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Establishment of Centre for Sub-Saharan Transport Leadership

Interim Report

Mott MacDonald, University of Cape Town and University of Birmingham

RAF2147A

June 2019

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Cover photo: KNUST entrance, Kumasi, Ghana.

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Abstract

The project to establish a Centre for sub-Saharan Transport Leadership (CSSTL) has been operational since February 2019 and this Interim Report and Draft Business Plan is the second major deliverable. In the period since the Inception Report, the Host Institution has been selected. Kwame Nkrumah University of Science and Technology (KNUST) in Ghana were awarded Host Institution status on a three-month probationary period pending the finalisation of activities, such as selection of Management Staff and agreement of a contract with ReCAP.

KNUST were selected based on their current transport and business school strengths, in addition to the synergies they bring through their World Bank funded Transport Education and Research Centre Kumasi (TRECK). TRECK is based in KNUST's Department for Civil Engineering and will now also host the CSSTL. The next steps in the coming months are to finalise the Business Plan, a contract between KNUST and ReCAP and finalise the curriculum and syllabus so approval for a new programme can be sought from KNUST University Management.

Once this approval is secured, the marketing and accreditation processes can commence. The expected start date for the first cohort who will participate on the Master's degree in Transportation Leadership is September 2020. When the TSLDP can commence is linked to the academic calendar year, hence why September 2020 was chosen as the starting date. It would not be possible to have programme approval from KNUST and accreditation for a course in place by September this year (2019).

Key words

Leadership, capacity building, development, training, education, CSSTL, KNUST, transport engineering, transport services.

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

www.research4cap.org

Acronyms, Units and Currencies

AAIT	Addis Ababa Institute of Technology
AfCAP	Africa Community Access Partnership
ALG	Action Learning Group
ASANRA	Association of Southern African National Road Agencies
AsCAP	Asia Community Access Partnership
CIHT	Chartered Institution of Highways and Transportation
CoE	Centre of Excellence
CPD	Continuous Professional Development
CSSTL	Centre for sub-Saharan Transport Leadership
DFID	Department of International Development
ECSA	Engineering Council South Africa
EngC	Engineering Council (UK)
ERA	Ethiopian Roads Authority
HVT	High-Volume Transport (DFID-funded programme)
ICE	Institution of Civil Engineers
JBM	Joint Board of Moderators
KNUST	Kwame Nkrumah University of Science and Technology (Ghana)
NAB	National Accreditation Board (NAB)
MDB	Multilateral Development Bank
MoU	Memorandum of Understanding
ReCAP	Research for Community Access Partnership
SAICE	South African Institution of Civil Engineers
SSA	Sub-Saharan Africa
TRECK	Transport Research and Education Centre Kumasi (KNUST, Ghana)
TSLDP	Transport Sector Leadership Development Programme (ReCAP)
UCT	University of Cape Town (SA)
UK	United Kingdom (of Great Britain and Northern Ireland)
UK aid	United Kingdom Aid
UoB	University of Birmingham (UK)
WB	World Bank

Executive Summary

This is the second milestone deliverable for this project. It consists of the Interim Report and Draft Business Plan and is a progress update on delivery since the Inception Report was submitted in February 2019.

During the Inception Phase, the number of universities shortlisted for Host Institution status was reduced from eight to two. These were Addis Ababa Institute of Technology in Ethiopia and Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana. In April 2019, the Service Provider and ReCAP visited both universities to interview staff and view facilities. The purpose of the interview was to explore the responses provided in their capability statements, in addition to checking their veracity.

Following these interviews, the Service Provider and ReCAP assessed how the universities aligned with the selection criteria and how sustainable their offerings were likely to be. The outcome was that Host Institution status was awarded to KNUST on a three-month probationary period. The probationary period is to permit some outstanding tasks to be finalised (e.g. appoint Management Staff) and offer ReCAP a mechanism to relocate the Centre for sub-Saharan Transport Leadership (CSSTL) should the project not be progressing as desired.

KNUST demonstrated close alignment between their existing World Bank-supported Transport Research and Education Centre Kumasi (TRECK) and the aims of the ReCAP CSSTL and Transport Sector Leadership Development Programme (TSLDP). TRECK is a transport Centre of Excellence (CoE) for West Africa that shares many ambitions with the CSSTL. One of these is the development of blended technical and managerial / leadership post-graduate degrees, one of which KNUST is already offering in the aviation sector. This alignment between KNUST's vision and that of the CSSTL, in addition to KNUST sharing similar long-term goals and World Bank support to help them achieve these goals, gave the team confidence that KNUST were the appropriate choice.

An Interim Stage Workshop was held at the University of Cape Town (UCT) between 21st and 23rd May. It was attended by the Service Providers team, two key KNUST professors and the ReCAP Deputy Team Leader – Infrastructure Research. The purpose of this workshop was to further elaborate on discussions pertaining to project implementation, curriculum development, KNUST approvals processes for programmes and courses, Ghanaian accreditation processes, project challenges and the CSSTL Business Plan.

The primary outcome from this workshop was establishing an agreed delivery programme for the project. It was agreed that Cohort 1 would start the post-graduate degree in September 2020. This date is driven by the need to facilitate the KNUST programme approvals process, Ghanaian accreditation process, allowing sufficient time for marketing and candidate applications and aligning with the start of the academic year.

It is recognised that this programme start date occurs beyond the scheduled end of ReCAP in July 2020 and it will be important that KNUST are supported beyond this point. Support would be recommended for at least the initial one - two cohorts on the programme to establish the delivery process, as successful establishment and operations in the first two years (approx.) is critical to achieving sustainability.

KNUST already possess much of the proposed TSLDP content within their current offerings, which if it can be utilised, would lower the cost of delivery versus engaging third-party suppliers. There would be significant value in a member of the Service Providers team spending time at KNUST reviewing this course content, checking its suitability and identifying areas for development. It is proposed this visit takes place in August/September 2019 but a funding mechanism for this will need to be agreed.

There are several activities to be completed to achieve the September 2020 start date. Some of these (e.g. an agreement between KNUST and ReCAP) are urgent as delays could impact this date. Others are reliant on the efficiency and expediency of third parties (e.g. Ghana National Accreditation Board (NAB) and KNUST University Management) and outside the control of the Service Provider. These key activities include:

1. Establishing a Memorandum of Understanding (MoU) between KNUST and ReCAP. This is to permit activities such as programme approval and Management Staff procurement to commence within KNUST.

2. Initiate the programme approval process within KNUST and expedite it through the system. KNUST approval is critical to initiating marketing of the CSSTL and accreditation by the Ghana NAB.
3. Develop a handover plan with the High-Volume Transport (HVT) Programme to manage the novation of the Service Provider and KNUST from ReCAP to HVT by May 2020.

1 Introduction

1.1 Project Background

Mott MacDonald, the University of Cape Town and University of Birmingham are working with ReCAP to implement the second phase of their Transport Sector Leadership Development Programme (TSLDP). The TSLDP project concept originated from the Association of Southern African Road Agencies (ASANRA), who identified a lack of technical and managerial leadership as a risk to the delivery of their highway transportation goals in the coming years. Whilst ReCAP generally focus on rural roads, they decided to take this broader transport-focused project forward and establish a capacity building programme that could help develop future generations of transport leaders in Africa.

Mott MacDonald and the University of Cape Town delivered Phase 1 of the TSLDP project in 2017. They identified that before any training is developed, a Centre of Excellence based in an appropriate sub-Saharan Africa (SSA) institution, responsible for owning and implementing this programme, was critical to secure its success in the long-term.

In Phase 2, Mott MacDonald, University of Cape Town and University of Birmingham are tasked with establishing this Centre of Excellence within a suitable institution in SSA. Our role is to identify this institution and work with them to establish the Centre of Excellence and technical and leadership training courses to be delivered. In selecting a suitable host, we must be able to demonstrate the location can provide continuity and stability, has an excellent academic reputation and shows a long-term commitment to developing a sustainable CSSTL.

The project's goal is for the Host Institution to become the home of the CSSTL and the training courses. With our support over the next two years (and possibly up to four years), the aim is that the Host Institution can go on to operate the centre independently beyond the end of this project. To support this objective, the Project Team and Host Institution will be working together to develop links to other African and reputable international Universities, professional institutions and funding bodies who can support the Centre and the training programme in the long-term.

1.2 Purpose of this Report

This is the Interim Report and Draft Business Plan submission and is the second milestone deliverable for the project. This report also acts as Quarterly Progress Report No. 1 under the Service Provider's Terms of Reference.

The purpose of the submission is to inform:

1. The outcome of the Host Institution selection process
2. The TSLDP curriculum and CSSTL management structure
3. Links to external partners
4. Issue the Draft Business Plan
5. The outputs from the Asia Scoping Study

Additional items have been added to this deliverable as the Project Team considered them important to the future delivery. These items include:

1. Marketing Strategy for the CSSTL
2. Terms of Reference for the CSSTL Working Group
3. A formal review of the KNUST curriculum

2 Progress Update

2.1 Current Status

A rationalised deliverable schedule was agreed with ReCAP at Inception Phase. The rationalisation combined the first Quarterly Progress Report with this Interim Report, as their deliverable dates aligned. It also combined the final Quarterly Progress Report and the Final Report for the same reasons.

Table 1 summarises the milestone and non-contracted deliverables submitted in this period and their current status. The schedule also lists the programmed deliverables for the next quarter and those following thereafter to the end of the project (under ReCAP management) in May 2020.

Table 1: Current Deliverables Schedule

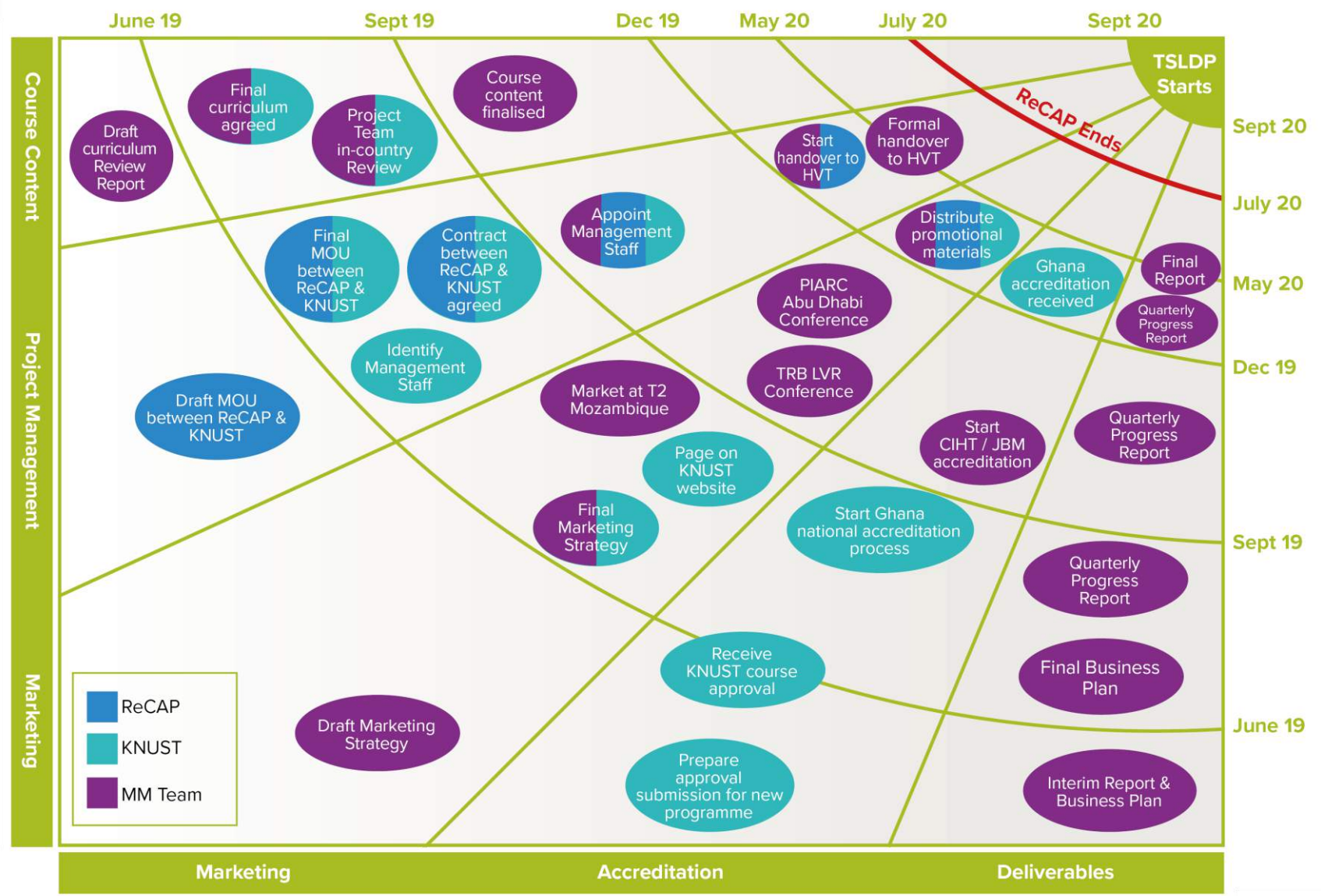
No	Deliverables	Contracted Deliverable Date	Submission Date	Status	Comments
Milestone Deliverables this Period					
1	Inception Report	28/02/2019	28/02/2019	Approved	Comments from the ReCAP Technical Panel received on 14/05/2019. An updated Inception Report was re-issued on 07/06/2019 to ReCAP in response to these comments.
2	Interim Report	07/06/2019*	07/06/2019	Approval Pending	-
3	Draft Business Plan	07/06/2019*	07/06/2019	Approval Pending	-
Non-Contracted Deliverables					
4	Abstract for T2 Mozambique	n/a	21/03/2019	Submitted	Submitted but no confirmation of receipt received from the organisers. Informed via ReCAP it has been received. T2 moved to November 2019.
5	TRB LVR conference submission	n/a	28/03/2019	Submitted	Submitted on the TRB submissions portal by N Leta.
6	Host Institution Assessment Note	n/a	24/04/2019	Submitted	-
7	Response / Award Letters to AAIT & KNUST	n/a	24/04/2019	Submitted	-
8	Working Group Invitations	n/a	15/05/2019	Submitted	-
9	Working Group ToR	n/a	15/05/2019	Submitted	-
10	RECAP/KNUST MOU	n/a	In Progress	In Progress	MOU is with KNUST for signature.
11	Article for ReCAP Newsletter	n/a	05/06/2019	Submitted	Draft submission scheduled for 5th June 2019.
Deliverables in the Next Period					
12	Final Business Plan	31/08/2019	TBC	TBC	Inputs required from KNUST. Date to be reviewed once Draft Business Plan is issued and comments received.
13	Paper for T2	n/a	TBC	TBC	To be prepared once correspondence received from T2. Note, T2 now moved from August to November 2019.
14	QPR No. 2	30/08/2019	TBC	TBC	-
Remaining Deliverables					
15	QPR No. 3	29/11/2019	TBC	TBC	-
16	QPR No. 4	28/02/2019	TBC	TBC	-
17	Final Report	31/05/2019	TBC	TBC	-

* New submission date agreed with ReCAP.

2.2 Forward Plan

The key tasks remaining for delivery between June 2019 and September 2020 are shown in Figure 1.

Figure 1: Spider diagram of milestone tasks and the task owners for the remaining project period



3 Selection of Host Institution

3.1 Selection Process

A selection process was defined in the Technical Proposal, then further developed and agreed with ReCAP during the Inception Phase. A methodical and transparent process was important to ensure acceptance and consensus on the preferred candidate. The agreed selection process is summarised in Figure 2 below.

Figure 2: Host Institution Selection Process

3.2 Options Review

The initial list of universities was drafted based on the Project Team's knowledge of the major universities around Africa. Not all universities were included, it was restricted to those whom the Project Team considered viable options for hosting the CSSTL. To be considered a viable option required them to possess some reputable regional standing and an educational offering relevant to the transport sector.

The full list of universities and private organisations that were on this initial list are available in the Technical Proposal and Inception Report for this phase of the project.

3.3 Preliminary Shortlisting

The initial list of universities was reduced to a more workable preliminary shortlisting for detailed assessment. This Preliminary Shortlisting was based on international and regional reputation, the educational offerings provided by these universities and the perceived appeal of the country to external students and professional support staff. This analysis shortlisted the following universities:

1. University of Rwanda
2. University of Nairobi, Kenya
3. Makerere University, Uganda
4. Ndejje University, Uganda
5. University of Dar es Salaam, Tanzania
6. University of Addis Ababa / Addis Ababa Institute of Technology (AAIT), Ethiopia
7. University of Namibia
8. Kwame Nkrumah University of Science and Technology (KNUST), Ghana

A Capability Statement template was developed by the Project Team which was designed to respond to the selection criteria. The purpose of the Capability Statement was to understand the university's ability and enthusiasm to host the CSSTL. It requested information pertaining to staff numbers, courses and curricula, course accreditation, links to external partners and explaining how the CSSTL aligned with their corporate strategies.

The Capability Statement template and assessment criteria are available in the Inception Report. A request for a Capability Statement was sent to each of the eight universities listed above, with each given one week to respond.

3.4 Final Shortlisting

Of the eight requests for capability statements issued, six universities responded. No response was received from the University of Namibia. The University of Nairobi regretfully declined submitting due to current commitments and difficulty meeting the deadline.

Capability statements from the six universities who did submit were evaluated by the Project Team against the agreed selection criteria. These evaluations were shared with ReCAP and published in the Inception Report for the project in February 2019.

The outcome of the evaluation was that AAIT and KNUST were awarded Final Shortlisting status. This was based on the strong transport offering they were able to demonstrate, in addition to strong links to external partners that could help secure the long-term sustainability of the CSSTL.

3.5 Interviews

3.5.1 Interview Process

The final stage of the process was to visit AAIT and KNUST and interview the key staff. The purpose of this visit was two-fold:

1. Due diligence check to confirm the accuracy of the responses provided in the Capability Statements and that the stated interest and capacity was likely to be accurate.
2. Meet the staff proposed to operate the centre and develop understanding of the universities curricula and the links they have to external bodies that could support the CSSTL.

The Project Team and ReCAP visited AAIT between 8th – 9th April 2019 and KNUST between 11th – 12th April 2019. Interviews were held with key staff at both universities, visits were conducted to the university's main facilities (e.g. libraries, laboratories, I.T. facilities etc.). Meetings were held with key external stakeholders, such as the Ethiopian Road Authority (ERA) and World Bank in Addis Ababa and the Ghanaian Highway Authority in Kumasi.

A selection of post-graduate students, both MSc and PhD level, gave the team brief presentations on their areas of research and on their experiences attending the university. Discussions were also held with international students to develop an understanding of what the experience is like for foreign students studying there.

This overview helped develop an understanding of how the CSSTL would be operated by the university, who would be staffing it, how easily it could network with external partners, and most importantly, how appealing it would be to international students to study there. The topics used as a basis for the interview questions are provided in Appendix A.

3.5.2 Outcome

A detailed summary of the interview assessment is provided in Appendix B, which discusses the findings against each of the selection criteria. The summary below focuses on the differentiating factors between AAIT and KNUST that determined selection of the preferred candidate.

Both AAIT and KNUST fully demonstrated their enthusiasm and capability to host the CSSTL. Both universities allocated significant time from senior personnel to our visit, responded capably to all questions posed and organised several visits and meetings with key stakeholders, which left the Project Team with a very positive impression of both institutions.

Selecting the preferred candidate rested on who is most likely to deliver a sustainable CSSTL. Key to this is funding and corporate alignment, as both funding and how well the CSSTL aligns with the university's corporate strategy are pivotal to it surviving for the long-term.

Of interest too is the number of existing courses that could be used by TSLDP. Using existing courses helps reduce the operating costs that need to be recovered by tuition fees, as these will increase the more external universities have to be engaged to support course delivery.

3.5.2.1 Funding

AAIT have a reputable Centre of Excellence (CoE) for Railways which is supported by the World Bank (WB). KNUST operate the Transport Research and Education Centre Kumasi (TRECK), which is a WB-supported CoE in highway transport.

AAIT's CoE for Railways is marketed as a CoE for East Africa although current enrolment includes students from other SSA countries and beyond. International students studying there have received WB scholarships, which they applied for from their home countries. However, a meeting held with the WB in Addis Ababa highlighted that WB funding tends to be allocated rigidly. Concerns existed in the Project Team as to whether Railway CoE funding could be leveraged to support scholarships for students at the CSSTL. They target two very different disciplines (i.e. roads/highways versus railways), so generating a productive link with the Railway CoE would likely prove difficult.

TRECK at KNUST also receives WB support and is marketed as a CoE for West Africa. As it is highways-focused, it was able to demonstrate clearer potential financing avenues with channels that could be used to support scholarships for students. This is considered vital during the early years to attract students. Once the CSSTL has built a reputation, it will attract students on the basis of this reputation, with reduced need for incentives like scholarships.

3.5.2.2 Corporate Alignment

KNUST brought the Dean of the Business School to their interview. This demonstrated understanding of the core objectives of TSLDP, given its blended technical and leadership scope. The KNUST team demonstrated an existing relationship between the Business School and TRECK and an ambition to develop technical and management post-graduate courses, with one currently available for the aviation sector.

This demonstrated strong corporate alignment between KNUST, TRECK and the CSSTL objectives, which benefits sustainability. Furthermore, the alignment between TRECK and the CSSTL is also mutually beneficial in terms of TRECK's WB support. Hosting the CSSTL at KNUST/TRECK satisfies Key Performance Indicators (KPI) which TRECK reports to the WB. This assists with their allocation of WB funding which could then be utilised to support CSSTL also. This is a reason for the proposed operating and management structure shown in the Draft Business Plan in Section 10, with the CSSTL coming under the TRECK umbrella.

3.6 Current Status

For the sustainability reasons outlined above, KNUST was selected as the preferred university to host the CSSTL. There remains a number of items that need to be finalised with KNUST. For this reason, a three-month probationary period has been placed on their appointment. If during this period there are concerns regarding performance or the sustainability of the CSSTL, ReCAP reserves the right to re-allocate host institution status to AAIT.

The items that remain to be concluded are:

1. The Management Staff need to be selected and agreed amongst KNUST, ReCAP and the Project Team. It has been requested that Dr Charles Adams is the lead for the CSSTL and that the day-to-day operations are supported by the Management Staff
2. Confirmation from the World Bank that they are supportive of this initiative and it will not be in conflict with their ambitions for TRECK
3. Acknowledgement from the internal CSSTL Working Group on KNUST's nomination for the CSSTL role
4. A letter of support from the relevant Ghanaian Government Ministry indicating willingness to support this initiative and acknowledgement that whilst the CSSTL will be hosted in Ghana, it is a centre for SSA. To maintain credibility, the centre must maintain an equitable, outward looking approach that gives equal opportunities to students from across SSA and cannot become Ghana focused
5. The establishment of a Memorandum of Understanding (MoU) between ReCAP and KNUST

At present, the MoU between ReCAP and KNUST has been drafted and it is in the process of being agreed with KNUST. From there, a specific agreement will be needed for the delivery. The precise form these agreements take is yet to be agreed, but it is likely to be a form of sub-consultancy agreement.

Irrespective of not having an agreed Contract in place, KNUST attended the Interim Stage Workshop at the University of Cape Town between 21st – 23rd May 2019. They were represented by Dr Charles Adams (KNUST / TRECK) and Professor Nathaniel Boso (KNUST / Dean of Business School).

Completion of the other items listed is pending and expected to be in place for the next Quarterly Progress Report at the end of August 2019.

4 Implementation Strategy

4.1 Overview

Efficient establishment of the CSSTL and onward development of the TSLDP involves the alignment of several related activities over the coming months. This is a dynamic collection of activities, whose progression is linked to the speed and efficiency with which external organisations (to the Service Provider) deliver. This includes aspects such as:

1. The speed at which the CSSTL is established and TSLDP approved is governed by KNUST's internal approvals processes for new programmes
2. The accreditation progress is linked to the National Accreditation Board (NAB) of Ghana's procedures and timelines
3. When the TSLDP can commence is linked to the academic calendar year, hence why September 2020 was chosen as the starting date. It would not be possible to have programme approval from KNUST and accreditation for a course in place by September this year (2019)

4.2 Strategy Components

An Interim Workshop was held at UCT from the 21st – 23rd May 2019 to discuss this implementation strategy. Two members of the KNUST team, Dr Charles Adams and Prof Nathaniel Boso, were present at this workshop. KNUST input was critical in defining this approach and will be vital to how this project is delivered moving forward, as the implementation is now intrinsically linked to KNUST and Ghanaian processes that will now govern the establishment, delivery and accreditation of new programmes and courses.

Figure 3 identifies the key components of the delivery. All of these activities are dependent on each other, as explained in Table 2. Underpinning all the activities are those on the critical path, shown on the bottom row of Figure 4. These critical items hinge on the contractual activities, such as ReCAP and KNUST agreeing a contract and there being successful handover to HVT by May 2020.

Figure 3: Headline activities required for successful delivery

Initially, it is imperative that a MOU is agreed between ReCAP and KNUST. At this stage, the MOU has been drafted and is undergoing review for appropriateness. KNUST cannot progress with procuring Management Staff and with gaining university approval for a new programme (i.e. TSLDP) until the MoU is in place, hence the urgency with which this must be agreed.

This KNUST approval is also critical to commencing subsequent tasks. These include marketing the CSSTL and post-graduate degree and initiating accreditation through the Ghana National Accreditation Board. These activities cannot be initiated until KNUST University Management has given their consent to a new programme being implemented by the University.

Beyond the MOU, a more formal agreement between ReCAP and KNUST is recommended. This should be a form of contract that commits both parties to the delivery and clearly identifies each other's roles and responsibilities, the dispute resolution process and the disbursement mechanism for the allocated seed funding.

Table 2: Activity Schedule and Dependency List

Activity	Output	Dependencies
Milestone Deliverables	• Contracted deliverables to ReCAP • Interim Report • Business Plan • Quarterly Progress Reports • Final Report	• Delivery of all activities below
Curriculum and Programme	• Agreed TSLDP programme structure and delivery plan • Agreed curriculum between the Service Provider, KNUST and ReCAP	• MOU and/or contract with KNUST to secure input into developing content and identifying gaps in existing courses • Support from Management Staff in developing content and establishing the courses. Requires signed MOU and/or contract to be in place between ReCAP and KNUST
Marketing and Networking	• Attendance at key conferences e.g. T2 in Mozambique and PIARC Congress in Abu Dhabi • Distribution of marketing materials • Webpage on KNUST website • Candidate applications and enrolment	• Agreed programme structure and outline curriculum • Programme approval from KNUST so the CSSTL and TSLDP can be marketed • National accreditation within Ghana in the first instance whilst international accreditation is pending
Accreditation	• Programme accredited nationally in Ghana • Programme accredited internationally by a recognised professional body	• Programme approval from KNUST University Management • Curriculum acceptable to accrediting bodies • Quality control processes in place that satisfy accreditors
Teaching	• Delivery of the TSLDP Master's degree	• Programme approval from KNUST management • Accreditation secured from Ghana NAB • Course curriculum finalised and delivery content developed • Lecturers and physical resources (e.g. classrooms, IT facilities etc.) booked
Agreement / Contract	• MOU signed between ReCAP and KNUST • Contract signed between ReCAP and KNUST • Handover plan to HVT agreed • Successful handover to HVT in May 2020	• Agreement between KNUST and ReCAP and co-ordination between Legal Departments when agreeing the contract and/or MoU • Successful implementation the period leading up to May 2020 • Clear forward programme and objectives

Whilst KNUST and ReCAP agree contractual formalities, the Service Provider and KNUST will progress the CSSTL delivery. Figure 4 displays the key activities against the project timeline. It shows that commencement of the Master's degree will commence in September 2020. Achieving this date is dependent on all the other activities being completed on schedule.

Critical to achieving this delivery timeline is:

1. Establishing an outline curriculum so programme approval can be sought from KNUST University Management. As discussed, this approval is critical to being able to commence the accreditation and marketing processes. This activity is on target, with the Curriculum Review Report, provided in Appendix C, scheduled to be converted into a standard KNUST format required for programme approval submissions. This conversion will be undertaken by Prof Adams and Prof Boso at KNUST and they will make the submission to University Management. Submission to KNUST University Management is expected to take place in **August 2019, with approval expected by the end of September 2019**.
2. Obtaining programme approval from KNUST University Management so that the programme can be submitted to the Ghana NAB and the accreditation process initiated. This is expected to be submitted in **October 2019.** The accreditation period can take six to eight months, with accreditation expected by March-May 2020. International accreditation is being treated separately and will likely take longer. This process is scheduled to commence in September 2020 but accreditation may not be secured until one-two cohorts have completed the programme. Often international accrediting bodies, such as the Joint Board of Moderators (JBM) / Engineering Council in the UK, like to see output from the programme as part of the accreditation process. Engagement with this body is ongoing at present.
3. Approval from KNUST University Management is key to being able to implement the marketing strategy, as the course cannot be publicised until this approval is secured. An agreed curriculum and syllabus for each course will also be necessary when marketing commences.
4. The earlier mentioned MOU and agreement is vital to KNUST being permitted to procure the Management Staff. Prof Adams and Prof Boso can perform the tasks expected at present, but in the coming months they will require Management Staff support to assist delivery.

As outlined earlier, delivery of this schedule is now heavily reliant on the promptness and efficiency of external organisations (to the Service Provider), such as Ghana NAB and KNUST University Management. Moving forward, this poses the biggest risk to the delivery schedule and will need to be managed closely.

Reliance will need to be placed on KNUST such that they can expedite their internal processes and Ghanaian accreditation processes to the extent permissible. The Service Provider will also support these efforts to the extent possible. It also raises the importance of a longer-term placement from the Service Provider within KNUST to support these activities, in addition to undertaking a review of KNUST's existing course content. This is discussed further in Section 4.3.

Each of the key activities shown in Table 2 and Figure 4 is discussed in greater detail within their individual sub-sections that follow.

4.3 KNUST Course Review Visit

The interview and subsequent discussions with KNUST have identified that a significant proportion of the content necessary for the post-graduate degree is likely to be available within existing KNUST courses. This is highly beneficial to delivery as it will reduce the costs involved in engaging external suppliers to deliver content.

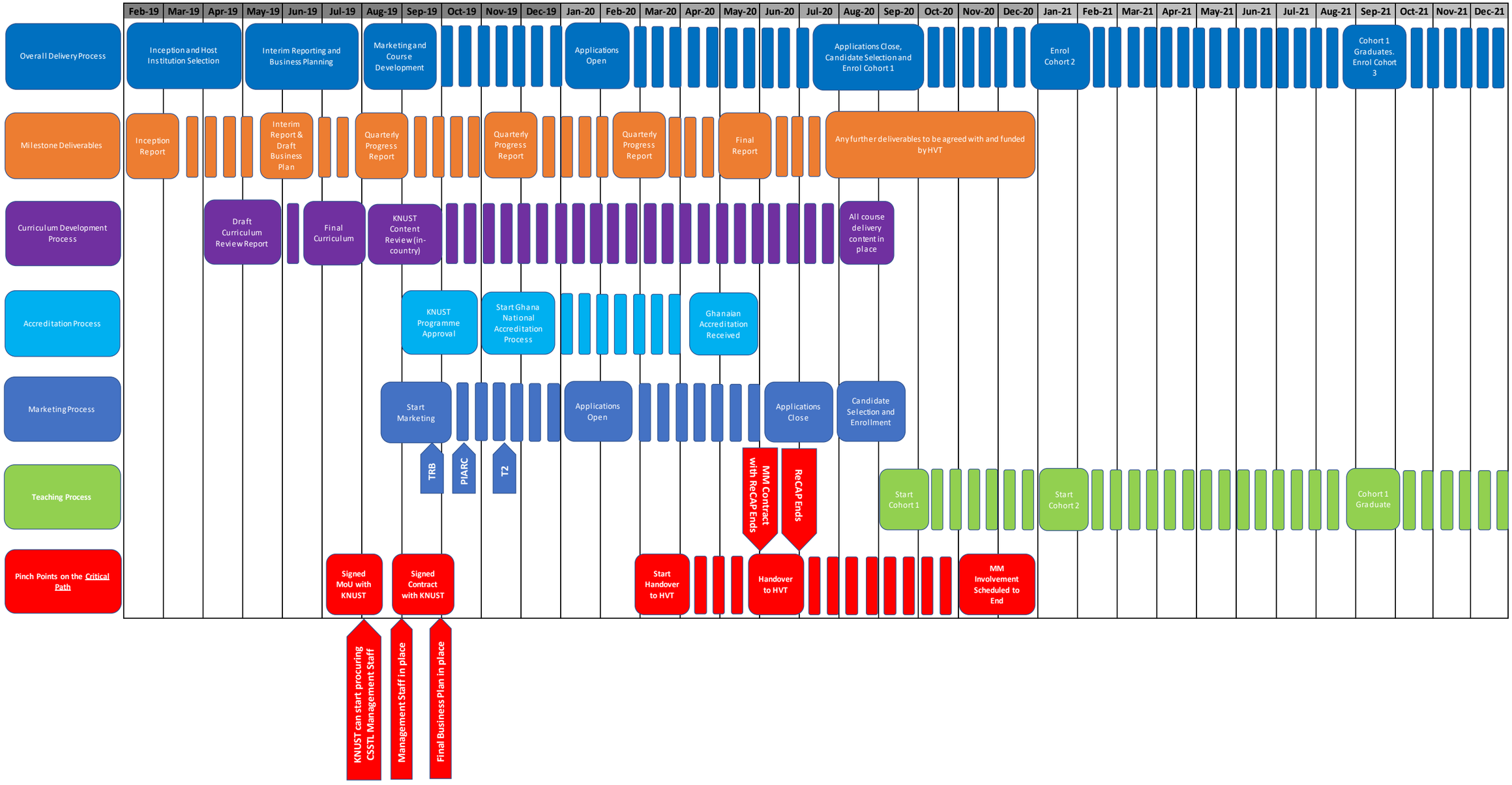
However, a thorough review of the existing syllabi is required to make a judgement on its quality, whether the content has gaps that need to be developed and whether the content requires tailoring to adapt it to TSLDP objectives.

It is proposed that a member of the Service Providers team spends a minimum of two weeks, and preferably up to four to six weeks, at KNUST reviewing course content, meeting the lecturers who will deliver these courses and assessing facilities.

Further tasks whilst at KNUST will be to support the finalisation of the MOU and agreement between KNUST and ReCAP, support and help expedite the KNUST approvals process for the programme and assist in initiating the accreditation process via the Ghana NAB.

There is significant value in undertaking this task to ensure smooth progression over the coming months and facilitate the achievement of the anticipated September 2020 start date. An extended stay of this nature was not anticipated in the Terms of Reference for this project or in the proposal submission, so a review will be undertaken by the Service Provider and KNUST to determine how it could be funded or part-funded through the existing contract. However, it is likely that additional funding may be necessary to take this forward.

Figure 4: CSSTL Implementation Strategy by Key Activity



5 Programme & Curriculum Development Process

5.1 Programme Structure

The host institution, KNUST, offers a variety of MSc programmes in the fields of transport and leadership. The leadership programmes are offered through the KNUST School of Business, with the College of Engineering offering post-graduate programmes in road engineering, transport systems and planning. The last is developed in collaboration with the KNUST College of Arts and Built Environment as well as the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland through WB grant.

In the first phase of the project (in 2017) it was assumed that the capacity of the host would be insufficient, at least initially, to provide and host a degree course. It has been concluded that KNUST has the capacity to offer such a degree programme. In fact, the Project Team are now of the opinion that such a programme is preferred over the earlier proposed Mentorship Programme and Continuous Professional Development (CPD) offerings for two reasons:

- A Master's degree is seen as a necessary (but not necessarily sufficient) condition to progress to higher leadership positions in the type of organisations that are being targeted
- The teaching and research infrastructure and systems at KNUST are geared towards degree programmes more than to CPD and mentorship training. It will therefore be easier to reverse the original assumption and start with a degree programme and then introduce CPD and mentorship

In addition, the first phase proposal was a Professional Masters in Transport Leadership. KNUST is primarily offering M.Sc. degrees as taught courses with a component of scientific research. To align with this organisational setup and simplify the establishment process, it is proposed to follow their system. This also benefits the project and candidates because M.Sc. degrees are, by most people, felt to be of a higher standard than Professional Masters – note from an academic perspective, this is not the case.

The CPD option remains a possibility, but should become part of the degree programme, whereby a selected number of course offerings are open to industry professionals to attend and obtain CPD points. The Host institution could then use its CPD income to partly finance costs for flying in Faculty for example.

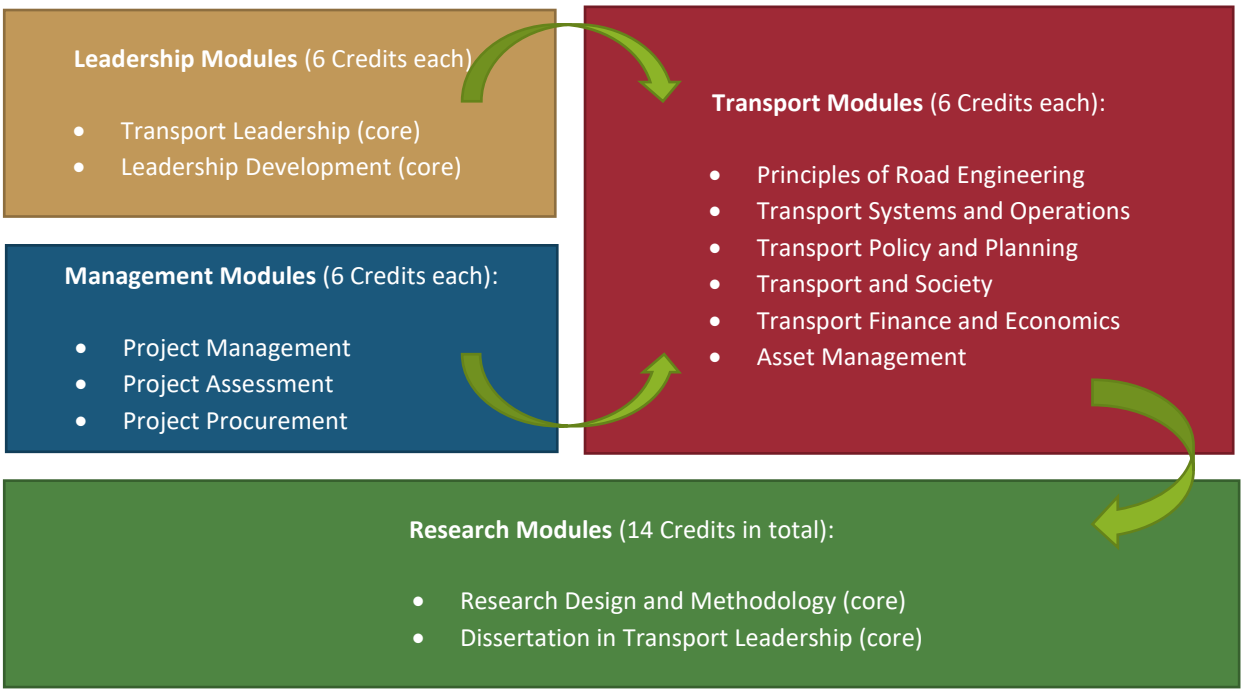
The overall structure of the 18 months Master programme is depicted in Figure 5 below. All students start by taking the two 6 credits leadership modules, before choosing at least five electives in Management and/or Transport. This selection is done in consultation with an assigned mentor who will ensure that the elective courses best meet the identified gaps in the students' profile, rather than their current background.

The research modules, which includes the thesis, are also compulsory. A student may graduate once passing all the core courses and enough elective courses to a total of at least 54 KNUST credit points.

Each course is 6 credit points, which is equivalent to 180 hours of nominal course work, including lectures, projects, study and assessment. The Dissertation is 14 credits (approximately 475 hours of nominal research work) and includes a one-week on site module on research design and methodology.

Appendix C provides the programme outline as well as module descriptions. Furthermore, it presents an initial review of the availability of courses at KNUST in the various defined course domains. An upcoming visit to KNUST is proposed, during which the team will confirm the existence, availability and quality of course materials and lecturer capacity in the various fields against the proposed curriculum. This exercise will inform a process of course development at KNUST, with KNUST and the project partners, and possibly with KNUST, the project partners and outside partners.

Figure 5: Module Breakdown



5.2 Delivery Format

The post-graduate degree modules will be delivered as a series of blocks, which blend a one-week session on campus at KNUST with pre and post-block week assignments. The candidates will also be examined at the end of the one-week block period.

This delivery format is demonstrated graphically in Figure 6 and the approximate contribution of each stage to the students module mark is also shown. This breakdown is indicative, as each lecturer retains discretion over how they wish to allocate marks between assignments and examinations within their respective modules.

This format has been chosen as experience elsewhere (e.g. at UCT) has shown it to best accommodate candidates' external needs. Given the target students are experienced professionals, they will need to balance their existing employment and personal lives with their development on this programme. Therefore, full-time attendance at university in Ghana, particularly for international students, is unlikely to be realistic.

Whilst this approach generates a need to travel on a short-term basis, it is considered the most appropriate option, particularly as delivery is flexible. This format also means candidates can be flexible about how they complete the programme and could spread the modules over one or two years.

Figure 6: Proposed Delivery Format and Contribution of each Section (%) to the Final Module Mark

5.3 Curriculum Review

Having identified a host institution and a new partner (University of Birmingham (UoB)) the team first reviewed the Phase 1 proposed curriculum in a workshop in Cape Town (May 2019). This included a review of the actual course outlines as well as a review of available teaching resources at KNUST in terms of existing courses in programmes at KNUST, and/or UCT or UoB.

In the process of completing the curriculum review, a number of omissions and opportunities were identified that led to improved course outlines as well as the definition of two new Modules: Transport and Society as well as Transport Finance and Economics.

The review of existing resources revealed that the host institution is already offering a large share of the programme content across the various departments. However, it has not yet been possible to check the quality of the courseware, nor gauge the interest and expertise of the persons / groups involved to offer (part of) that course to the students.

A field visit will therefore be organised later in 2019 to identify the standard of the existing course offerings, the possibility for inclusion of existing course offerings in the CSSTL programme and the need for further development of course materials. This will be organised and agreed in conjunction with ReCAP and KNUST to determine how best it is funded and delivered.

Part of the curriculum review process was to review course credits against requirements for the M.Sc. degree in KNUST, given that KNUST will be issuing the degrees. It was concluded that the proposed courses will be 6 credits according to the KNUST system which is equivalent to about 180 hours of nominal student work time.

Appendix C provides the updated draft course outlines as well as the results of the review of existing course offerings.

5.4 Mentoring/Coaching Programme

A strategy for incorporating mentoring into the delivery is at an early stage of development and will be elaborated upon in conjunction with KNUST over the next quarter. The ambition is to establish an Action Learning Group (ALG) format, similar to that used on Mott MacDonald's Emerging Leaders programme.

Also, it is recommended that the focus becomes less about 'mentoring' and more about 'coaching'. Mentors tend to be directive and can offer advice to their mentees. However, a coach helps the coachee arrive at the solution for themselves. It is considered this is a more valuable skill to develop in transport leaders. It is important that candidates can develop their ability to coach and also solve their own problems.

The cohort of students will be divided into groups of 3-4 people and each will be assigned a Career Coach, rather than a mentor. This person should be a senior leader from the industry who can coach the transport leaders based on their own experience transitioning into a leadership role.

The function of the ALG is for candidates to come together periodically and share the challenges and issues they are facing. They should use the group to explore these challenges and coach support each other to arrive at solutions. The Career Coaches' role is to provide guidance and insight based on their own experiences. They shouldn't directly advise the students how to solve the issues they face, but ask open and probing questions to coax the candidates towards solving the problems for themselves.

Work will be required in the next stage to identify potential industry leaders who could perform the Career Coach role. It is possible these could come from links generated with Road and Transport Authorities across Africa. If these Authorities propose staff to participate on the programme, they could also act as career coaches for these candidates.

Consideration will need to be given to whether these will be paid or voluntary roles, how the commitment of these people is secured and the wider cost implications of their engagement – i.e. the Career Coaches would need to be present at the first session in KNUST to meet their coachees.

The team is also aware that ReCAP have their own ongoing mentoring initiatives and agenda and there may be scope to blend it with this programme. Further information on ReCAP's existing mentoring programmes will be required before a plan can be defined for their incorporation into this programme – if they are suitable.

6 Candidate Selection Process

6.1 Overview

After reviewing the Phase 1 plans, it is reaffirmed that the target audience are mid-career public transport officials including, but not limited to:

- Political Leaders with transport portfolios
- Highway Agency Staff
- Construction Contractors, Engineers & Managers
- Design Consultants, Engineers & Managers
- Equipment Manufacturers and Distributors
- Materials Laboratory Engineers
- Public Transport / Mass Transit Operators
- Rail / Road / Port authorities
- Transport research Institutes
- University Researchers and Professors
- Engineering Services Professionals.

KNUST also suggested to be prepared to lower the entry requirements to also accept younger graduates, as there may be a big market there. This is agreed if required to fill spaces on the programme, but mid-career professionals should be given preference before opening to younger graduates. This would follow processes applied by various international executive MBAs that are offered worldwide.

The application process for prospective students will be designed to ensure candidates demonstrate motivation for participation in the course - completion of the TSLDP Masters will not be an easy process and will require time and effort from the candidate to balance course requirements (e.g. time at University and time at home doing coursework) with their work and personal lives.

It is important that candidates realise this before committing to the programme, but it is also important that funding, that will be spent by ReCAP, or other partners in future, is not used on candidates who do not intend to take the course seriously or who the operators believe do not have a reasonable chance of successfully completing it. For this reason, the following criteria shall be considered for submission with the advertised application process:

1. Motivation Letter, portfolio with examples of work and CV is required from the candidate
2. Approval letter from their Employer to participate and confirmation that study leave will be granted. The letter must also demonstrate their value to the business and their potential to become leaders in future
3. Agreement for fees to be repaid by the candidate in the event they fail the programme or are required to take repeats

Once applications are received, assessment of candidates will begin by the grouping of candidates into three categories based on age, experience and qualifications, see Table 3 below. Please note that this is to guide the process. There may well be candidates that are a combination of two categories, or fall under Category C but can still be considered at the discretion of those reviewing.

Table 3: Candidate Selection Criteria

Category A (Primary Candidates)	Category B (Secondary Candidates)	Category C (Not Suitable)
• Relevant Bachelors or Master's degree in Civil Engineering or Transport related field • ≥10 years relevant experience **Exceptions** • 5 – 10 years of experience but demonstrable high flier candidate: e.g. has won awards, industry recognised etc.	• Relevant Bachelors or Master's degree in Civil Engineering or a Transport related field • 5 – 10 years of experience **Exceptions** • < 5 years experience but demonstrable 'high flier' potential seen in their CV or portfolio. Could be accepted depending on the availability of places	• Irrelevant qualifications • <5 years relevant experience

Once students are accepted to the programme they will be assigned a mentor, who will be a member of university staff, who will decide with the student on the detailed study programme. Given the variety of backgrounds expected, mentors and mentees will be encouraged to agree an ambitious programme that seeks to take courses outside their domain of undergraduate (or other postgraduate) studies.

The courses will be offered with the variety of backgrounds in mind i.e. a student with an urban planning background with experience in the transport sector will be encouraged to register for the Principles in Road Engineering course, similarly the Civil Engineering graduate who has been designing pavements for many years will be encouraged to take the Transport and Society and Transport Finance and Economics courses.

7 Accreditation Process

7.1 KNUST Programme Approval Process

The proposed curriculum for the Transport Leadership programme under the CSSTL would be further developed into the KNUST format. The key areas to be prepared or tailored will include:

- Course information, programme aim, programme philosophy and justification, objectives, target students and opportunities for employment, entry requirements, mode of assessment, graduation requirements and programme structure including detailed descriptions.

The approval process by the University Management prior to submission to the National Accreditation Board includes consideration of the following boards:

- Departmental Board
- Faculty Board
- College Board
- Graduate School Board
- University Planning and Resource Committee

Typically, at each level of assessment, the board will assess the credits and the number of courses per semester, teaching faculty (full time and part time), physical resources, evidence of demand by industry as evidenced by engagement with industry for inputs, mode of assessment of courses, programme sustainability and the readiness of the awarding department. The process could take between six to twelve months to complete.

7.2 Ghanaian Accreditation by the National Accreditation Board (NAB)

The National Accreditation Board (NAB) is the Ghanaian statutory body for the accreditation of academic programmes in Universities and the tertiary institutions. The following process is followed in the accreditation of programmes:

- University makes application using the approved document in NAB format
- University makes applicable payment to the NAB
- NAB acknowledges receipt of the application and indicates approximate date when assessment and physical inspection of facilities might be made at the University premises
- Accreditation panel visits the University to assess facilities and staff qualification, availability (full time / part time), mode of delivery, syllabus etc and make recommendations

Since the programme is to be hosted within the Regional Transport Research and Education Centre Kumasi (TRECK) and the KNUST School of Business both of which run other accredited programmes from which the CSSTL Transport Leadership programme will draw, there is very negligible risk of non-approval. The accreditation process could take six to twelve months to complete. However, the programme can be advertised after submission to the NAB and acknowledgement of receipt of application documents and accreditation fees paid.

7.3 International Accreditation

Initial contact has been made with the Joint Board of Moderators (JBM) who accredit engineering degrees in the UK through the Engineering Council. They have a standard procedure for the accreditation of non-UK institutions which is described in detail in the following link (https://jbm.org.uk/Accreditation-guidance). A brief outline of the process is given below but it should be recognised by ReCAP and other stakeholders that this is an involved and challenging process. The JBM are required to review student output from the Programme so accreditation cannot commence until a student cohort has graduated through the course.

The JBM was established by the Institution of Civil Engineers (ICE), the Institution of Structural Engineers (IStructE), the Institute of Highway Engineers (IHE), and the Chartered Institution of Highways and Transportation (CIHT) to co-ordinate accreditation activities for educational programmes in the civil, structural, transportation and associated engineering disciplines within the built environment sector. The JBM is licensed by the Engineering Council (EngC), the UK's regulatory body for the engineering profession, to accredit degree programmes that partially or fully satisfy the academic requirements for a Chartered Engineer (CEng) in the UK.

In order to achieve accreditation, the Higher Institution must satisfy the JBM that the teaching facilities, and teaching resources are of a standard commensurate with other UK / International MSc courses and that the standard of student output maps onto the learning outcomes the JBM have detailed in their documentation.

Initially, after applying for accreditation, the Institution must complete a standard set of documents. These documents will include details on the structure of the University; the facilities across the Institution; the teaching staff qualifications; the entry requirements for students; the structure and syllabus of the Programme; and the teaching methods.

A JBM panel would then visit the Institution and inspect the facilities. The visiting team will want to see samples of students' output for each module / unit of study for the academic year immediately preceding the visit including:

- Module specifications and coursework / project briefs
- Programme specifications
- Marked examples of coursework (with briefs, model answers if appropriate, mark schemes and marking criteria, feedback given to students)
- Marked laboratory reports
- A list of marks (with students' names highlighted where their work is included in the sample output)
- Marked samples of coursework (with feedback given to students)
- Individual final year project dissertations or conference format papers (including marks and marking schemes)
- Marked design project work and posters
- Marked class tests (or other similar in-class assessments)
- Plans, drawings, sketch books and models

The JBM panel must be satisfied that the modules cover each of the four JBM threads – design, sustainability, health and safety risk management, professionalism and ethics.

It should be noted that it is the JBM policy that all Universities outside the UK meet the total cost of the accreditation visit. These costs include travel (business class flights, UK travel expenses and travel in the host country), accommodation and all other relevant expenses (meals, transfers etc).

8 Marketing Process

8.1 Purpose

The Marketing Strategy outlines the approach that will be adopted to publicise the CSSTL and TSLDP to the target audience across SSA. It is not discussed in depth here, but is available under Appendix D. It remains under development and further work is required to elaborate on the strategy in conjunction with KNUST.

The main point to note is that initiation of the marketing strategy is dependent on being granted programme approval by KNUST University Management. Once this is in place, marketing can commence in earnest. It is expected that the first external marketing event will be at the TRB Low-Volume Roads Conference in the USA in September 2019. However, the main event being targeted to market the programme is the T2 Conference in Mozambique in November 2019. It is the primary target given it is Africa-focused and the likelihood that a significant proportion of the attendees will be the target market for TSLDP.

9 Networking Process

9.1 Purpose

To achieve the stated goal of being a CoE for all SSA, not only must the CSSTL deliver high quality, tertiary level, accredited education and training, but it should also, over time, become a repository for knowledge and expertise linked to a wide professional network of experienced transport professionals across the region. It is hoped that by creating this professional SSA network between transport professionals, stakeholders in the transport sector and the cohorts of future transport leaders graduating from the CSSTL a sustainable, vibrant and innovative centre for transport initiatives in Africa is achieved.

9.2 Network Development

9.2.1 Professional Bodies

It is very desirable that the CSSTL is recognised and ultimately endorsed by the engineering professional bodies across Africa, in the UK and in South Africa. Any qualification in transportation leadership awarded by the CSSTL must have this international recognition to be valued by potential candidates and by their employers. The CSSTL is less likely to be successful if the qualification does not achieve this professional endorsement.

The project team has already successfully engaged with the Chartered Institution of Highway and Transportation Engineers (CIHT) in the UK and they have expressed their support for this initiative. The CIHT represents and qualifies professionals who plan, design, build, manage and operate transport and infrastructure.

It is '*the leading voice of the highways and transport infrastructure profession and offers routes to qualification including Chartered Engineer, Incorporated Engineer and Engineering Technician, the SoRSA Certificate of Competency and Transport Planning Professional*.' https://www.ciht.org.uk/. This will be a crucial link moving forward with the CSSTL as it provides an obvious next step for CSSTL graduates who so desire, to becoming a Chartered Engineer. The CIHT have also provided a member to sit on the CSSTL Working Group to help co-ordinate this process (see Section 10).

Contact has also been made with the Joint Board of Moderators (JBM) who accredit engineering degrees in the UK through the Engineering Council. They have a standard procedure for the accreditation of non-UK institutions (https://jbm.org.uk/Accreditation-guidance). The team will continue to liaise with the JBM with the intention of having the Master's degree in Transport Leadership recognised by them.

It should be recognised by ReCAP and other stakeholders that this is an involved and onerous process and would involve the JBM panel visiting KNUST and reviewing student output. The cost of this JBM visit would have to be paid for by KNUST or via ReCAP, HVT or other avenues. Nevertheless, it is the intention that the Master's degree should aspire to have JBM accreditation.

Contact has also been made with the South African Institution of Civil Engineers (SAICE) and the Engineering Council of South Africa (ECSA) so that, in parallel with UK accreditation, the qualification can achieve accreditation through the South African Engineering Council. Feedback from SAICE is pending, but ECSA have indicated they only accredit programmes to Bachelor's level, so would not be suitable for the TSLDP.

9.2.2 Development Partners (DP) and Multilateral Development Banks (MDB)

To make the CSSTL sustainable it is imperative that there is engagement with stakeholders in the transportation industry, including DP and MDB. These contacts will be pursued more vigorously when the detail of the programme is finalised, and there is publicity material and start dates for the programme and modules available.

It would be the intention of the project team to encourage the MDB to either support the CSSTL through direct scholarships or indirectly through in-country projects they are supporting.

The project team has already made contact with the Ghanaian World Bank representative and are awaiting a response regarding their willingness to participate on the CSSTL Working Group.

9.2.3 Other Universities

There are many extant links with other Universities within the project team. As the CSSTL develops and the syllabi are agreed in detail these links can be exploited to fill knowledge gaps in the pedagogy at CSSTL. As the CSSTL becomes established, it is anticipated that it will link with other Universities across Africa and with reputable International Universities to improve the breadth of professional experience available to the students.

9.3 Tasks for Next Stage

The project team will continue to develop the professional network with a view to having transport community (private and public stakeholders, MDBs and Universities) supporting the CSSTL both academically, by contributing to the teaching and collaboration in research dissertation and projects, and economically though scholarships and other support. Much of this will be initiated via the CSSTL Working Group (see Section 11) and existing contacts held by KNUST, ReCAP and the project team.

10 Draft Business Plan

10.1 Purpose

The Business Plan outlines the purpose, structure, management and commercial aspects of the CSSTL. It is intended to act as an independent document upon which the implementation of the CSSTL is based. This submission consists of the Draft Business Plan, and as such, it still has gaps in its content that will be filled in the final version scheduled for submission at the end of August 2019.

10.2 Current Status

The Draft Business Plan is available as a separate document. It has been developed based on the Business Plan provided during the Phase 1 delivery in 2017. This has been amended based on the additional information now available and to align it with the processes and information held by KNUST.

10.3 Next Steps

Indicative costs have been included in the Draft Business Plan at this stage, however, they need further review. This will be undertaken in advance of the Final Business Plan submission. Additionally, the signed MoU between KNUST and ReCAP will also be appended to the Final Business Plan once it is agreed.

11 CSSTL Working Group

11.1 Purpose

It has been agreed with ReCAP to establish a 'Working Group' (WG) to act as a sounding board for the project team. The role of the WG will be to review the development and progress of the CSSTL through regular online discussions, this role is detailed in the Terms of Reference for the WG in Appendix E which also includes the letter of invitation and meeting dates. The WG will not have any executive powers but will be an advisory body. The members of the WG will have a broad range of experience in the transport sector, including academics, engineers from the public and private sector, representative from the Engineering Professional bodies and Multilateral Development Banks (MDBs). The project team is exploring the use of Socrative (or other similar online meeting forums) to record the views of this group.

11.2 Members

The current membership of the WG is set out in Table 4 below. This may change over time as the CSSTL develops and other expertise or input is required. The membership is drawn from a wide range of stakeholders and those with experience of education and transport issues, in particular in developing countries. Letters of invitation have been sent out to many of the proposed members. It is hoped that the first meeting of this group will be in July 2019.

Table 4: Working Group Participant List

No.	Name	Affiliation
1	Mr N Leta	ReCAP Deputy Team Leader - Infrastructure
2	Mr N Alli	African Community Access Partnership (AfCAP) Steering Committee Chair
3	Project Team (various)	Mott MacDonald, UCT, UoB
4	Mr C Adams and/or Mr N Boso	KNUST, TRECK and Business School respectively
5	Ms Eunice Yaa Brimfa Ackwerh	Education Team Leader at World Bank Ghana
6	Mrs E Jones	Senior Transport Advisor, Department for International Development (DFID)
7	Mr J Malota	Programmes Officer, Association of Southern African Roads Agency (ASANRA)
8	Mr L Stringer	Chartered Institution of Highways and Transportation (UK) representative
9	Mr S Traore	President, African Roads Maintenance Fund Association (ARMFA)
10	Dr B Obika	Team Leader - High-Volume Transport (HVT) programme
11	Mr C Gourley	DFID SRO, HVT Programme

11.3 Terms of Reference

The terms of reference are detailed in Appendix E and will address issues such as:

- Are we sufficiently addressing the industry need in Africa? We have our views on what the curriculum should include, but what do you think?
- How best can we get this course accredited by a recognised international body? What processes are involved and how do we satisfy them?
- How can we secure funding to support scholarships for students? This is important for the early years whilst we are building a reputation that will hopefully go on to attract students without the need for scholarships.
- Can this funding come from existing relationships with Donors and Multilateral Development Banks?
- What capacity of building programmes exists within Road Authorities in Africa that would be interested in sending staff to study this Masters?

- How best can we leverage our contacts and market this to the industry across Africa and attract our first cohort(s) of students?
- How do we make this programme sustainable in the long-term? How can we engage the industry and build partnerships across the continent, so that this Master's Degree becomes a desired qualification for transport professionals on the continent?

The deliberations of this group will be discussed by the project team and will help in the evolution of the CSSTL.

12 Asia Scoping Study

12.1 Purpose

The purpose of the Asia Scoping Study was to undertake a similar review to that done for the current TSLDP in 2017. It should be noted that this is not as substantial a review as that undertaken for TSLDP. The intent is to gain an insight into the status quo in Asia, particularly the Asian Community Access Partnership (AsCAP) countries and define a way forward that would need to be developed either as an additional activity under this project or procured separately.

The study includes a curricular review of civil engineering, transportation and MBA programmes in the AsCAP partner countries of Pakistan, Afghanistan, Myanmar, Nepal and Bangladesh. The intent was to appraise the gaps in the academia in the partner countries and measure the relevance or possible impact of establishing a Centre for Transport Leadership in the sub-region.

The review is based on an online survey of relevant courses and programmes offered in institutions of higher education across the focus countries.

12.2 Methodology

To generate an inventory of existing and relevant courses in transport and/or leadership, existing programmes in the focus countries were assessed by means of a web-based survey. Given the team's familiarity with the African context and lesser experience of the Asian region, the review at this stage was restricted to a web-based survey, involving reviewing the websites of the universities in each country.

The countries surveyed include; Afghanistan, Bangladesh, Nepal, Myanmar and Pakistan. Additionally, two institutions, namely the Asian Development Bank Institute and the Asian Institute of Technology, were also researched. For each country, an initial inventory of top universities was generated. From this, a short list was drawn up, based on the universities with a civil engineering and/or transportation offering. The existence of an MBA programme in the institutions was also explored. The detailed inventory for the institutions in each country was conducted based on the following checklist:

- Programme (civil engineering, transport studies, urban & regional planning / town planning, MBA, other relevant programmes)
- Degree options per programme (BSc, MSc, Diploma, PhD)
- Existence of Continuous Professional Development (CPD) for the programme
- Accreditation status at national and international level
- Existing collaborations at the national, regional and international level
- Availability of laboratory facilities (pavement, traffic, geotechnical and GIS labs)
- Computer facilities and relevant proprietary software (ArcGIS, AutoCAD, HDM4, SPSS) at the department level
- Blended learning facilities at faculty / university level. E.g. video conferencing and broadband internet
- Curriculum details such as curriculum roadmap, course content and credits
- Ranking of the institution (university) at the regional and global level
- Transport expertise in other programmes

The outcome of this desktop study gives an overview of the relevant courses in the partner countries and allows the identification of gaps in tertiary education. The results are limited by the amount of information available on the websites of the various institutions.

12.3 Country Summaries

12.3.1 Bangladesh

Universities in Bangladesh are categorised by ownership as public, private or international. The universities focus on three major academic areas of specialisation, namely arts and social sciences, business administration and engineering. Fourteen universities offer programmes in engineering, however, the majority of these, offer only Bachelor's degree programmes in civil engineering.

Only two universities offer a combination of programmes that are of interest to transport leadership development, including civil engineering and MBA. The schools are the North South University and the Khulna University of Engineering and Technology. The former offers an MBA programme, while, the latter offers a post-graduate programme in civil engineering. The civil engineering programmes are accredited by the Board of Accreditation for Engineering and Technical Education in Bangladesh and an ongoing international accreditation by the Accreditation Board for Engineering and Technology (ABET).

There was no evidence of an existing transportation curriculum either at the undergraduate or post-graduate levels. Data collected reveal that the North South University has some collaborations with prominent schools in North America, southern Africa, Europe and Asia (see in listing in Appendix F). There are relevant facilities such as library, blended learning, laboratories and the availability of proprietary software in these labs. There is no detailed information about the programme curriculum and institutional ranking.

12.3.2 Afghanistan

Most engineering universities in Afghanistan have only undergraduate level civil engineering programmes. Instances where post-graduate programmes exist are normally in engineering disciplines other than civil engineering. However, with respect to the transportation leadership programme, two institutions offer post-graduate civil engineering, transport studies and/or an MBA. The Kabul Polytechnic has an undergraduate and post-graduate transportation engineering programme, while the Kardan University offers an MBA.

The programmes are accredited by the Ministry of Higher Education in Afghanistan. The MBA is also affiliated to the International Assembly for Collegiate Business Education (IACBE). There are library and I.T. facilities for blended learning. The institutions, also, enjoy local collaborations with the Ministry of transport and the private sector in Afghanistan. Laboratory facilities also exist.

12.3.3 Pakistan

A total of four Higher Learning Institutions were surveyed in Pakistan. The National University of Computer and Emerging Sciences, Mehran University of Engineering and Technology, National University of Sciences and Technology and International Islamic University Islamabad.

The civil engineering programmes offered at the above-mentioned institutions have been accredited by the Engineering Council and Higher Education Commission (HEC) of Pakistan, which are the national accrediting body. Most of the institutions reported in this survey offer civil engineering programmes at different levels from Bachelor to post-graduate. Additionally, the National University of Sciences and Technology which also has a Master's programme in transportation engineering. A Master of Business Administration (MBA) is also offered at the institution.

Across these institutions, there was no evidence of international collaboration, however, there are available facilities, like libraries, I.T. facilities for blended learning, laboratories – GIS, Geotechnical and pavement engineering. Details of the curriculum were not available.

12.3.4 Nepal

In Nepal, only one Institution (Kathmandu University) offers a post-graduate civil engineering degree and MBA programmes. There was no evidence of the programmes being accredited either nationally or

internationally. Additionally, it was not evident from the survey that there exists a transportation engineering programme at the institution.

The data indicates that the institution has a strong collaboration with several institutional stakeholders, donor agencies and universities, both locally and globally but there is no specification of the nature of these partnerships or their direct connection to transportation engineering or transportation leadership.

There are facilities like libraries, I.T. facilities for blended learning, laboratories – GIS, Geotechnical and pavement engineering. Details of the curriculum were not available. There were also no details about the curriculum as it is currently delivered.

12.3.5 Myanmar

As the case in Nepal, only one Institution (Yangon University) offering a post-graduate civil engineering degree and MBA programmes. There was no evidence of the programmes being accredited either nationally or internationally. Also, it was not evident from the survey that there exists a transportation engineering programme at Diploma, Masters and PhD levels at the institution.

The data indicate that the institution has some collaboration locally with the government through the Ministry of Science and Technology and at a regional level, though, there was no specification of the nature of these. Library and I.T. facilities for blended learning are available. Laboratories for remote sensing (GIS), Geotechnical and pavement engineering are also available. Details of the curriculum are not presently available.

12.3.6 Asian Institute of Technology

One institution, the Asian Institute of Technology (AIT) in Thailand, was reviewed outside of the AsCAP focus countries to give an indication of the availability of broader capability. AIT is an international institution for higher education and it specialises in engineering, advanced technologies, sustainable development, and management and planning. Its aim is to "develop highly qualified and committed professionals who play leading roles in the region's sustainable development and its integration into the global economy".

AIT is officially accredited by the Ministry of Education, Thailand and offers courses and programmes leading to officially recognised higher education degrees such as Master degrees and Doctorate degrees in several areas of study.

The School of Engineering and Technology (SET) collaborates and partners with several government central agencies, scholarship providers, academic joint programs and academic research exchange. These institutions include Rangsit University, Thailand; Templecity Institute of Technology and Engineering (TITE), India; Japan Advanced Institute of Science and Technology (JAIST), Japan; National Taiwan University, Department of Civil Engineering.

AIT School of Management (SOM) was established in October 1987 to meet the growing needs in Asia for graduate management education. SOM offers accredited MBA and Doctor of Business Administration (DBA) programmes. AIT School of Management is a member of several international bodies that include the Association to Advance Collegiate Schools of Business, the European Foundation for Management Development and the Association of Asia-Pacific Business Schools. The QS 2018 educational rankings places the civil engineering programme at AIT at (101-150) globally, while the business and management programmes are ranked (201 - 250). Information is readily available about the facilities available at the institution.

12.3.7 Asian Development Bank Institute

The Asian Development Bank Institute (ADBI) is a think tank set up by the Asian development bank (ADB) to provide knowledge driven content for policy makers in the ADB's member countries. Its activities focus, on conducting research and capacity building, associated to the medium to long-term strategic development issues in the region. The capacity building is primarily conducted for mid and senior level officials from ADB developing member countries to enhance awareness on the region's important development issues,

introduce appropriate policy proposals to address them, and build consensus among policy makers and stakeholders on key priority areas. Delivered in the form of policy dialogues, course-based training, e-learning, and publications the capacity building and training programme provides a forum for discussion and information sharing on development practices and country experiences. The key focus areas of the Institute's capacity building are addressing poverty and reducing inequality, accelerating gender equality, fostering regional co-operation and integration, making cities more liveable and promoting rural development and food security. In terms of the TSLDP, there is no evidence that the ADBI offers a structured curriculum in the form of a post-graduate or CPD offering in civil engineering transportation or an MBA. However, they offer workshops, seminars, publications and other course-based e-learning on their thematic areas. The schedules for these courses are detailed on their website.

12.4 Summary of Findings

In summary, the data collected, reveals that in terms of rankings, the institutions in all the AsCAP countries do not feature on popular global ranking scales like the Times Higher Education (THE) and Quacquarelli Symonds (QS) rankings. There generally is an availability of civil engineering laboratory and blended learning facilities in all explored institutions, however a detailed inspection of these facilities is required to determine their operational conditions. The details of curricula, especially those of the postgraduate programmes, are generally not available on the websites. Lastly, with respect to collaborations and accreditations, the surveyed institutions, understandably have a local accreditation, while, there was not much evidence of either local or international collaborations.

12.5 Proposed Way Forward

The main limitation of this study is its restriction to a web-only survey. This is due to a limited exposure of the UCT team to south-east Asia where the AsCAP countries are situated, thereby restricting the ability at this time to get a more detailed understanding of the situation on the ground. However, it is felt that the review is sufficient to give direction and recommend a way forward.

Regarding the gaps highlighted by this study, it is clear that there is a pressing need for investment in the upgrade of higher education in general in the surveyed countries, a way of creating a more sustainable underpinning for a transport sector leadership programme. This is because when the data collected is matched against the list of criteria used to guide the survey, there is a substantial deficiency, in terms of the level of post graduate programmes specifically in the areas of civil engineering, transportation and MBAs.

There is generally a lack of reputable institutions that have good global recognition or ranking, collaborations with networks both locally, regionally and internationally and facilities that could host a transport sector leadership programme. Some of the identified problems include:

- Lack of well-developed engineering post-graduate programmes in civil engineering
- Lack of transport related programmes
- Limited knowledge of the state of available facilities
- Non-existent ranking of the institutions in the AsCAP countries
- The known political instability across the region

It is considered that hosting a Transport Leadership programme in one of the AsCAP partner countries at this time is not viable. A similar course of action to that developed for the TSDLP in SSA would be the aim. Initially however the recommended way forward would be to explore the possibility of establishing the programme in other regions within the continent, where there are several reputable universities, such as in Japan, South Korea, India, China and Indonesia, with a view to relocating it once there is better stability in the partner countries.

This implies that a wider survey of other Asian countries and possibly the broader Asian continent, would be required. This is a substantial piece of work that would be similar to that undertaken for the African

TSLDP in 2017. It would require additional budget to be accommodated within this contract or separate procurement as a new project.

13 Next Steps

13.1 Agreement with KNUST

An MOU has been drafted and is being reviewed by KNUST and ReCAP in advance of signature. It is recommended that this is followed by a contractual agreement that commits both to the project, outlines roles and responsibilities and the terms under which the seed funding will be disbursed. Subject to completion of a successful probationary period, It is recommended that the MoU is in place before the next Quarterly Progress Report is due at the end of August 2019.

13.2 Deliverable Schedule

The project milestone deliverable schedule is provided in Table 5. Deliverables shown in green have been submitted and those in orange scheduled to be submitted over the coming months. The next deliverable will be the Final Business Plan. Timely submission is dependent on the receipt of comments from ReCAP on this deliverable (including the Draft Business Plan) and on further input from KNUST in defining costs and operational structures.

Table 5: Deliverable Schedule

Milestone Deliverable	Due (Week) – see programme+	Due (Date)
Inception Report	3	28th February 2019
Interim Report & Draft Business Plan (also forms Quarterly Progress Report No. 1)	21	7th June 2019
Final Business Plan	24	31st August 2019
Quarterly Progress Report No. 2	28	30th August 2019
Quarterly Progress Report No. 3	40	29th November 2019
Quarterly Progress Report No. 4	52	28th February 2020
Final Report (also forms Quarterly Progress Report No. 5)	64	31st May 2020

13.3 Challenges to Manage

There are many challenges to successfully establishing and growing the CSSTL, some of these challenges are well understood but it should be recognised that as the project moves forward there may be unforeseen hurdles and barriers to implementation. The project team have completed a risk register with mitigation in place for the known challenges.

The main challenge to the project is the short time frame we have proposed in order to have the first cohort of students starting the MSc programme by September 2020. This proposed start date will only be possible if a number of critical milestones are met, these include a contract to fund KNUST and allow the Institution to appoint two members of staff to the CSSTL. There is also a short window of time for KNUST to accredit the MSc in Transportation Leadership so that it can be advertised by February 2020 and enrolment can commence by June 2020.

Some of the main challenges to implementation are therefore:

- Signed MoU between KNUST and ReCAP urgently required
- Contract agreed between KNUST and ReCAP to fund CSSTL
- Complete accreditation process and Programme approval at KNUST for MSc in Transportation Leadership with published timetable for the modules

- Selection and availability of suitably qualified staff at KNUST to support CSSTL
- Buy in from stakeholders and MDBs to support CSSTL and help sustain the programme
- Production of publicity and advertising to allow promotion of the course in February 2020 for course enrolment in June / July / August 2020

We also face the uncertainly in the funding stream as ReCAP is currently due to end in July 2020 with the responsibility from this project transferred to the High-Volume Transport (HVT) programme. It is hoped this issue will be resolved shortly.

Appendix A: Host Interview Discussion Topics

Topics for Interview / Assessment during CSSTL Visit:

Area 1: The University and Faculty facilities (high level general information)

Outline the structure of your Faculty - how many departments – how many staff? This question is intended to find out the strength and depth of the Institution:

1. Academic and support staff numbers (separately)
2. Undergraduate and postgraduate courses your Department provides including:
   a. The name of the programme
   b. The associated numbers of students enrolled on the programmes over the last 3 years
   c. The approximate date when the programme was instigated
   d. Indicate which courses have Engineering Council accreditation or other national or international accreditation.

Area 2: The current staff likely to engage with the CSSTL – specific details on staff

Specifically, how many academic staff work in the discipline of Transport/Highway Engineering? How much time could they have to devote to the CSSTL. The CSSTL will require a lot of staff input – would the existing staff be prepared to transfer out of their existing duties into the CSSTL teaching only? How would the University feel about employing new staff – how can this be achieved?

Note #1: please ensure staff you envisage being part of the CSSTL project are available on the day and included in the interviews.

Note #2: there is a sum of £150,000 available to support the provision of two (2) management staff to help us with establishing and running the CSSTL over the next 2 years. It is expected these roles will be an Operations Manager tasked with day-to-day running of the centre and an Education Manager tasked with controlling the educational aspects of training programme development and delivery. Please bear this in mind when considering responses to staff availability, your ability to make staff available or hire staff.

Area 3: Teaching pedagogical standard

1. Please provide some examples of your teaching material / resources.
2. Can we please speak with some of your MSc students to ask them about their experiences on the courses?
3. Have you an Industrial Advisory Board – if so, can we speak with them?

Area 4: Laboratories and technical support – and links with industry

Visit to see technical laboratories, I.T. facilities and libraries.
If these facilities have technical support, please identify it.

Area 5: Research Activity

Could a selection of your PhD students give a short seminar or poster session on their research studies?

Area 6: Active outside/international links

Discussion about links with Multilateral Development Banks, donor agencies or other relevant links with external international funding bodies. Can you see any way MDBs would help to fund the CSSTL?

Area 7: Long term business case and the University corporate strategy and sustainability?

Discuss the business arrangement and set-up of the CSSTL. How would the University go about setting up a centre like this – *key aspect to cover is sustainability in the long-term*?
Under what contract would the university be engaged? Have you any similar contracts at present or centres of excellence currently?

Area 8 Does the host have a support service division with a responsibility towards international students and visitors?

Do you have experience with international students and international lecturers? Can you discuss visa/health/housing/legal/travel/local transport support?

Area 9: Relationships with national/international partners.

Can you demonstrate how these relations work with respect to i) mentoring/hosting internships for international CSSTL students, ii) could they utilise their networks to obtain funding/scholarships/actual registrations for CSSTL students?

Is it possible to meet with any of these partners during our visit?

Can references be provided and contact details for these partners?

Area 10: Leadership training and modules

Can you demonstrate any offering similar to, or that could be used as part of, the leadership development training. Have you links to any suppliers or institutions that do offer this type of training?

Appendix B: Interview Assessment Summary

Host Institution Assessment

Project:	ReCAP: Establishment of a Centre for Sub-Saharan Transport Leadership		
Our reference:	400815-MMD-RP-1007	**Your reference:**	n/a
Prepared by:	K. Kelly	**Date:**	15 April 2019
Approved by:	S. Jones	**Checked by:**	M. Zuidgeest
Subject:	Assessment following Host Institution Interviews		

Addis Ababa Institute of Technology (AAIT) and Kwame Nkrumah University of Science and Technology (KNUST) were shortlisted as the two final candidates for hosting the Centre for sub-Saharan Transport Leadership (CSSTL). They were visited by the Project Team (S. Jones, M. Zuidgeest, O. Nnene and K. Kelly) and ReCAP (N. Leta) on the 8/9th April and 11/12th April respectively.

Interviews with key staff from each university were undertaken, meetings held with students and the universities industry partners and an inspection of their learning facilities. This note summarises the findings and makes a recommendation on which university should be selected to host the CSSTL.

1 Process

Following the receipt of Capability Statements from an initial list of potential host institutions, AAIT in Ethiopia and KNUST in Ghana were shortlisted as the final two candidates competing to host the CSSTL. The Project Team scheduled visits with both institutions and supplied the topics they wished to discuss one week in advance of their visit.

The interview schedule at both institutions included:

1. Introductions between the Project Team, ReCAP and university personnel.
2. Presentations from the university and Project Team.
3. Discussion period where the topics identified as being of interest to the Project Team were discussed.
4. Meetings with stakeholders of the university, such as industry partners and government bodies.
5. Presentations from MSc and PhD students about their research.
6. Discussions with international students about their experiences in Addis Ababa and Kumasi respectively.

Following the completion of these interviews, the Project Team collated their findings and came to a consensus on the preferred candidate. The following section summarises these findings and makes recommendations on the pre-conditions that need to be assigned to the preferred candidate.

2 Findings

The findings from the interview process are summarised in Table 1.

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Table 1: Summary of findings from university interviews and visits

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
Transport course offering	• Offering courses in highways and transport engineering. • Good standard on offer and positive feedback from their students about the teaching. • Depth and strength of some of the research displayed to the team is limited. • Sister institutes in other parts of the university that can assist with other disciplines – e.g. urban planning, land use planning etc.	• Offering courses in highways and transport engineering. • Has an operational Business School. Head of School participated in the meetings. They offer management and leadership courses, which could be used as part of the TSLDP offering. • Has Transport Research and Education Centre of Knowledge (TRECK), which has funding from the World Bank. • TRECK is a WB Centre of Excellence for Transport for West Africa. However, there is no other CoE in Transport in the rest of Africa, so there may be scope to expand this across Africa. • Depth and strength of some of the research displayed to the team is limited.
Desire	• Demonstrated excellent desire to host the programme. • Visit was well organised and managed by AAIT. • Communications in advance of the visit were well handled and efficient.	• Demonstrated excellent desire to host the programme. • Visit was well organised and managed by KNUST. • Demonstrated good understanding and knowledge of what is required to establish a centre, the problems we may face and how they could be resolved.
Course accreditation	• Courses are accredited within Ethiopia. • No international accreditation seen. • Credit system changed to Bologna system, so they can link with other universities more easily for joint degrees.	• Courses are accredited within Ghana. National Accreditation Board of Ghana: http://www.nab.gov.gh/ • They have international (AQAS, Germany-based Agency for Quality Assurance) accreditation for their courses in the Water sector. Similar accreditation is scheduled this year/next year for the civil/transport courses.

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Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
Infrastructure	• Campus has very good computing facilities. • Library is good but there seemed to be some access issues to some journals. • Some laboratories were limited (e.g. highway lab) however they are likely to be of limited relevance to the CSSTL. • ERA indicated we could use the new Road Research Centre. • This is still under construction. It will have very good facilities but unlikely to be the educational/learning centre we are looking for, as it is an industrial/commercial research facility and not a student friendly or a teaching/educational environment. • Campus has security on the gates checking vehicles and persons accessing the building.	• Large, self-contained campus which operates like a small town (over 40,000 students and several thousand staff live and work here). • Has its own shops, swimming pool and sports facilities for students, a primary school on campus for children of the staff. • Health insurance given to international students and on-site clinic available (although noted from discussions with international students, neither the insurance or clinic operates smoothly). • Accommodation for students is available on-site. • Library facilities with journal access is available, in addition to separate study and discussion areas for post-graduate students. • Computer laboratories with relevant software is present. • Large, new auditorium equipped with latest equipment capable of hosting small conferences etc. • Distance learning facility with latest video recording and sharing technology and demonstrated it is being used as classes are available on it. • Use of Virtual Classroom technology to live broadcast or send recorded lectures at the distance learning facility. All students given access. Demonstration from staff showing it is being used for classes.
Reputation	• Excellent reputation within Ethiopia. • Most Ethiopian civil engineers have studied at AAIT, including some current senior members of government. • Limited recognition in the form of International Ranking outside of Ethiopia. • QS Top University Ranking and Times Higher Education Index places it at >1500 in the world. • It is a signatory to a World Bank MoU for transport research in Africa. • It has established a Railway Centre of Excellence, which is supported by the World Bank. It is attracting students from across Africa.	• KNUST has an excellent reputation within Ghana. • Outside of Ghana, it does not feature on most International Ranking lists. • The international ranking lists it does feature on places it at >1800 in the world (QS Top University Ranking and Times Higher Education Index)

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
Links to tertiary institutions	• Demonstrated strong links with institutions inside and outside Ethiopia. • Member of the African Research University Alliance (ARUA) which is a group of African universities that collaborate on research topics like climate change, energy, food security (N.B transport is not one of their focus areas). It is governed by a board comprising 16 vice chancellors from the member universities • These include the University of Birmingham, Delft (Netherlands), Cardiff and Swedish University of Agri Sciences. • Other SSATP signatories include Nairobi, Dar es Salaam, Johannesburg and Dakar.	• Links exist to several other universities including Lausanne (Switzerland), University of South Africa, University of Cape Town, Texas State University, Munich (Germany). • Not a signatory of the ARUA MoU.
Links to Multilateral Development Banks (MDBs)	• Via the Railway Centre of Excellence, they have links to the World Bank. • AAIT organised a meeting for the Project Team with the local World Bank office. • They are also signatories to the World Bank's SSATP (Scientific Cooperation with African Universities in Research and Capacity Building in the Transport Sector). • They work on a DFID Air Pollution project, but unclear whether they have links directly with DFID. DFID unlikely to be of onward value to the CSSTL additional to what they are contributing via ReCAP.	• TRECK is funded by the World Bank, so links exist to this MDB. • Samuel Ampadu from KNUST sits on the ReCAP Technical Panel. However, no evidence of other DFID support opportunities.
Links to industry	• Strong demonstrable links with their stakeholders and partners. • Stakeholder involvement in their curriculum development. • Organised meetings with the Director General of the Ethiopian Roads Authority (ERA), their Road Research Centre and the Addis Ababa Metropolitan Authority.	• Strong demonstrable links to local industry. • Stakeholders from the Ghana Ministry of Works and Accra Metropolitan Area were flown to Kumasi to meet with the Project Team. • Also have links to Ghana Civil Aviation Authority / Aviation Ministry.
Links to professional institutions	• Demonstrable links to the Ethiopian professional engineering system. • No obvious links to institutions outside Ethiopia.	• Demonstrable links to the Ghanaian professional engineering system. • Links to German accreditation body (AQAS).
Staffing	• The engineering department seems well staffed.	• Seems reasonably well staffed.

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
	• Road and Transport Chair has 20 full time academic staff and 5 visiting professors. • Bikila Teklu offered as full-time manager/point of contact for the CSSTL. • He would have other existing duties reallocated to ensure he has the time necessary to perform in the role. • He would also be given a deputy/assistant.	• Unwilling to provide a name for the Management Staff at this stage. • Should not be Charles Adams as there are concerns amongst the team as to whether he would have time given his TRECK commitments. However, Charles could oversee the chosen Management Staff. • Agreed that the Project Team will supply the Terms of Reference to KNUST if they are successful and they will engage two appropriate staff. • **Team note outside of meeting/interview:** pre-condition needed so the Project Team and ReCAP have a role in selecting these staff to ensure suitability, if KNUST successful.
Accessibility	• Addis Ababa is well connected across Africa via Ethiopian Airlines. • University is well situated within Addis Ababa. • We would likely need to use facilities at the Road Research Centre. This is located on the outskirts of Addis Ababa.	• Kumasi is accessible by road (4.5-hour drive) or flight (40 mins) from Accra. • Not as readily accessible as Addis Ababa in this regard.
Appeal of the location	• Addis Ababa in general would be appealing. Ethiopia is politically stable and has a relatively low security risk despite their military presence in Somalia and close geographic proximity to Somalia, Eritrea etc. • The country is well developed and regarded within Africa. • Ethiopia is rated as a Medium Risk Country for travel according to Mott MacDonald travel advisory systems. • FCO indicates there has been an increase in the level of reported crime in the Bole and Yeka Hills areas of Addis Ababa. Advisories against all travel to some areas of Ethiopia and all but essential travel to others – see FCO website for details (https://www.gov.uk/foreign-travel-advice/ethiopia). None of these areas are in or near Addis Ababa. Terrorist risk is present and they are likely to target Ethiopia given their military involvement in Somalia and Ethiopian authorities have successfully disrupted a number of planned attacks. • It is where the African Union HQ is based.	• Ghana is politically stable country, which is well-developed and regarded within Africa. • Ghana is a Low Risk Country for travel according to the Mott MacDonald travel advisory systems. • FCO indicates most trips to Ghana are trouble free. There remains a risk from petty crime, theft and an increase in armed robberies. There is no recent history of terrorist attacks in Ghana, but a risk remains given its proximity to other higher risk countries in the region (e.g. Mali, Cote d'Ivoire and Burkina Faso). • It is recorded as having no noted active terror groups and low risk of insecurity, which is positive in terms of attractiveness to international students. • There are tourist locations and areas to visit when in Ghana, for example beaches around Accra etc. • Excellent on-site facilities at KNUST. The large campus is a pleasant place to be based and well equipped with swimming pool and sports facilities, health clinic which would be appealing to candidates from elsewhere in Africa.

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
	• Ethiopia is marketed as 'the cradle of life', as it is recognised as being where human life originated. • Several other major donor and bank bodies have major operations there. • There are cultural and tourist places to visit both in Addis Ababa and the wider country. • Traffic congestion and air pollution in Addis Ababa is a slight concern. • Also, the AAIT facilities are a slight concern and the appeal of the building in general. The new RRC may be more appealing to international students but is not yet finished. It is also not as ideal a learning environment as the university. • International students spoke highly of AAIT and the appeal of Addis Ababa. Negative points raised focused mainly on the cost of sending money back to their families.	• International students spoke highly of the KNUST campus, facilities and overall environment. Negative points included the fact the health insurance system is not working as it should and the health clinic gets busy. Also, sending money home is expensive.
Alignment between the CSSTL and university's vision and objectives	• Strategy dictates they want to be a recognised university in Africa, particularly in Eastern and Southern Africa. • The CSSTL would sit in the existing School of Multidisciplinary Engineering (SMDE). • They have a PR person who could assist with the promotion of the CSSTL to the wider continent.	• Clear alignment strategy evident. KNUST already starting to offer courses similar to what the CSSTL aims to deliver, with blends of technical and managerial content. • The objectives of TRECK align closely with the CSSTL. • Noted that TRECK has similar ambitions to the CSSTL but they have not yet fully materialised due to funding constraints. • Ghana government objective to bring in more international students and 'internationalise' universities. • They have a marketing department who could support with the CSSTL marketing. • The CSSTL would be run via Africa Centre of Excellence (ACE) / Regional Transport Research and Education Centre Kumasi (TRECK) as this would benefit sustainability. Keep staff employed via KNUST and not under separate contracts on the project, which means they remain employed beyond this project period. • Existing programmes on offer are self-sustaining, maintained by the tuition fees they generate – this is also an ambition for the CSSTL.

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
		• Hosting the CSSTL would also help KNUST achieve Disbursement Level Indicators (DLI) as part of their TRECK agreement with the World Bank. • The World Bank would match any external funding KNUST manage to secure, as part of this agreement.
Additional points arising during interviews and other meetings	• World Bank funding is country specific and driven from the Ministry of Finance. • There is no mechanism for the WB to directly support the CSSTL. • Funding would need to come from the countries in question. Team concern the Ethiopian government would be unwilling to spend their money/WB funds supporting international students, which is understandable and reasonable. • Funding could potentially be leveraged from the WB-funded Railway Centre of Excellence to support student scholarships. The team consider this would be difficult given the rigidity with which funding appears to be distributed by the WB and the disciplinary differences between our programme and the railway programme.	• Clearer alignment evident in how TRECK and the CSSTL could work together. • Opportunity to engage their Business School is promising and they are already working with the Transport/Engineering school on other courses. • Clearer mechanism for how we could secure scholarships from students using existing WB funding for TRECK. • As TRECK is highway transport orientated there aren't the applicability concerns that exist with AAIT and the Railway CoE. • Opportunity exists to make TRECK more Africa-focused in addition to CSSTL. • KNUST offer free English language lessons for non-English speaking students, as they get several students from Francophone countries in West Africa – this was verified by PhD students we met from Senegal, Burkina Faso and Mali, who improved their English through this course.
Conclusions	• AAIT demonstrated they are very organised and enthusiastic and certainly would be a capable partner in this project. • CSSTL setup would be relatively straight-forward, according to AAIT. It would be setup in an existing multi-disciplinary school which already houses other Centres of Excellence, so this would achieve the aim of not setting up a separate business. The legal and tax implications are less clear and there is some concern around this as the teams experience indicates Ethiopia is not always an easy country to operate in from a legal/tax perspective. AAIT indicated they don't expect any issues as it would be set up in the Multi-Disciplinary School (i.e. not a new business), but this would need further exploration later.	• KNUST demonstrated they have an excellent understanding of what is required. • Establishment and setup are likely to be simplified by subsuming the centre into TRECK so there is no separate business entity, which is what is proposed by KNUST. Contracts and Terms of Reference will likely take some negotiation. The KNUST team seem very focused on this. Whilst this has some positives in that it shows they want a clear scope and objectives, it could also indicate the likelihood for protracted negotiation to arrive at an agreement. KNUST don't envisage any legal or taxation issues, but this would need further exploration later.

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
	• Their confirmation that Bikila Teklu would manage the CSSTL was noted and appreciated. Bikila's organisation and management of the teams visit was excellent and gave the team confidence that he would be a reliable point of contact at AAIT. • There was some concern regarding the desirability of the facilities/physical location and whether use of the Road Research Centre would be needed. However, the RRC is still under construction and also not an ideal education facility in any case. • The availability of opportunities to secure funding are likely to be complicated. We may be able to leverage WB funding via the Railway Centre of Excellence, but the avenues are unlikely to be straight-forward given the different disciplines in question. • If we had to engage the RRC and/or ERA, there is some concern within the team as to whether it may become difficult to maintain the necessary pan-Africa focus and not give undue preference to Ethiopian students. If this were to happen it would impact the sustainability of the CSSTL and its focus as a centre for the whole of Africa. **Recommendation:** AAIT demonstrated they have the enthusiasm and capability to establish and operate the CSSTL. They have capable staff and reasonable facilities. The support of ERA and the Road Research Centre is noted. This facility would likely be required to be attractive to students. However, the longer-term sustainability and alignment of the CSSTL was not as clear to the Project Team and there are concerns about the ability to secure scholarship funding via existing relationships. Due to the funding/sustainability challenges, the concern about the suitability of the Road Research Centre as an educational/learning facility versus an actual university campus and the fact it is felt the RRC would need to be used to supplement existing AAIT facilities, it	• They demonstrated the know how to setup CoE's through what they've done with TRECK and another Water sector CoE. • Bringing the Business School to the interview and demonstrating the courses they already have that combine technical and managerial/leadership training was excellent and demonstrated understanding of what we are trying to achieve. • Clear training/programme opportunities exist between CSSTL and TRECK, such as incorporation of their Business School into the delivery and course offerings by TRECK that could be used by the CSSTL/TSLDP which would greatly reduce our development costs. • Opportunities exist to use the funding streams for TRECK could be used to support the CSSTL and provide scholarships to students. • KNUST is based within an attractive campus with excellent facilities, particularly the Distance Learning Facility, which was state of the art. This could offer significant benefits to long-distance (blended) teaching at KNUST. This is a pre-requisite for cost-effective implementation of the TSLDP as envisaged. • The challenges posed and questions raised by KNUST demonstrated understanding of several challenges the Project Team also grappled with in the Scoping Phase and now. This demonstrated they are aware of the challenges we will need to overcome establishing the CSSTL. **Recommendation:** KNUST demonstrated they have the enthusiasm and capability to establish and operate the CSSTL. Their current operations with TRECK align very closely with our goals for CSSTL – e.g. planning and delivering blended management and technical courses, they have a relationship with their Business School, they have WB funding that could potentially be used for scholarships, their TRECK ambitions align closely with our CSSTL ambitions (i.e. develop transport leaders and achieve long-term sustainability) The opportunities to engage their Business School will bring added benefit to the managerial and leadership training. There appears to be scope for scholarship support via the WB funding for TRECK, which is vital until such time as we can attract sufficient fee-paying students to be self-supporting. We also believe the campus and

Selection Criterion	AAIT (Ethiopia)	KNUST (Ghana)
	is recommended that AAIT is selected in 2nd position to host the CSSTL. However, as discussed, AAIT also possess the capability to run the CSSTL and they are enthusiastic. A probationary period will be included in the award to the 1st placed institution. If there are serious concerns regarding the performance of the 1st placed institution within this probationary period that may affect the outcome of the project, the recommendation is that the CSSTL is relocated to AAIT. AAIT should be made aware of this in the correspondence informing them of the outcome of this process.	facilities available at KNUST would make it an attractive proposition for visiting students. For these reasons, it is recommended that KNUST is selected as the preferred candidate to host the CSSTL.

3 Conclusions

3.1 Preferred Host

The recommended candidate to host the CSSTL is KNUST in Ghana. Whilst both universities demonstrated capability and enthusiasm, KNUST differentiated themselves in the following ways:

1. They demonstrated a clear alignment between their objectives with TRECK and those of the CSSTL.
2. Bringing the Business School to the interview, and demonstrating they already work together on technical transport/managerial courses, demonstrated they understand what TSLDP is trying to achieve.
3. Their campus offers an attractive environment for students to visit. The broader facilities are also impressive, particularly the Distance Learning Facility which houses state-of-the-art remote learning equipment, which KNUST demonstrated is in use.
4. Through TRECK there is a clear avenue through which we could leverage scholarships for students. These will be important to attract candidates until we build a reputation and attract candidates on this basis. This is critical to achieve the sustainability objectives.

3.2 Pre-Conditions

KNUST were unable to provide names for the two Management Staff at this stage. As a result, the following pre-conditions should be placed on their selection, in addition to a number of others covering other issues to be addressed. These shall be written into their award letter:

1. The Award is subject to a **3-month** probationary period. If during this probationary period there are concerns about the direction in which the CSSTL is progressing, or lack of progression, ReCAP reserve the right to re-locate the CSSTL to the second-placed university, Addis Ababa Institute of Technology (AAIT).
2. The two Management Staff must comply with the requirements of the Terms of Reference, which will be provided to KNUST.
3. World Bank confirmation is required that the ability to utilise TRECK, as explained by KNUST, is permissible and feasible.
4. The CSSTL is a Sub-Saharan Africa – focused organisation. Written support from the Government of Ghana shall be provided to demonstrate they support this aim. Whilst KNUST/Ghana will act as host for the CSSTL, it will not entitle Ghanaian institutions or students to greater access or representation on courses run by the CSSTL or to influence its direction. The CSSTL is a Sub-Saharan Africa institution and must be seen as an institution that represents the continent. An open and equitable approach to participants from across the continent is critical to achieving this goal. This will further be reinforced through the candidate selection criteria to be agreed by all parties.
5. The Project Team and ReCAP shall be permitted to meet with the proposed staff and shall have final acceptance on whether they are suitable to act as the Management Staff of the CSSTL.
6. It is requested that Dr Charles Adams be the KNUST Lead for the CSSTL and provided with support staff (Management Staff) using the seed funding. Dr Adams should be the main point of contact for ReCAP and the Project Team.

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7. Acceptance of the terms of the MoU or Contract that will be drafted between ReCAP and KNUST for the establishment of the CSSTL.

Appendix C: Curriculum Review Report

ReCAP
Research for Community Access Partnership

UKaid
from the British people

Establishment of Centre for Sub-Saharan Transport Leadership

Curriculum Review Report

Mott MacDonald, University of Cape Town and University of Birmingham

RAF2147A

June 2019

MOTT MACDONALD

University of Cape Town · iYunivesithi yaseKapa · Universiteit van Kaapstad

UNIVERSITY OF BIRMINGHAM

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The views in this document are those of the authors and they do not necessarily reflect the views of the Research for Community Access Partnership (ReCAP) or Cardno Emerging Markets (UK) Ltd for whom the document was prepared.

Cover photo: Mott MacDonald education training programme, Ghana.

Quality Assurance and Review Table

Version	Author(s)	Reviewer(s)	Date
A	M Zuidgeest et al	N Leta, ReCAP PMU J Haule, ReCAP PMU	14/06/19 18/06/19
B	M Zuidgeest et al	N Leta, ReCAP PMU Technical Panel Phil Paige Green John Hine,	06/08/2019 23/08/2019
C	K. Kelly et al	N Leta, ReCAP PMU	30/09/19

ReCAP Database Details: Establishment of Centre for Sub-Saharan Transport Leadership

Reference No:	RAF2147A	Location	Africa (Regional)
Source of Proposal	Tender	Procurement Method	Open Competitive Tendering
Theme	Capacity Building	Sub-Theme	Leadership Development
Lead Implementation Organisation	Mott MacDonald	Partner Organisation	University of Cape Town and University of Birmingham
Total Approved Budget	£452,000	Total Used Budget	£228,225 (ex. VAT)
Start Date	4th February 2019	End Date	30th June 2020
Report Due Date	7th June 2019	Date Received	7th June 2019

Mott MacDonald Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	07/06/19	Various	M. Zuidgeest M Vanderschuren	S. Jones	First Issue (DRAFT)
B	31/07/19	Various	M. Zuidgeest M Vanderschuren	S. Jones	Second Issue. Response to ReCAP comments.
C	30/09/19	Various	M. Zuidgeest M Vanderschuren	S. Jones	Third Issue. Response to ReCAP Technical Panel comments.

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Abstract

Mott MacDonald, University of Cape Town and University of Birmingham commenced the establishment of a Centre for sub-Saharan Transport Leadership (CSSTL) in February 2019. This is the Curriculum Review Report which defines the modules and content to be delivered under the Transport Sector Leadership Development Programme (TSLDP). It remains under development with KNUST and is expected to be completed by the end of September 2019.

Key words

Leadership, capacity building, development, training, education, CSSTL, Centre of Excellence, transport engineering, transport services, curriculum, modules.

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

www.research4cap.org

1 MSc in Transportation Leadership

This document is the Curriculum Review Report for the Centre for sub-Saharan Transport Leadership (CSSTL). The purpose of this report is to define the modules and content to be delivered under the Transport Sector Leadership Development Programme (TSLDP). It remains under development with KNUST and a final version shall be issued in October 2019, following a visit to KNUST by a member of the project team to finalise the credit system and course content with relevant university staff.

1.1 Programme Description

The table below provides a summary of the proposed MSc programme in Transportation Leadership, followed by detailed module descriptions and a desk-based study into available capacity and resources at the host institution for developing and providing these modules.

The MSc programme is offered on a full-time basis, i.e. allowing participants to graduate in 18 months, whilst a part-time registration will be possible as well.

<table>
<tr><td>Programme Title</td><td colspan="5">MSc Transportation Leadership (MTL)</td></tr>
<tr><td>Criteria for Admissions</td><td colspan="5">A minimum of a 2nd class honours degree, or above, in a relevant Engineering, Management, or Planning discipline, or a recognised equivalent qualification. At least five years of relevant working experience in the transport sector is required. (Professional status will also be considered). Applicants must provide evidence of an IELTS* score of 6.5, with not less than 5.5 in any component, or an equivalent qualification acceptable to the university.

*Taken within the last 2 years.</td></tr>
<tr><td>Portfolio Details</td><td colspan="2">Applicants will be required to submit a curriculum vitae, together with a short portfolio, which demonstrates technical and managerial experience in the transport sector, together with a recommendation from their employer.</td><td>Interview Details</td><td colspan="2">Applicants will be required to undertake an interview as part of the criteria for admission.</td></tr>
<tr><td colspan="2">Mode of Study</td><td colspan="4">A full time 18 months MSc offering of 12 modules (core courses and electives), a dissertation and a short module on research methods aligned to a thesis project), which can also be taken part-time.</td></tr>
<tr><td>Type of Programme</td><td>Postgraduate</td><td>Length of Programme</td><td>Full time offering of 18 months, part time registration possible up to 28 months.</td><td>Total Credits for Programme</td><td>54 Cr (KNUST), equivalent to 1800 nominal hours of study.</td></tr>
<tr><td>Graduation Requirements</td><td colspan="5">For the award of the MSc, the student must have:

• passed all core courses;
• achieved the minimum credit hours of 54 for applicants without master’s degree;
• obtained a minimum pass mark of 50% in any examination;</td></tr>
</table>

	• obtained a minimum Cumulative Weighted Average (CWA) of 55.00; and • submitted and successfully defended thesis.
Assessment requirements	The assessment of students will be based on: • preparatory assignment • post course week assignment • group works • seminar presentations • written exercises • written examinations • thesis Continuous Assessment: • Continuous assessment will take 75% of the overall assessment and comprises preparatory assignments (15%), group work (10%), and a post course week individual assignment (50%). Some modules may also offer graded take home assignments and a mid-semester examination. Examination: • This will form 25% of the overall assessment and will be written under formal examination conditions immediately after the course week.
Exit Awards available	Master of Science (MSc) degree certificate

Awarding Institution/Body	KNUST, Ghana, with an outlook towards joint degree offering in the future, possibly UCT or UoB, or another internationally recognised university.
Teaching Institution	KNUST, in a consortium with UCT, UoB, and Mott MacDonald International.
School/Department	KNUST School of Civil Engineering, TRECK Programme, in close collaboration with the KNUST School of Business.
Framework for Higher Education Qualification Level	Level ##* (Ghana) / NQF Level 9 (South Africa) / Level 7 (United Kingdom). *tbc

Accreditation agency	AQAS Germany	**Date of Accreditation Visit**	Target date 2021
Accreditation agency	To be confirmed, e.g. Joint Board of Moderators, Institutions of Civil Engineering (UK) and Structured Engineering (UK)	**Date of Accreditation Visit**	NA
Accreditation agency	e.g. Chartered Institution of Highways & Transportation	**Date of Accreditation Visit**	NA

External Examiner Name:	External Examiner Institution/Organisation
To be appointed. External examiners will be appointed per module following KNUST rules. Candidates may be from Ghana and beyond, including from SA, UK, Ethiopia etc. Specifically, we will need examiners for the research project.	Institutions in Ghana, rest of Africa, UK

1.2 Educational Aims of the Programme

Educational Aims of the Programme:

On completion of the programme the student will be able to:

- Develop practical and professional skills in the critical acquisition, analysis, interpretation and understanding of the transportation sector in Africa.
- Develop a comprehensive approach by integrating the technical knowledge of planning, design, engineering, operations and impact in transport studies with financial, legal, IT, commercial leadership and managerial skills. These leadership skills will be developed from the management of simple to complex transport projects, from project planning and conception to construction engineering and maintenance; and operation.
- Develop critical and analytical problem-solving skills across a broad range of subjects and transferable skills that relate to literacy, numeracy, computing, teamwork, group work, communication, leadership and personal presentations.
- The thesis project provides an opportunity for students to independently produce a structured research document with clear aims and objectives, stating hypotheses to be tested within a relevant problem in the African transportation sector. The dissertation will clearly communicate their analysis of the data obtained, how it may, or may not, align with literature or agree with their hypotheses. It will also discuss implications for practice within the transportation sector. The thesis is preceded by a short module on research design and methodology.

Learning Outcomes: Cognitive Skills

	On the completion of this course successful students will be able to:	**Teaching/Learning Methods and Strategies**	**Methods of Assessment**
	• Plan, conduct, present and report a major independent research project in transportation leadership.	Students' intellectual skills are developed through lectures on research methodology (following a blended learning approach), tutorials, directed reading, problem-solving scenarios and group work exercises and presentations.	Assessment will be on the basis of a Dissertation.

		Further opportunity for the development of intellectual skills is offered through the supervision of the independent research project work.	
	• Understand and apply mitigating measures to counteract the risks/impacts of projects in the transport sector. • Critically analyse, evaluate and interpret qualitative and quantitative data related to the African transport sector. • Formulate and test concepts and hypotheses; both theoretically and in practice, that relate to issues of transportation planning, engineering, operations and their impacts in the African transport sector. • Make informed judgements on complex and uncertain issues, e.g. interpret a diversity of multi-factors affecting African transport sector realities.	Students' intellectual skills are developed through lectures (following a blended learning approach), tutorials, directed reading, problem-solving scenarios and student presentations. Further opportunity for the development of intellectual skills, specifically for the programme, is offered by the individual and independent research project work. The range of topics covered in the programme will develop the student's 'problem solving skills' and help them to think in new and imaginative ways to solve complex real-life problems in the transport sector.	Assessment is made using examinations, coursework (individual and group work submissions), an individual post-assignment per module, as well as in oral presentations by both individuals and project groups.
Learning Outcomes: Transferable Skills			
	On the completion of this course successful students will be able to:	**Teaching / Learning Methods and Strategies**	**Methods of Assessment**
	• Make effective use of both oral and written skills and can communicate effectively, both digitally and interpersonally, to both specialist and non-specialist audiences within the context of projects in the Transport Sector. • Demonstrate an ability to learn and then apply that learning in the context of projects in the African transport sector. • Demonstrate ability to apply transferable skills in the context of projects in the African transport sector. • Work in a team and understand professional responsibilities in the context of projects in the African transport sector.	Students' transferable skills are developed through presentation exercises, student and tutor-led discussions, preparation for oral and written presentations, group-working exercises and the extended individual project.	The assessment of the majority of the transferable skills forms an integral part of the overall assessment of the degree pathway. Group-working and written and oral communication skills are assessed directly. Practical skills in the use of IT are not formally assessed, although the development of IT skills are integral to the learning and

	• Demonstrate leadership, independent judgement, autonomy, and personal responsibility in addressing potentially complex situations in professional or equivalent environments (i.e. through their independent Research Project).		teaching process underpinning the degree, and are assessed indirectly. Assessment may also be on the basis of (part of) a Dissertation.
Learning Outcomes: Knowledge and Understanding			
	On the completion of this course successful students will be able to:	**Teaching / Learning Methods and Strategies**	**Methods of Assessment**
	• Develop practical and professional skills in the critical acquisition, analysis, interpretation and understanding of projects in the African transport sector.	Students' acquisition of core knowledge and understanding is achieved primarily through independent study supported by lectures, tutorials and group work.	Assessment is made using written examinations (where required), coursework, a post-assignment and in oral presentations by both individuals and project groups.
	• Develop a holistic approach by integrating the technical knowledge of planning, design, engineering, operations and construction with financial, legal, IT, commercial leadership and managerial skills. These leadership skills for the African transport sector will be developed from the management of simple to complex transport projects, from project planning and conception to construction engineering and maintenance; and operation; e.g. construction economics and finance, strategic management, information systems, construction law, international construction markets and competitive advantage.	Students' acquisition of core knowledge and understanding is achieved primarily through independent study supported by lectures, tutorials and group work.	Assessment is made using written examinations (where required), coursework, a post-assignment and in oral presentations by both individuals and project groups.
	• Develop critical and analytical problem-solving skills, across a broad range of subjects and transferable skills that relate to literacy, numeracy, computing, teamwork, group work, and personal presentations and interactions to prepare students for leadership roles.	Students' acquisition of core knowledge and understanding is achieved primarily through independent study supported by lectures, tutorials and group work.	Assessment is made using written examinations (where required), coursework, a post-assignment and in oral presentations by both individuals and project groups.

	• Develop the professional ability and an underlying aptitude to apply appropriate theoretical and practical management methods in the analysis and solution of planning, design, engineering and construction problems in the Transport Sector. Understand and apply the underlying theory in the management of consulting, contracting and development businesses, including human resource issues, finance and accounting, leadership and organisational issues. Lead and work effectively with project teams and communicate effectively in a variety of forms, including digitally, orally and in writing. Understanding the expectations of clients, developers, financiers, and investors in the transport sector. Analyse typical African sectoral problems; design and implement strategies for change.	Students' acquisition of core knowledge and understanding is achieved primarily through independent study supported by lectures, tutorials and group work. In the case of the Research Project students will, with appropriate supervision, independently produce a structured research document with clear aims and objectives, stating hypotheses to be tested within a relevant transportation leadership area. The research will include a review of research methodologies, a comprehensive literature review and the development of research questions to test their hypotheses in a social and/or engineering sciences research context. The dissertation will clearly communicate their analysis of the data obtained, how it may or may not align with literature, or agree with their hypotheses. It will also discuss implications for practice within the African transport sector.	Assessment is made using written examinations (where required), coursework, a post-assignment and in oral presentations by both individuals and project groups. In the case of the Research Project, assessment will be on the basis of a dissertation.
Learning Outcomes: Subject Specific Skills			
	On the completion of this course successful students will be able to:	**Teaching / Learning Methods and Strategies**	**Methods of Assessment**
	• Integrate data and methods to find solutions to real problems in the African transport sector. • Use simple transport analytical models and techniques to analyse and solve transport problems. • Analyse and solve problems using a multi-disciplinary approach, applying professional judgments to balance costs, time, quality benefits, safety and social and environmental impact.	Student's practical skills are developed through independent study supported by lectures, online tutorials and supervision, an individual post-assignment and group work.	Assessment is made using written examinations (where required), coursework, an individual post-assignment and in oral presentations by both individuals and project groups.

	• Integrate and critically evaluate information. • Formulate and apply appropriate solutions. • Prepare technical reports and give technical presentations. • Use the scientific literature effectively. • Plan, conduct and write up a programme of original research.		

1.3 Programme Requirements

Module Title	Module Code	Level/ Stage	Credits	Availability		Duration			Assessment		
				S1	S2		Core	Option	Coursework %	Practical %	Examination %
Transport Leadership		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended learning)	Y		65	10	25
Leadership Development		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended learning)	Y		65	10	25
Project Management		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended		Y	65	10	25

						learning)					
Management and business operations		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Principles of Road Engineering		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Transport Systems and Operations		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Transport Policy and Planning		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Transport and Society		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site	Y		65	10	25

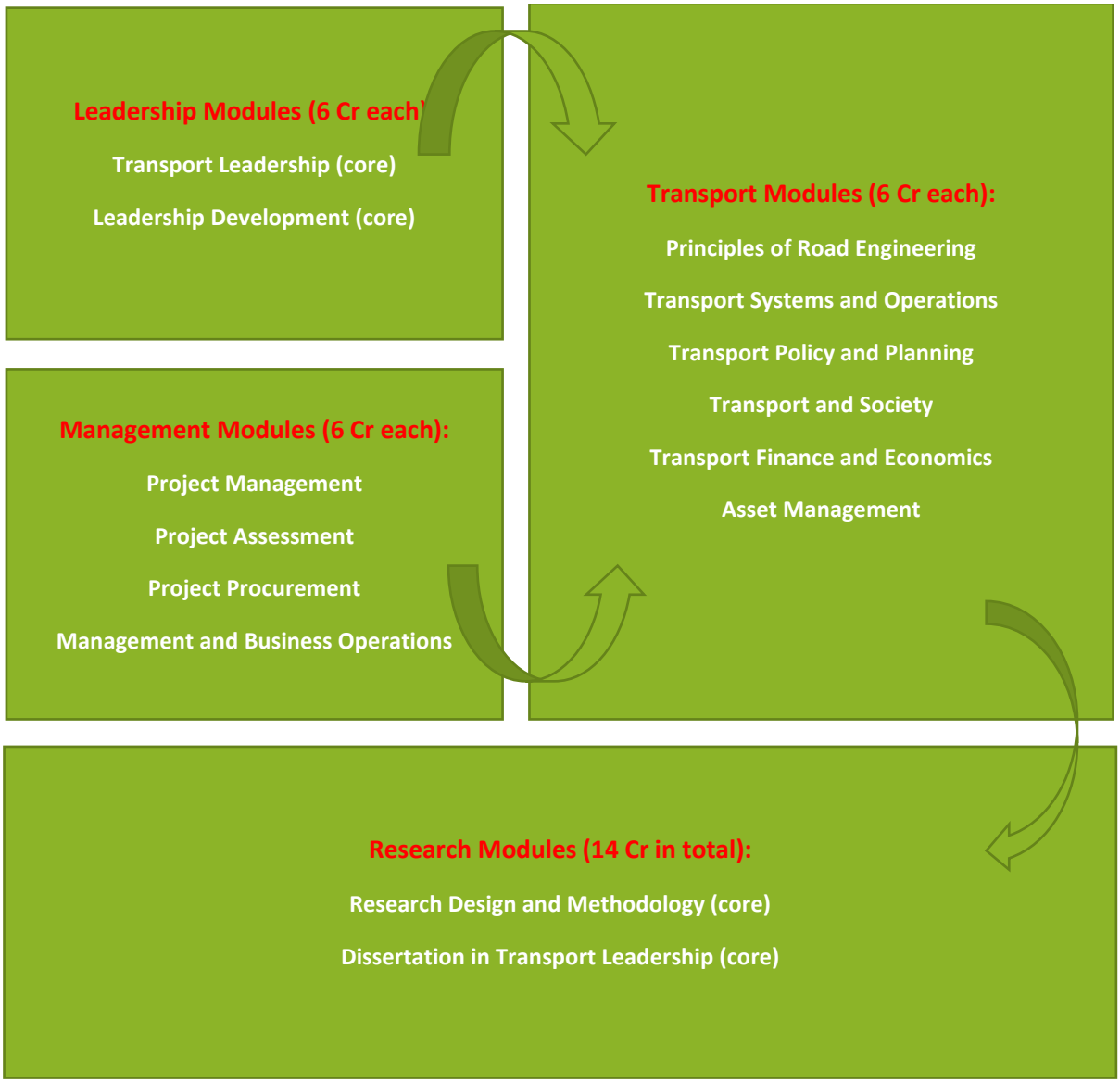
						(blended learning)					
Transport Finance and Economics		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Asset Management		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Project Assessment		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Impact Assessment		NQF9 / Level7	6		Y	1.5 weeks on-site, 2 weeks off-site (blended learning)		Y	65	10	25
Project Procurement		NQF9 / Level7	6	Y		1.5 weeks on-site, 2 weeks		Y	65	10	25

						off-site (blended learning)					
Dissertation in Transport Leadership		NQF9 / Level7	14	Y		24 weeks	Y		100	0	0
Research Design and Methodology (part of Dissertation course)		NQF9 / -Level7	0	Y		1 week on-site, as part of Dissertation	Y		100	0	0

2 Programme Structure and Module Summaries

The MSc programme is offered using a modular structure with some modules compulsory to all participants. The core modules include the leadership modules, as well as the research related modules. Participants will choose a minimal of five 6 credit Management and / or Transport modules counting towards their MSc degree. Choice of modules is made together with the students' mentor and is based on the candidate's background and experience. In certain cases, the candidate may be required to take additional modules beyond the five electives.

Figure 1: Programme Structure and Modules



2.1 Transport Leadership

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in an individual project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course is one of the pillars of the Transport Sector Leadership Development Programme.

The course shall equip students with an understanding of what a transport leader looks like and provide them with a broad perspective of the environment within which a transport leader in the African industry sits. Industry leaders should have an awareness of key industry drivers and social challenges that inform the direction that transport policy and strategy should take. This includes aspects such as the Sustainable Development Goals (SDGs), climate change, the environment, urbanisation, rural transport and poverty alleviation, and the importance of diversity and inclusion within the industry. This course sets the scene for the overall programme and the fundamental industry drivers that a Transport Leader must be aware of, and take responsibility for considering and promoting as they develop. It will also touch upon the importance of communication and the ability to influence people to lead them towards the future vision for the African transport sector.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- how to communicate effectively to different stakeholders within the sector and understand the drivers and priorities of these stakeholders (i.e. general public vs. peers vs. politicians);
- how to anticipate changes in trends within the sector;
- how to lead projects, programmes, organisations effectively;
- examples of best and worst practices of leadership in the transport sector;
- principles of good governance;
- principles of critical thinking;
- principles of systems thinking;
- principles of ethics and compliance in transport sector projects and programmes;
- the complexities and uncertainties of transport projects, in particular mega-projects, and their leadership requirements;
- the Sustainable Development Goals and the importance of social and environmental goals in an African context; and
- the importance of gender balance and diversity within the industry.

Learning outcomes — intellectual abilities

After completing this module, the course participant should appreciate what it is to be a leader within the transport industry and understand the broad-ranging environment within which the sector sits. They should understand the importance of their role and their responsibility for driving the industry forward in the right direction, recognising the importance of acting ethically, achieving the Sustainable Development Goals, the relationship between transport and society and the responsibility we all share for protecting the environment and considering climate change, amongst other things, when developing and implementing transport policy and strategies.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- apply effective communication techniques to a broad range of stakeholders;
- know how to effectively lead a project, programme or organisation;
- relate effective leadership to overarching goals of SDGs, good governance, ethics, compliance and more;
- confidence to challenge the status quo and be an ambassador for positive change within the industry; and
- apply critical thinking and systems thinking techniques to leading complex and uncertain projects and programmes.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to effectively lead and communicate;
- the ability to anticipate changes in trends within the organisation / sector;
- the ability to plan responses to those changes;
- the ability to motivate and influence others to move in the planned direction.

2.2 Leadership Development

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	Module Transport Leadership
Co-requisites	None

Descriptive information

Course contents

This course aims to equip the course participant with leadership development skills, as well as the skills required for the participant to coach and mentor his / her team in the organisation. The subjects, presented in a practical and hands-on way, enable participants to understand their own leadership style and mindset, and how they can adapt it to become successful in future. Upon completion, the student will be able to apply their leadership skills to continuously improve, and help coach others.

Learning outcomes — knowledge and understanding

On completion of the module the participant should know and understand:

- their leadership style and personality traits;
- how these personality traits influence how they manage people and their progression within the industry;
- the principles of coaching and mentoring;
- key coaching and mentoring skills; and
- how to support and empower individuals through coaching.

Learning outcomes — intellectual abilities

After completing this module, the course participant should be able to appreciate the psychological traits and mindset of an industry leader and apply tools and skills to support their own development, as well as provide mentoring and coaching to others in their organisation.

Learning outcomes — subject-specific skills

On completion of the module the participant should be able to:

- communicate effectively and influence others;
- understand the importance of creating a high-performance environment;
- be able to hold ‘honest conversations’ with peers and stakeholders, challenging status quo and ideas to promote innovation and the best possible solutions;
- understand personal resilience and apply personal resilience strategies to manage their emotional and mental well-being within a stressful environment;
- be a leader for change within their organisation;
- understand collaboration and the tools required to achieve true collaboration;
- understand leadership transitions and manage their own change from a mid-level professional to an industry leader;
- understand the importance of seeing the bigger picture and strategic thinking; and
- understand the importance of creating high-performing teams.

Learning outcomes — transferable skills

This module will enhance the following skills:

- to demonstrate effective inter-personal skills
- to demonstrate effective personal resilience skills
- to demonstrate effective leaderships skills, particularly around leading change, seeing the big picture and creating high-performing environments and teams.

2.3 Management and Business Operations

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	Module Transport Leadership Module Leadership Development
Co-requisites	None

Descriptive information

Course contents

This course aims to equip the course participant with managerial and business operational skills, including the basic skills (communication, problem solving and conflict resolution within the business), planning skills (vision development, organisational resource management, organisational system balancing), organisation (structuring and resource allocation), directing (effects of different leadership styles, job design and costs, productivity and human reward structures) and control (organisational and individual effectiveness).

Learning outcomes — knowledge and understanding

On completion of the module the participant should know and understand:

- The effectiveness of different communication styles;
- Problem solving tools;
- Human conflict resolution tools;
- Vision development tools;

- Resource management, allocation and system balancing;
- The effectiveness of different leadership style;
- Delegation tools;
- Job design, costing and operations;
- The effectiveness of human reward systems;
- Organisational and individual control systems.

Learning outcomes — intellectual abilities

After completing this module, the course participant should be able to appreciate various managerial tools and the need for resource planning and optimisation (i.e. leading adaptation and adjustments if required), in the light of the vision and organisational structure. Leadership and motivation are two integral elements of management and business organisation.

Learning outcomes — subject-specific skills

On completion of the module the participant should be able to:

- communicate effectively and understand the advantages of different communication styles;
- be a visionary, problem solver and leader for change within the organisation;
- understand the importance of creating a high-performance environment;
- understand personal resilience and apply personal resilience strategies to manage their emotional and mental well-being within a stressful environment;
- understand the need to balance business versus individual personnel needs.
- understand the importance of creating high-performing personnel.

Learning outcomes — transferable skills

This module will enhance the following skills:

- to demonstrate effective vision development and leadership skills
- to demonstrate effective resource and reward planning skills
- to demonstrate effective business operation and management skills, particularly around system optimisation and personnel motivation.

2.4 Project Management

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	Module Transport Leadership Module Leadership Development
Co-requisites	None

Descriptive information

Course contents

This module focuses on the systems and approaches used to complete transport projects in a manner that is timely and not wasteful of resources, and which meets stakeholder requirements and project goals. The module teaches the basics for project managers in the transport sector by introducing essential project management concepts and methods. Through discussion, workshops and real-world examples, participants learn how to identify project components, organise them effectively and control the project from the earliest steps of developing the project charter through the final steps of a project - documenting lessons learned. Topics covered are project life cycle and organisation; project integration, project management processes; project time management and scheduling; project cost management; project quality management; project risk management; project procurement management and project human resource management, including communications management.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- the complexity of projects in the transport sector;
- the principles of project management;
- the project life cycle and organisation;
- the principles of time management, scheduling and control;
- financial aspects of project management;
- the principles of quality control in transport projects;
- the theory and practice of risk management;
- principles of project procurement;
- contract law and conditions of contracts;
- human resources management; and
- communications management.

Learning outcomes — intellectual abilities

After completing this module, the course participant should understand the responsibilities of a Project Manager and have the ability to conceptualise and manage the life cycle execution of a project.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- view the planning and progress of projects logically and systematically;
- apply project planning and scheduling techniques;
- apply cost management techniques; and
- explain the salient features of contract law and contract forms.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to critically investigate the role of data in project management;
- the solution of non-routine problems;
- the solution of some project management problems through systematic analysis; and
- the ability to learn independently.

2.5 Principles of Road Engineering

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course aims to give the participant an overview and appreciation of the basic principles of road design taking the needs of various modes (heavy vehicles, buses, para-transit, private cars, motorcycles, bicycles, pedestrian, as well as special needs users). The student will be introduced to the issues underpinning sustainable and appropriate design and will understand the application of technology and engineering principles to the design of road networks for the safe, universal, comfortable, convenient, economical, and environmentally compatible movement of people and goods. It also seeks to provide the course participant with an understanding of road engineering and design by providing a grounding in techniques for the design of the different road elements, such as intersections, pavements, lighting, drainage, as well as for the estimation of traffic flows (both urban roads, rural roads and highways). Tension between modes and what this means for design elements is addressed.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- the interaction between road-based modes of transport and their individual needs;
- the interaction between road infrastructure and the broader transportation network;
- the principles of appropriate sustainable road design in a rural, urban and multi-modal context;
- the elements of road design, such as route selection, geometric design, junction design, drainage design, the increasing use of BIM, pavement and materials engineering and equitable road space design;
- an appreciation of the principles behind an Environmental Impact Assessment for roads and transport operations; and
- sustainability in road design and the principles of whole life costing.

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- understand the interaction between various road users, road infrastructure and the transportation network;
- understand the principles of road design in a rural, urban and multi-modal context;
- understand the elements of road design, such as route selection, geometric design, junction design, drainage design, pavement and materials engineering and equitable road space design;
- understand the principles of safe design in road engineering;
- understand the principles of public space design relative to road engineering;
- understand the applications of BIM to the design of roads; and
- understand the applications of whole life costing and sustainability to the design of roads.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- view road engineering projects logically and systematically;
- apply sustainable and appropriate road design techniques;
- apply principles of safe and appropriate design in road engineering considering all modes; and
- apply principles of public space design relative to road engineering.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to communicate the results of road designs projects;
- the ability to critically investigate the connection between roads and public spaces;
- the solution of non-routine problems; and
- the development of solutions from an initial idea.

2.6 Transport Systems and Operations

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Course contents

Transport systems and operations investigates the application of technology and scientific principles to the design, operation and management of multi-modal transport systems, including all road-based (both private and public), rail-based, non-motorised transport and paratransit modes, for the safe, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods, in both an urban and rural setting. The foundation of the course is based on whole system design thinking, which will treat the transport system as a holistic system with multiple stakeholders, multiple scales, multiple objectives, and multiple impacts, including transport-related social exclusion and traffic safety.

Specifically, this course aims to gain an understanding of the technical and behavioural fundamentals of transport systems design and operations by providing an overview of the steps and elements involved in designing and operating road-based transport systems, non-motorised transport systems, public transport systems, and the management and control of these systems.

A traffic simulation group work will enable the students to see the impacts of their design and operational decisions on the whole transport system performance.

Learning outcomes — knowledge and understanding

On completion of the module the participant should know and understand:

- the theoretical foundations of Whole Systems Design;
- the key design and operational challenges of urban and rural transportation, including the advantages and disadvantages of design element choices;
- the elements that make up multi-modal transportation systems;
- the behavioural foundations of transportation system analysis;
- the fundamental principles of traffic engineering design, management and control, including safe systems approach;
- key aspects of non-motorised transport design and operations;
- key aspects of public transport design and operations, including paratransit modes; and
- Multi-modal HCM application and an understanding of Level of Service.

Learning outcomes — intellectual abilities

After completing this module, the course participant should be able to perform a basic design and assessment of a transportation system (in an urban or rural setting), including its various parts and elements, as well as judge the type of impacts it will have on the economy, environment and society.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- describe, design and understand the operational implications of various and integral parts and elements of transport systems;
- perform a basic design exercise for elements of a multi-modal transport system;
- assess the impacts of design and operational design choices on system performance and impact; and
- perform a traffic simulation analysis in a selected traffic simulation software.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to critically investigate transport system components;
- to distinguish urban from rural transport challenges;
- apply whole systems, people focused, design thinking;
- ability to set up and perform a basic simulation exercise; and
- the ability to learn independently.

2.7 Transport Policy and Planning

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

The objective of this course is to provide course participants with an overview of the problems and prospects of aligning transport planning processes with existing policy directives and contextual realities, as well as establishing a more integrated approach to the planning of urban and rural transport systems, which interact in complex ways in contemporary cities, towns, and villages, as well as between them. It offers course participants a coherent conceptualisation of the processes involved in addressing such problems, explores methods and processes through which appropriate integrated land use-transport policy, regulation, (master)plans and programmes might be formulated, and provides opportunities to reflect critically on current developments in the field, both locally and internationally. Planning tools, such as transport modelling are introduced.

Learning outcomes — knowledge and understanding

On completion of the module the course participants should know and understand:

- the conceptual transport framework (role of transport in activity systems; travel need, travel behaviour, systems of urban or rural transport provision; land use patterns, land markets, land use-transport connection, generic city, town, and village forms and associated transport networks and operations);
- planning intervention in urban or rural activity and transport systems (rationale for planning intervention as a field of public action / policy, evolution of approaches to planning, methods in both the land use and transport planning arenas (including transport modelling principles), considerations of economic efficiency, social equity and environmental sustainability as planning objectives);
- Approaches to integrated land use-transport planning with local and international best-practices.

Learning outcomes — intellectual abilities

Course participants who have completed the course successfully should:

- have a clear conceptual understanding of the complex dynamics of interaction between land use and transport systems;
- comprehend the essential nature of the planning process and its key moments, understand why planning intervention in transport and land use systems is warranted, and have a critical perspective on the implications of different planning approaches for issues of appropriate process and method;
- be familiar with, and be able to compare, the current legislative and policy frameworks governing transport and land use planning in various countries in Africa, and have a critical understanding of their implications for planning practice, particularly at the local level; and
- be equipped to draw critically on the lessons of experience in integrated land use-transport planning, both locally and internationally, in this endeavour.

Learning outcomes — subject-specific skills

On completion of the module the course participants should be able to:

- view policies, regulations, (master)plans and frameworks and assess local impacts and applicability;
- apply policy and planning theories in a holistic manner;
- use case study information to identify do's and don'ts; and
- communicate findings in a coherent, well-structured and clear manner.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to critically investigate policy and regulatory directives;
- the identification of local applicability of findings;
- the identification of positive and negative aspects of policies and their implications for practice; and
- the ability to learn independently.

2.8 Transport and Society

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course aims to introduce the course participant to the concepts of transport justice, the burden of travel for the majority of Africans, given their income, gender, age and ability. In the African context, land uses favour the urban wealthy. This focus in the formal economy is also present in the design of transport infrastructure and services. This course emphasises the need to plan and design for people on the periphery of society.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- that the impact of transport varies for different stakeholders in the society;
- the meaning of transport justice in the urban and rural context;
- that the transport experience is influenced by gender, age and ability of the user.
- measures (including designs) that can be taken to combat poverty, inequity, transport related exclusion and other negative impacts of transport on the society;

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- understand the relationship between transport and the society;
- understand the power of road design when creating a holistic, multi-modal transport environment;
- understand the interaction between people, land-use and the transport system;
- understand the need to protect vulnerable road users;
- understand the negative impacts that transport related issues have on women, the youth, the elderly and people with physical or mental impairments;
- understand the principles of transport justice; and
- understand the principles of people focused on universal design.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- apply and assess the social impacts of transport;
- identify the appropriateness of suggested policies, strategies and designs, protecting vulnerable stakeholders, and challenge inappropriate suggestions;
- educate and encourage peers to engage with transport justice and people focused issues;
- communicate the impacts of transport project to non-expert stakeholders; and
- lead community engagement processes.

Learning outcomes — transferable skills

This module will enhance the following skills:

- appreciate transport justice and people focused issues;
- appreciate the needs for social data collection;
- understand the burden of travel for the poor, women, the youth, the elderly and people with physical or mental impairments;
- carry out people focused designs and assessments; and
- successfully communicate the need to look after vulnerable stakeholders.

2.9 Transport Finance and Economics

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course aims to introduce participants to the field of transport funding and economics. First, the course provides a grounding in transport economic principles, before discussing transport finance and funding options. Specifically, the course discusses micro-economic principles of transport demand and supply; road pricing; estimation of user-benefits; valuation of travel-time savings; valuation of accidents, damage and subjective costs; valuation and shadow-pricing of resource costs; principles of compensation and welfare loss; investment appraisal; funding and financing of transport infrastructure; and actors in transport finance.

In the second part of the course, these economic and funding principles are used to discuss externalities such as traffic congestion, air pollution and inequity, and the possible role of road pricing therein. The course then also discusses a number of transport investment case studies, including best-practices in public-private partnerships. Public transport finance is also discussed through a number of African case studies. Finally, regulation and competition are further discussed using a number of African and non-African examples.

The course also provides some perspectives on project appraisal and evaluation, which are also used on the project assessment and impact assessment modules.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- micro-economic theory applied to transport systems analysis, including demand, supply, equilibrium and pricing theory and practice; and
- principles of transport funding and finance of transport infrastructure and transport operations.
- examples of best practices in road pricing, public transport finance, transport investment, and transport regulation and competition.

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- be able to use and apply the micro-economic principles in an economic analysis of a transport system;
- be able to asses issues related to funding, finance and pricing of transport infrastructure and operations; and
- be able to discuss important economic issues related to contemporary African transport finance policy and practice.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- produce, visualise and interpret basic transport economics data for, amongst others, evaluating costs and benefits of a transport project;
- use computer-based decision-making tools to make critical economic decisions on transport investment; and
- be able to identify sources of possible transport funding and finance in a complex funding environment.

Learning outcomes — transferable skills

On completion of the module the course participant should be able to:

- manipulate and analyse data; and
- develop and use spreadsheets for appraisal and analysis.

2.10 Asset Management

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time

Assessment

Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course aims to introduce the course participant to basic and advanced asset management practices in the transport sector. Assets can be seen as physical infrastructure, such as geotechnical, pavement or structural asset, or a transport network.

The course also covers basic and advanced asset management practices which are applicable to rural and urban transport contexts. The major focus of the course is on asset life cycle processes, information systems, data collection, asset management plans and organizational human resources required for asset management in the transport sector. It is expected that the participants in this course will become effective asset managers who can effectively manage different information and data management systems for transport infrastructure like roads, rail, bridges and pavements

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- the general basic and advanced principles of asset management in the transport sector;
- life cycle costing principles;
- Identifying levels of service (which should be linked to policy);

- predicting demand (i.e. levels of non-vehicular and vehicular traffic and associated axle loads);
- assessing condition and monitoring performance;
- maintenance and its management;
- financial management;
- preparing an asset management plan (for incremental improvement); the effective use of data for asset management and the collection thereof through appropriate sensors (human, physical sensor).

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- understand the economic approach to asset management in the transport sector;
- understand the three levels of asset management in the transport sector (strategic, tactical and operational)
- understand the legal responsibilities around asset management;
- understand failure mode analysis in transport asset management;
- understand demand management in transport asset management;
- understand optimised decision making (social, political, political environment);
- understand how to procure and implement asset management systems;
- be able to demonstrate asset management techniques; and
- to understand different data collection approaches across transport assets.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- embed and critically overview asset management systems in the transport sector;
- be familiar with a variety of asset management systems; and
- apply big data analytics to transport assets.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to critically overview asset management systems;
- the ability to create and review asset management plans;
- the reflective evaluation of the appropriateness of the asset management systems;
- the solution of non-routine asset management problems;
- the development of solutions to asset management from an initial idea; and
- the ability to learn independently.

2.11 Project Assessment

Enrolment information	
Core information	
Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.
Teaching time for timetable	
Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time
Assessment	
Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project
Module links	
Pre-requisites	None
Co-requisites	None

Descriptive information
Course contents
Transport systems, and the array of planned interventions into these systems, have become too complex for many conventional urban passenger transport demand analysis practices. In particular, a shift in passenger transport policy away from the supply of additional road capacity as the principle means of addressing transport problems, to an appropriate balance between infrastructure supply and the management of transport systems and the way passengers use them, has introduced significant additional complexities for data collection, processing and analysis, as well as transport project assessment practices. Quality travel data is needed to analyse and frame urban passenger transport problems, and to monitor changing patterns of travel demand and travel behaviour in response to system interventions. Project assessment methods are needed to ensure that they are operationally effective, socially equitable and that environmentally sustainable benefits are derived from interventions into transport systems. Many current methods of data collection, processing and evaluation were developed during a period of relative economic prosperity in the developed world, in order to facilitate the large-scale construction of inter- and intra-city freeways and arterials. These methods often omit important aspects of travel demand from data collection and modelling, tend to be cross-sectional or static in their analysis of transport patterns, and fail to incorporate social justice and environmental issues adequately. The new policy discourse requires the utilisation of a broader set of methods for data collection, processing and evaluation. This course is intended

to address that need. The objective of this course is to familiarise students with survey, data processing and assessment tools used during different stages of the transport planning process. Participants of this course will understand the different impact assessment approaches, and the advantages and disadvantages of the various tools and analytical techniques identified. The course exposes participants to current developments in the field, both locally and internationally.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- the complexity of project data collection, processing and assessment;
- the various methods available to collect data;
- the various methods available to assess projects (CBA, (S)MCA, sustainable livelihoods);
- the principles of the holistic systems approach to thinking (including the triple bottom line);
- the principles of strategic environmental impact assessments in transport;
- the complexities and mitigation of social impacts on transport projects
- the principles of transportation impact assessments
- the analysis of data, including statistical testing.

Learning outcomes — intellectual abilities

After completing this module, the course participant should be able to: demonstrate an understanding of the project assessment theories, the advantages and disadvantages of various approaches, as well as the variables that need consideration (social (including gender based) equity, environmental sustainability and economic welfare).

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- view the planning and assessment of projects logically and systematically;
- apply project assessment techniques in a holistic manner;
- use basic statistical techniques for data collection, analysis and presentation; and
- use a range of assessment techniques to aid decision-making, including GIS based tools.

Learning outcomes — transferable skills

This module will enhance the following skills:

- the ability to critically investigate project impacts;
- the identification of non-routine solutions;
- the identification of project solution through systematic analysis; and
- the ability to learn independently.

2.12 Project Procurement

Enrolment information	
Core information	
Career	Postgraduate degree / CPD
Offered	Blended learning, including block week. Block week for CPD also.
Teaching time for timetable	
Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week
Tutorials/projects (hours)	3 credits, 36 hours, partly following the block week; the rest post-assignment
Self-study	108 hours, which includes time for pre-assignment, study and unsupervised post-assignment time
Assessment	
Pre-Assignment (PG only)	15% Knowledge and skills boost
Group Assignment (PG/CPD)	10% Skills development
Test Paper (PG only)	25% 120 minutes
Major Assignment (PG only)	50% Application in a project
Module links	
Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This course aims to introduce the course participant to the concepts, methods and best practices involved in the project procurement life cycle. It will also acquaint them with an understanding of the various activities that are involved in a procurement process, such as purchasing and contracting. The course also seeks to facilitate a general appreciation of how procurement interfaces with the other activities carried out during the life cycle of a project, and how it relates to other control mechanisms with a project. Lastly, the module will cover the critical skills and techniques required to tackle problems arising in the procurement process, and will help the student develop an understanding of how to identify and prepare the principal documents involved in the procurement process.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- the project procurement process and its various elements carried out throughout the lifecycle of a project;

- the principles of project planning and legal framework;
- the principles of tendering and tender preparation;
- the principles of procurement;
- contract planning, control and different forms of contract;
- contract law;
- conditions of contracts;
- types of contracts;
- funding models; and
- contract negotiation.

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- understand the project procurement process and its various elements carried out throughout the lifecycle of a project;
- understand the principles of project planning and legal framework;
- understand the principles of tendering and tender preparation;
- understand the principles of procurement;
- understand the process of contract planning, control and different forms of contract;
- understand contract law to different types of procurement scenarios;
- understand and interpret / formulate the conditions of contribution;
- understand the requirements for contract negotiation; and
- understand how to prepare a business case, including the use of HDM4.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- apply the principles of tendering and tender preparation;
- apply the principles of procurement;
- apply the process of contract planning, control and different forms of contract;
- apply contract law and its application to different procurement scenarios;
- apply and interpret / formulate the conditions of contract; and
- apply the requirements for contract negotiation.

Learning outcomes — transferable skills

This module will enhance the following skills:

- appreciate project procurement as a major component of project delivery;
- carry out the procurement of equipment materials, supplies, labour and services that are required for the successful delivery of a project;
- formulate the conditions of contract for different project procurement requirements;
- prepare contract tenders; and
- successfully negotiate the procurement contract.

2.13 Research Design and Methodology

Enrolment information

Core information

Career	Postgraduate degree / CPD
Offered	Block week (for CPD also).

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	3 credits, 36 hours in 1 block week (Mon to Fri)
Tutorials/projects (hours)	Part of Dissertation project
Self-study	Part of Dissertation project

Assessment

Pre-Assignment (PG only)	NA
Group Assignment (PG/CPD)	NA
Test Paper (PG only)	NA
Major Assignment (PG only)	Dissertation

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

The areas covered in this course include types of research, research organisation and management, information search (in library and internet), producing good literature review and clear objectives, forms of thesis, writing and effective reading skills, how to appraise and draw sound conclusions, and the guidelines and structure of a thesis. Also included are planning and setting up experiments, data collection, and data preparation and analyses.

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- How to apply the Scientific Method in the pursuit of a dissertation in Transport Leadership.

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

- be able to design and write a concise research proposal as preparation of the Dissertation research; and
- apply the principles of Research Design and Methodology to the Dissertation.

Learning outcomes — subject-specific skills

On completion of the module the course participant should be able to:

- know the Scientific Method;
- list and identify the various possible research types;
- search for, and select, appropriate literature efficiently; and
- write a proposal and / or dissertation.

Learning outcomes — transferable skills

This module will enhance the following skills:

- literature search skills; and
- writing skills.

2.14 Dissertation in Transport Leadership

Enrolment information

Core information

Career	Postgraduate degree
Offered	Supervised learning.

Teaching time for timetable

Timetabled at same time as	TBA
Lectures (hours)	None
Tutorials/projects (hours)	None
Self-study	450 hours, which includes time for experimentation, discussions and review

Assessment

Research proposal	15% assessed based on Research Design and Methodology Module
Dissertation	85%

Module links

Pre-requisites	None
Co-requisites	None

Descriptive information

Course contents

This is where students conduct individual research work and come out with an examinable thesis. The thesis work will consist of various combinations of activities, including clearly formulating, specifying, defining and justifying a geophysical related research topic, carrying out a comprehensive literature review on the topic selected, applying basic scientific procedures and tools to conduct the research, and demonstrating the ability for critical analyses of research outputs and writing.

Learning outcomes

Learning outcomes — knowledge and understanding

On completion of the module the course participant should know and understand:

- how to identify key research questions, in Transport Leadership, in which to carry out the independent research;
- how to analyse, synthesise and defend research findings;
- how to apply basic statistical principles to data analysis; and
- how to understand and apply theoretical frameworks to the chosen area of study.

Learning outcomes — intellectual abilities

On completion of the module the course participant should:

• identify, summarise and critically evaluate relevant literature and write a literature review of the relevant field; • manage time effectively whilst working on the independent research; • demonstrate appropriate referencing and develop skills in other aspects of academic writing; • describe the process of carrying out independent research in written format and report your results and conclusions, with reference to existing literature; • show evidence of clarity of argument, understanding of the chosen topic area, and presentation of technical information; and • identify, analyse and interpret suitable data to enable the research question to be answered.
Learning outcomes — subject-specific skills
On completion of the module the course participant should be able to: • demonstrate knowledge and understanding of report writing; and • use and develop written and oral presentation skills.
Learning outcomes — transferable skills
This module will enhance the following skills: • Most of the above are relevant to many aspects of professional and academic life.

3 Existing Teaching Resources at the Host Institution

In the sections below, the results of a first round of inquiry into the availability of convenors and courses that speak to the modules listed are given. The focus is on KNUST offerings and, where not available at KNUST, then UCT and UoB offerings.

In the next few weeks an in-depth review of those resources (existing resources, gaps, development needed) will be performed on-site in Kumasi by the Educational Manager's team. This is pending agreement on the scope and budget with ReCAP.

3.1 Transport Leadership

	KNUST									UCT			UoB				
Transport Leadership	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Communication			CGSL561		ORLD755												
Dealing with change				CGSL552					ORLD851								
Leading		CGSL559		CGSL552	ORLD755				ORLD851								
Leadership		CGSL559			ORLD755				ORLD851								
Good governance			CGSL561					ORLD762									
Critical thinking	LCT162																needs development
Systems thinking										CON5014Z							needs development
Ethics and compliance	CGSL555					ORLD757											
Complexity and uncertainty																	needs development
SDGs and social goals		CGSL559					ORLD764										

Legend	
85%-100% Covered	
70%-84% Covered	
50%-69% Covered	
30%-50% Covered	
10%-29% Covered	
not Covered	Semester
KNUST	Masters: CORPORATE GOVERNANCE AND STRATEGIC LEADERSHIP — TPC
CGSL 555	Corporate Responsibility and Business Ethics — 3,0,3
CGSL 559	Leadership Theory and Practice — 3,0,3
CGSL 561	Organizational Behaviour and Team Building — 3,0,3
CGSL 552	Strategic Management and Leading Change — 3,0,3
KNUST	PhD: ORGANISATIONAL LEADERSHIP
ORLD755	Theories and Processes of Leadership — 3,0,3
ORLD757	Leadership Ethics and Corporate Social Responsibility — 3,0,3
ORLD764	Collaborative Leadership and Partnership — 3,3,4
ORLD762	Organizational Governance, Policy and Analysis — 3,3,4
ORLD851	Strategic Leadership and Organisational and Change — 3,0,3
LCT162	Critical thinking
UCT	
CON5014Z	Project management and systems theory

KNUST has a fair number of leadership-oriented courses in her programmes. An existing programme in Leadership and Supply Chain Management is closest to the core philosophy of our programme. We will be particularly looking at making the existing leadership content relevant for the transport sector, as well as develop content around critical thinking, systems thinking and uncertainty.

3.2 Leadership Development

	KNUST									UCT			UoB				
Leadership Development	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Leadership styles	CGSL552			CGSL557	CGSL558		ORLD853										some development needed
Personality traits	MES666																some development needed
Managing people	MES666																some development needed
Coaching and mentoring	MES666																some development needed
Empowerment	CGSL552					ORLD760				CON5018Z							some development needed
Team dynamics								ORLD764									development needed
Organizationsal theory	CGSL552	CGSL554	CGSL556														some development needed

Legend		
85%-100% Covered		
70%-84% Covered		
50%-69% Covered		
30%-50% Covered		
10%-29% Covered		
not Covered		Semester
KNUST	Masters: CORPORATE GOVERNANCE AND STRATEGIC LEADERSHIP	TPC
CGSL552	Strategic Management and Leading Change	3,0,3
CGSL554	Corporate Finance and Corporate Reporting	3,0,3
CGSL556	Corporate Law and Regulatory Governance	3,0,3
CGSL557	Corporate Governance and Risk Management	3,0,3
CGSL558	Management Consulting	3,0,3
MES666	Coaching	
KNUST	PhD: ORGANISATIONAL LEADERSHIP	
ORLD760	Strategic Human Resource Management	3,0,3
ORLD853	Management Philosophy and Practice	3,0,3
ORLD764	Collaborative Leadership and Partnership	3,3,4
ORLD851	Strategic Leadership and Organisational and Change	3,0,3
UCT		
CON5018Z	Human Resource Management and Interpersonal Communication	
GSB	Centre for Coaching	
UCT PCS	Professional Communication Services	

KNUST has a fair number of leadership-oriented courses in her programmes. An existing programme in Leadership and Supply Chain Management is closest to the core philosophy of our programme. We will be particularly looking at making the existing leadership content relevant for the transport sector, as well as develop some exercises around team dynamics.

3.3 Management and business operations

	KNUST							UCT			UoB				
Management and Business Operations	KNUST1	KNUST2	KNUST3	KNUST4	KNUST5	KNUST6	KNUST7	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Communication	CGSL561	ORLD755													Needs little development
Problem solving															Needs development
Conflict resolution															Needs development
Vision Development															Needs development
Resource management and control			AVM562	CGSL561			CEH545								Needs little development
System balancing															Needs development
Effectiveness of leadership styles					CGSL559										Needs little development
Human reward structuring						CGSL552									Needs little development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

3.4 Project Management

	KNUST									UCT			UoB				
Project management in transport sector	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Project life cycle and organization	ISD 555									CON5014Z							needs little development
Project integration	ISD 555									CON5014Z	CON5016Z						needs little development
Project management processes	ISD 555									CON5014Z							needs little development
Project time management and scheduling	ISD 555									CON5014Z	CON5016Z						needs little development
Project cost management	ISD 555									CON5014Z							needs little development
Project quality management	ISD 555											CON5022Z					needs little development
Project risk management	ISD 555											CON5022Z					needs little development
Project procurement management	ISD 555									CON5014Z		CON5022Z					needs little development
Project human resource management	ISD 555																needs little development

Legend			
85%-100% Covered			
70%-84% Covered			
50%-69% Covered			
30%-50% Covered			
10%-29% Covered			
not Covered		Semester	
KNUST	Masters: CORPORATE GOVERNANCE AND STRATEGIC LEADERSHIP	TPC	
ISD 555	Project management		
KNUST	PhD: ORGANISATIONAL LEADERSHIP		
	MSc programme project management		
UCT			
CON5014Z	Project management and systems theory	20Cr	HEQSF 9
CON5016Z	Project planning and implementation	20Cr	HEQSF 9
CON5022Z	Total quality mangement in a project environment	20Cr	HEQSF 9

KNUST has several existing courses, as well as a MSc programme in the domain of Project Management. Our efforts will be geared towards identifying the right content for our module and to see whether representative transport examples and cases can be identified.

3.5 Principles of Road Engineering

	KNUST				UCT			UoB				
Principles of Road Engineering	Course 1	Course 2	Course 3	Course 4	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Road infrastructure and the traffic environment												needs development
Principles of road design - urban and rural	CEH 541											
Route selection	CEH 541											
Geometric design	CEH 541											
Junction design	CEH 541											
Pavement design		CEH 543										
Road design materials		CEH 543										
Low volume road design			CEH 545									
Universal road design												needs development
Safe road design				CEH 547								
Principles of public space in road design												needs development
BIM for road design												needs development
Whole life costing and sustainability												needs development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

		Semester
KNUST	Masters: Transportation Planning	TPC
CEH 541	Geometric design and drainage	3,1,3
CEH 543	Pavement engineering and materials	3,1,3
CEH 545	Rural transport and technologies	3,1,3
CEH 547	Transport safety and sustainability	3,1,3

KNUST has a lot of expertise in road engineering, in particular pavement design, both urban and rural. In our module description we have added a number of contemporary topics such as universal road access/design, which may not be there now. Our efforts will be to either confirm or identify some of the missing topics in the existing courses and commence a development in those spaces, where applicable.

3.6 Transport Systems and Operations

	KNUST				UCT			UoB				
Transport systems and operations	Course 1	Course 2	Course 3	Course 4	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Whole system design												needs development
Public transport operations design - urban and rural	CHE 574				CIV5071Z							
Multi-modal transport systems	CHE 574											
Behavioural foundations of transport system analysis												needs development
Traffic engineering management and control		CEH 562										
Traffic flow modelling			CEH 564									
Road safety				CHE 547								Additional development needed
Non-motorised transport						END5039Z						needs development
Para-transit , HCM and LOS					CIV5071Z							needs development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

		Semester
KNUST	Masters: Transportation Planning	TPC
CEH 574	Public transport systems	3,1,3
CEH 564	Traffic flow modelling	3,1,3
CEH 562	Traffic demand modelling	3,1,3
CEH 547	Transport safety and sustainability	3,1,3

UCT	
CIV5071Z	Public Transport System Design & Operations Management
END5039Z	Non-motorised Transport

With their new Masters programme KNUST is embarking on many courses in the transport systems and operations domain. In our module description we have added several contemporary topics, such as whole system design and paratransit operations content, which may not be there currently. Our efforts will be to either confirm or identify some of the missing topics in the existing courses and commence a development in those spaces, where applicable.

3.7 Transport Policy and Planning

	KNUST				UCT			UoB				
Transport Policy and Planning	Course 1	Course 2	Course 3	Course 4	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Transport in urban activity systems	ACF 760				CIV5070Z							need additional development and international perspective
Transport policies, plans		ORLD 762			CIV5070Z							need additional development and international perspective
Transport legislative frameworks					CIV5070Z							need additional development and international perspective
Current policy concepts like TOD					CIV5070Z							need additional development and international perspective

Legend		
85%-100% Covered		
70%-84% Covered		
50%-69% Covered		
30%-50% Covered		
10%-29% Covered		
not Covered		
		Semester
KNUST	PhD: Organisational Leadership	TPC
ACF 760	Public transport systems	3, 0, 3
ORLD 762	Organisational governance	3, 3, 4
UCT		
CIV5070Z	Public Transport Policy and Regulation	

We have not found any modules currently offered at KNUST that directly speak to the proposed module content of Transport Policy and Planning, yet we know that a couple of courses are being developed in their new programmes that might speak to these topics. In addition, we have been able to identify a UCT course that is almost ready for the task. Our efforts will be to, firstly, identify similar content in existing KNUST courses and commence the development in those spaces, where needed.

3.8 Transport and Society

	KNUST				UCT			UoB				
Transport and Society	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Interaction between, people, land-use and the transport system												Needs development
Transport justice and the need to protect (urban and rural) vulnerable road users												Needs development
Educate peers on transport justice												Needs development
Burden of travel (poor, old, young, female, disabled)												Needs development
understand negative impacts that transport related issues on vulnerable groups												Needs development
Identify appropriate policies, strategies and designs												Needs development
Measures (including designs) that can be taken to combat injustice and exclusion												Needs development
Understanding the power of people fucused road design												Needs development
Assess social impacts of transport												Needs development
People focused assessment												Needs development
Communicate impacts to various stakeholders (peers and vulnerable groups)												Needs development
Lead community/public engagement												Needs development
Legend												
85%-100% Covered												
70%-84% Covered												
50%-69% Covered												
30%-50% Covered												
10%-29% Covered												
not Covered												

We have not found any modules currently offered at KNUST that directly speak to the proposed module content of Transport and Society, yet we know that a couple of courses are being developed in their new programmes that might speak to these topics. In addition, we have been able to identify a UCT course that is almost ready for the task. Our efforts will be to, firstly, identify similar content in existing KNUST courses and commence the development in those spaces, where needed.

3.9 Transport Finance and Economics

	KNUST				UCT			UoB				
Transport Finance and Economics	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Micro-economics	CEH 557											Needs little development
Transport Financing												Needs development
Road pricing	CEH 557											Needs little development
Valuation of Time	CEH 557											Needs little development
Externalities	CEH 557											Needs little development
Regulation and competition	CEH 557											Needs little development
Public transport finance	CEH 557											Needs little development
Case studies	CEH 557											Needs little development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

KNUST		Semester
		TPC
CEH 557	Transport Economics	3,1,3

Within their new Masters programme KNUST is developing a Transport Economics course. This course does not speak to Transport Finance, so we will gear our efforts to finding capacity at KNUST in the transport finance space, or otherwise develop such a course with the help of UoB and/or UCT.

3.10 Asset Management

	KNUST				UCT			UoB				
Asset Management	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Asset mgt principles	CEH 554				CIV5067Z							Needs little development
Asset economics / Finacial managent	ACF 762				CIV5067Z							Needs some development
Condition and performance monitoring					CIV5067Z							Needs development
Asset management systems	CEH 554				CIV5067Z							Needs little development
Levels of Asset Management					CIV5067Z							Needs development
Routine Asset maintenance	CEH 554				CIV5067Z							Needs little development
Non-routine Asset maintenance					CIV5067Z							Needs development
Identifying levels of service												Needs development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

KNUST	
ACF 762	FINANCIAL ACCOUNTING
CEH 554	Road asset management

UCT	
CIV5067Z	Advanced Infrastructure Management

KNUST has a course in road asset management that speaks to most of our proposed content. Yet, we have identified a few missing topics that we will investigate on our next site inspection visit.

3.11 Project Assessment

	KNUST				UCT			UoB				
Project Assessment	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Performance indicators					CIV5132							Needs some development
Data Collection	ORLD 855				CIV5132							Needs little development
Data processing					CIV5132							Needs little development
CBA	ACF 760	ACF 762			CIV5132							Needs little development
MCA					CIV5132							Needs little development
SMCA	CEH 533				CIV5132							Needs little development
Systems thinking					CIV5132							Needs some development
Statistics	ORLD 855				CIV5132							Needs development
Environmental impact	CEH 547											Needs development
Social impact assessment												Needs development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

KNUST	
ORLD 855	Advanced Quantitative Research Methodology
ACF 760	
ACF 762	
CEH 533	
ORLD 855	
CEH 547	Transport, safety and sustainability
UCT	
CIV5132	Transport Data Collection and Project Assessment

We have not found any modules currently offered at KNUST that directly speak to the proposed module content of Project Assessment. Yet we have been able to identify a UCT course that is almost ready for the task. Our efforts will be to, firstly, identify similar content in existing KNUST courses and commence the development in those spaces, where needed.

3.12 Project Procurement

	KNUST				UCT			UoB				
Project Procurement	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Lifecycle					CIV4041F							Needs development
Legal Framework	ORLD 762	CGSL 555										Needs development
Contract law												Needs development
Forms of contract	ORLD 753				CIV4041F							Needs development
Tendering					CIV4041F							Needs development
Procurement					CIV4041F							Needs development
Corperate Governance	CGSL 551	ORLD 758	CGSL 557									Needs some development
Conditions of Contract					CIV4041F							Needs development
Ethics	CGSL 555	ORLD 762	CGSL 555		CIV4041F							Needs some
BBEEE (equivilent)					CIV4041F							Needs development

Legend
85%-100% Covered
70%-84% Covered
50%-69% Covered
30%-50% Covered
10%-29% Covered
not Covered

KNUST	
CGSL 551	CORPORATE GOVERNANCE – THEORY, PRINCIPLES AND PRACTICE
CGSL 555	Corporate Responsibility and Business Ethics
ORLD 753	ORGANISATIONAL THEORIES
ORLD 758	MODELS OF ORGANISATIONAL BEHAVIOUR
ORLD 762	Organizational Governance, Policy and Analysis
CGSL 555	Corporate Responsibility and Business Ethics
CGSL 557	Corporate Governance and Risk Management
UCT	
CIV4041F	Professional Practice

We have not found any modules currently offered at KNUST that directly speak to the proposed module content of Project Procurement. Yet we have been able to identify a UCT course that deals with most of the content, but at BSc level. Our efforts will be to, firstly, identify similar content in existing KNUST courses and commence the development in those spaces, where needed.

3.13 Research Design and Methodology

	KNUST			UCT			UoB				
Research Design and Methodology	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Course 1	Course 2	Course 3	Overall	Comments
Scientific method	CGSL562	ORLD855	ORLD857	CIV5131SZ							Needs little development
Research design	CGSL562	ORLD855	ORLD857	CIV5131SZ							Needs little development
Experimental design	CGSL562	ORLD855	ORLD857	CIV5131SZ							Needs little development
Statistics											Needs development
Report writing				CIV5131SZ							Needs little development

Legend									Semester			
85%-100% Covered												
70%-84% Covered									TPC			
50%-69% Covered									3,0,3			
30%-50% Covered												
10%-29% Covered												
not Covered									3,6,5			
									3,6,5			
KNUST	Masters: CORPORATE GOVERNANCE AND STRATEGIC LEADERSHIP											
CGSL 562	Research Methods											
KNUST	PhD: ORGANISATIONAL LEADERSHIP											
ORLD 855	Advanced Quantitative Research Methodology											
ORLD 857	Advanced Qualitative Research Methodology											
UCT												
CIV5131Z	Research Design and Methods for Civil Engineering											
PCS	Professional Communication Services											

Both UCT and KNUST have existing modules on research design – also in the engineering space. We feel that these can be used directly. Our efforts will be to streamline existing content with that of the proposed course that is not only engineering, but also leadership so, hence, some other types of research may be needed.

3.14 Dissertation in Transport Leadership

	KNUST				UCT			UoB				
Dissertation	KNUST1	KNUST2	KNUST3	KNUST4	UCT1	UCT2	UCT3	UoB1	UoB2	UoB3	Overall	Comments
Topic justification	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Topic definition	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Method justification	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Method formulation	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Method specification	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
literature review	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Data analysis	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Data syntheses	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Time mangement	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development
Academic writing	ORLD 862	ORLD 953	ORLD 954		CIV4044F/S	CIV5017Z						Needs little development

Legend	
85%-100% Covered	
70%-84% Covered	
50%-69% Covered	
30%-50% Covered	
10%-29% Covered	
not Covered	
KNUST	
ORLD 862	Thesis I
ORLD 953	Thesis II
ORLD 954	Thesis III
UCT	
CIV4044F/S	Dissertation in Civil Engineering (honours level)
CIV5017Z	Dissertation in Transport Studies (masters level)

This is not really a teaching module, yet we will need to check existing course outlines, both at KNUST and UCT, as well as UoB, to find the right form of organising and supervising Dissertations.

Appendix D: Draft Marketing Strategy

ReCAP
Research for Community Access Partnership

UKaid
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Establishment of Centre for Sub-Saharan Transport Leadership

Marketing Strategy (DRAFT)

Mott MacDonald, University of Cape Town and University of Birmingham

RAF2147A

June 2019

MOTT MACDONALD

University of Cape Town · iYunivesithi yaseKapa · Universiteit van Kaapstad

UNIVERSITY OF BIRMINGHAM

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The views in this document are those of the authors and they do not necessarily reflect the views of the Research for Community Access Partnership (ReCAP) or Cardno Emerging Markets (UK) Ltd for whom the document was prepared

Cover photo: Entrance to KNUST, Kumasi, Ghana (Credit: Charles Adams)

Quality assurance and review table

01	G Ghataora et al	N Leta, ReCAP PMU D Runganaikaloo, ReCAP PMU	14/06/2019 18/06/2019
02	G Ghataora et al	N Leta, ReCAP PMU D Runganaikaloo, ReCAP PMU	*TBC*

ReCAP Database Details: Establishment of Centre for Sub-Saharan Transport Leadership

Reference No:	RAF2147A	Location	Africa (Regional)
Source of Proposal	Tender	Procurement Method	Open Competitive Tendering
Theme	Capacity Building	Sub-Theme	Leadership Development
Lead Implementation Organisation	Mott MacDonald	Partner Organisation	University of Cape Town and University of Birmingham
Total Approved Budget	£452,000	Total Used Budget	£228,225 (ex. VAT)
Start Date	4th February 2019	End Date	30th June 2020
Report Due Date	31st May 2019	Date Received	31st May 2019

Mott MacDonald Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	07/06/19	G. Ghataora M Burrow N Boso	K Kelly	S. Jones	First Issue (DRAFT to undergo further development)
B	31/07/19	K. Kelly	S. Jones	S. Jones	Second issue. Updated based on ReCAP comments. Remains DRAFT to undergo further development.

Document reference: 400815-MMD-RP-1004

Information class: Standard

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Abstract

Mott MacDonald, the University of Cape Town and the University of Birmingham commenced the establishment of a Centre for sub-Saharan Transport Leadership (CSSTL) in February 2019. This document is the Marketing Strategy and is currently a DRAFT. It is scheduled for development between the Mott MacDonald project team, KNUST and ReCAP over the next 1-2 months, with a final agreed version scheduled for submission at the end of September 2019 following a Project Team visit to KNUST.

Key words

Leadership, capacity building, development, training, education, CSSTL, Centre of Excellence, transport engineering (highways), transport services (highways).

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

www.research4cap.org

Acronyms, Units and Currencies

AfCAP	Africa Community Access Partnership
AfDB	African Development Bank
ASANRA	Association of Southern African National Road Agencies
AsCAP	Asia Community Access Partnership
CPD	Continuous Professional Development
CSSTL	Centre for Sub-Saharan Transport Leadership
KNUST	Kwame Nkrumah University of Science and Technology (Ghana)
MoU	Memorandum of Understanding
ReCAP	Research for Community Access Partnership
SA	South Africa
SSA	Sub-Saharan Africa
TSLDP	Transport Sector Leadership Development Programme (ReCAP)
UCT	University of Cape Town (SA)
UK	United Kingdom (of Great Britain and Northern Ireland)
UK aid	United Kingdom Aid
UoB	University of Birmingham (UK)
WB	World Bank

1 Introduction

[Note: this Marketing Strategy is currently in draft format. It requires further development with KNUST over the next 1-2 months to elaborate on the strategy specific to KNUST procedures. It is anticipated the final marketing strategy will be agreed by the end of September 2019, following a visit by the members of the project team to KNUST. The purpose of this visit is to meet with the KNUST marketing team and streamline this marketing strategy, ensuring it aligns with existing KNUST marketing tools and processes.]

The Transport Sector Leadership Development Programme (TSLDP) is a capacity building project designed to enhance the technical and managerial / leadership skills of transport professionals in sub-Saharan Africa (SSA). The concept was initially identified by ASANRA before being supported and co-ordinated by ReCAP. ASANRA and ReCAP recognised the leadership issues within the industry and promoted this project as a means of developing professionals within the sector.

The programme sets out to address this and develop skills in subjects across transport engineering, transport services and managing / leading people. These themes are seen as critical to the development of a modern transport network across sub-Saharan Africa, as future industry leaders need to understand the wider industry and the links between its constituent parts, in addition to the ability to make informed decisions based on reliable evidence and communicate these effectively to a wide-ranging audience, from the public through to politicians and other decision makers.

To improve the efficiency in the management of the transport sector throughout SSA, ReCAP has funded the establishment of the Centre for Sub-Saharan Transport Leadership (CSSTL). It addresses a gap identified in the study undertaken in 2017 (ReCAP, 2017). The CSSTL will be based at the Kwame Nkrumah University of Science and Technology (KNUST) in Ghana. It will have academic support from both the University of Birmingham, UK and the University of Cape Town, RSA.

KNUST is ranked second in Ghana and has about 52,600 students. In terms of transport studies, it hosts Africa's only World Bank supported Centre of Excellence - Transport Research and Education Centre of Knowledge (TRECK). It also has a track record in running both CPD and Masters level programmes in transport-related topics.

In addition to this, KNUST has links with several universities around the world and a range of donor organisations and industries. KNUST's location and reputation in Africa makes it ideally suited as host of the centre.

2 Document Purpose

This document will become the Marketing Strategy for the CSSTL. Its purpose is to outline how the CSSTL and TSLDP will be publicised, where it will be marketed and to whom. As explained earlier, it is currently in DRAFT format and requires further elaboration and development in the coming 1-2 months. It also cannot be implemented until approval has been secured from KNUST University Management permitting the implementation of a new educational programme at the university.

3 Goals

The development of the centre addresses the ongoing demand for capable, confident and professional leaders in the transport sector. It will deliver CPD courses and a Masters level postgraduate programmes on both full-time and part time basis from September 2020 onwards.

Admissions targets for CPD and Masters programme are to be confirmed by the project team by September 2019.

[Area for development – how do we set a target to make a CSSTL qualification of key importance for a top job in the sector with the aim of making such a qualification a 'standard' for career development]

4 Target Audience

4.1 Target Group

Candidates for the post-graduate programme are likely to come from a range of industry sectors and professions, from public bodies, consultancy and contractors, as shown in Figure 1. This graphic is not intended to provide an exhaustive list and there may be other disciplines and sectors from which a Transport Leader could originate and be considered for the programme.

The initial focus is expected to be on the ReCAP partner countries and candidates from associated public bodies, as that is the most accessible group for the project at this point in time. From there, the focus will be expanded to capture the broader sector across SSA.

Figure 1: Possible backgrounds from which a Transport Leader could originate.

4.2 Strategy

[Note: a detailed marketing and communication strategy needs to be developed with KNUST so it aligns with their existing tools and processes. This is expected to take place in September 2019 when a member of the project team will be travelling to KNUST to meet with them on this subject.]

The marketing strategy sets out to target the type of individual who would benefit from attending the programme e.g. enthusiastic mid-career professionals who are keen to develop their career and wish to gain the leadership skills to accelerate their development towards senior leadership roles.

Once KNUST approval is received to initiate a new programme at the university, the accreditation process via the Ghana National Accreditation Board can be initiated. Securing accreditation is also an important component when marketing, as it adds credibility to the programme. It is expected that the accreditation will be secured by April 2020.

Marketing the CSSTL will require raising awareness of the training programmes to attract the types of candidates identified in Figure 1. The marketing strategy aims to address this through various channels which include using digital social media marketing techniques, emails and exhibition stands at both national and international conferences.

Marketing will be initiated for the Masters Degree in the first instance. It is also intended to run several of the degree modules as CPD courses as an additional revenue generating mechanism. Marketing both CPDs and Masters will involve the distribution of marketing materials via a broad range of channels. These channels specifically target the professionals identified in Figure 1, for example:

1. Regional bodies like ASANRA, ARMFA and the IRF;
2. Regional professional institutions for the respective disciplines;
3. Presenting at regional conferences such as T2, and;
4. Posting on relevant social media platforms (e.g. ReCAP Twitter and LinkedIn).

Distribution of marketing materials will commence after approval is received from KNUST Management. It is also subject to the KNUST marketing team developing the necessary content – something that will be discussed with KNUST during the September 2019 visit.

KNUST management approval is anticipated to be received in August/September 2019. Once this is in place, electronic communications (e.g. social media posts on the ReCAP LinkedIn page) can commence. The will be followed by Project Team attendance at a number of upcoming events which have been targeted for promoting the CSSTL. These include:

1. 12th TRB Low-Volume Road Conference, Kalispell, Montana, USA from 15-18th September;
2. 26th PIARC World Road Congress, Abu Dhabi, UAE from 6-10th October, and;
3. 9th Transport Technology Transfer Conference 2019, Maputo, Mozambique from 26-28th November.

Abstracts have been submitted for the TRB Low-Volume Roads Conference and the 9th Technology Transfer Conference. ReCAP will also have a marketing stand at the 26th PIARC World Road Congress event, which the Project Team anticipate could be partly utilised to promote the CSSTL.

Additional events are currently also being explored and will be added to this list as the project progresses. The T2 conference is perhaps the most important conference-related platform identified for promoting the CSSTL, given its regional presence and expected attendance by the CSSTL's target audience. It was originally scheduled to take place in August 2019 but has since been rescheduled to November 2019.

It is anticipated that the applications portal for the TSLDP will open in January 2020 and close in July 2020. Marketing will be undertaken, both electronically via social media and email distributions in advance of the January 2020 date, in addition to participation at key regional events, such as T2 in November 2019.

The marketing process will continue throughout the period the applications portal is open to maintain awareness of the programme. This will take the form of periodic electronic email and social media communications to the target audience, in addition to select marketing events or regional conferences in this period if suitable opportunities are identified.

4.3 Promoting Gender Balance

An important focus of this programme is on encouraging and promoting the participation of female professionals. Regardless of the advertising tool chosen, all advertising and social media posts will carry a message indicating that 'female transport professionals are encouraged to apply'.

All candidates who come through the assessment will be required to attend a Skype interview to confirm their suitability for the programme and only those attracting the highest marking out of all the criteria will be offered a place on the programme. The minimum entry criteria and proposed assessment process will be stated in the marketing material in order to discourage applicants who do not meet the minimum criteria.

It is proposed that this, combined with ensuring advertisements specifically target female candidates, should help garner female applicants to the process. Beyond this point, candidates should be scored assessed equally based on their experience. However, positive discrimination may be needed and a certain number or percentage of places allocated to female candidates.

5 Marketing Strategy

The marketing strategy for the proposed centre is to be built around the development of its unique selling point (USP), brand, content of the programmes delivered by the Centre and their implementation. It will also include a method of measuring performance and implementing changes. The strategy adopted will be knitted into the existing marketing methodologies used by KNUST to attract appropriate students to the programmes.

5.1 USP

The USP is that the CSSTL is a unique facility in SSA and sits in a one-of-its-kind in Africa centre of excellence for transport - Transportation Research Centre Kumasi (TRECK). The centre offers African transport professionals the opportunity to develop their capacity within Africa, rather than having to travel to Europe, America or South Africa.

This is important as it means African transport professionals can be developed based on courses focused on the African transport sector, the challenges it faces and the context within which transport professionals must operate. This is generally not the case with programmes taken outside of Africa.

5.2 Brand

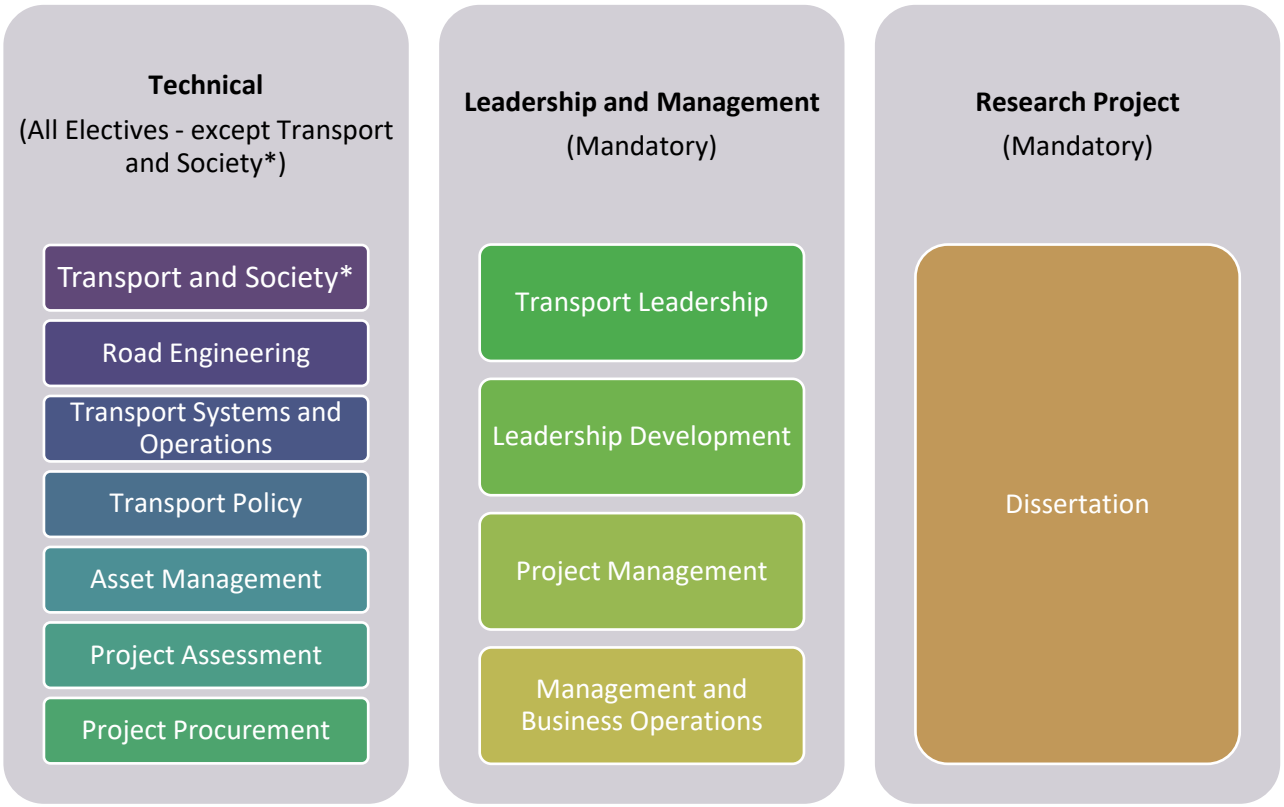
KNUST has a good reputation in SSA. In addition to this, it has the academic support from the University of Birmingham, UK, and the University of Cape Town, RSA, for at least the first 2 years. The CSSTL will also have the support of Mott Macdonald and ReCAP over this period. Thus, in the initial stages, the CSSTL will be promoted with the brand support of KNUST/UK aid/ReCAP/UoB/UCT brand. The combined value of these partners' brand value will significantly help the potential success of the programmes offered.

In the coming months, consideration will need to be given to aspects such as logos and the format of publicity materials. This is an area that will require development in conjunction with existing KNUST marketing teams.

5.3 Courses and Content

The courses provided as part of the Masters and CPD programme is shown in Figure 2 below. Full detail on the curriculum and content is provided in the Curriculum Review Report and is also discussed in the Interim Report and Business Plan, therefore is not elaborated on here.

Figure 2: Programme Structure for Post-Graduate Degree



6 Stakeholders

Stakeholders for the CSSTL include both National and Regional Road Authorities, consultants, contractors, individuals with the suitable civil engineering/transportation background and donor organisations (World Bank, ReCAP, other). Each of these organisations will be informed about CSSTL through a range of activities described below.

[Area for development: key stakeholder mapping exercise. Define a preferred form of communication and communication frequency etc.]

7 Key Performance Indicators (KPI) and methods of measurements.

KPIs and methods of measurement for both CPD and masters programme Transport Leadership are given in Table 1.

Table 1: KPIs and methods of measurement for both CPD and Masters

KPI	Method of Measurement
Admissions	Number of applications Numbers arrived Conversion rate
Marketing effectiveness	Numbers arrived – meeting targets Arrivals survey
Course relevance and delivery	Survey at the end of the course for CPD. Survey each module and end of masters survey.
Success of CPDs and MSc	Meeting admissions targets on annual basis Survey of sponsors Survey of attendees a year after completion

8 References

1. ReCAP, 2017 Transport Sector Leadership Development Programme – Phase 1 Inception Report, Mott MacDonald and University of Cape Town RAF2079A [www.research4cap.org/Library/MottMacDonald_UoCT_2016_TransportSectorLeadershipDevelopment_Inception_AfCAP_RAF2097A_v170206.compressed.pdf]

Appendix E: Working Group Terms of Reference

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Establishment of a Centre for Sub-Saharan Transport Leadership (CSSTL): Invitation to Contribute to the CSSTL Working Group

15 May 2019

Dear Sir,

We would like to formally request your participation on a Working Group being established for the Research for Community Access Partnership (ReCAP) CSSTL project, as the nominated representative for the African Community Access Partnership (AfCAP).

This project is part of the Transport Sector Leadership Development Programme (TSLDP), the concept for which originated from the Association of Southern African Road Agencies (ASANRA), who identified a lack of technical and managerial leadership as a risk to the delivery of their highway transportation goals in the coming years. Phase 1 of the TSLDP project identified that before any training is developed, a Centre of Excellence based in an appropriate sub-Saharan Africa (SSA) institution, would take ownership and be responsible for implementing this programme. This was considered a critical prerequisite to secure its success in the long-term.

In Phase 2, Mott MacDonald, University of Cape Town and University of Birmingham have been tasked with establishing this Centre of Excellence within a suitable institution in SSA. Following an assessment process, Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana has been selected as the host institution and so going forward it is our aim to establish the centre of excellence for transportation leadership at KNUST.

Our goal is to setup this centre and an associated training programme to support the development of high-calibre, mid-level transport professionals in Africa. We aim to target the professionals who are likely to become the continent's future industry leaders and help equip them with the skills to be effective when they ascend into these roles. Ultimately the objective is for the CSSTL to become a recognised, accredited body in Africa for the development of industry leaders.

Attached to this letter is a Terms of Reference for the Working Group. This outlines:

- The purpose of the Working Group;
- Draft Working Group participant list;
- Meeting frequency and proposed subject matter;
- Expected level of effort from Working Group members, and;

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- Outcomes we hope to achieve.

Participation on the Working Group is voluntary and no financial reimbursement will be made available for the role.

We would greatly appreciate your support in this, with a specific focus for your role being on supporting engagement with African road authorities and ensuring the proposed training programme responds to industry needs.

If you could please confirm whether you will be willing to participate on this Working Group by **Wednesday 22nd May 2019**, that would be appreciated.

We hope you will join us on this venture and lend your support and we look forward to hearing from you at your soonest convenience.

Yours sincerely,

Stephen Jones
Project Team Leader (Mott MacDonald)
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Project

Establishment of a Centre for Sub-Saharan Transport Leadership (CSSTL)

Client

DFID through Research for Community Access Partnership (ReCAP)

Location

Africa (Regional)

This Document

Terms of Reference for the CSSTL Working Group

CSSTL Working Group Terms of Reference

ReCAP, Mott MacDonald, University of Cape Town and University of Birmingham are working to establish a Centre for Sub-Saharan Transport Leadership (CSSTL) at Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana.

The CSSTL role is to educate and support the development of the next generation of transport leaders in Africa.

This document is the Terms of Reference for participants on the CSSTL Working Group (WG). It aims to clarify the function of the WG and outline what you can expect from the role.

CSSTL Project Summary

A shortage of technical and managerial leadership has been identified by regional stakeholders as a risk to the successful delivery of future African highway and transportation strategies.

Transport professionals face the challenge of defining and delivering transport strategies and projects that respond to the complex environment in which the industry operates. Delivering this involves not only resolving the technical transport challenges but understanding where this sits within a world of limited resources, finance and politics. Transport professionals must also take cognisance of many complex factors including climate change, environmental pollution, population growth, urbanisation, rural and urban poverty, gender equality, safety and crime amongst others.

It's a complex environment that encapsulates a broad spectrum of skills and professions. It requires leaders who can envision the future and communicate this to decision makers, their peers and the public, to make it happen. Leaders must be more than communicators, they need to be influencers.

A project goal is to play a part in developing the next generation of industry leaders in Africa. The first step involves establishing a Centre of Excellence for Transport Leadership (initially supported by UK Aid through ReCAP) at a suitable institution, which is potentially the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana.

Once the CSSTL is established, the Project Team will progress with developing a training programme consisting of a blended technical (transport engineering and transport services topics) and leadership development curriculum. Our ultimate aim is to develop an internationally-recognised and accredited Masters Degree in Transportation Leadership.

The training programme will be targeted at young and mid-career professionals in the industry who could become the next industry leaders. Candidates shall be nominated by their employers and participate on the programme, with a view towards them returning to industry with the broader perspective, vision and confidence needed to drive this industry forward.

Purpose of the Working Group

This is a very dynamic project and there are a broad range of elements we need to consider. We feel an external perspective on our delivery would be valuable to ensure we consider all options available to us.

It is also recognised that others outside the project team are well-placed to inform views on aspects such as:

- What capacity and competency gaps can the CSSTL realistically fill that are directly relevant to progressing transport sector leadership in Africa?
- Are we sufficiently addressing the industry need in Africa? We have our views on what the curriculum should include, but what do you think?
- How best can we get this course accredited by a recognised international body? What processes are involved and how do we satisfy them?
- How can we secure funding to support scholarships for students? This is important for the early years whilst we are building a reputation that will hopefully go on to attract students without the need for scholarships.
- Can this funding come from existing relationships with donors and Multilateral Development Banks?
- What capacity building programmes exist within Road and Transport Authorities in Africa that would be interested in sending staff to study this Masters?
- How best can we leverage our contacts and market this to the industry across Africa and attract our first cohort(s) of students?
- How do we make this programme sustainable in the long-term? How can we engage the industry and build partnerships across Africa, so this Masters Degree becomes a desired qualification for transport professionals on the continent?

A small but relevant WG is has been established to guide the above.

Outline WG Participant List

The **initial** member list for the WG is:

No.	Name	Affiliation
1	Mr N Leta	ReCAP Deputy Team Leader
2	Mr N Alli	African Community Access Partnership (AfCAP) Chair
3	Project Team (Various)	Mott MacDonald, UCT and UOB
4	Mr C Adams and/or Mr N Boso	KNUST
5	Ms Eunice Yaa Brimfa Ackwerh	Education Task Team Lead at World Bank, Ghana
6	Ms E Jones	Senior Transport Advisor, Department for International Development (DFID)
7	Mr J Malota	Programmes Officer, Association of Southern African National Road Agencies (ASANRA)
8	Mr L Stringer	Chartered Institution of Highways and Transportation (UK) Representative
9	Mr S Traore	President, African Roads Maintenance Fund Association (ARMFA)
10	Dr B Obika	Team Leader, High-Volume Transport Programme
11	Mr C Gourley	DFID SRO, High-Volume Transport Programme

Estimated Time Input

Meetings are proposed to take place quarterly, starting in **July 2019** and will take place via **conference call** between the participants. In-person meetings are not expected at this stage.

Each meeting will be focused on a specific theme. Information relating to each meeting will be shared with participants at least **one week in advance** of the meeting taking place.

Outline Meeting Schedule

The outline meeting schedule is provided below. Outlook meeting invites will be circulated by the Project Team to each of the WG members at least **four weeks in advance** of a meeting.

Meeting dates and times may change subject to amendments in the project delivery schedule between ReCAP and the Project Team (i.e. Mott MacDonald, in association with UCT and UOB).

In the event of such an occurrence, the Project Team will provide WG members with as much notice as possible regarding any cancellation and endeavour to find an alternative mutually suitable date.

Meeting No	Date	Time (BST/GMT)	Theme
1	July 2019	10:00 – 12:00	Curriculum content for training programme and responding to industry needs
2	October 2019	10:00 – 12:00	Scholarship funding opportunities, accreditation and marketing
3	January 2020	10:00 – 12:00	Building long-term links with professional bodies, industry partners and regional bodies
4	April 2020	10:00 – 12:00	Final Report and future programme direction

Conference Call Details

Conference call details will be included at the bottom of each Outlook meeting invite. This includes a **Skype link** and a **conference call phone number.**

Please note, dialling-in via the Skype link can sometimes be problematic when calling from an external organisation to Mott MacDonald.

In the event of any difficulties with the Skype link, members can dial-in to the conference call directly using the **conference call phone number** and **conference code** that are located directly below the Skype link in the meeting invite.

Participation Rules

The WG meetings should encourage a safe and constructive environment for all views to be heard. Everyone's opinion will be taken into consideration and people should feel comfortable asking any questions they feel are pertinent to the programme.

The WG is an informative tool to help guide the direction and content of the training programme. ReCAP and the Project Team will be grateful for all feedback received during (and after) these sessions.

DFID reserves the right of discretion as to what comments and feedback will and will not be adopted into the project delivery. As one can appreciate, there are cost and programme implications that will also need to be considered, so there may be occasions where suggestions made, whilst may be valid and useful, cannot be incorporated for budgetary or other reasons.

The Project Team will act as the WG secretariat and provide relevant information and documentation for members to consider in advance of meetings. It will also take minutes for each WG meeting.

Project Team Contact Details

For further information on or if one has any difficulties dialling-in to or attending the proposed WG meetings, please get in touch with the Project Team via the contacts below:

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Appendix F: Asia Scoping Study

Bangladesh

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Bangladesh	North South University	• Faculty of Engineering and Technology	• BSc. (Civil engineering)	• Board of Accreditation for Engineering and Technical Education Bangladesh	Not available	• The University of California, Berkeley; • the University of Illinois at Urbana-Champaign; • George Washington University, • Pennsylvania State University; • Colorado State University; • Yarmouk University, Jordan; • Witswaterstrand University, South Africa.	None	Available	Not available	Available
		• Faculty of Economics	• MBA	None			None	NA	Not available	NA
	Khulna University of Engineering and Technology	• Engineering	• BSc. (Civil engineering) • MSc. (Civil engineering) • PhD. (Civil engineering)	• Board of Accreditation for Engineering and Technical Education Bangladesh	Not available	None	None	Available	Not available	Available

Afghanistan

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Afghanistan	Kardan University	• Faculty of Engineering and Technology	• BSc. (Civil engineering)	• Ministry of Higher Education	Not available	None	None	Available	Not available	Available
		• Faculty of Economics	• MBA	• International Assembly for Collegiate Business Education	Not available	None	None	NA	Not available	NA
	Kabul Polytechnic University	• Transportation Engineering Faculty	• BSc. Civil Engineering • MSc Roads & Transportation Engineering	• Ministry of Higher Education	• Ministry of Transport	None	None	Available	None	Available
		• College of Business and Economics	None	None			None	NA	Not available	NA

Pakistan

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Pakistan	National University of Computer and Emerging Sciences	• Lahore campus	• BSc. (Civil engineering) • MSc. (Civil engineering)	• Higher Education Commission • Engineering Council	Not available	Not available	None	Available	Not available	Available
		• Lahore campus	• MBA	• Higher Education Commission • Engineering Council	Not available	Not available	None	NA	Not available	NA
	Mehran University of Engineering and Technology	• Faculty of Architecture and Civil Engineering	• BSc. (Civil engineering) • MSc. (Civil engineering) • PhD (Civil engineering)	• Higher Education Commission • Engineering Council	Not available	Not available	None	Available	Not available	Available
	National University of	• Military college of Engineering	• BSc. (Civil engineering)	• Higher Education Commission	Not available	Not available	None	Available	Not available	Available

	Sciences and Technology		• MSc. (Transport engineering)	• Engineering Council						
		• College of Business and Economics	• Executive MBA	• Higher Education Commission • Engineering Council	Not available	Not available	None	NA	Not available	NA
	International Islamic University Islamabad	• Engineering and technology	• BSc. (Civil engineering) • MSc. (Civil engineering) • PhD (Civil engineering)	• Higher Education Commission • Engineering Council	Not available	Not available	None	Available	Not available	Available

Nepal

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Nepal	Kathmandu University	School of Engineering	• BSc. (Civil engineering) • MSc. (Civil engineering)	Not available	Not available	None	None	Available	Not available	Available
		School of management	• MBA	Not available	Not available	None	None	Available	Not available	Available

Myanmar

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Myanmar	Yangon Technological University	• School of Engineering	• B Eng. (Civil engineering) • Diploma (Transportation engineering) • M Eng. (Transportation engineering) • PhD. (Transportation engineering)	• Ministry of Science and Technology	Not available	Not available	None	Available	Not available	Available

Asian Institute of Technology

Country	Institution	College/Faculty	Programme & Qualifications	Accreditation	Existing Collaboration(s)		Ranking	Computer and Lab	Curriculum details	Blended learning
				National	Local	International				
Nepal	Kathmandu University	• School of Engineering	• BSc. (Civil engineering) • MSc. (Civil engineering) • PhD (Civil Engineering) • MSc. (Transportation engineering) • PhD (Transportation Engineering)	• Ministry of Education	Not available	• Rangsit University, Thailand; • Templecity Institute of Technology and Engineering (TITE), India; • Japan Advanced Institute of Science and Technology (JAIST), Japan; • National Taiwan University, Department of Civil Engineering	Not available	Available	Available	Available
		• School of management	• MBA • DBA (Doctor of Business Administration)	• Ministry of Education	Not available	include the Association to Advance Collegiate Schools of Business, the European Foundation for Management Development and the Association of Asia-Pacific Business Schools	Not available	Available	Available	Available