connected with wide road.	- See Major Issues(4). Transfer by bus is not practical due to mass transit nature of HSR. Transfer by other modes such as LRT will require further large investment.
Providing a new station in priority industrial development area is desired to farther accelerate industrial development.	- See Major Issues(5). The new station may be considered with the demand, distance between the stations.

General Responses from Stakeholders [South Section]

Comments in Southern City/Provinces (1)

Khanh Hoa Province (Nha Trang Station)

Comments	Response of JICA Study Team
To confirm if the alignment is properly planned by avoiding the planned administration area in Vinh Thai, in accordance with the comments by the province given prior to the SHM	- Alignment was revised accordingly and the location of the station was also adjusted with the change.
Development of HSR must be accelerated.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future.
Congestion in roads is becoming serious as it is the most utilized mode of transport now and its traffic is increasing.	- Noted.
How to acquire the land for such a long-term project in the urban and urbanizing areas while the construction is still uncertain must be considered.	- Since this is the long term project, land use plan compatible with the HSR alignment should be prepared after the official commitment.
Eastern side of this Province (coastal area) is more populated. This point needs to be considered for alternative analysis.	- See Major Issues (3). - The analysis was done objectively
Detail cost should be clarified.	- It will be clarified in DfR/FR.

Comments in Southern City/Provinces (2)

Ninh Thuan Province (Thap Cham Station)

Comments	Response of JICA Study Team
Strong need and demand for and desire to development of HSR were expressed.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future.
Since the agricultural area (especially irrigated area) is limited and important in this province, land acquisition of the agricultural area should be minimized.	- Alt 1 has the least impact of overall environmental and social aspects. JICA Study Team propose the appropriate steps for the compensation.
Station location options: (i) at existing Thap Cham station (Alt1), (ii) in a few hundreds meter north from existing station, (iii) along the express way considering future demands (Alt3).	- Alt 1 is planned so that to have the best connectivity with the existing railway. The station will be elevated so that the land acquisition has a minor impact only.
Viaduct is preferred considering (i) the impact on water flow, (ii) possible exposure of underground radioactive elements distributed during the war by excavating filling materials of embankment, and (iii) segregation of land use and communities.	- See Major Issues (2). - Issue (ii) will be monitored in the construction phase.
Urban drainage (flood) and conflict with other traffic by crossing must be farther considered.	-Viaduct will be applied in the city area to avoid such problems.

Comments in Southern City/Provinces (3)

Binh Thuan Province (Phan Thiet Station and Tuy Phong Station)

Comments	Response of JICA Study Team
To consider the alignment mainly in the western side of NH1A and planned expressway to minimize the impact on agricultural areas and possibly reduce land acquisition cost. To minimize crossings with national highways.	- Alternative 1 was set in accordance with the comments and shifted to the west side of NH1A.
Between Phan Thiet and Tuy Phong, alignment should be as straight as possible like Alternative 2 because this sandy area is not populated and land acquisition is easier.	- Since this sandy area is not recommended at all from the engineering view (both construction and maintenance), alignment should not pass through this sandy area.
To move Phant Thiet HSR station to planned Le Duan Road side area because the road will be completed by 2020.	- Considering convenience of passengers, the HSR station should be developed in the station area of new Phan Thiet Station.
To provide a new HSR station in Tan Nghia area.	- See Major Issues (5). - Some facility (ex. signal station) may be placed for future station development.
Station location of Tuy Phong is generally accepted.	- Noted. Integrated development will be proposed in DfR and FR.

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Comments in Southern City/Provinces (4)

Dong Nai Province (Long Thanh Station)

Comments	Response of JICA Study Team
Early completion of HCMC – Long Thanh section is preferred because the opening of the airport is scheduled in 2020.	- See Major Issues (1) - The schedule depends on the economy and demand of Vietnam in the future.
Alternative 1 which enters to the airport is preferable. However, advantage of Alternative 3 on airport security and reduction in traffic load on airport access road must also be considered.	- Alt 1 is recommended from the view point of demand and convenience. - security and traffic load will be further explained in this presentation.
Additional HSR station in the areas either in Long Khanh or Cam My is proposed because of long distance of 117 km between Long Thanh and Phan Thiet stations. New HSR station can improve the accessibility to/ from Ba Ria area and attract new developments.	- See Major Issues (5). - Some facility (ex. signal station) may be placed for future station development.
Intersections of HSR with NH51, Long Thanh – Dau Giay Expressway and planned freight railway need careful planning. Coordination and information exchange with relevant agencies are necessary.	- The intersection is already considered, and the information will be shared with relevant agencies.

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Comments in Southern City/Provinces (5)

Ho Chi Minh City (Thu Thiem/Hoa Hung Station)

Comments	Response of JICA Study Team
Participants could understand that the future of the north south railway system is consisted of A2 (partially B1) of the existing railway with HSR.	- Noted.
The importance and necessity of HSR is agreed, and the roadmap for the development of HSR will be further elaborated and concretized especially because the investment is huge.	-The schedule of the investment is studied from demand, economical and financial aspects and explained in DfR and FR.
The terminal station for HCMC should be Thu Thiem Station, which is consistent with the existing plans of HCMC. The land area of 17ha for the station and 200 ha for depot area is already secured.	-JICA Study Team will propose the plan setting Thu Thiem Station as the terminal of the south section.
Fare setting is important. The demand, and necessary subsidy will be affected by the fare setting.	- The appropriate fare level will be further studied and explained in DfR and FR.

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Result of Questionnaires

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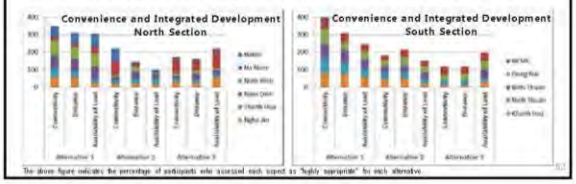
Results of Questionnaire in SHM (1)

In order to gain insights from various participants as much as possible, a questionnaire survey was conducted in the SHM. The number of valid response was 297 from 11 target cities/provinces.

- Project Awareness: **95% were aware** of the project. While **99% were in favor** of the project, **55% signified HSR as suitable for short-term while 44% favored for long-term plan**.
- Benefits and Impacts: Benefits cited as "most significant" were **"high travel speed and time savings (69%)", "safe transport service (72%)", and "increase in tourism (59%)"**.
- Regarding convenience and integrated development, results have indicated that **Alternative 1 is most advantageous** for most provinces. (see figures below)



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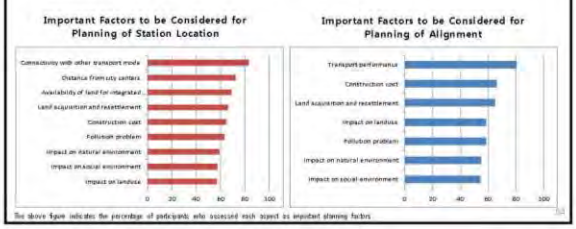
Results of Questionnaire in SHM (2)

- Issues and Concerns: While a majority indicated generally a limited impact to natural and social environment, high impacts to certain areas were noted for consideration. Such include **"land acquisition and resettlement (49%)"**, and **"displacement of residential and business communities (37%)."**
- Planning Factors Concerned: Results indicate that **"connectivity with other transport modes (83%)"** is agreed as most important to consider the location of station, and **"transport performance (81%)"** is agreed most important for alignment. (see figures below)



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Reflection of Comments from Stakeholders

Reflection of Comments from City/Provinces in North Section

City/Province	Main Discussion Points	Reflection on Comments
Hanoi	- Terminal station options (Hanoi Station or Ngoc Hoi Station). - The alignment in Ha Noi City	- HSR's station will be planned beside Ngoc Hoi station of UMRT Line1 - Shift the alignment to be consistent with City's Development Plan
Ha Nam	The alignment in Ha Nam Province	- Shift the alignment east side of Highway to minimized the social impact by land acquisition - Shift the HSR's station to be consistent with City's Development Plan
Nam Dinh	The alignment in Nam Dinh Province	- Shift the alignment a little toward west side due to alignment from Ha Nam province and location of Phu Ly station - HSR's station will be planned at crossing point with existing railway

Note: Shift the alignment as mentioned above, but all alignment radius is kept R≥6000m and all stations will be planned on the straight alignment section

Reflection of Comments from City/Provinces in North Section

Province	Main Discussion Points	Reflection on Comments
Ninh Binh	Alignment	- Shift the alignment to mountain area to avoid military lands and populated town. - HSR's station will be planned parallel to current railway & station
Thanh Hoa	Alignment passing through Bim Son/Ha Trung (except residential area)	- Shift the alignment to east side of cement factory to avoid important development areas. - HSR's station will be planned at crossing point with existing railway
Nghe An	Alignment The location of HSR's Vinh station and depot	- Shift the alignment considering populated area and industrial zones. - The learning from Japanese and world's long history of HSR shows the importance of the connection of HSR and the existing railway especially at the terminal stations. - Location of Depot is set at the south of Vinh station.

Note: Shift the alignment as mentioned above, but all alignment radius is kept R≥6000m and all stations will be planned on the straight alignment section

Reflection of Comments from City/Provinces in South Section

Province	Main Discussion Points	Reflection on Comments
Khanh Hoa	To confirm if planned provincial administrative area is avoided in accordance with the comments by the province prior to SHM	It was confirmed that the alignment presented in SHM will not affect the planned administrative area.
Ninh Thuan	Station Location and Alignment	No specific comments requiring actions.
	Viaduct is preferable to embankment because of agricultural land and hydrology issues	In-depth study was conducted and clarified followings. (i) The affected paddy land area is only 0.3% of the total agricultural land in Ninh Thuan Province. Alignment should be evaluated from comprehensive aspects, and viaduct or embankment issues are related especially to balancing resettlement / land acquisition and construction cost. (ii) 4 Box culverts/km will be suitable to solve the hydrology issues

Reflection of Comments from City/Provinces in South Section

Province	Main Discussion Points	Reflection on Comments
Binh Thuan	To confirm the route west of Phan Thiet Sta. is on the west side of the NH 1A in accordance with the comments by the province prior to SHM	It was confirmed that the alignment presented in SHM runs on the west side of NH1A parallel with Dau Giay-Phan Thiet express highway.
	Phan Thiet Sta. should be moved outside of the city, to the west	In-depth study result shows the importance of connecting HSR with existing line for the success of HSR
	Route between Phan Thiet and Tuy Phong should run straight through sand area	In-depth study result shows the difficulties on construction, maintenance when alignment go through sand area.
Dong Nai	How to ensure the security and safety when HSR runs through the center of LTIA	In-depth study result shows that the HSR Station location to be in the center of the airport from passengers' convenience and because it will not cause any problem.
HCMC	Comparison of the station locations in Thu Thiem and Hoa Hung	In-depth study result shows the advantages / disadvantages of each station location

Important Topics for Responding to Comments in 2nd SHM in Cities/Provinces

In order to respond to the comments made by stakeholders during 2nd SHM in Cities/Provinces, followings are the major topics which needs further study. The study result will be shown in the Part III of this plenary session.

- Why the connectivity of HSR and the existing railway is important.
- What is the important issues for the successful integrated development after the open of HSR station.
- How to consider the station setting.

Part III-1 In-depth Study on Common Topics for the Selection of Optimal Alternative

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG
SECTIONS

Plenary Session of 2nd Stakeholder Meetings

Part III-1
In-depth Study on Common Topics for the Selection of Optimal Alternative

JICA Study Team

Contents

- Importance of Connectivity
- Integrated Development
- Concept of Setting Station

Common Topics for Further In-depth Study

Among many comments from cities/provinces, there are three common topics which relate to each other:

- Connectivity of HSR/Existing Railway
- Integrated Development
- Station Setting

Connectivity
- Passengers' convenience
- Feeder function
- North-South Corridor by combination of HSR and the existing railway
- Competition with other transportation modes

Integrated Development
- Connectivity (convenience) is important to attract investment
- Station is better to be close to the city center

Station Setting
- Concept for addition of new station
- Terminal station are important to consider the total railway corridor

Importance of Connectivity

Importance of Connectivity

WHY HSR should be connected with other transportation modes, especially existing railway?

- Convenience of passengers will be the key for the success of HSR system, in order to attract more passenger and more investment for integrated development, to form railway corridor, and to compete with other transportation modes.

Experience in Japan: Tokaido Shinkansen (HSR) and Tokaido-line (conventional railway/CR)

- Before 1964: CR service was for long distance over 600 km (maximum approx. 1,575km)
- After 1964: HSR took over long distance service. Long distance service of CR was significantly decreased.
- Current: CR runs shorter sections mostly around 100km sections and even shorter sections like 30km for busy hours. In the busy hours, trains run less than every 5 minutes especially near large cities.

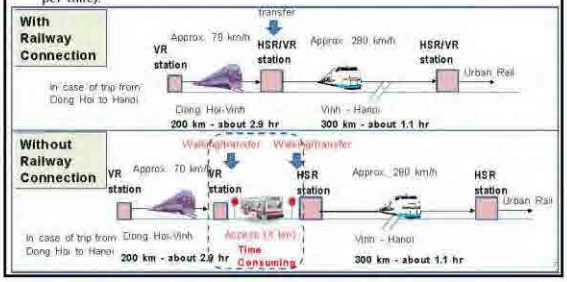
Importance of Connectivity (Integration of HSR and CR in Japan)

Experience in Japan: Tokaido Shinkansen (HSR) and Tokaido-line (conventional railway/CR)

Tokai Corridor in Japan
Mishima-Toyohashi Section

Importance of Connectivity (North-South Corridor)

- HSR and existing railway form the integrated North-South Railway Corridor.
- The easy transfer will reduce the travelling time.
- Transfer by bus/car between stations will be inefficient causing long waiting time for passengers due to the large capacity of Railway Transport (over 1,000 passengers per time).



Importance of Connectivity (Feeder Function)

Q: What is the advantage of integration of HSR and the existing railway?

Image of Feeder Function of Existing Railway

A: 1. With planned A2 level improvement, the existing railway comes **every 30 minutes**.
2. Passengers take the **existing railway to reach HSR station**, or passengers come to **HSR stations to transfer to continue their trip to the local stations** of the existing railways

Importance of Connectivity (Station in City Center with Connectivity)

- HSR will face **the competition against air and road** soon after its operation.
- Vietnam HSR should **maximize the advantage of HSR** (ex. **short access time punctuality / high frequency etc**) by the considering the strategic location station with connectivity.

Competition of HSR and Air in Japan

Origin	Destination	Km	Mode	Access Time		Travel Time	Total Time	Frequency (Aug2012)
				Origin	Destination			
Tokyo	Osaka (Itami/Air)	500	HSR	0:00	0:13	2:33	2:46	130
			Air	0:57	0:55	1:05	2:57	30
Tokyo	Hiroshima	900	HSR	0:00	0:00	3:52	3:52	Direct:50 Transfer:130
			Air	0:59	1:01	1:20	3:20	17
Osaka (Itami/Air)	Hakata	630	HSR	0:09	0:00	2:28	2:37	70
			Air	0:59	0:28	1:15	2:42	16

Integrated Development

Urban Development with HSR Station Development

- Successful urban development have been achieved with feeder railway network. (With better connectivity, more ridership and economic activity)
- Without convenient railway connections, many cities have failed urban development (in Japan, Taiwan, Korea, etc)

Urban Development around HSR Station (Shin-Yokohama Station, Japan)

Source : Blog@shinyokohama

Urban Development with HSR Station Development

[Experience in Taiwan HSR]

Station Planning Concept

- Outside city center
- Aiming at developing new urban area
- To be connected with existing city center with new roads, and other new transportation (mono-rail/light rail/trams)

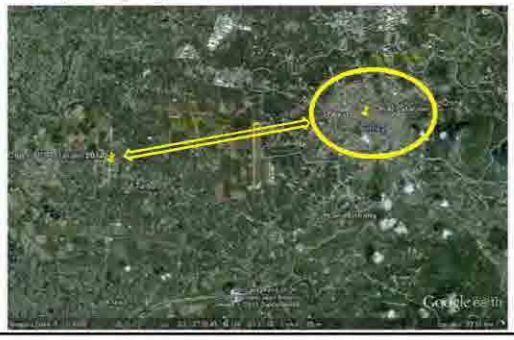
Current Situation (after 5 years of its operation)

- Not enough investment on new connection and city development
- Most new station areas are not developed yet as planned.
- No financial benefit as expected from the private investment around station area

To attract private investment, convenience is also the key.

Urban Development with HSR Station Development

[Taiwan Experience] Chiayi Station Area



Urban Development with HSR Station Development

[Taiwan Experience] Chiayi Station Area: Nearly 4 years after open

Basic Concept for Station Setting

Criteria for Setting Station Locations

i. Provincial Capitals, if alignment allows.
ii. Larger towns (ex. class III) along the alignment.
iii. Special location for passengers' convenience

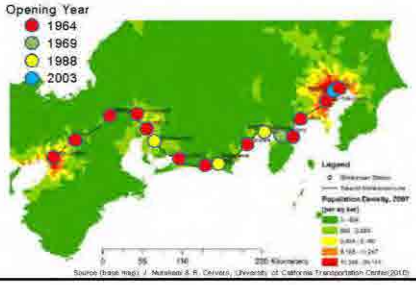
Stations Set and Related Criteria (North and South Section)

Station	i	ii	iii	Station	i	ii	iii
Ngoc Hoi	✔	✔	✔	Nha Trang	✔	✔	
Phu Ly	✔	✔		Thap Cham	✔	✔	
Nam Dinh	✔	✔		Tuy Phong		✔	
Ninh Binh	✔	✔		Phan Thiet	✔	✔	
Thanh Hoa	✔	✔		Long Thanh			✔
Vinh	✔	✔		Thu Thiem	✔	✔	✔

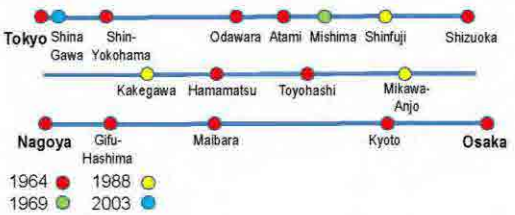
✓ Other stations may be developed later if there is 1) enough demand with 2) potential of integrated development.

Incremental Development of HSR Stations

- Tokaido Shinkansen (HSR) started operation in 1964 with 12 stations and currently (2012) with 17 stations.
- Tokyo-Osaka: 515.4 km



Concept of Station Setting (Experience in Japan)



Reasons to Increase Stations

- 1969: To increase convenience and integrated development
- 1988: To increase convenience and integrated development
- 2003: To increase operational capacity of HSR

Basic Concept for Additional Station

For HSR in Vietnam, following areas mentioned during SHMs may be considered for potential station locations in the future:

Areas	Important Considerations as New Station
Hoang Mai Town	**Priority area for urbanization** in Nghe An Province (future plan for expansion of town), near Nghi Son **IZ** (major oil refinery factory)
Tan Nghia Town	**Priority area for urbanization** in Binh Thuan Province, benefits **La Gi Town** (planned to become 2nd largest urban area after Phan Thiet City) as well
Long Khanh Town	Urbanized area in Dong Nai Province (**2nd largest urban area in province** after Bien Hoa City), near Cam My **High-tech IZ**

➡ ***JST has set the alignment so that the future station development for three areas above is possible.***

Important Considerations on Terminal Stations

- With regard to the Terminal Stations, the follows are needed to be confirmed and secured.
  - Hanoi and HCMC: it has to be **connected with urban railway** to access city center.
  - Vinh and Nha Trang: it has to be **connected with the existing railway** to be the part of North-South Railway System with smooth transfer.
  - All terminals: **the potential extension of HSR** should be kept in the mind.

Station	Important Considerations as Terminal
- Ha Noi (Ngoc Hoi Station)	- Connection with urban railway (Line 1) / existing railway - Potential extension to North (Hanoi Station, etc))
- HCMC (Thu Thiem Station)	- Connection with urban railway (Line 2) - Potential extension to South (Can Tho, etc)
- Vinh and Nha Trang	- Connection with the existing railway - Potential extension of HSR

Part III-2 Optimal Alternative for Alighment and Station Locations (North Section)

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG
SECTIONS

Plenary Session of 2nd Stakeholder Meetings

Part III-2
Optimal Alternative for Alignment and Station Locations (North Section)

JICA Study Team

Contents

- Alternative 1 by JICA Study Team in North Section after the Discussion with Cities/Provinces
- Detail of Revised Alternative 1
- Re-scoring of Alternatives to Select Optimal One

Alternative 1 by JICA Study Team in North Section after the Discussion with Cities/Provinces

Meeting with City/Provinces in North Section

➢Summary of SHM held in each Province

Section	Province	HSR Station	Date	No of Attendance			
				Province	MOT	VR	JICA Study Team
North	Nghe An	Vinh	23/7/2012	52	0	6	9
	Thanh Hoa	Thanh Hoa	24/7/2012	36	0	6	9
	Ninh Binh	Ninh Binh	25/7/2012	55	0	6	9
	Nam Dinh	Nam Dinh	26/7/2012	21	0	6	9
	Ha Nam	Phu Ly	27/7/2012	34	0	6	9
	Hanoi	Ngoc Hoi	30/7/2012	31	4	9	13

➢Summary of Follow Up Meeting held in each Province

Section	Province	HSR Station	Date	No of Attendance			
				Province	MOT	VR	JICA Study Team
North	Nghe An	Vinh	3/8/2012	2	–	–	7
	Thanh Hoa	Thanh Hoa	6/8/2012	4	–	–	7
	Ninh Binh	Ninh Binh	6/8/2012	9	–	–	7
	Nam Dinh	Nam Dinh	7/8/2012	9	–	–	7
	Ha Nam	Phu Ly	7/8/2012	4	–	–	7
	Hanoi	Ngoc Hoi	9/8/2012	9	–	–	8
			13/8/2012	2	–	–	8

Reflection of Comments from City/Provinces in North Section

City/Province	Main Discussion Points	Reflection on Comments
Hanoi	- Terminal station options (Hanoi Station or Ngoc Hoi Station). - The alignment in Ha Noi City	- HSR's station will be planned beside Ngoc Hoi station of UMRT Line1 - Shift the alignment to be consistent with City's Development Plan
Ha Nam	The alignment in Ha Nam Province	- Shift the alignment east side of Highway to minimized the social impact by land acquisition - Shift the HSR's station to be consistent with City's Development Plan
Nam Dinh	The alignment in Nam Dinh Province	- Shift the alignment a little toward west side due to alignment from Ha Nam province and location of Phu Ly station - HSR's station will be planned at crossing point with existing railway

Note: Shift the alignment as mentioned above, but all alignment radius is kept R≧6000m and all stations will be planned on the straight alignment section

Reflection of Comments from City/Provinces in North Section

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Thanh Hoa	Alignment passing through Bim Son/Ha Trung (except residential area)	- Shift the alignment to east side of cement factory to avoid important development areas. - HSR's station will be planned at crossing point with existing railway
Nghe An	Alignment The location of HSR's Vinh station and depot	- Shift the alignment considering populated area and industrial zones. - The learning from Japanese and world's long history of HSR shows the importance of the connection of HSR and the existing railway especially at the terminal stations. - Location of Depot is set at the south of Vinh station.

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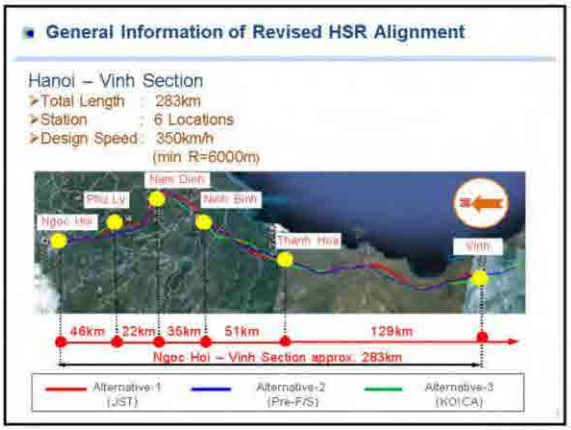
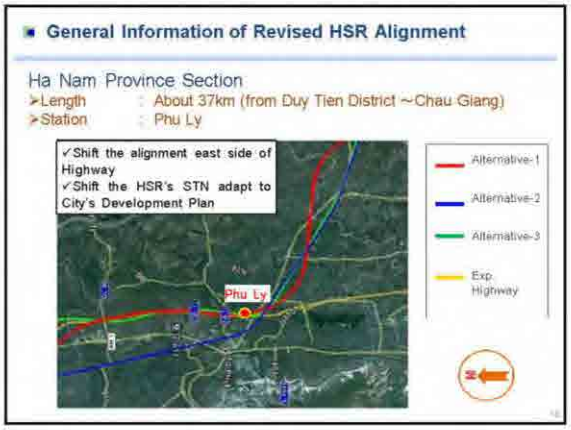
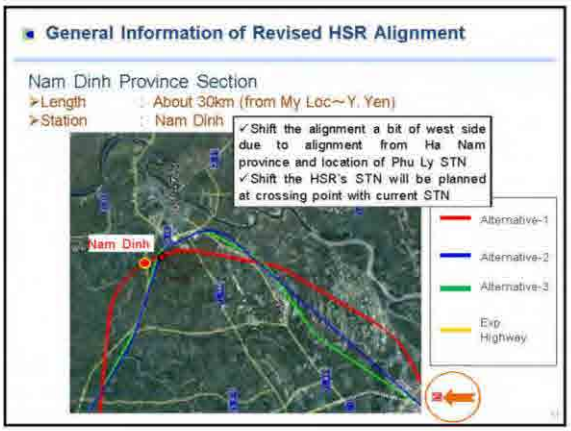
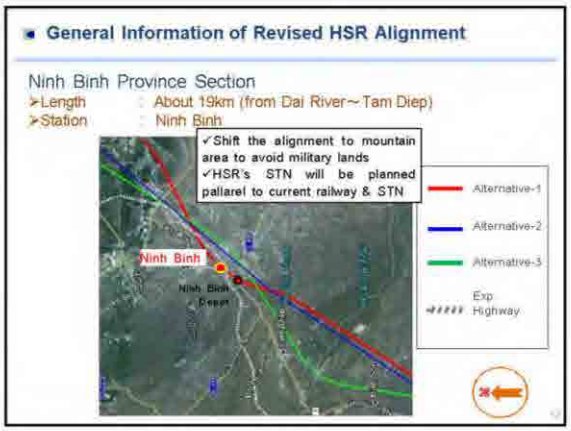

General Information of Revised HSR Alignment
Hanoi – Vinh Section
Total Length : 283km
Station : 6 Locations
Design Speed : 350km/h
(min R=6000m)
Nam Dinh
Phu Ly
Ninh Binh
Ngoc Hoi
Thanh Hoa
Vinh
46km
22km
35km
51km
129km
Ngoc Hoi – Vinh Section approx. 283km
Alternative-1 (JST)
Alternative-2 (Pre-F/S)
Alternative-3 (KOICA)


Detail of Revised Alternative 1


General Information of Revised HSR Alignment
Hanoi Section
Length : About 28km (Until Phu Xuyen District)
Station : Ngoc Hoi
Ngoc Hoi
Ngoc Hoi Alternative
Alternative-1
Alternative-2
Alternative-3
Highway
Shift the alignment adapt to City's Development Plan
HSR's station will be planned beside of Ngoc Hoi STN of Line-1


General Information of Revised HSR Alignment
Ha Nam Province Section
Length : About 37km (from Duy Tien District ~Chau Giang)
Station : Phu Ly
Shift the alignment east side of Highway
Shift the HSR's STN adapt to City's Development Plan
Phu Ly
Alternative-1
Alternative-2
Alternative-3
Exp. Highway

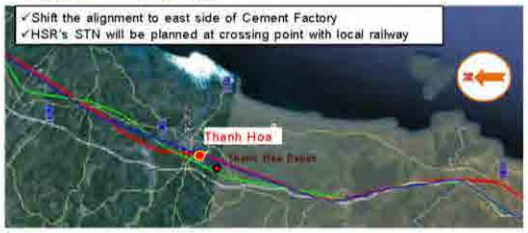

General Information of Revised HSR Alignment
Nam Dinh Province Section
Length : About 30km (from My Loc~Y. Yen)
Station : Nam Dinh
Shift the alignment a bit of west side due to alignment from Ha Nam province and location of Phu Ly STN
Shift the HSR's STN will be planned at crossing point with current STN
Nam Dinh
Alternative-1
Alternative-2
Alternative-3
Exp. Highway


General Information of Revised HSR Alignment
Ninh Binh Province Section
Length : About 19km (from Dai River~Tam Diep)
Station : Ninh Binh
Shift the alignment to mountain area to avoid military lands
HSR's STN will be planned pallarel to current railway & STN
Ninh Binh
Ninh Binh Depot
Alternative-1
Alternative-2
Alternative-3
Exp. Highway

General Information of Revised HSR Alignment

- Than Hoa Province Section
  - Length : About 96km (from Bim Son~Tinh Gia)
  - Station : Thanh Hoa

✓Shift the alignment to east side of Cement Factory
✓HSR's STN will be planned at crossing point with local railway

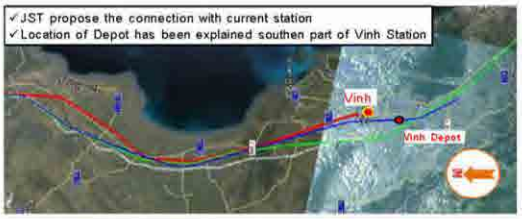


Alternative-1 Alternative-2 Alternative-3 Exp. Highway

General Information of Revised HSR Alignment

- Nghe An Province Section
  - Length : About 74km (from Quynh Luu)
  - Station : Vinh

✓JST propose the connection with current station
✓Location of Depot has been explained southen part of Vinh Station



Alternative-1 Alternative-2 Alternative-3 Exp. Highway

Re-scoring of Alternatives to Select Optimal One

Alternatives and Potential Stations in North Section

Ha Noi – Vinh Section

Alt-1 Alt-2 Alt-3

Draft Selection Result of Optimal Alternative

- **HSR is the holistic system**, and it has to be evaluated from comprehensive view points, rather than just summing up the partial evaluation.
- In this study,
  - Alignment and station locations of **(1)North Section** and **(2) South Section**, will be evaluated through **comprehensive considerations of following four aspects**, or
  - (i) Convenience and integrated development, (ii) environmental and social considerations, (iii) high speed serviceability and engineering , and (iv) construction cost.

Result of Overall Evaluation (North Section)

Convenience and Integrated Development	Alt1	Alt2	Alt3
OVERALL EVALUATION	**A**	**B**	**B**
1) Ha Noi	A	A	A
2) Ha Nam	A	B	A
3) Nam Dinh	A	C	C
4) Ninh Binh	B	C	C
5) Thanh Hoa	A	B	C
6) Nghe An	A	C	B
Environmental and Social Considerations	**Alt1**	**Alt2**	**Alt3**
OVERALL EVALUATION	**A**	**B**	**B**
1) Ha Noi	A	A	A
2) Ha Nam	A	A	A
3) Nam Dinh	A	B	B
4) Ninh Binh	A	A	A
5) Thanh Hoa	A	B	B
6) Nghe An	A	A	A

Draft Result of Overall Evaluation (North Section)

Aspect/Indicators	Alt1	Alt2	Alt3
OVERALL EVALUATION	**A**	**C**	**B**
1) Convenience and Integrated Development	**A**	**B**	**B**
2) Environmental and Social Considerations	**A**	**B**	**B**
2)-1 Natural Environment	(A)	(B)	(B)
2)-2 Pollution	(A)	(C)	(B)
2)-3 Social Environment	(A)	(A)	(A)
3) High Speed Serviceability and Engineering	**A**	**B**	**C**
4) Construction Cost	**B**	**D**	**A**

- From comprehensive evaluation, Revised Alternative 1 is suggested to be the optimal alignment and station locations among three.

Discussions

- The evaluation and the optimal alignment presented is the draft, and final evaluation will be conducted reflecting the discussions of these plenary meetings in Hanoi and HCMC
- Thus, the comments from participants are very important for the finalization.
- **Final selection result will be shown in the 3rd SHM in October or November 2012.**

Back Data-1

Basic Policy

- For HSR operation with V=350km/h, Alignment has planned with curve radius of R≥6000m .

Curved section with R<6000m

Study	The number of Curve section R<6000m	Curved length /Total length (Km)	Percent (%)	Remark
JST (Alternative-1)	0	0/283 Km	0	
Pre-Fs (Alternative-2)	3	9.13 Km / 283Km	3.0 %	R = 3000m: 1 Location R = 5000m: 1 Location R = 4000m: 1 Location
JICA (Alternative-3)	21	48.40Km / 281 Km	17.02 %	R = 2000m: 3 Locations R = 2500m: 1 Location R = 5000m: 16 Locations

- The route has selected following subjects as much as possible; i.e. Resident area, Sanctuary Forests, Temples, Churches, Gravels, Military Lands, Schools, Factories and so on.

Part III-3 Optimal Alternative for Alighment and Station Locations (South Section)

STUDY FOR THE FORMULATION OF
HIGH SPEED RAILWAY PROJECTS
ON HANOI-VINH AND HO CHI MINH-NHA TRANG
SECTIONS

Plenary Session of 2nd Stakeholder Meetings

Part III-3
Optimal Alternative for Alignment and Station Locations (South Section)

JICA Study Team

Contents

- Alternative 1 by JICA Study Team in South Section after the Discussion with Cities/Provinces
- In-depth Study Reflecting on Comments
- Re-scoring of Alternatives to Select Optimal One

Alternative 1 by JICA Study Team in North Section after the Discussion with Cities/Provinces

Consultation with City/Provinces in South Section

➢Summary of Meetings with Provinces before SHM

Section	Province	HSR Station	Date	Province Representative	No. of Attendance	
					Province	JICA Study Team
South	Khanh Hoa	Nha Trang	31/5/2012	Chairman	10	4
	Ninh Thuan	Thap Cham	1/6/2012	Vice chairman	6	4
	Binh Thuan	Tuy Phong, Phan Thiet	8/6/2012	DOT Deputy Director	10	5
	Dong Nai	Long Thanh	7/6/2012	DOT Deputy Director	6	5
	HCMC	Thu Thiem /Hoa Hung	18/5/2012	DOT Deputy Director	3	4

➢Summary of SHM held in each Province

Section	Province	HSR Station	Date	No. of Attendance			
				Province	MOT	VR	JICA Study Team
South	Khanh Hoa	Nha Trang	9/7/2012	54	1	4	6
	Ninh Thuan	Thap Cham	11/7/2012	43	1	4	6
	Binh Thuan	Tuy Phong, Phan Thiet	12/7/2012	23	1	4	6
	Dong Nai	Long Thanh	13/7/2012	29	1	4	6
	HCMC	Thu Thiem /Hoa Hung	10/8/2012	48	0	6	9

➢Report on alignment based on the result of SHMs were sent for clarification.

Reflection of Comments from City/Provinces in South Section

Province	Main Discussion Points	Reflection on Comments
Khanh Hoa	To confirm if planned provincial administrative area is avoided in accordance with the comments by the province prior to SHM	It was confirmed that the alignment presented in SHM will not affect the planned administrative area.
Ninh Thuan	Station Location and Alignment	No specific comments requiring actions.
	Viaduct is preferable to embankment because of agricultural land and hydrology issues	In-depth study was conducted and clarified followings. (i) The affected paddy land area is only 0.3% of the total agricultural land in Ninh Thuan Province. Alignment should be evaluated from comprehensive aspects, and viaduct or embankment issues are related especially to balancing resettlement / land acquisition and construction cost. (ii) 4 Box culverts/km will be suitable to solve the hydrology issues

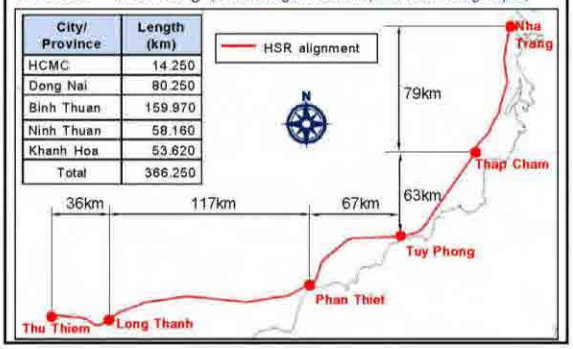
Reflection of Comments from City/Provinces in South Section

Province	Main Discussion Points	Reflection on Comments
Binh Thuan	To confirm the route west of Phan Thiet Sta. is on the west side of the NH 1A in accordance with the comments by the province prior to SHM	It was confirmed that the alignment presented in SHM runs on the west side of NH1A parallel with Dau Giay-Phan Thiet express highway.
	Phan Thiet Sta. should be moved outside of the city, to the west	In-depth study result shows the importance of connecting HSR with existing line for the success of HSR
	Route between Phan Thiet and Tuy Phong should run straight through sand area	In-depth study result shows the difficulties on construction, maintenance when alignment go through sand area.
Dong Nai	How to ensure the security and safety when HSR runs through the center of LTIA	In-depth study result shows that the HSR Station location to be in the center of the airport from passengers' convenience and because it will not cause any problem.
HCMC	Comparison of the station locations in Thu Thiem and Hoa Hung	In-depth study result shows the advantages / disadvantages of each station location

Station Locations and Alignment in South Section

➢HCMC – Nha Trang (Total Length：366km (until Nha Trang depot)

City/ Province	Length (km)
HCMC	14.250
Dong Nai	80.250
Binh Thuan	159.970
Ninh Thuan	58.160
Khanh Hoa	53.620
Total	366.250



In-depth Study Reflecting on Comments

Station Locations and Alignment in South Section (1)

➢Alternative 1 in Khanh Hoa Province (Total Length：54km)

➢Alternative 1 in Ninh Thuan Province (Total Length：58km)

Confirmed Alignment in Khanh Hoa Province

➢ In 2nd SHM in Khanh Hoa, participants confirmed that alignment avoided the planned administrative area in accordance with the comments from the province.

Study on Paddy Area in Ninh Thuan Province

Ninh Thuan Province showed concern on the land acquisition of paddy area and preferred viaduct structure of Alt2 to embankment structure of Alt1/3. Additional study result is as follows.

- Alt1 was planned so that overall environmental and social impact is minimized. (Table-1)
- Paddy area affected by HSR (Alt1) is only **0.26%** of total paddy area in Ninh Thuan. (Table-2)
- Since the cost impact may **affect the project feasibility** and its **investment schedule** severely, balanced considerations on cost and impact should be made.

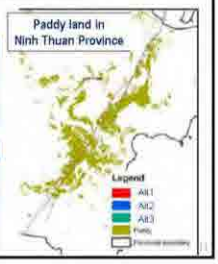
Table-1 Impact on Environment

Impact	Alt1	Alt2	Alt3
Natural	B(Good)	B(Good)	B(Good)
Pollution	B(Good)	C(Fair)	D(Worse)
Social	B(Good)	D(Worse)	C(Fair)

Table-2 Impact related to Paddy

Impact	Alt1	Alt2	Alt3
Affected Paddy (% of total area)	56ha (0.26%)	34ha (0.15%)	67ha (0.29%)
Cost per km (Paddy Section)	5.2 million USD/km	20.1 million USD/km	5.2 million USD/km

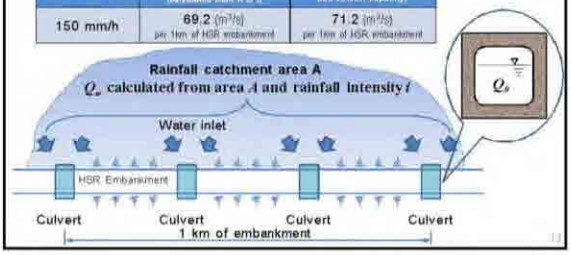
Cost: estimated land price + compensation+ civil construction work



Study Result on Hydrology in Ninh Thuan Province

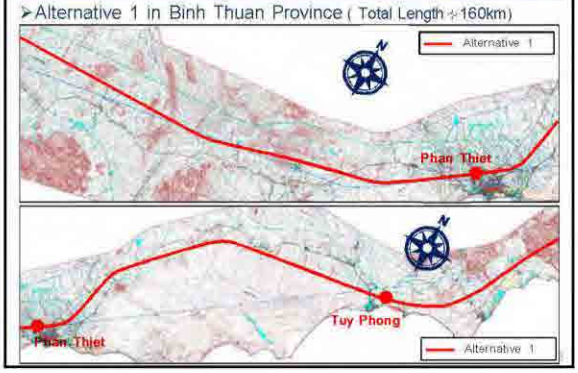
- Retention of rain water can be minimized through box culverts.
- Based on hydrological calculation, if 4 locations of box culverts of 2.0m x 2.0m for drainage are planned per 1km along the embankment of HSR, discharge capacity is estimated to be enough for 150 mm/h rainfall.

Assumed rainfall intensity I	Estimated maximum rainfall discharge Qw in Ninh Thuan (calculated from A & I)	Planned Discharge Qe (calculated from box culvert capacity)
150 mm/h	69.2 (m^3/s) per 1km of HSR embankment	71.2 (m^3/s) per 1km of HSR embankment



Station Locations and Alignment in South Section (2)

➢ Alternative 1 in Binh Thuan Province (Total Length ≒160km)

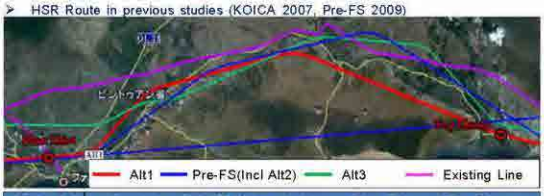


Confirmed Alignment in Binh Thuan Province

➢ In 2nd SHM in Binh Thuan, participants confirmed that alignment is set to the east of National Highway 1A in accordance with the comments from the province.

Study on Alignment in Binh Thuan Province

➢ HSR Route in previous studies (KOICA 2007, Pre-FS 2009)

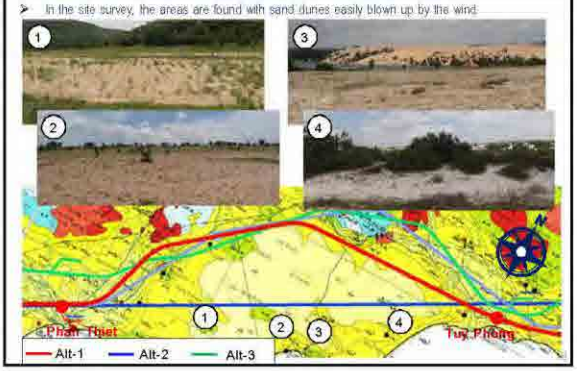


Study of	Conclusion for HSR Alignment between Phan Thiet and Tuy Phong
KOICA (Alt3)	Detour Route to avoid sand area (crossing Existing Line twice)
Pre-FS (incl Alt2)	Giving 2 alternatives, but concluding that the most appropriate route is the Detour Route to avoid sand area (crossing Existing Line twice)
JST (Alt1)	Reviewing previous studies, carrying out the geological investigation in the sand area and determining the Detour Route to avoid sand area (no crossing with Existing Line)

In meeting with Binh Thuan province in 8th June 2012, many discussions have been done about the straight route from Phan Thiet to Tuy Phong, therefore JST has selected this route as Alt-2 for further study and comparison.

Study on Alignment in Binh Thuan Province

➢ In the site survey, the areas are found with sand dunes easily blown up by the wind



Study on Alignment in Binh Thuan Province

➢ Sand Areas are also found easy to collapse by rainfall as following photos

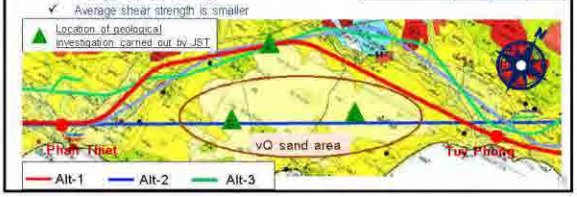
Study on Alignment in Binh Thuan Province

➢ In **Geology and Mineral Resources** (Department of Geology and Minerals of Vietnam), it is reported that
- ✓ vQ sand area is formed by the wind and continues to change
- ✓ Many sand dunes move each year causing traffic jam, burying many field and garden

➢ As result of geological investigation, compared to location A location B,C are found easy to collapse due to
- ✓ Top layer (0~6m) is loose
- ✓ Average void ratio e is larger
- ✓ Average shear strength is smaller

Laboratory test result by JST

	Location		
	A	B	C
Top layer (0~6m)	dense	loose	loose
Average void ratio e	0.569	0.631	0.603
Average shear strength (kg/cm²)	0.672	0.620	0.624



Study on Alignment in Binh Thuan Province

- Risks of Running through Undifferentiated Quaternary/Eolian Deposits vQ

Station Locations and Alignment in South Section (3)

- Optimal route in Dong Nai Province (Total length ≒80km)

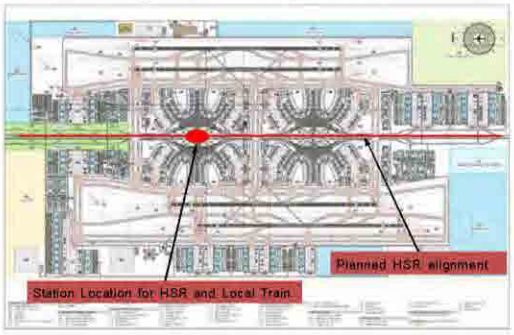
- Optimal route in HCMC (Total Length ≒14km)

Long Thanh Station Location Comparison

- HSR station location in Long Thanh International Airport Master Plan

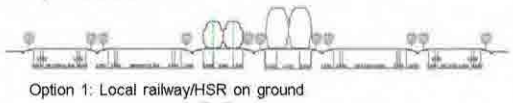
Long Thanh Station Location Comparison

- HSR location in Long Thanh International Aiport Master Plan



Long Thanh Station Location Comparison

- Cross Section of Airport Access (Road and Railway) in Airport Master Plan



Option 1: Local railway/HSR on ground

Option 2: Local railway on ground / HSR open cut

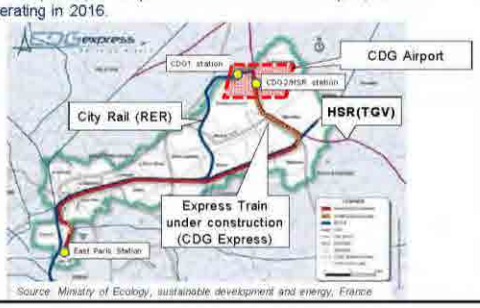
According to Airport Master Plan, HSR and local train can go through the center of the airport on the ground or open cut without any height restriction

Long Thanh Station Location Comparison

	Across of airport	Outside of airport
Conformity with Airport plan	**Compatible** with Airport Master Plan approved by Prime Minister	**Incompatible** with Airport Master Plan approved by Prime Minister
Estimated Demand	**More passengers feel convenient** Per day 40,000 passengers will use railway to access to the airport while there are only 13,000 passengers to access to the area out of the airport	**Less passengers feel convenient**
Transfer of Air/ HSR	**Smooth** easy to access Airport Buildings using pedestrian bridges or underground pass	**Difficult** Detour Route is needed to connect air and HSR. Underground access road beneath runway is not permitted
Connection with Local Train	**Same Station location** local train will be designed in the center of the airport	**Different Station location** local train station which is planned in the center of the airport
Security and Safety	**No issue** no height restriction for HSR to run through the center of the airport	**No issue** Running outside of the airport, parallel with the landing strip
Impact to Airport Road Access	**Lower** as Passengers moving from HSR St. to Airport center are reduced	**Higher** Due to passengers from HSR St. to Airport center, the load to Access Road will be higher
Noise Resettlement	**Negligible** No land acquisition for the station / HSR noise is less than airplanes	**High Impact** Land acquisition required for the station / HSR will run closer to the residential area

Example of HSR Station in Airport in the World

- Charles de Gaulle(CDG) Airport in Paris has HSR(TGV) station at the center of airport.
- CDG Express (non-stop train between Paris and airport) is to be operating in 2016.

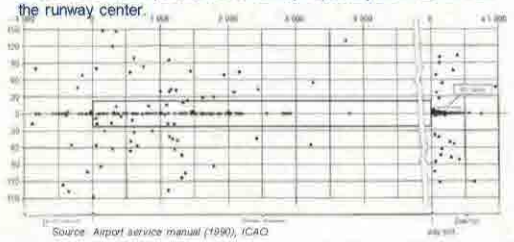


Source: Ministry of Ecology, sustainable development and energy, France

Safety of Long Thanh Airport

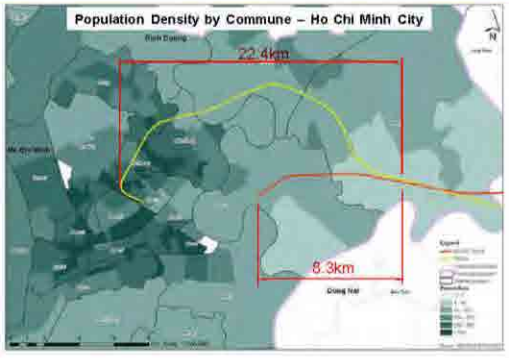
More study was done to answer the questions if there could be any risk of more danger by combining HSR and the airport.

- Most of airplane accidents occurs during take off and landing near the runway (59%, *source: 2011 State of Global Aviation Safety, ICAO*).
- Accidents concentrates in the center line of the runway, and few accidents recorded parallel to the runway especially over 120 m from the runway center.



Source: Airport service manual (1990), ICAO

Thu Thiem & Hoa Hung Station Comparison



Thu Thiem & Hoa Hung Station Comparison

	Thu Thiem	Hoa Hung
Conformity with Urban Planning	**Compatible** (Thu Thiem New Town Development Plan)	**Incompatible**
Accessibility	**Smooth** (East-West Avenue, Thu Thiem Tunnel)	**Difficult by Cars/Bikes** (Congested narrow streets around the station area)
Station Plaza	**Spacious**	**Narrow**
Connection with Railway	**Metro Line 2**	**Existing Railway Metro Line 2**
Land acquisition	**Easy** (8.3km long in less populated area)	**Difficult** (22.4km long in densely populated area)
Resettlement	**Few** (64 buildings affected)	**Many** (866 buildings affected)
Environment Impact (Noise, estimation)	**Minor** (Approx 350 people affected by noise impact)	**Significant** (Over 7,000 people affected by noise impact)
Construction Cost	**Low**	**High** (+320 million USD)
Extension to the South	**Easy**	**Difficult**

Re-scoring of Alternatives to Select Optimal One

Alternatives and Potential Stations in South Section

HCMC – Nha Trang Section

Draft Selection Result of Optimal Alternative

- **HSR is the holistic system**, and it has to be evaluated from comprehensive view points, rather than just summing up the partial evaluation.
- In this study,
  - Alignment and station locations of **(1)North Section** and **(2) South Section**, will be evaluated through **comprehensive considerations of following four aspects**, or
  - (i) Convenience and integrated development, (ii) environmental and social considerations, (iii) high speed serviceability and engineering , and (iv) construction cost.

Draft Result of Overall Evaluation (South Section)

Convenience and Integrated Development	Alt1	Alt2	Alt3
OVERALL EVALUATION	**A**	**B**	**B**
1) Khanh Hoa	B	C	C
2) Ninh Thuan	A	A	A
3) Binh Thuan (two stations)	A, B	A, C	C, C
4) Dong Nai	A	B	A
5) Ho Chi Minh	A	B	A

Environmental and Social Considerations	Alt1	Alt2	Alt3
OVERALL EVALUATION	**A**	**B**	**B**
1) Khanh Hoa	A	B	C
2) Ninh Thuan	A	B	B
3) Binh Thuan	B	A	B
4) Dong Nai	A	A	A
5) Ho Chi Minh	A	B	A

Draft Result of Overall Evaluation (South Section)

Aspect/Indicators	Alt1	Alt2	Alt3
OVERALL EVALUATION	**A**	**C**	**D**
1) Convenience and Integrated Development	**A**	**B**	**B**
2) Environmental and Social Considerations	**A**	**B**	**B**
2)-1 Natural Environment	(A)	(A)	(C)
2)-2 Pollution	(B)	(C)	(B)
2)-3 Social Environment	(A)	(C)	(B)
3) High Speed Serviceability and Engineering	**A**	**B**	**D**
4) Construction Cost	**B**	**C**	**A**

- From comprehensive evaluation, <u>Alternative 1 is suggested to be the optimal alternative alignment and station locations</u> among three.

Discussions

- The evaluation and the optimal alignment presented is the draft, and final evaluation will be conducted reflecting the discussions of these plenary meetings in Hanoi and HCMC
- Thus, the comments from participants are very important for the finalization.
- **Final selection result will be shown in the 3rd SHM in October or November 2012.**

APPENDIX 8C

Questionnaire from 2nd Stakeholder Meeting[1]

Date: _____ Department _____

Name of province_____ Gender [ ] Male [ ] Female

The purpose of the questionnaire is to gather your opinions regarding the North –South High Speed Railway Project (Hanoi-Vinh and Ho Chi Minh-Nha Trang) which are considered as priority sections. Your valuable opinions and recommendation will contribute to an effective planning of the proposed project.

Section A: Project Awareness

1. Have you heard about the project before?
   [ ] yes [ ] No

2. If yes, where did you hear it from?
   [ ] Central government [ ] Commune leader
   [ ] Provincial PPC [ ] People around
   [ ] District commune [ ] Media
   [ ] Others, please specify _____

3. If yes, when did you hear about it?
   Year _____

4. Are you in favor of the projectfrom either of short-term (within 10 years) or long-term (within 20-30 years)perspective? If No, please specify the reason.
   [ ] yes in short-term
   [ ] yes in long-term
   [ ]No
   Reason
   ( )
   [ ] No Answer

Section B: Perception of Positive impacts and Benefits

What do you think are the benefits or positive impacts for having a high speed railway? (please check the box below as appropriate)

1. Facilitate higher mobility

1.1 High travel speed and time saving
[ ] Most significant [ ] Significant [ ] Less significant

1.2High accessibility to distant places
[ ] Most significant [ ] Significant [ ] Less significant

1.3 Availability of safe transport service
[ ] Most significant [ ] Significant [ ] Less significant

1.4Availability of comfort transport service
[ ] Most significant [ ] Significant[ ] Less significant

2. Increase opportunity for economic development

2.1 Promote urban development
[ ] Most significant [ ] Significant [ ] Less significant

2.2. Promote industrialization
[ ] Most significant [ ] Significant [ ] Less significant

2.3 Increase in trade and business
[ ] Most significant [ ] Significant [ ] Less significant

2.4 Increase potential for tourism industry
[ ] Most significant [ ] Significant [ ] Less significant

2.5 Provide employment for local labor during construction , operation and maintenance
[ ] Most significant [ ] Significant [ ] Less significant

2.6.Increase in land value
[ ] Most significant [ ] Significant [ ] Less significant

Section C: Issues and Concerns

What are some of the problems or negative issues that you perceive in implementing this project?

1.2. Impact on nature reserved/protected area conservation
[ ] High impact [ ] less impact[ ] No impact

[1] Note that "Strategic Environmental Assessment (SEA)" noted in this annex imply the comparison of alternatives (alignment and station location) as one step of "Initial Environmental Examination (IEE)" study and does not carry the meaning of SEA as used in other situations.

1. **Natural Environment and Pollution** 1.1 Loss of natural resources (trees, vegetation,etc) [ ] High impact [ ] less impact[ ] No impact	1.3 Pollution (Noise, and vibration) [ ] High impact [ ] less impact[ ] No impact
2. Social impact 2.1 Land acquisition and resettlement [ ] High impact [ ] less impact [ ] No impact 2.2.Dispalcement of residential and business communities [ ] High impact [ ] less impact[ ] No impact 2.3 Impact on cultural properties/historical settings [ ] High impact[ ] less impact [ ] No impact	2.4 impact on Ethnic minorities [ ] High impact[ ] less impact [ ] No impact 2.5 Loss of livelihood (productive land) [ ] High impact[ ] less impact [ ] No impact

Section D: Assessment of alternative route; Please provide your assessment on the alternative route by encircling a score corresponding the criteria and alternative route. The weighted value of the score is represented as follows:

3= Highly appropriate;2= less appropriate 1= Not appropriate

Impact Aspects/Indicators	Alternative Route 1			Alternative Route 2			Alternative Route 3		
1. Convenience and integrated Development									
1.1Connectivity to other transport modes	3	2	1	3	2	1	3	2	1
1.2 Distance from main centers	3	2	1	3	2	1	3	2	1
1.3 Availability of land for integrated development	3	2	1	3	2	1	3	2	1
2. Environmental and Social Consideration									
2.1 Impact on natural environment (protected area, forest, water and topography)	3	2	1	3	2	1	3	2	1
2.2Noise/vibration	3	2	1	3	2	1	3	2	1
2.3 Impact on social environment (community, cultural heritage,ethnic minorities)	3	2	1	3	2	1	3	2	1
2.4 Land acquisition and Resettlement	3	2	1	3	2	1	3	2	1

Section E:Planning Factors Concerned

1. Which factors should be especially concerned forselecting <u>the location of the station</u>(check all items apply)	[ ] Connectivity with other transport mode [ ] Distance from city centers [ ] Availability of land for integrated development around the station location [ ] Impact on natural environment (protected area, forest, water, topography) [ ] Pollution problem (Noise/vibration, etc) [ ] Impact on social environment(community, cultural heritage, ethnic minorities) [ ] Impact on landuse (ex. army area, industrial zone, cemetery, heritages, pagoda) [ ] Land acquisition and resettlement [ ] Construction Cost [ ] Other (specify) [_____]
2. Which factors should be especially concerned for selecting <u>the alignment</u> (check all items applies)	[ ] Transport performance of a high speed railway (speed/safety/comfort) [ ] Impact on natural environment (protected area, forest, water, topography) [ ] Pollution problem (Noise/vibration, etc) [ ] Impact on social environment (community, cultural heritage, ethnic minorities) [ ] Impact on landuse (ex. army area, industrial zone, cemetery, heritages, pagoda) [ ] Land acquisition and resettlement [ ] Construction Cost [ ] Other (specify) [_____]

Other comments. (Please give additional comments if any)

STUDY FOR THE FORMULATION OF HIGH SPEED RAILWAY PROJECTS ON HANOI-VINH AND HO CHI MINH-NHA TRANG SECTIONS

Newsletter - July 2012

BACKGROUND

Vietnam has achieved remarkable economic growth since the commencement of the policy of Doi Moi. In Vietnam, the North–South High Speed Railway Project (NSHSR) is expected to become a promoter of the country's further economic growth as well to serve as a symbol of its successful growth. The Government of Vietnam (GOV) intends to implement this mega project with the support of Japan based on the "Japan–Vietnam Joint Statement on the Comprehensive Development of Strategic Partnership for Peace and Prosperity in Asia" in 2006. During the period of 2007 – 2010, the Japanese government provided technical assistance through the Japan International Cooperation Agency (JICA) to conduct "The Comprehensive Study on the Sustainable Development of Transport System in Vietnam" (VITRANSS2) upon the request of the Vietnamese government. In VITRANSS2, a study on the NSHSR project was carried out and a preliminary development strategy was formulated. During the same period, a pre-feasibility study of the NSHSR was also conducted by the Vietnam–Japan Consultancy Joint Venture (VJC), consisting of the Transport Investment and Construction Consultant Joint Stock Company (TRICC) and Japanese consultants, under Vietnam Railways (VNR). The basic data for forecasting traffic demand and analyzing economic feasibility was shared between the two studies.

While a need for development of modern and efficient mass-transit for the most important north-south corridor of the country has been observed, it was considered necessary to study more in detail on several aspects including socio-economic and environmental impacts, funding, operation and management, etc. Furthermore, for the approval of the National Assembly, a detailed analysis supported by scientific and objective grounds has to be conducted on the issues raised in previous sessions.

Given these circumstances and upon the request of the Vietnamese government, Japan has again provided technical assistance through JICA to carry out the "Study for the Formulation of High Speed Railway Projects on the Hanoi-Vinh and Ho Chi Minh Nha Trang Sections".

OBJECTIVES

The study aims to conduct a study on NSHSR development, analyze development alternatives, propose the optimal plan, develop a project implementation plan for selected sections (namely, the Hanoi-Vinh and Ho Chi Minh-Nha Trang sections), and promote a better understanding of the NSHSR project among various stakeholders. Specifically, the study's objectives are as follows:

(i) Formulate a basic development plan for the NSHSR (to include development scenarios that consider the existing railway, alternative alignments, and main infrastructure).

(ii) Formulate preliminary designs, system plans, cost estimates, construction plans, economic and financial evaluations, as well as financing plans.

(iii) Prepare the documents needed for the environmental and social studies.

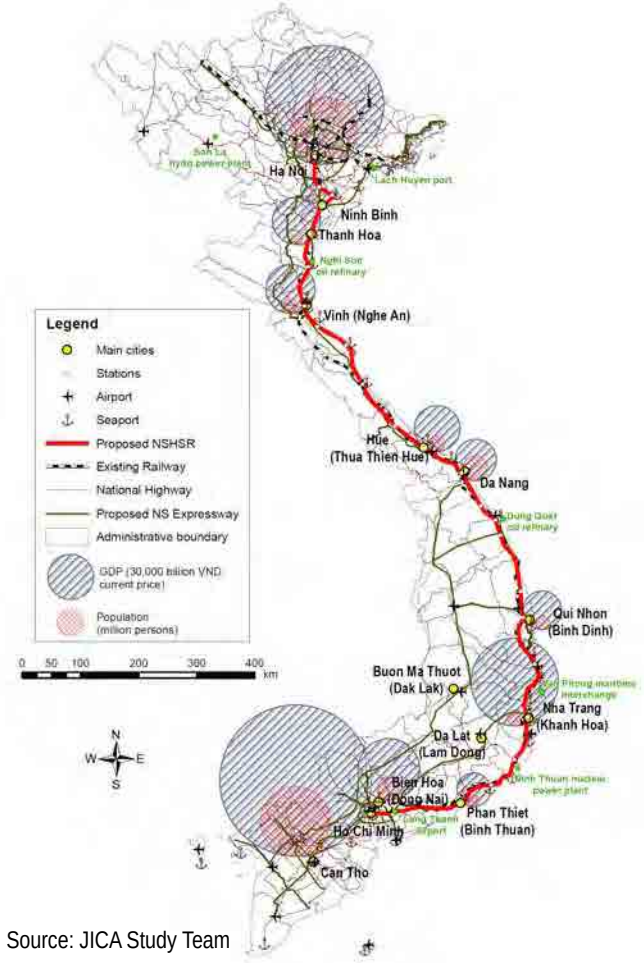
(iv) Formulate preliminary technical standards for high-speed railway.

(v) Formulate a preliminary capacity development plan for high-speed railway construction, operation and maintenance.

PROJECT AREA

The project area covers the whole North-South Transport Corridor in general and Hanoi-Vinh and HCMC-Nha Trang Sections in particular.

Location of NSR Project and Neighboring Cities



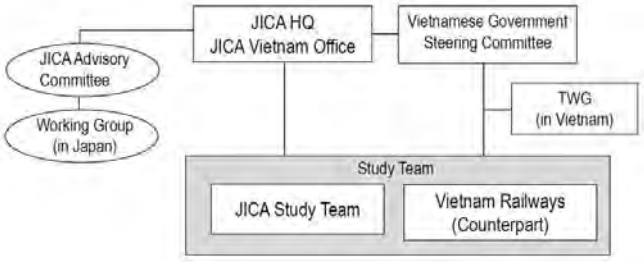
Source: JICA Study Team

STUDY ORGANIZATION

For the smooth implementation of the study, close coordination system between Vietnamese and Japanese side has been established. Vietnamese Steering Committee is organized by members of Ministry of Transport (MOT), Vietnam Railways (VR) and other related agencies and technical working group members consist of Vietnamese experts and officers engaged in railway business.

On Japan side, besides JICA Headquarter and Vietnam Office, the JICA Advisory Committee and Working Group are organized to support the task of the JICA Study Team. JICA Advisory Committee and Working Group members consist of those from academia, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), railway company and agency and give advices to the JICA Study Team based upon the knowledge and experiences of the development and operation of Shinkansen in Japan.

Overall Organization of the Study



Source: HQ = Headquarters, TWG = Technical Working Group

WORK PLAN

The study is composed of several tasks which can be grouped into two stages: the study on the role of North-South railway including NSHSR in Vietnam at the first stage and the preparation of the investment plan based on the optimal development scenario of North-South railway at the second stage. Besides, through the whole study, the study shall take steps to promote mutual understanding between the Vietnamese and Japanese stakeholders of the project through discussions and coordination.

PROGRESS OF THE STUDY

Up to the stage of Interim Report, the following tasks have been implemented.

Meetings

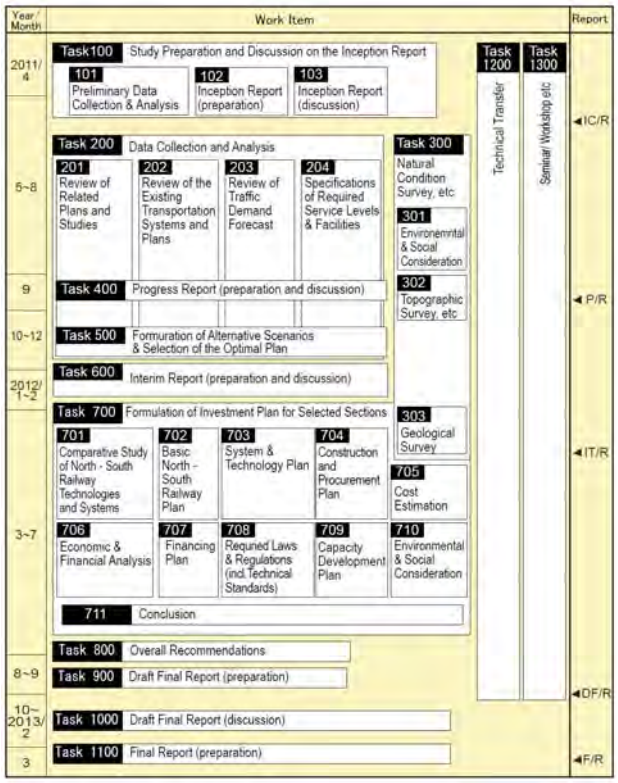
- 1st Steering Committee on May 18th, 2011 (Inception Report Meeting)
- 2nd Steering Committee on September 28th, 2011 (Progress Report Meeting)
- 3rd Steering Committee on February 24th, 2012 (Discussion on the North-South railway development scenarios)
- 1st Stakeholder Meeting on December 9th, 2011
- Various meetings with Vietnam Railways, related agencies, and local governments

Main Activities Undertaken

- Study on the potential role of railway in overall transport network along north-south corridor
- Study on the constraints and opportunities of existing railway to meet the demand and recommended improvement plans
- Preliminary study on the development of High Speed Railway along the north-south corridor in general and that for Hanoi-Vinh and HCMC-Nha Trang sections in particular

As of July 2012, the Study Team is at the stage of the formulation of investment plan for Hanoi-Vinh and HCMC-Nha Trang sections and several tasks including the planning for alignment & facility, system, operation & maintenance, technical norms & standards, institutions and construction, and the analysis of demand, cost, economic & financial viability, financing and environmental & social impact are on-going.

Overall Work Flow of the Study



STUDY APPORACH

During the discussion on the development of NSHSR held in National Assembly (June 2010) and across the society during the time, the most fundamental issue was that the necessity and implementation of the HSR must be assessed and clarified in conjunction with development of all available transportation modes along the north-south corridor in general and existing railway in particular. To address the above mentioned issue, the possible development options has been identified based on the review of alternative scenarios discussed in the National Assembly and the analysis of the condition of existing north-south railway

Initial set of alternative scenario on the development of the North-South railway development discussed in National Assembly in 2010 were reviewed and reorganized for more comprehensive study to provide a rational basis to formulate optimum strategy on the North-South railway development. The approach to this work is composed of three steps:

Step 1 Initial Alternative Scenario

Alternative	Existing Line	New Line
Scenario 1	• Upgrading to double track with dual gauge (meter + standard) • Current maximum speed for passenger and freight services	• None
Scenario 2	• Upgrading to double track (standard gauge) • Maximum operating speed of 200 km/h for both passenger and freight services • Electrification	• None
Scenario 3	• Improvement for local passenger and freight transport services • Single track	• Construction of new high-speed line (double track with standard gauge) • Maximum operating speed of 200 km/h for passenger and freight service
Scenario 4	• Improvement for local passenger and freight transport services • Single track	• Construction of new high-speed line (double track with standard gauge) • Maximum operating speed of 300 km/h for passenger service only
Scenario 5	• Improvement for local passenger and freight transport services • Double track	• Construction of new high-speed line (double track with standard gauge) • Maximum operating speed of 200 km/h for passenger and freight service
Scenario 6	• Improvement for local passenger and freight transport services • Double track	• Construction of new high-speed line (double track with standard gauge) • Maximum operating speed of 300 km/h for passenger service only

Step 2 Constraints to Upgrading of Existing Railway

- Constraints on converting to dual gauge for entire section of existing railway (1,700km)
- Constraints on mixed operation of passenger and freight trains at maximum speed of 200 km/h
- Constraints on upgrading of existing railway to accommodate train operation at maximum speed of 200 km/h

Step 3 Options for Improvement of Existing Railway

Options for Improvement of Existing Railway	
A1	• Minimal improvement to ensure safe operation (ongoing and committed projects) • Scheduled Speed: 60 km/h (travel time: 28.3 h (Hanoi-HCMC)) • Capacity: 32 trains/day
A2	• Maximization of existing single track transportation capacity • Scheduled Speed: 70 km/h (travel time: 24.3 h (Hanoi-HCMC)) • Capacity: 50 trains/day
B1	• Double tracking with meter gauge • Scheduled Speed: 110 km/h (travel time: 15.5 h (Hanoi-HCMC)) • Capacity: 170 trains/day
B2	• Double tracking with standard gauge • Scheduled Speed: 135 km/h (travel time: 12.6 h (Hanoi-HCMC)) • Capacity: 170 trains/day

Options for New HSR	
H1	• Scheduled Speed: 200 km/h
H2	• Scheduled Speed: 280 km/h • (Maximum Speed: 300 km/h)

SUMMARY OF ANALYSIS

Based on the analysis, basic development directions for the north-south railway are explained in summary as follows;

(i) Demand along the north-south corridor: Passenger and freight transport demand along the north-south corridor can be basically met without HSR in 2030 by a combination of current plans including expansion of national roads to 4-6 lanes, construction of 4-6 lane expressways, expansion of air transport by three times of existing capacity and improvement of existing railway to A2 and B1 level. However, this scenario is unable to meet higher speed travel service of passengers who are demanding more and more as economy grows in Vietnam.

(ii) Demand for higher speed travel along the north-south corridor in the future is significant. Without HSR, excessive demand for air transport will generate which is practically impossible to meet by expansion of airport and services. Based on demand analysis made on the assumption that HSR is in operation in 2030, it can attract significant volume of passengers and relieve burden to air transport at lower fare level (half of air fare). Although improvement of existing railway can expand transport capacity and improve operating speed, it cannot meet the requirement for higher speed service of passenger sufficiently unlike HSR.

(iii) HSR is a mass rapid transit mode that solves various transport issues such as traffic congestion, traffic accidents, and adverse impacts to the environment. However, given the requirements for enormous investment for HSR construction, the project will only be viable after 2030 when Vietnam has become fully industrialized country, and the entire section of HSR can be opened between 2030 and 2040.

(iv) Assuming that the HSR is opened between 2030 and 2040, the development of existing railway can be considered as follows;

- Improvement to A2 level can be implemented at the earliest possible time
- Improvement to B1 level must be limited to selected sections where more detailed study is necessary in conjunction with development of HSR
- Improvement to B2 level cannot be justified

(v) Development of HSR for the entire section between the north and south would be justifiable by 2040. As the investment costs of HSR is so large, the development must be done in stages starting from priority sections.

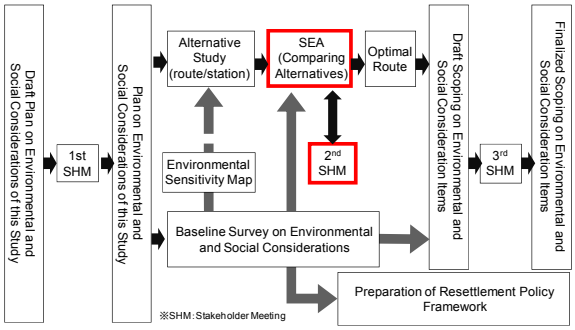
(vi) As the development of HSR requires considerable amount of time and effort, it is important to prepare and commence a good preparation work and pre-investment activities at early stage for formulating technical standards, developing human resource and establishing institutions for operation besides works for construction.

ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The environmental and social considerations of this study comply with the principles below, following the laws and regulations of Vietnam and JICA guidelines.

- To avoid or minimize adverse impacts, alternatives or mitigation measures will be examined and incorporated into the project planning.
- To propose important environmental and social consideration items to be studied in the further stage of full-scale EIA.
- To form a common understanding of the environmental and social issues confronting the projects among the wide range of stakeholders.

Flowchart of the environmental and social considerations of this study is shown below.



The major contents of this study on environmental and social considerations are as follows: (1) baseline survey, (2) strategic environmental assessment (SEA) to select the optimal route, (3) scoping on environmental impact assessment (EIA) on the optimal route, (4) stakeholder meetings, and (5) resettlement policy framework.

As of July 2012, JICA Study Team is conducting SEA to select the optimal option of the alignment and station location based on the result of the baseline survey, environmental sensitivity map and the alternative survey conducted through the site visits. The three alternatives from the previous studies (KOICA and Pre-FS) and this study will be compared from four aspects (see the table below). Without project case is also considered in view of the greenhouse gas emission.

Through the series of the 2nd Stakeholder Meeting in 11 provinces along the alignment to be held during July and August 2012, the opinions on alternatives will be collected from the local government and people in the provinces.

The final selection of the optimal option will be done from the result of subjective and comparative analysis with due consultation with Vietnamese side, reflecting the comments of provinces.

(1) Baseline survey

Item	Brief Descriptions
Objectives	To collect basic secondary information on overall environmental and social conditions
Information to be collected	1) Natural environment, pollution, social environment 2) Related laws and regulations 3) Results of previous studies

(2) SEA

Item	Brief Descriptions
Objectives	To select the optimal option from alternatives.
Alternatives	Alignment options and station location options, together with zero option.
Items to be considered for alternative comparison	1) Convenience and integrated development 2) Environmental and social considerations (natural environment, pollution, social environment) 3) High speed serviceability and engineering 4) Construction cost

(3) Scoping on EIA

Item	Brief Descriptions
Objectives	Identification of environmental and social consideration items to be studied for the selected optimal route.
Scoping on EIA	1) IEE level study based on the secondary data and information 2) Proposal of the methodologies for data collection, estimation and evaluation of potential impacts of the scoped items. 3) Preliminary study on mitigating impacts (avoid/minimize/compensate) and on monitoring methodologies.

(4) Stakeholder Meeting

Stage	Schedule (Approx)	Objectives/Venue
Planning stage of environmental and social considerations study	7/Dec/ 2011	Objectives: Explanation and discussion on approach to environmental and social considerations Venue: in Hanoi
SEA stage (as a part of SEA process)	July-Aug/ 2012	Objectives: Explanation and discussion on SEA (selection of optimal option among alternatives) Venue: in Provinces along alignment
Scoping Stage	Oct-Nov / 2012	Objectives: Explanation and discussion on the result of SEA (selected optimal option) and draft scoping result Venue: in Hanoi

(5) Resettlement Policy Framework

Item	Brief Descriptions
Objectives	To formulate framework for the preparation of resettlement action plan
Contents	1) Process of formulation and approval of resettlement action plan 2) Compensation process / livelihood restoration supports 3) Grievance redress mechanism 4) Monitoring framework, etc.

NEXT STEPS

- Third Stakeholder Meeting to be held for the explanation of the result of SEA and the draft EIA scoping
- Preparation and submission of the Draft Final Report.

For comments or questions about this newsletter or the study, please contact us at:
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Tel. No: (+84 43) 974 9270 Fax No: (+84 43) 974 9269 / Ms. Tran Thu Muoi *(Office Administrator)*

APPENDIX 9A

Recommendations from JICA Advisory Committee for Environmental and Social Considerations

The working group meeting of 1st JICA Advisory Committee for Environmental and Social Considerations was organized on November 9, 2011 to discuss necessary recommendations to be provided to the Study for more appropriate environmental and social considerations in the projects. Based on the discussions at the working group meeting, the advisory committee meeting which was held on December 5, 2011 decided the recommendations to the Study as shown in Table 9A.1. Upon receiving the recommendations from the Advisory Committee, the JICA Study Team has taken the actions as also discussed in Table 9A.1.

Table 9A.1 Recommendations from the 1st JICA Advisory Committee and Actions Taken in the Study

No	Category	Recommendations	Actions Taken
1	Overall	The relationship between the project planning and infrastructure development plans along the project areas shall be clarified.	Following the recommendation, infrastructure development plans along the project areas were discussed as basic information of future socio-economic framework of the HSR projects.
2		An environmental impact and cost effectiveness study shall be conducted taking into considerations future extending section.	For environmental and social considerations study especially near the terminal stations (Ngoc Hoi, Vinh, Nha Trang and HCMC), environmental and social impacts by the possible extension sections beyond these stations were also taken into consideration in the comparison of alternatives.
3	Comparison of alternatives	In the Study, the various alternatives of the routes and station locations will be compared. If necessary, alternative for the structures shall be also considered.	Structurs were also considered in the alternatives to be compasred.
4	Selection of High Seeped Railway System	In the Study, the high-speed railway system will be selected comparing various alternatives. For selecting appropriate system, clear standards from diversified viewpoints such as economic and financial aspects, organization, technology and sustainability shall be established. Then, the alternatives shall be compared against the standards.	Following the recommendation, clear and diversified standards were established in selection of appropriate high speed railways system.
5		For planning of the routes of HSR (policy on comparison of alternatives), economic aspects (economic benefits and costs) shall be taken into considerations.	Following the recommendation, economic aspects were also taken into consideration for planning of the alignment.
6	Project Implementation Capacity	Capacity of the Vietnam Railways (VR) from the viewpoints of financial, technical and human resources aspects in the project planning and construction phases, and prediction of sustainability after the operation shall be examined and discussed.	The study discussed the capacity development of the VR for the projects.
7	Selection of Items for SEA (comparison of alternatives)	The main objective of the survey shall focus on SEA (comparison of alternatives). Based on this, the scoping tables shall be prepared.	The alternatives were compared as per the JICA Guidelines in this study. The provisional scoping tables were also prepared for the optimal alternative which is selected by the comparison of alternatives.
8		Concrete contents of the baseline information of natural conditions and environmental and social considerations shall be clarified as requirements in alternative considerations. In addition, in comparison of alternatives, the relationship among these information and data shall be considered.	The contents of the baseline information, i.e. natural environment, living environment (pollution control), and social environment conditions are discussed in the report.

No	Category	Recommendations	Actions Taken
9		The environmental and social items (draft) to be considered in SEA (comparison of alternatives) shall be set in the format of rating of impacts and its reasons, survey methods, and items to be considered in the comparison of alternatives.	Selection of comparison items is discussed in the report. The results of selection are presented together with rating of impacts and its reasons, survey methods, and items to be considered in the comparison of alternatives.
10		In SEA (comparison of alternatives), rating shall be made for all items. In particular, as some negative impacts are expected, rating shall be made carefully for ecosystem, regional economy, life and livelihood, pollution, ground subsidence, waste, landscape, and climate change.	Selection of items for the comparison of alternatives including rating for all items is discussed in the report.
11		Impacts on greenhouse gas (GHGs) emissions caused by the HSR projects (including reduction effects) shall be evaluated, including environmental loads regarding power supply required for operation of HSR to the extent possible.	Following the recommendation, the impacts (including reduction effects) on GHGs emissions and expected future load by the HSR projects on power supply in Vietnam are discussed in the report.
12		It is advisable that impacts during construction and operation shall be evaluated separately to the extent possible.	The environmental and social considerations items which were considered in the comparison of alternatives were selected taking into consideration overall impacts by the HSR projects. The provisional scoping tables were prepared assessing impacts in pre-construction stage, construction stage and operation stage separately.
13	Stakeholder Meeting	The participants invited to all stakeholder meetings shall be clarified.	Stakeholders participated in the 1st and 2nd stakeholder meetings are attached in the report.
14		In case of holding stakeholder meetings, representatives of local residents along the routes who are the affected groups as well as the users and NGOs shall be also invited. The active participation of these invites shall also encourage by informing the meeting in advance. In addition, at the time of the meeting, the atmosphere that the participants are able to discuss equally and positively is tried to be cleared.	For the 1st stakeholder meeting, as representative of local residents, representative of people's committee of each province were invited. In 2nd stakeholder meetings which were held in each affected city/province, representatives of district people's committees, social associations and NGOs were also invited. For those NGOs which did not attend the meetings, supplemental hearings to them were also conducted. In addition, the atmosphere was created as recommended and questionnaires were given to all participants so that they could have more opportunity to provide the comments.

Note: Since the original recommendations were provided in Japanese, the above English recommendations are provisional translation.
In the 1st JICA Advisory Committee, the term of "SEA" was used for the comparison of alternatives taking into consideration environmental and social considerations aspect.
Source: JICA and JICA Study Team

The working group meeting of 2nd JICA Advisory Committee for Environmental and Social Considerations was organized on November 16, 2012 to discuss further recommendations to be provided to the Study for more appropriate environmental and social considerations in the projects. Based on the discussions at the working group meeting, the advisory committee meeting which was held on December 3, 2012 decided the recommendations to the Study as shown in Table 9A.2. Upon receiving the recommendations from the Advisory Committee, the JICA Study Team has taken the actions as also discussed in Table 9A.2.

Table 9A.2 Recommendations from the 2nd JICA Advisory Committee and Actions Taken in the Study

No	Category	Recommendations	Actions Taken
1	Overall	For introduction of the HSR (Shinkansen) system of Japan, various conditions peculiar to Vietnam such as climate and social system shall	In the report, the HSR system adjusted to the situation in Vietnam was discussed. In addition, necessary technology transfer and human

No	Category	Recommendations	Actions Taken
		be taken into consideration. In addition, technology transfer and human resource development program shall also be considered.	resource development program were also discussed in the report.
2	Comparison of alternatives	Analysis and evaluation on impacts by climate change and flood shall be discussed in the study report.	The alignment has been planned considering the impacts by climate change and flood. Such description was added in the report.
3		Zero option shall be evaluated at the time of comparison analysis of transportation modes, including at the time of SEA, and it's result shall be explained apparently by utilizing a table or figure In addition, positive and negative impacts by zero option shall be evaluated including a scale of involuntary resettlement.	The result of SEA conducted in VITRANSS 2 is summarized in the report which includes evaluation of zero option. In addition, positive and negative impacts by zero option were also discussed in the comparison of alternatives taking into consideration environmental and social considerations aspect.
4		Total number of affected buildings is relatively large as 9,777. Thus, further mitigation measures to minimize this number including the comparison of alternatives shall be examined and discussed in EIA.	Following the recommendation, necessity of examination of further mitigation measures to minimize involuntary resettlement was emphasized in the report.
5	Scoping	Overlap between Important Bird Area (IBA) designated by Birdlife International and the proposed alignment shall be checked. In addition, impacts on fauna and ecosystem during construction and operation shall be assessed EIA.	A map overlaying IBA and the alignment was prepared to check their overlapping. In addition, necessity of detail impact assessment on fauna and ecosystem considering IBA was emphasied in the proposed provisional requirements of EIA.
6		Since seven long tunnels of which length are more than 7km are planned in the South section, a large amount of soil excavated for construction of these tunnels. Thus, treatment method of excavated soil shall be examined in EIA.	Following the recommendation, necessity of examination of appropriate treatment of excavated soil in EIA as well as project planning was discussed in the report.
7		Increase of convenience of the local peoples along the alignment shall be taken into consideration.	Increase of convenience of the local people by improvement of the existing railway was discussed in the report.
8		Detail survey on the relocation of local religious facilities and cemeteries shall be conducted in EIA with cooperation from relevant aorhotiesinstitutions and Vietnamese experts.	Following the recommendation, necessity of detail survey on the relocation of local religious facilities and cemeteries in EIA was discussed in the report.
9		In the North section, several ethnic minority groups such as the Mong group are living. As impacts on these ethnic minority groups are expected, their culture, life, means of livelihood, religion etc. shall be examined expertly with cooperation of local experts. In case of the South section, as there are 30 ethnic minority groups there, careful measures shall be examined in EIA.	Following the recommendation, necessity of expert survey and study on impacts on ethnic minority in EIA was discussed in the report.
10		Implementation of safety measures for local peoples shall be proposed.	Following the recommendation, safety measures for local peoples was also discussed in the report.
11		Effects by earthquake and other natural disasters shall be taken into consideration carefully in EIA.	Following the recommendation, necessity of further study on effects by earthquake and other natural disasters in EIA was discussed in the report.
12		Environmental degradations by HSR (Shinkansen) and measures taken against them which were experienced in Japan in the past shall be reviewed. In addition, after the HSR projects began, implementation of necessary measures based on the monitoring shall be recommended.	Following the recommendation, past experiences in Japan regarding environmental degradations and measures taken fo the HSP (Shinkansen) were described in the report. In addition, recommendation on necessity of monitoring and utilization of its results was emphasize in the report.
13		Increase in GHGs emission by increase in electricity consumption by the HSR projects shall be discussed.	Following the recommendation, increase in GHGs emission by increase in electricity consumption was estimated.
14	Stakeholder Meeting	In the SHMs, information and facts on negative impacts by the HSR projects such as	Following the recommendation, it was explained supplemantely in the report that information on

No	Category	Recommendations	Actions Taken
		possibilities of large scale involuntary resettlement and increase in economic liability to citizens shall be explained and reported.	potential negative impacts by the HSR projects such as possibilities of nvoluntary resettelemnt and public finaicial burden was also shared in the 2nd SHM.
15		Opinions of commune level local stakeholders including project affected people (PAPs) shall be listened in the processes of EIA and RAP preparation.	Following the recommendation, necessity of hearing of opinions at commune level local stakeholders including PAPs was emphasized in the report.

Note: Since the original recommendations were provided in Japanese, the above English recommendations are provisional translation.
Source: JICA and JICA Study Team