

**MINISTRY OF PUBLIC WORKS
AND TRANSPORTATION**

**MAINSTREAMING APPROPRIATE LOCAL ROAD
STANDARDS AND SPECIFICATIONS AND
DEVELOPING A STRATEGY FOR THE MPWT
RESEARCH CAPACITY**

Technical Paper No 4

Report on Pilot Training Course

Draft for Comment

SEACAP 03

UNPUBLISHED PROJECT REPORT



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SPECIFICATIONS AND DEVELOPING A STRATEGY FOR THE
MPWT RESEARCH CAPACITY**

Technical Paper No 4

Report on Pilot Training Course

by

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MPWT Research Capacity**

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Approvals	
Project Manager	
Quality Reviewed	

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1. Introduction

The SEACAP 3 project seeks to accomplish three key outcomes:

1. The drafting of appropriate local road standards and specifications and the initiation of them into the MCTPC program.
2. Develop an affordable and sustainable strategy for attaining the necessary road research capacity.
3. Increase the awareness of good practice experience from this project by disseminating the outcomes at the national, sub-regional and international levels.

The development and trialling of an appropriate training course was seen as an integral part of achieving success in the above items 1 and 3. The SEACAP 3 Pilot Training Course (PTC) was therefore planned as a logical follow-on from the development of the Low Volume Rural Road (LVRR) Standards and Specifications and an associated training needs and human resource development review.¹

This report describes the planning, preparation and delivery of the PTC delivered from 27th to the 30th of November 2007, and makes recommendations relating to the course material and to the further development of the course on a national basis.

The course, which was outlined in July 2007 and developed in detail September and October followed an overall pattern of background, detail and practice. This is believed to be a simple and effective pattern for a course of this type.

2. Pilot Training Course Elements

2.1 Planning and Preparation

Initial discussion on the proposed PTC were held with the SEACAP 3 Coordination Committee and the relevant training departments within the MPWT during July 2007 and agreement reached on the general modular content and presentation principles. Proposed Module content and programme were drafted following the arrival of the nominated Training Specialist Mr Simon Done in August. These were discussed with and approved by the Coordination Committee in early September.

Final programme and course materials were drafted between September and November. Final preparations which included booking the venue, translating the course material, inviting the participants and organising the necessary logistics were completed in November.

2.2 PTC Participants

Participants were selected by the Coordination Committee on two criteria: as typical future participants when the course is delivered in the Provinces and Districts of Lao and as possible future presenters. Twenty participants attended the course, as listed in Table 1.

¹SEACAP 3 Technical Report 3 Dissemination mainstreaming and Training Strategy Review, by Andreas Beush

Table 1, PTC Participants

Name	Office
Mr Bounthong Pongvilay	Engineer, DPWT, Salavanh Province
Mr Phengsy Sengsavang	Engineer, DPWT, Salavanh Province
Mr Kongthavivanh Thoprakane	Engineer, DPWT, Salavanh Province
Mr Kaysone Thepbouaheuang	Chief of Office, DPWT, Vientiane Province
Mr Khampaseuth Panyanouvong	Engineer, LRD, Vientiane Capital
Mr Sengmany Sysouvanthong	Roads Administration Division (RAD), DoR, Vientiane Capital
Mr Ounheuang Siriamphone	SEACAP Coordinator,
Mr Inthapada Sithimolada	Engineer, LRD, Vientiane Capital
Mr Somneuk Keomany	Engineer, DPWT, Borikhamxai Province
Mr Outid Keola	Head of Roads Office, DPWT, Borikhamxai Province
Mr Vongdeuan Chanthavongsa	Head of DPWT, Borikhamxai Province
Mr Bounthan Bandidphakdy	Head of OPWT, Outhoumphone Dist, Savannakhet Province
Mr Xayasene Keovilaysak	Head of Roads Office, DPWT, Savannakhet Province
Ms Soukthavy Pathilath	Engineer, LRD, Vientiane Capital
Mr Vilath Bouathong	Head of Roads Office, DPWT, Vientiane Province
Mr Khamla Angmasa	DPWT, Sang Thong District, Vientiane Capital
Mr Phouvieng Boudmisay	Engineer, DPWT, Vientiane Capital
Mr Khampasay Salyvanh	Acting Coordinator, Basic Access Comp., LRD, Vientiane Capital
Mr Vongtong Souphanthong	Engineer, LRD, Vientiane Capital
Mr Sak Dalath	Roads Administration Division (RAD), DoR, Vientiane Capital

2.3 Course Venue

The course lectures and discussions were held in a seminar room at the MPWT (Ministry of Public Works and Transportation) in Vientiane.

2.4 Training Course Organisation

The PTC was organised into 4 course modules preceded by an registration and introductory session and followed by a final evaluation and closing session. The structure of the course is presented in Appendix A to this report.

The course Facilitator was Mr Sengdarith Kattignasack, Director of LRD (Local Roads Division) of the DoR (Department of Roads) in the MPWT and the key roles taken by SEACAP 3 project team are summarised below:

Mr Simon Done: PTC Task Team Leader; detailed the design of the course and drafted the majority of course materials and presentations; coordinated course presentation, fieldwork and evaluation and gave short presentations, with translation, during the PTC.

Dr Jasper Cook. SEACAP 3 Team leader; Initial development of the course structure and quality review of course materials.

Mr Mick O'Connell; SEACAP 3 Deputy Team leader, key input into Module 3 and gave technical support throughout the PTC.

Mr Bounta Meksavanh LTEC Team Leader; presented Topics 1.3, 1.4 and 1.5 in Module 1 and part of Module 3.

Mr Saysongkham Manodham LTEC Senior Road Engineer; presented all Topics in Module 2. and part of Module 3.

Mr Somphit Bounnaphol, LTEC Training Engineer; support to Simon Done in preparing course materials and PTC organisation.

Ms Chanthida Phaphiboun, Mr Thipdavanh Vongxay Mr Kiatiphan Senamadmountry; course organisation and administration, preparation of the materials used during the course.

Mr Bounhom Kounnavong translated course materials used during the course from English to Lao and also supported with the PTC organisation.

2.5 Registration and Introduction

The start of the PTC comprised five elements; after the registration the welcome, opening, introduction and self-introductions lasted for approximately 45 minutes.

Registration of participants: This lasted longer than the anticipated 30 minutes and was carried out by the course organisers.

Welcome: Mr Sengdarith gave the welcome speech to the participants.

Opening: Mr Phan Phouthavong, the Deputy General Director of the Department of Roads in the Ministry of Public Works and Transportation, gave the opening speech

Introduction: Simon Done, with translation support, covered the items as described in the relevant part of the Instructions document.

Self-introductions: Each participant briefly gave their name, work location and job description. The five items given in the Instructions document were not displayed to remind each participant – it is recommended that this is done on future courses.

2.6 Module 1

Module 1 was originally planned to have two separate discussion topics (1.1 and 1.2), three presented topics (1.3, 1.4 and 1.5) and a review (1.6). However, because the course began later than expected and the Course Start took longer than expected, Topics 1.1 and 1.2 were delivered as a single topic. This was successful and the programme has been rewritten to reflect this change.

Mr Sengdarith facilitated the combined topic. It lasted 50 minutes and discussion covered many aspects of LVRRs and their management.

Topics 1.3, 1.4 and 1.5 were then presented in a continuous session by Mr Bounta. The reason for this was that the course was still behind the programme when he started presenting but it

meant that a lot of material was presented without opportunity for questions or discussion. In future courses, questions and discussion should be allowed and encouraged after every topic.

The combined presentation of the three topics lasted for 40 minutes. The review of Module 1 lasted for 30 minutes.

Points raised in discussion by the participants during the module were as follows.

- Up until now there has not been a formal survey and design process or standard for LVRRs
- Government funding is insufficient for construction and maintenance
- Rural roads are often not maintained
- It is common for villagers to construct their access roads themselves because of a lack of Government funding
- Many roads are constructed by the people but then maintained by the Government
- MPWT often has a budget for surveys and design work but not for construction and maintenance
- Government support for construction and maintenance will be welcomed
- Will the LVRR standards supersede the existing standards?
- The LVRRs are equivalent to which current traffic classes in the Lao Road Design Manual,?
- The traffic on the access roads alongside the recently improved Road 9 is rising rapidly – how can this be controlled?
- Road surfaces trialled by SEACAP 17 in Bokeo are too high standard and expensive for LVRRs
- What kind of vehicles will use the LVRRs? What pavements will be specified?
- Previously MPWT have authorised 11 tonne axle loads on the access roads alongside Road 9
- If traffic increases, low volume pavements may fail early
- The main problems for road design are water crossings and axle loads

2.7 Module 2

After a short introduction to Module 2 by Mr Sengdarith, Topics 2.1, 2.2, 2.3 and 2.4 were presented by Mr Saysongkham. After each topic, Mr Sengdarith encouraged questions and discussion from the participants.

Including discussions, Topic 2.1 lasted for 45 minutes, Topic 2.2 lasted for 25 minutes and Topic 2.3 lasted for 30 minutes. Including the whole life asset cost exercise, Topic 2.4 lasted for 60 minutes. The review of Module 2 lasted for 10 minutes.

Points raised in discussion by the participants during the module were as follows.

- How are the environmental problems of dust and flooding are addressed in the LVRR standards?
- Guidance is required on how to use the different materials from different regions
- It would be good if the 6% criteria for sealing steep hills could be reduced to 4-5%
- Local people should be involved in the construction work

During the discussion of spot improvements, in which the photo of the unimproved road in Topic 2.3 in the course presentation was used, the following suggestions were made.

- Seals sometimes need to be repaired
- Roads through villages often need to be improved

- Raised road level, water crossings are required as spot improvements
- Seals and improved drainage on steep hills are likely spot improvements
- On flat terrain, roads may need to be recompact
- Seals or block pavements may be required through villages
- Good quality materials are required on steep hills

2.8 Module 3

After a short introduction by Mr Sengdarith, Module 3 was presented by Mr Bounta and Mr Saysongkham in stages through the second day. The overall design process and the subsequent design steps were covered in turn as shown Table 2.

Table 2, The Design Process Presentations

Subject	Duration (minutes)
<i>Summary of the design process</i>	40
<i>Traffic analysis</i>	15
<i>LVRN envelope</i>	20
<i>Traffic analysis exercise</i>	75
<i>Alignments</i>	10
<i>Sectioning</i>	10
<i>Cross section</i>	15
<i>Surfacing</i>	5
<i>Pavement design</i>	25
<i>Drainage</i>	5
<i>Variable longitudinal design options</i>	5
<i>Whole life asset costs</i>	5
<i>Design review</i>	5

At the relevant stage in the design process, the LVRN standards and specifications were described. A temporary document was provided as a handout but in future courses, the completed LVRN standards and specifications documents should be provided as handouts for Module 3.

The traffic analysis exercise requires sufficient time to be available if the participants are to learn from it. It is important that the presenter explains fully the analysis process on the handout and, after the exercise is complete, guides the participants through the completed traffic analysis form. It is suggested that the participants are asked to calculate the AADTs of only 3 or 4 of the vehicle categories so that the exercise does not take too long.

The material in the design process was covered quickly in order to allow time for the two invited presenters: Mr Vandy of LTEC, whose presentation and discussion on the SEACAP 17 pavement trials lasted for 45 minutes, and Mr Xayphone of LCG, whose presentation and discussion on the SEACAP 21 slope stability trials lasted for 35 minutes.

In future courses, it is recommended that additional time be given to the design process and the LVRN standards and specifications. In particular it is necessary to explain the detail of every table in the documents and explain why each value or criteria has been chosen and how each table should be used.

After these two presentations, a review of Module 3 lasted for 5 minutes and the following points were raised.

- How should the profile be designed?
- How should environmental and social issues be included in the design process?
- Should surveying equipment be used during the survey?
- Should local people be consulted during the design and maintenance?

2.9 Module 4

Topic 4.1, the preparation for the site exercise, with the objective of allowing participants to practice the LVRR design process, was given on the second day after the review of Module 3. This lasted for 20 minutes.

On the third day, the LTEC/TRL team and the participants went first to a LVRR road near the Hinkanna waterfall where the following two aspects of LVRR design were demonstrated:

- The effect of gradient on deterioration and design – a flat section of road was in good condition but as the road went downhill it became badly eroded
- The ability of an unformed track to carry traffic – a flat section of unformed track in strong soil was in good condition

The entire group then went to a road which had been identified 2 months previously for the site exercise. From a total length of 6 km, a 4 km length was selected for use. Mr Thipdavanh and Mr Kiatiphan travelled along the road installing the stakes every 100 metres. The participants were subdivide into and Mr Bounta and Mr Simon Done repeated the instructions for the site exercise to each group in turn which set off at approximately 5 minute intervals. The groups took approximately 90 minutes to complete the survey. All participants then had lunch and returned to Vientiane by approximately 3.30 pm.

The road proved to be a good example on which to carry out the exercise. It had a length of good flat gravel with no significant deterioration, inclined and badly eroded sections, areas of good in situ soil and poor in situ soil, water crossing sites and a section through a village.

On the fourth day, the groups spent 90 minutes preparing their presentations and then each group made its presentation. Mr Sengdarith facilitated discussion after each presentation. The presentations and subsequent discussion lasted for 25 minutes on average for each group.

The standard of the presentations was high and it was clear that all groups had understood the important messages of the course, including the variation of the design along the road as factors change and the need for a sealed surface through a village.

The review of the material presented in the entire course then lasted for 55 minutes.

2.10 Course End

Four sessions formed the Course End. Because of time constraints, the evaluation forms were completed while the conclusion and closing speeches were given. In future courses, it is expected that the evaluation forms will be completed before this.

Evaluation: Participants completed two evaluation forms: firstly, an assessment paper to determine their knowledge of the subject and which had been requested by LRD, and secondly, a course evaluation form. The feedback from the course evaluation is

given in Appendix B and the feedback is summarised in Section 4 of this report. The completed assessment papers are currently held by the project team.

Unfortunately there was insufficient time to discuss the feedback on the content and the arrangements of the course with the participants. Nevertheless the comments in the evaluation forms, and those discussion points listed above in each module, have been very useful.

Although a form for the presenters to evaluate the course was also prepared, this feedback was done informally with individual team members rather than formally in a group or using the forms.

Conclusion: Simon Done, with translation, covered the items as described in the relevant part of the Instructions document.

Closing: Mr Phan gave the closing speech which covered the following subjects.

- The LVRR standards and specifications are designed to help road authorities provide access at low cost on roads carrying low volumes of light traffic and to thereby serve local people
- It is reasonable to design roads for current low volumes and to accept that in some cases it may be necessary to upgrade the road if traffic rises greatly
- It may be necessary to convince rural communities that this design approach is reasonable
- Congratulations to the participants for their involvement in the presentations, discussions and the site exercise
- Thanks to DFID and SEACAP for their support of the project

Presentation of certificates: Participants were announced by Mr Sengdarith and certificates were presented by Mr Phan.

2.11 Breaks in the course

The first, second and last days included a morning break, a lunch break and an afternoon break. The morning and afternoon breaks lasted for 20-30 minutes and the lunch break, taken at a restaurant away from the course venue lasted for 75-90 minutes. On the third day, lunch was taken after the exercise at a restaurant near the exercise site.

3. Recommendations from the Course

3.1 General comment

The course was delivered according to the intended programme and most participants appeared to be satisfied with the technical content and arrangements of the course, including the site exercise. It is therefore recommended that the overall programme of the PTC is used in the future courses. The finalised training course material has been prepared on this basis.

3.2 Language and translation

The course was given in Lao or in English with Lao translation. It was the correct decision to give the course in Lao due to the limited English ability of the participants, particularly of technical terms.

If the training course is to be successful in the future, it is vital that the presentations, handouts and exercises are written in fluent Lao and do not give the impression of being translated from external or foreign material. Criticism was received during participants' feedback relating to the quality of the translation. The finalised course material should be checked and edited very carefully to remove all potential sources of criticism, such as typing errors, poor word selection and, perhaps most importantly and most frequently, inconsistent translation of technical terms. Alternatively it has also been suggested that important technical terms could be left in English. This checking for consistency should consider the training course material in its entirety, as described in the following section, rather than considering each document separately.

Criticism should not reflect on the SEACAP translator as it is felt that this criticism was related to technical aspects and which should have been addressed if the SEACAP team had been able to carry out a technical check of the material before presentation. In most cases this was not done due to the lack of time available between the production of the material in English and the start of the course. It is hoped that the remaining time of the project will allow more complete technical checks to be carried out.

3.2 Set of training course material

The documents and files listed below form the complete set of training course material. They have been amended from the material used in the pilot course where appropriate to reflect comments from participants and the presenting team and observations made by the author during the course.

Instructions: This document guides the delivery of the course. It provides guidance for every session during the course and includes the key messages which the facilitator or presenters should ensure are covered during each session.

Programme: This document lists the various topics and sessions in the training course. It should be sent out with the invitations and should also be given to the participants when they register on the first day.

Logistics: This document lists all the arrangements which need to be made before and during the course.

Presentation: This large power-point file contains all the slides that will be used during the course. A printed set of slides for each topic should be given to each participant either together at the start of the course or separately before each individual topic or session. The standard of the language in the presentation, particularly the technical terms, should be checked before it is finalised.

Handouts: These documents accompany most topics in Modules 1 and 2. They should be given to the participants either together at the start of the course or

separately before each individual topic. The standard of the language in the handouts, particularly the technical terms, should be checked before they are finalised.

LVRR standards and specifications: These documents are the final official output of SEACAP 3. They should be given to the participants either at the start of the course or before Module 3 is delivered.

Whole life asset costing exercise: The material for this exercise contains a text document and a spreadsheet. The spreadsheet has a blank form and a completed form with the correct answers. The document and the blank form should be given to participants at the start of the exercise. The completed form should be given to participants at the end of the exercise.

Traffic analysis exercise: The material for this exercise contains a text document and a spreadsheet. The spreadsheet has a blank form and a completed form with the correct answers. The document and the blank form should be given to participants at the start of the exercise. The completed form should be given to participants at the end of the exercise.

Evaluation forms

Evaluation of participants – assessment paper: This paper is used to assess the participants' knowledge of the course material. It is the first form to be given in the first session of the Course End.

Evaluation of course by participants: This form is used to gather feedback from the participants about the course. It is the second form to be given in the first session of the Course End.

Evaluation of course by presenters: This form is used to gather feedback from the facilitator, presenters and organisers after the course is finished. Separate forms can be completed individually or the form can be used to focus discussion during a team meeting soon after the course.

A CD containing all course material should be given to each participant during the course. It will be necessary to check the revised English documents, translate them and check the translations before it will be possible to prepare the CD. These CDs should be sent to participants from the pilot training course when they are ready.

3.3 Changes to course material

Most of the changes to the course material suggested during the evaluation process have already been made. Further comments relate to the inclusion of more photographs in the handouts.

It has been proposed by Mr Sengdarith that the LVRR standards and specifications will be distributed widely to all organisations working in the sector and will be incorporated into the curriculum at the National University of Lao. For this, further changes will be required to be made to the material depending on how it will be used.

4. Conclusions

The following summarises the comments made by the participants as detailed in Appendix B.

Course

- The course generally met expectations and objectives
- Satisfaction with the course, although would prefer a bit more technical detail
- Would like more time for discussions and exercises, especially the traffic analysis and the site exercise and would like more explanation before the exercises of what is to be done
- The course was well facilitated
- The course was about the right length although a significant number of participants suggested that more time is required for parts of the course
- Satisfaction with the food, transport and room arrangements
- Presentations were generally sufficient and good, although some improvements are required.

Technical content

- General understanding of the technical content and a feeling of having gained knowledge and that it will be useful in their work
- General understanding of the potential benefits of applying the technical content on LVRRs
- Would like more detail on the use of different pavement materials and their specifications
- Would like drainage structures to be added to the standards

Handouts

- Problems are reported with the translations, in terms of consistency of technical terminology and typing errors
- Handouts, especially of the slides, are sometimes too small to read
- A file should be given to put the handouts in
- Would like more photos in the handouts
- Handouts were generally sufficient but should be made clearer

Next steps

- Enthusiasm to start using the standards and specifications
- Would like the course to be given across the LVRR sector
- Would like the standards and specifications to be made available across the LVRR sector
- Suggestion that the course is put into the curriculum of the national university

The general opinion is that PTC was delivered smoothly and efficiently and the enthusiasm of the participants indicates that the course is likely to be successful when it is rolled out for delivery throughout Lao. In general the material was generally understood, participants are keen to use the material and the overall programme of the pilot course is suitable for use on future courses, it can be concluded that the PTC has been a success.

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Report on Pilot Training Course

Appendix A

Course Programme

APPROPRIATE STANDARDS AND SPECIFICATIONS FOR LOW VOLUME RURAL ROADS

Training Course Programme

Course objectives:

- To introduce the concepts behind Environmentally Optimised Design to those responsible for LVRR planning, design, construction and maintenance
- To present the standards and specifications produced by the SEACAP 3 project using Environmentally Optimised Design principles
- To present the design process associated with the standards and specifications and allow the participants to practise this process

		Session	Objective of the session	Presenter (to be confirmed)
Day 1				
		Course Start		
8.00	30	Registration of participants		
8.30	5	Welcome		Facilitator
8.35	10	Opening		
8.45	15	Introduction	What are the objectives of the course and the piloting?	
9.00	15	Self-introductions		
		Module 1 – LVRR Background		
9.15	60	1.1 LVRRs – purpose and management	What is the ultimate purpose of LVRRs and what issues affect their management?	Interactive session led by the facilitator
10.15	20	1.2 The problems of LVRRs		
10.35	25	Coffee and tea		
11.00	20	1.3 The road environment		
11.20	20	1.4 Current LVRR design in Lao	<i>What problems affect the provision of LVRRs?</i>	
11.40	20	1.5 Review of Module 1	<i>Is traffic level the main factor influencing the design of LVRRs?</i>	
			<i>How are LVRRs currently designed in Lao?</i>	
12.00	60	Lunch		
		Module 2 – LVRR Environment		
13.00	45	2.1 Road design and deterioration	<i>A summary of the main aspects of road design and</i>	

			<i>deterioration</i>	
13.45	25	2.2 Environmentally Optimised Design	<i>What are the many factors influencing the design of LVRRs?</i>	
14.10	30	2.3 Variable longitudinal design principle	<i>A road does not need to be uniform in design along its length</i>	
14.40	20	Coffee and tea		
15.00	75	2.4 LVRR whole life asset costs	<i>How are total construction and maintenance costs calculated?</i>	
16.15	15	2.5 Review of Module 2		
16.30		End of Day 1		

Day 2		Module 3 – LVRR Design process	A detailed explanation and discussion of the LVRR design process, with standards and specifications introduced at the appropriate stage	
8.30	10	3.1 Summary of design process		
8.40	30	3.2 Traffic analysis		
9.10	30	3.3 LVRR envelope		
9.40	20	Coffee and tea		
10.00	60	3.4 Traffic analysis exercise		
11.00	45	3.5 Alignments		
11.45	15	3.6 Sectioning		
12.00	60	Lunch		
13.00	20	3.7 Cross section		
13.20	20	3.8 Surfacing		
13.40	60	3.9 Pavement design		
14.40	20	Coffee and tea		
15.00	15	3.10 Drainage		
15.15	15	3.11 Variable longitudinal design options		
15.30	15	3.12 Whole life asset costs		
15.45	15	3.13 Design review		
16.00	15	3.14 Review of Module 3		
		Module 4 – LVRR Design in practice		
16.15	15	4.1 Preparation for the site exercise		
16.30		End of Day 2		
Day 3				
8.30-4.00 w/ lunch		4.2 Visit 1 – Site discussion	An opportunity to discuss the LVRR design process on site	
		4.3 Visit 2 – Site exercise	An exercise in the use of the LVRR design process on site	
Day 4				
8.30	90	4.4 Preparation of presentations		
10.00	20	Coffee and tea		
10.20	90	4.5 Presentations	Each group presents their designs to the other participants	

11.50	70	Lunch		
13.00	60	4.5 Presentations		
14.00	45	4.6 Review of Modules 1-4		
		Course End		
14.45	30	Evaluation	Participants to complete an assessment paper and course evaluation	
15.15	10	Conclusion		
15.25	10	Closing		
15.35	10	Presentation of certificates		
15.45		End of Day 4 and departure		

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Appendix B

Course Evaluation by Participants

This Appendix contains results from the participants' course evaluation form .

For questions that required a score, typically from 1 to 5, the numbers of each score have been recorded, as well as the average of all the scores.

For questions that required a written response, relevant comments have been translated into English and inserted below the relevant question.

Pilot Training Course

Course Evaluation by Participants

1. THE COURSE

1.1 Did the course have a good mix of presentations, discussions, exercises and site exercise?

	Need more	About right	Need less
Presentations	13	6	0
Discussions	10	9	0
Exercises	7	12	0
Site exercise	9	10	0

How could this mix be improved?

- *More on SEACAP 3; more detail and more discussion*
- *More exercises so that people learn more*
- *Not enough time on the exercise*
- *Improve the calculations and the site exercise*
- *More topics*
- *Improve topics before giving the course to others*
- *More time for the examples and give more explanations*
- *More time for the site exercise*
- *Detailed examples*
- *The agenda should be clear*
- *Presenters should explain very clearly and use the correct terminology*
- *More practical work*
- *No improvement required*
- *More practical work and in a different place (ie not Vientiane)*

1.2 What was your knowledge of low volume rural road design before the course?

			some				
nothing	1	2	3	4	5	detailed	
	0	3	3	9	4	Ave = 3.7	

What is your knowledge now of low volume rural road design?

			some				
nothing	1	2	3	4	5	detailed	
	0	0	3	7	8	Ave = 4.3	

How has the course helped improve your knowledge?

- *Increased skill and knowledge of LVRR design and standards and specs*
- *Improved skill and knowledge for LVRR design and understand spot and whole length improvement*
- *Increased road maintenance skill and knowledge*
- *Indicated need to do plenty of research*
- *Have gained knowledge*
- *Course improved knowledge, new skills, already had basic skills but now improved*
- *Know better now*
- *Know new road maintenance methodology and spot improvements*
- *Material is good for LVRR design and decision making*
- *Helped understanding of design and EOD approach*
- *Knowledge on LVRR has improved*
- *Increase skill and knowledge in LVRR design and useful for doing work on LVRRs*
- *Improved skills and know how to select road maintenance options at suitable cost*
- *Improved compared to other training*
- *Course revised experience gained over 20 years*
- *Understands re spots and whole length improvement and general design process*
- *Improve skill and knowledge for working on LVRRs*

1.3 Did the course meet your expectations?

not at all	1	2	3	4	5	completely
	0	0	2	9	7	Ave = 4.3

What were your expectations?

- *To improve year round rural access*
- *Standards to be issued to the Districts*
- *More funds from the Ministry for building LVRRs*
- *Expected to be able to keep road in good condition and traffic to rise*
- *Standards to be issued for future reference*
- *Material to be suitable for his District*
- *Use spot improvements to give year round access*
- *Standards should be applied to the local roads, previously haven't got any*
- *Quality control, eg material testing, was not mentioned, nor drainage design nor how to consult in communities*
- *Course to be applicable to all terrains*
- *Construction to follow immediately after design*
- *Course should be in national University curriculum*
- *LVRR design standards will be useful*
- *Use these techniques to reduce poverty*
- *LVRR designing within a tight budget and year round accessibility*
- *Course can be used in actual work*
- *LVRRs should meet the needs of rural people and reduce poverty and achieve road sector objectives*
- *People can use good roads – however, government has limited funds*
- *LVRR standards are good for MPWT and can be used for reference by other sectors*

- *Will take this lesson and train his staff in the District*

1.4 Did the course have the right amount of technical content?

			enough			
too little	1	2	3	4	5	too much
	0	0	10	6	3	Ave = 3.6

How should the technical content be changed?

- *Examples of construction materials would be good – with their suitability*
- *More photos in presentations*
- *Have a non-serious atmosphere in the classroom*
- *To be given to District technicians and contractors*
- *More standards on other subjects*
- *Translation Eng to Lao is not clear in a few places [may be referring to the slides]*
- *Standards should be applicable in all parts of Lao*
- *Prefers a continuous series of presentations and then questions at the end*
- *More training courses*
- *In general good but similar to other standards and would like more variety of pavements, eg as in SEACAP 17*
- *More detail on traffic analysis – formulae, etc*
- *Not the right amount but covers the basics*
- *Course should be shortened but more detailed when given in the University*
- *More on material selection and testing specifications*
- *More on traffic analysis*
- *Cost estimation*
- *Add more on material selection*
- *Should do the site exercise in mountainous terrain*
- *Designs should match actual site conditions*
- *Add drainage structures – small bridges, drifts, etc – to the standards*
- *Bit too quick as the material was new to the participants*

1.5 Did the programme satisfy the stated objectives of the course?

not at all	1	2	3	4	5	completely
	0	0	3	6	10	Ave = 4.4

How did it fail to meet them?

- *Material sometimes clear, sometimes unclear*
- *Translation Eng to Lao was hard to understand in the handouts – sometimes missed the meaning*
- *Couldn't understand some of it, eg technical terms*
- *Important to evaluate road projects after completion – assess the benefits*
- *Translation is hard to understand with typing errors*
- *Every day we started late*
- *Slide handouts were too small – hard to read*
- *Detail on higher order roads required*
- *Slide handouts are too small, especially the tables*
- *Time is too short – extend to 2 weeks*

- *Programme didn't stick to the schedule*
- *Handouts should be put in a hard file – easy to carry*
- *Some words not translated well – should be checked again*
- *Training gives him some experience in LVRR techniques*

1.6 Was the course well conducted and moderated?

badly	1	2	3	4	5	well
	0	0	3	8	8	Ave = 4.3

What improvements can you suggest?

- *Documents should be made easier to understand by the reader*
- *Improve the meaning of the slides to be easier to understand*
- *Improve the typing of the handouts – layout, clarity, etc*
- *Would like full standard documents for future use*
- *More time for the exercise*
- *Would like more discussion time*
- *More time*
- *Documents should be more legible*
- *Review the Lao translations*
- *More advance information to participants to prepare them and get early feedback*
- *Should be continued through the sector*

1.7 Did you always know what was next in the programme?

no	yes
11	5

How can we keep participants better informed?

- *Sometimes wanted a more detailed explanation*
- *Discussion should be a bit more specific and address specific sites*
- *Use slides to explain the programme*
- *We should give documents in advance*
- *Technical people should know of this course*
- *Discussion*
- *Follow the programme*
- *More site practice/exercise*
- *Presentation topics to be explained more clearly*
- *Wants to hear presenters' recommendations*
- *Recommends knowledge exchange between participants*
- *Road design should be based upon the road environment and solve accessibility problems of LVRRs with suitable, effective and low cost standards*
- *Transfer knowledge theoretically and practically*

1.8 Was the course about the right length?

		about right					
too short	1	2	3	4	5	too long	
	3	1	11	2	2	Ave = 2.9	

How should it be changed?

- *Propose the course to be open for all Provinces*
- *Add more time*
- *About right*
- *Reduce time*
- *Should be done in other Provinces*
- *Extension of time*
- *Add more time*
- *Good but could be done away from the Ministry*
- *Training should be organised in the Provinces and practical work should be done in difficult road conditions*

1.9 Will the course material of this workshop be of use to you in your work?

not useful	1	2	3	4	5	very useful
	0	0	1	2	16	Ave = 4.8

What parts of the course material will be useful or not useful?

- *RAD (Road Admin Division) will find it useful*
- *Road maintenance methodology and road maintenance design will be useful – before there was no maintenance planning or design*
- *Yes, for the whole sector*
- *Useful for technical unit and LRD*
- *Useful for OPWT and village road committees*
- *Pavement structure design*
- *Useful (2 comments)*
- *Useful for our community development planning*
- *Useful for engineering basics especially for University course*
- *Very useful (4 Comments)*
- *Spot improvements is very useful*
- *Very good and a valuable lesson*

1.10 Which topics in the course did you prefer (useful or interesting)?

- *First module, explain more re Lao design standards and their history*
- *Include environmental material*
- *Spot improvements and EOD*
- *Should add material on environmental assessment for LVRRs*
- *Everything, especially design*
- *Road design and whole life asset costing*
- *Road design and SEACAP 17*
- *Every topic is very important, should have more photos*
- *Detailed calculations*
- *Overall arrangements and planning, suggest take course to the Districts*
- *Road maintenance design*
- *All (2 commenst)*
- *Standards and specifications, whole life asset costing*
- *Pavement materials*

1.11 Which topics in the course did you not like (useless or boring)?

- *None (8 comments)*

1.12 How were the handouts?

		about enough					
Quantity:	too few	1	2	3	4	5	too many
		0	0	14	2	3	Ave = 3.4
Usefulness:	not useful	1	2	3	4	5	very useful
		0	0	5	3	4	Ave = 3.9
Clarity:	hard to understand	1	2	3	4	5	easy to understand
		1	2	4	7	2	Ave = 3.4

Do you have any comments on the handouts?

- *Translation in handouts should be edited again to improve for the next course (3 comments)*
- *Slide handouts – should be easier to read (2 comments)*
- *Slides handouts were too small*
- *Want more detail on the slides*
- *Exercise: there was no example before the practical*
- *Traffic analysis – want formulae, and for any other forms*
- *Want more detail of traffic analysis*
- *Handouts should be in a hard file with a list of contents (2 comments)*

1.13 How were the presentations?

		about enough					
Quantity:	too few	1	2	3	4	5	too many
		0	1	9	8	0	Ave = 3.4
Usefulness:	not useful	1	2	3	4	5	very useful
		0	0	4	5	5	Ave = 4.1
Clarity:	hard to understand	1	2	3	4	5	easy to understand
		0	0	5	9	2	Ave = 3.8

Do you have any comments on the presentations?

- *Course should be given to everyone*
- *The course to be improved and don't mix it with SEACAPs 17 and 21*
- *Improve clarity of formulae*
- *Because District staff have low skills, the trainer should explain more clearly with more examples*
- *Course should be held in a different place*

1.14 Did the moderator and presenters make it easy for you to contribute to the course during discussion and feedback?

difficult	1	2	3	4	5	easy
	0	0	9	4	6	Ave = 3.8

Do you have any comments on the discussions and feedback?

- *Sometimes questions were not answered well*
- *Wants to do course in other Provinces*
- *People should stand up to give comments*
- *Need good friendly discussions and training*
- *Not necessary to have a meeting chair sitting in front – a facilitator is enough*
- *Very interesting but should be more discussion time*

2. FUTURE COURSES

This course is a pilot for a national training programme. We would like to know how to make it suitable for giving to OCTPCs and VMCs.

2.1 Are there any topics that should be added?

- *Construction methods for LVRRs*
- *Quality control and other pavement types to be added*
- *Quality control of materials*
- *Video show*
- *Introduction to community maintenance and road usage*
- *Make topics easier to understand*
- *Documents are OK but must be made user-friendly*

2.2 Are there any topics that should be removed?

- *SEACAP 17*
- *Road maintenance*

2.3 Are there other ways in which it could be improved?

- *Improve translation – technical terms should be translated consistently*
- *Improve quality control and supervision training*
- *More practicals*

3 ARRANGEMENTS

How were the arrangements for the course?

	unsatisfactory					very satisfactory	
Food	1	2	3	4	5		
	0	0	2	4	11	Ave = 4.5	
Transport	1	2	3	4	5		
	0	1	3	2	11	Ave = 4.4	
Training room	1	2	3	4	5		
	0	0	2	3	12	Ave = 4.6	

If you have circled 1, 2 or 3 for any item, please explain the problem.

- *Per diems are not enough and should get per diems for both travelling days*

4. ADDITIONAL COMMENTS

Please give any other comments that you would like on any aspect of the course.

- *Invitation should give more background to the course – so we can select the right person to attend*
- *More photos in the documents*
- *Invitations should include the course programme*
- *Add more time*
- *Participants should be prompt and follow announcements*
- *Evaluate participants' level of experience and decide which level needs to be trained*
- *After site exercise presentations, other participants should get involved in the discussion*
- *Increase to 5 days with 2-3 days for the exercise*
- *Environment should be informal*