



**REVIEW OF DESIGN STANDARDS AND MAINTENANCE
GUIDELINES FOR LOW VOLUME ROADS IN ETHIOPIA
AFCAP/ETH/111**

INCEPTION REPORT

16th August 2013

This project was funded by the Africa Community Access Programme (AFCAP) which promotes safe and sustainable access to markets, healthcare, education, employment and social and political networks for rural communities in Africa.

Launched in June 2008 and managed by Crown Agents, the five year-long, UK government (DFID) funded project, supports research and knowledge sharing between participating countries to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources.

The programme is currently active in Ethiopia, Kenya, Ghana, Malawi, Mozambique, Tanzania, Zambia, South Africa, Democratic Republic of Congo and South Sudan and is developing relationships with a number of other countries and regional organisations across Africa.

This material has been funded by UKaid from the Department for International Development, however the views expressed do not necessarily reflect the department's or the managing agent's official policies.

For further information visit <https://www.afcap.org>

This document is one of the outputs from the AFCAP funded Review of Design Standards and Maintenance Guidelines for Low Volume Roads in Ethiopia. The Review has been carried out by IT Transport Ltd (ITT). The views expressed are those of the authors and do not necessarily reflect those of AFCAP or the Ethiopian Roads Authority.

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List of Abbreviations and Acronyms

AFCAP	Africa Community Access Programme
DCP	Dynamic Cone Penetrometer
ERA	Ethiopian Roads Authority
LVR	Low Volume Roads
SNNP	Southern Nations National Peoples
URRAP	Universal Rural Road Access Programme

EXECUTIVE SUMMARY

- AFCAP engaged I.T.Transport Limited (UK) to carry out an independent review of the Ethiopian Low Volume Roads Design Manuals and Bidding Documents issued by ERA in 2011. This Inception Report provides a record of the preliminary meetings and discussions including the agreed decisions and clarifications.
- The Consultants Team comprises Gary Taylor and Dr Alemgena Araya. Gary Taylor arrived in Ethiopia on Monday 12th August and is scheduled to depart from Ethiopia on 30th August 2013.
- At a kick-off meeting held on 13th August 2013, it was clarified that the objectives of this assignment were to focus on who was using the Manuals, how they were being used and any problems found during their use.
- It was also clarified that any amendments required to the manuals would be made by the original authors in a follow up assignment funded by AFCAP.
- During the kick-off meeting (see Annex 2) and in subsequent discussions a programme for visits to the Regions was agreed (see Annex 4). These visits will take place between 15th and 26th August 2013. The regions visited will be Oromia, Tigray, Amhara and SNNP.
- Based on the preliminary discussions a revised work programme has been prepared (See Section 3.2). A Debriefing meeting will be held on Thursday 29th August at ERA offices during which the Consultant's main findings and recommendations will be presented. Based on this and the comments received in the Debriefing Meeting, a draft Final Report will be produced by 6th September 2013. The Consultants will prepare a final report within one week of receipt of comments on the Draft Final Report.

1. INTRODUCTION

1.1 Background

A new series of standards, manuals, guidelines and bidding documents for the design and maintenance of low-volume roads (LVR) in Ethiopia¹ has been prepared for the Ethiopian Roads Authority (ERA) with support from the African Community Access Programme (AFCAP). These documents have come into general use in Ethiopia from 2011 onwards with the intention that, after a period of time, they should be reviewed and updated. This review and updating is now to be carried out with support from AFCAP in a two-phase process:

Phase 1: An Independent Review to examine the extent to which the documents are in use, identify any specific barriers to their use and provide recommendations for an updating process.

Phase 2: An updating of the documents to be carried out by their original authors based on the recommendations of Phase 1.

After a competitive bidding process, AFCAP engaged consultants I.T.Transport Limited (UK) to carry out Phase 1 of the process in a contract signed in July 2013. This is the Inception Report for phase 1. The full Terms of Reference for this Review are given in Annex 1.

1.2 Mobilisation

The Consultants Team comprises:

1. Gary Taylor, and
2. Alemgena Araya (Dr.)

Gary Taylor arrived in Addis Ababa from UK on Monday 12th August 2013. He is scheduled to depart Ethiopia on the morning of 30th August 2013. A kick-off meeting was held at ERA offices on Tuesday 13th August. During this meeting, the overall objectives of the mission were restated and preliminary plans for the mission, including the visits to the regions, were discussed. Notes of this meeting are given in Annex 2.

¹ These LVR Documents are referred to locally as the “LVR Manuals”.

2. CLARIFICATIONS

2.1 Objectives

The goal of the current Phase 1 assignment is to collect evidence on the use of the manuals and their impact on the construction and maintenance of low volume rural roads in Ethiopia.

The immediate objective of the current assignment is to provide an independent assessment of the extent of the use of the LVR documents and their impact on roadworks. The specific objectives are to:

- Examine the extent to which the LVR Documents are in use in Ethiopia
- Identify any specific barriers to their use
- Provide recommendations for the updating process

According to the Terms of Reference, the Consultants for Phase 1 are not required to analyse or review the technical principles behind the LVR Documentation. The focus should be on the implementation and roll-out of the LVR Design Approach. However, the Consultants will record where any problems, errors, limitations or gaps in the LVR Documents have been encountered.

The main questions to be answered by the current assignment are:

- Who is using the manuals?
- How are they being used?
- What problems have been encountered during their use?

2.2 Regional Visits

During the kick-off meeting, it was agreed that the four main regions (Oromia, Tigray, Amhara and SNNP) would be visited rather than the three stated in the Consultant's proposal. However, in Oromia it may only be possible to visit the regional offices and not the weredas.

The agreed format for the regional meetings is:

- Day 1: morning – discussions with regional staff: afternoon – discussions with consultants and contractors
- Day 2: visits to two weredas to interview wereda staff and visits to sites to examine technical standards and interview communities and road users.

To get inputs from the emerging regions that will not be visited, the Consultants have prepared a questionnaire. This will be distributed by ERA during the ERA Annual Meeting on 16th and 17th of August 2013. The Questionnaire is given in Annex 3.

2.2 Overview of AFCAP Research Projects

The AFCAP Technical Manager confirmed that, given the short duration of the assignment, the overview of other AFCAP Research Projects that is referred to in the Terms of Reference could be limited to two issues:

1. Are there aspects of the Tanzania district road maintenance research that are relevant to Ethiopia and should be incorporated into the maintenance “booklet” (Part G of the LVR Manual)?
2. Should the DCP design catalogue developed in Malawi be incorporated into the Ethiopia LVR manuals? DO you have the most recent draft of the DCP design manual dated June 2013?

3. WORK PROGRAMME

3.1 Mission programme

Following the kick-off meetings and subsequent discussions, a detailed work programme for the mission to Ethiopia has been drawn up. Both the Consultant’s team members will visit SNNP (Awassa) and Oromia (Addis Ababa). Gary Taylor will visit Amhara (Bahar Dar) accompanied by an ERA staff member. Dr Alemgena Araya will visit Tigray (Mekelle). A copy of the Mission Programme is given in Annex 4.

3.2 Overall work programme

The revised overall work programme for the Review is shown below. This is an updated version of the work programme shown in the Consultant’s proposal.

WORK PLAN: Consultancy Services for Review of Design Standards and Maintenance Guidelines for Low Volume Roads in Ethiopia		Week1							Week2							Week3															
		Dates (August/September 2013)																													
ID	Result Area / Activity	8	9	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	6	30					
1	Inception Phase																														
1.1	Familiarisation with the 2011 ERA LVR documents	■		■		■		■																							
1.2	Conduct overview of research projects carried out under AFCAP	■		■		■		■																							
1.3	Initial Meetings and Brainstorming (e.g. Conduct interviews with ERA staff engaged in the implementation of URRAP and other LVR projects)			■																											
2	Site Visits, Conduct Interviews & Debriefing																														
2.1	Undertake visits to a selection of regions and weredas where URRAP or other relevant programmes are being implemented																														
2.2	Inspect road works being carried out																														
2.3	Solicit the views of local communities and road users on the standards and approaches adopted																														
2.4	Conduct interviews with road experts, consultants and contractors in the selected study areas to obtain feedback																														
R	REPORTING																														
R1	Inception Report																														
R2	Debriefing Note																														
R3	Draft Final Report																														
R2	Final Report																														
	STAFFING																														
1	Expert 1 - Gary Taylor																														
2	Expert 2 - Alemgena Araya																														

A Debriefing meeting will be held on Thursday 29th August at ERA offices during which the Consultant’s main findings and recommendations will be presented. Based on this and the comments received in the Debriefing Meeting, a draft Final Report will be produced by 6th

September 2013. The Consultants will prepare a final report within one week of receipt of comments on the Draft Final Report.

3.3 Reporting Milestones

Based on the revised work programme given above, the reporting milestones are now:

REPORTING MILESTONES	
Inception Report	Saturday 17 th August
Debriefing Note	Thursday 29 th August
Draft Final Report	Friday 6 th September
Final Report	One week after receipt of comments

Annex 1: Terms of Reference

Review of Design Standards and Maintenance Guidelines for Low Volume Roads in Ethiopia (Phase 1)

The Africa Community Access Programme² (AFCAP) is a research programme funded by the UK government's Department for International Development (DFID). AFCAP is assisting the Ethiopian Road Authority (ERA) to update and expand the existing suite of road design manuals, standard specifications and bidding documents.

Background

The overall objective of the project is to review, update and expand the existing series of ERA design manuals, standards specifications and bidding documents. This includes greater recognition of the specific requirements of low volume roads. The purpose of the design manuals, specifications and standard bidding documents is to promote rational, appropriate and affordable implementation of projects for all roads in Ethiopia that make appropriate use of local resources and are cost-effective and sustainable.

Local ownership of the documents is imperative and the methodology adopted in preparation of the documents has been a key element of this process. The process involves the full participation of local experts in the preparation of new chapters or thematic areas, or the revision of existing documents. This participation is being guided and supplemented through inputs by regional and international experts. The documents are all subject to high level quality assurance and endorsement by appropriate authorities at both regional and federal government. The project is being overseen by the Research Steering Group, which is chaired by the Ethiopian Roads Authority (ERA).

The project is being managed by the AFCAP Core Management Group (CMG). The CMG is providing the following services:

1. Assist ERA to organise Research Steering Group Meetings.
2. Identify, appoint and supervise a Technical Director with oversight for the production of the manual and bidding documents.
3. Identify, appoint and supervise specialist lead authors and works contracts experts for the various component chapters of the manual and bidding documents.
4. Identify, appoint and supervise other specialist contributors as required.
5. Assist ERA and Regional Road Authorities to organise technical thematic workshops and peer review meetings for the manual and bidding documents.
6. Organise the distribution of drafts of documents to stakeholders for comment and review.
7. Organise final printing and distribution.
8. Assist ERA with the preparation of publicity and other dissemination materials.

A key output of the project is a new series of manuals for the design and maintenance of low volume roads. This series of manuals was published by the Ethiopia Roads Authority in 2011. The manuals are accompanied by standard bidding documents including standard technical specifications for labour based construction of wereda roads, and standard drawings. These documents are now in use on the Universal Rural Roads Access

² AFCAP is a DFID funded programme of research, knowledge dissemination and training, designed to address the challenges of providing safe and sustainable access to poor communities in Africa. The management of AFCAP has been contracted by DFID to Crown Agents.

Programme (URRAP) and other low volume roads improvement projects implemented by ERA. They were published in draft form with the intention of updating them after a period in use.

Scope of the Services: Review of Design Standards and Maintenance Guidelines for Low Volume Roads

The review and updating of the LVR documents will follow a two phase process. The first phase will examine the extent to which the documents are in use in Ethiopia, identify any specific barriers to their use, and provide recommendations for the updating process. The second phase, which will include implementation of the recommendations of the first phase, will be carried out by the original authors of the documents.

The Consultant for Phase 1 will review the use of the ERA LVR design manuals under URRAP and other programmes in Ethiopia and identify specific areas for update, improvement, training and dissemination. The study will consider how recent innovations and lessons learned under AFCAP research projects in Ethiopia and elsewhere in the region could be better reflected in the Ethiopia documents.

At the start of the assignment the Consultants shall receive a briefing from ERA management, the AFCAP Technical Services Manager, and the AFCAP Technical Director for the Ethiopia manuals project.

The Consultants shall:

1. Familiarise themselves with the 2011 ERA LVR documents in particular:
 - Road Design manuals (Parts A, B and D)
 - Complimentary Interventions Manual (Part C)
 - Structures Manual (Part E)
 - Trail Bridge Design Manual (Part F)
 - Maintenance manual (Part G)
 - Standard Specifications for Labour Based Construction of Wereda Roads
 - Standard Drawings
 - Standard Bidding Documents.
2. Conduct an overview of research projects carried out under AFCAP in Ethiopia and other countries in the region that may be relevant to the updating process.
3. Undertake visits to a selection of regions and weredas where URRAP or other relevant programmes are being implemented; inspect road works being carried out and solicit the views of local communities and road users on the standards and approaches adopted.
4. Conduct interviews with road experts, consultants and contractors in the selected study areas to obtain feedback on the use of the manuals and bidding documents and to identify any barriers to the implementation of the guidelines.
5. Conduct interviews with ERA staff engaged in the implementation of URRAP and other LVR projects.
6. Discuss findings and initial recommendations with senior ERA officials, AFCAP management, and the AFCAP Technical Director for the LVR manuals project.
7. Prepare a draft report including: i) an assessment of the extent to which the new documents and standards are being used in Ethiopia ii) recommendations for improvements to the documents and standards iii) recommendations for further training and dissemination.

8. Prepare a final report taking into account any comments in the draft report from ERA and AFCAP management.

The Consultant is not required to analyse or review the principles of Low Volume Road design that form the basis for the LVR documentation. These principles are now well established in Ethiopia. It is expected that the assignment will focus more on the implementation and roll-out of the LVR design approach than the technical details of the design approach and the road design standards that have been established. All reports shall be submitted in electronic form.

Minimum Experience requirements

The assignment will be carried out by a team of two experts. Both members of the team shall have an appropriate university degree at masters' level or equivalent and a minimum of 15 years' experience in the road sector and rural development. Prior experience in Ethiopia by at least one of the team members is essential, including relevant work in rural areas. Preference will be given to proposals that include an Ethiopian national on the team. None of the experts shall have participated directly in the original preparation of the LVR documents.

The team must be able to demonstrate the following specific areas of skills and experience:

- Rural roads engineering (paved and unpaved roads)
- Maintenance of rural roads
- Use of labour based technology and intermediate equipment
- Small contractor development
- Decentralised road sector management
- Contract management and administration
- Community development
- Rural transport services
- Social and environmental impacts of road works.

Facilities, services and resources to be provided by the Consultant

The Consultants are expected to make one visit to Ethiopia of up to three weeks for purposes of the assignment. The consultants shall visit a minimum of six weredas in three regions where URRAP is being implemented. If possible these field trips should include visits to a selection of non-URRAP sites where LVR standards are being implemented, e.g. ERA/AFCAP Otta Seal demonstration sites. The Consultants will be accompanied by ERA or Regional Road Authority staff at all times during the field visits.

The Consultants are responsible for providing their own transport (road and air), accommodation and subsistence at their home base and in Ethiopia, as well as telephone communications, notebook computer and internet access.

The Consultants are not required to provide subsistence costs or airfares for government staff but should be prepared to share road transport.

ERA will provide the Consultant with one hard copy of the LVR Design Manuals (Part A to G) and the Standard Drawings, as well as electronic versions of all relevant documents.

Assignment management, inputs and administration

The total anticipated time input of the Consultants is 45 days, shared approximately equally between the two experts.

The Consultants will liaise with the ERA Deputy Director General (Planning) or his representative for all day-to-day aspects of the implementation of the assignment in Ethiopia. All correspondence and reports shall be copied to the AFCAP Technical Services Manager. For contractual issues the Consultants are required to report to the Procurement Manager of AFCAP, who is based in Sutton, UK.

Annex 2: Notes of the Kick-off Meeting held at ERA Offices on 13th August 2013

Present:

Bekele Negussie (BN)	ERA
Mulugeta Demissie (MD)	ERA
Frew Bekele (FB)	ERA
Yetmgeta Asrat (YA)	ERA
Les Sampson (LS)	AFCAP
Alemgena Araya	ITT
Gary Taylor	ITT

Subject: Review of Design Standards and Maintenance Guidelines for Low Volume Roads (the LVR Manuals) in Ethiopia

1. BN opened the meeting and welcomed the participants.
2. LS introduced the subject of the meeting. The LVR Manuals have now been in use for 1-2 years. A review at this stage was part of the original plans. This would be carried out in two phases. The first phase will be an independent review and the second phase will be an updating of the Manuals.
3. LS emphasised that the first phase of the review was not particularly technical. The focus was on finding out who is using the manuals, how they are being used and any problems encountered. Another important aspect was to gain some assessment of the impact of the Manuals in terms of tangible indicators.
4. BN expressed satisfaction with the process. He clarified and LS confirmed that the phase 2, covering the updating of the manuals, would be carried out by AFCAP after the recommendations of phase 1 were available and agreed.
5. MD clarified that, although technical issues were not the main focus of phase 1 of the study, inconsistencies and controversies over certain elements would be covered. LS confirmed this and also said that the consultants should list any technical issues raised during their visits and discussions. These would then be taken into account in the updating of the Manuals.
6. There then followed a discussion on the regions to be visited. The consultant's proposal was based on visiting three regions. It was agreed that visits should be made to Tigray, Amhara and SNNP Regions. However, it was agreed that, because the Oromia Regional Offices were in Addis, this could be added as a fourth region.
7. It was agreed that two days per region would be required. The first day should cover interviews with regional staff, consultants and contractors. The second day should include visits to two weredas and road sites.
8. It was agreed that a short questionnaire could be distributed to the regional representatives attending the ERA Annual Conference on 16-17 August at Alemgena. This would then include the regions that would not be visited by the Consultants.
9. It was agreed that the Debriefing Meeting should be held at ERA offices on Thursday 29th August at 0845 hrs.

Annex 3: Questionnaire for Regional Road Authorities or Transport Bureaux

(Answer for your region only)

		Yes	No	Partly
Q1	Are you aware of the LVR Manuals issued by ERA in 2011?			
Q2	Do you have copies available in your organisation?			

		Estimated number of staff (tick one box per row)				
Q3	Who is using the documents in your region?	0-5	5-10	10-20	20-50	<50
	• Your organisation's staff					
	• Enterprise staff (where applicable)?					
	• Wereda staff?					
	• Contractor's staff?					
	• Consultant's staff?					

		Extent of use (tick one box per row)				
Q4	At what stage are the documents being used?	5	4	3	2	1
	• Identification/Feasibility					
	• Design & Tender					
	• Construction					
	• Maintenance & Monitoring					

Key: 5 = always used; 4 = usually used; 3 = sometimes used; 2 = only occasionally used; 1 = never used.

		No of projects	Est. No of kilometres
Q5	How many road projects have been developed or are in development using these documents?		
Q6	How many road projects have been constructed or are under construction using these documents?		
Q7	How many roads are being maintained using these documents?		

		Yes	No
Q8	Have you encountered any problems/limitations/gaps in the LVR Documents? If “yes”, please list these below giving the document reference where possible		
		Doc Ref.	

For Reference, this is a list of the LVR Documents:

- Road Design Manuals (Parts A, B and D)
- Complementary Interventions Manual (Part C)
- Structures Manual (Part E)
- Trail Bridge Design Manual (Part F)
- Maintenance Manual (Part G)
- Standard Specifications for Labour Based Construction of Wereda Roads
- Standard Drawings
- Standard Bidding Documents

Annex 4: Consultants' Mission Programme

Day	Date		Details	Overnight
T	13	a.m.	Kick-off meeting at ERA	
		p.m.	Draft letters to Regions	Addis
W	14	a.m.	Organise logistics – travel/accommodation	
		p.m.	Prepare regional questionnaire	Addis
T	15	a.m.	Organise Oromia meeting	
		p.m.	Notes on kick-off meeting/prepare Inception Rep.	Addis
F	16	a.m.	Finalise Inception Report	
		p.m.	Finalise checklists for regional visits	Addis
S	17	a.m.	Join ERA Annual Meeting for lunch	
		p.m.	Collect Questionnaires	Addis
S	18	a.m.		
		p.m.	Travel to Awassa by road	Awassa
M	19	a.m.	SNNPR – RRA + Enterprise	
		p.m.	SNNPR – consultants & contractors	Awassa
T	20	a.m.	SNNPR - Visit weredas	
		p.m.	Travel back to Addis	Addis
W	21	a.m.	Fly to Amhara/Tigray – RRA + Enterprise	Bahar
		p.m.	Amhara/Tigray – consultants & contractors	Dar/Mekelle
T	22	a.m.	Amhara/Tigray – visit weredas	Bahar
		p.m.		Dar/Mekelle
F	23	a.m.	GT Travel back to Addis by air	
		p.m.		Addis
S	24	a.m.	Alemgena Travel back to Addis by air	
		p.m.		Addis
S	25	a.m.	Visit AFCAP site at Toloburo	
		p.m.		Addis
M	26	a.m.	Oromia – RRA + Enterprise	
		p.m.	Oromia – consultants & contractors	Addis
T	27	a.m.	Follow-up meetings in Addis	
		p.m.		Addis
W	28	a.m.	Prepare debriefing note	
		p.m.		Addis
T	29	a.m.	Debriefing Meeting	
		p.m.	Update Debriefing note. Depart Addis	Travelling
