JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY IN THE SOUTHERN SUDAN

FINAL REPORT (3)

APPENDICES

JULY 2010

CTI ENGINEERING INTERNATIONAL CO., LTD.
YACHIYO ENGINEERING CO., LTD.

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JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

AGENDA

1ST STAKEHOLDER'S MEETING

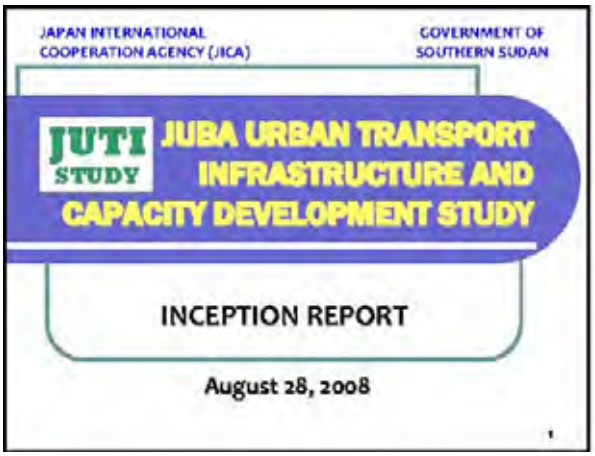
INCEPTION REPORT PRESENTATION

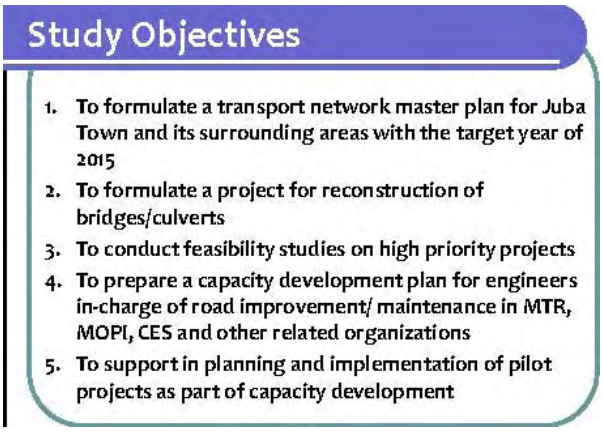
Date and Time : August 28, 2008 at 10:00 am

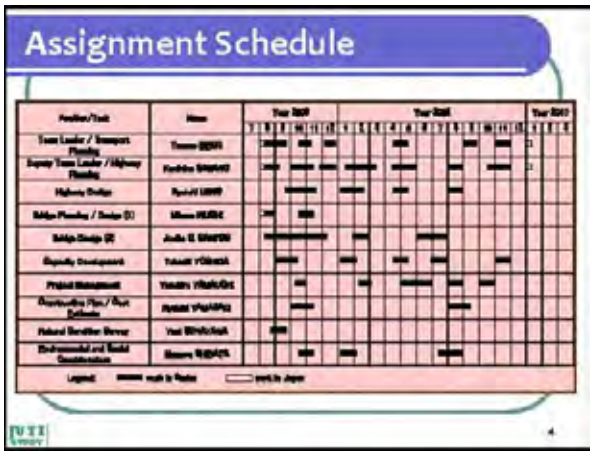
Venue : Conference Room
Ministry of Transport and Roads

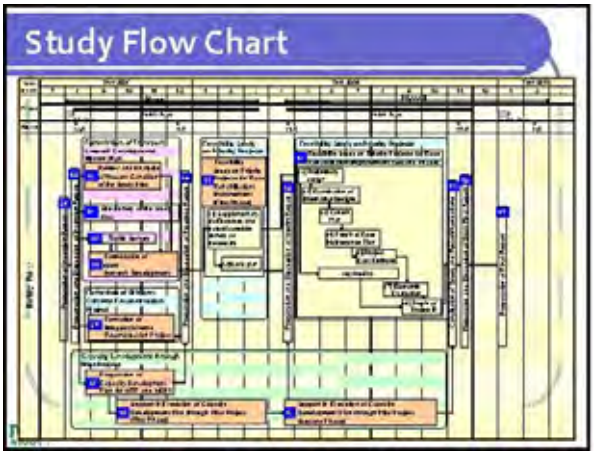
1. Opening Remarks	Dir. Gen. Jacob M. Maker	10:00 am – 10:10am
2. Inception Report Presentation	Study Team	10:10am – 11:00am
• Study Organization	Mr. T. Bekki	
• Master Plan Study Flow	Mr. K. Sawano	
• Bridge/Culvert Recon Project	Dr. J. Santos	
• Capacity Dev't & Pilot Project	Mr. T. Bekki	
3. Dicsussion		11:00am – 11:30am
4. Closing Remarks		11:30am – 11:50am
• JICA	Mr. Shishido	
• MTR	Dir. Gabriel M. Amour	

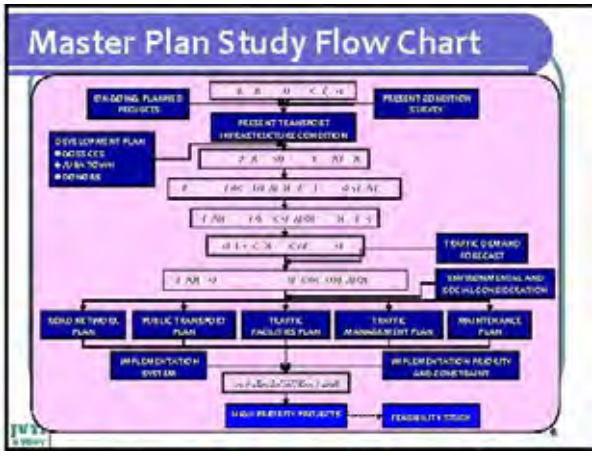
1.2 Presentation Material











Socio-Economic Framework

- Population
- Economy (GDP)
- Poverty Incidence, Income Level, Living Standard
- Working Population
- School Environment
- Vehicle Registration
- Land Use

*Considering IDPs and Inflow of Population to Juba Town

7

Formation of Bridge/Culvert Reconstruction Project

10

Formation of Bridge/Culvert Reconstruction Project

17 Bridges Location Map (MTR Request)

8

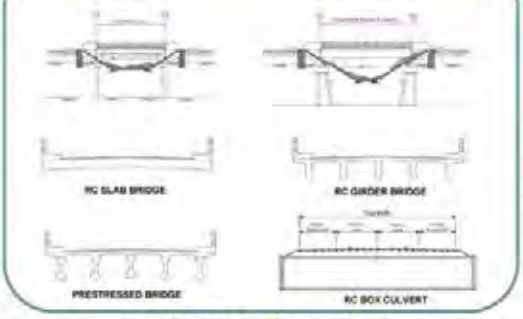
Formation of Bridge/Culvert Reconstruction Project

11

Formation of Bridge/Culvert Reconstruction Project

9

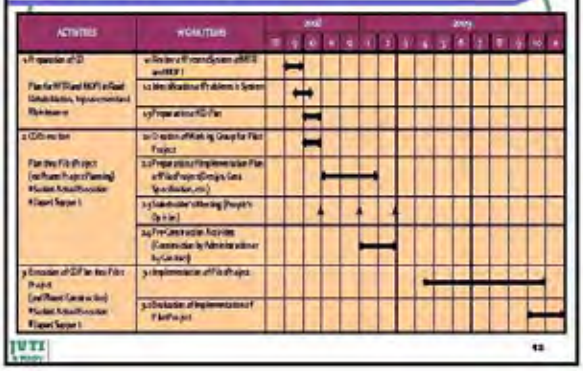
Formation of Bridge/Culvert Reconstruction Project



Possible Bridge/Culvert Types

12

Action Plan for CD



Pilot Project Concept

Project Purpose:

- Reconstruction of Roads to develop lots for IDPs

Project Location:

- Adjacent to Munuki Payam community

Project Characteristics:

- Small in size
- Community participation in planning and implementation
- Labor-intensive construction
- Coordination with organizations supporting returnees

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

1.3 Minutes of Discussion

MINUTES OF MEETING

Purpose	:	**Presentation of Inception Report**
Date and Time	:	**August 28, 2008 (10:00 am)**
Venue	:	**Conference Room**
		Ministry of Transport and Roads

Minutes of Discussion:

1. The meeting was called to order by Director Engr. Gabriel Makur Amour of the Roads and Bridge. Dir. Amour welcomed the JICA Team and the attendees.
2. The Study Team presented the Inception Report for the JICA Study on "Juba Urban Transport Infrastructure and Capacity Development Study (JUTI Study)". The Study will cover five objectives which include: (1) formulation of transport network master plan for Juba town and surrounding areas with target year of 2015, (2) formulation of bridge/culvert reconstruction project, (3) preparation of feasibility study on high priority projects, (4) preparation of capacity development plan for road improvement/maintenance for MTR/ MOPI, etc., and (5) support in planning and implementation of pilot projects.
3. MTR expressed its concern on the implementation timing of the "Bridge/Culvert Reconstruction Project" since the bridges are part of the on-going Juba Road Rehabilitation Project (JRRP). The JICA Team will prepare the project formulation and basic design of bridge/culverts and will coordinate with the JRRP implementation office for project schedules. However, start of implementation of the bridge/culvert project may take one year due to procedural system with the Japan's grant aid.
4. The issue of Study Area coverage was clarified by both MTR and Study Team since the Study will cover Juba and surrounding areas. However, the administrative boundary of Juba is not yet clear so that it is agreed that the Study Team, MOPI and MTR will discuss the coverage as the study progresses.
5. The transport master plan to be formulated in the Study was clarified by the JICA team to include updating of the previous JICA Study due to rapid development in Juba. The master plan will focus on motorized vehicles and will consider pedestrian movements in the road facilities. Public transport will also be looked into in the Study. The Study team will also coordinate closely with MOPI, MTR and other agencies dealing with land use plan which will be used as a basis for transport master plan.
6. MTR clarified the scope and mechanism of Pilot Project which is a component of the Study. The Study Team emphasized that the Pilot Project will focus on small road projects that can be implemented by MTR with community participation. The outcome of the Pilot Project is expected to enhance the capability of MTR in road project execution.

7. In closing, the Mr. Shishido of JICA Team emphasized that the Government of Japan is committed to assist in the development of Juba beginning with the bridge/culvert reconstruction and other priority road projects, respecting the people's will and ownership of the project. In response, MTR expressed its gratitude to the Government of Japan for its assistance and its willingness to support the Study in any way.

8. Dir. Gabriel Makur Amour, in closing, emphasized the need to improve transport movement and transport safety in Juba. He hopes that the Transport Master Plan will help decongest Juba town by providing better road network in Juba and the surrounding areas. He further expressed full support of MTR in the Study.

MR. GABRIEL MAKUR AMOUR
Director of Roads and Bridges
Ministry of Transport and Roads
Government of Southern Sudan

MR. TSUNEO BEKKI
Team Leader
JICA Study Team (JUTI Study)

1.4 List of Attendees

LIST OF ATTENDEES

Name	Organization	Contact
1. Gabriel Makur Amour	Director or Roads and Bridges Ministry of Transport & Roads	+882164333902 0477112052 0121775211 gabrielmakuramuor@yahoo.com
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12. Naomichi Murooka	JICA Team	
13. Kenichi Shishido	JICA Sudan Office	
14. Shoji Hasegawa	JICA Team	
15. Koichi Miyake	JICA Team	
16. Kensuke Oshima	JICA Sudan Office	
17. Tsuneo Bekki	Team Leader, JICA Study Team	
18. Kunihiko Sawano	Dep. Team Leader, JICA Study Team	
19. Dr. Jovito Santos	Member, JICA Study Team	

APPENDIX 2 SECOND STAKEHOLDER'S MEETING (FUTURE LAND USE PLAN AND ROAD NETWORK)

2.1 Agenda

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba

Government of South Sudan

05 November 2008

2 ND STAKEHOLDERS MEETING
Conference Room (Ground Floor)/Home and Away

AGENDA

1.	Opening Remarks	H. E. Dr. Daniel Wani Undersecretary Ministry of Transport and Roads GOSS	10:00 - 10:10
2.	Role of JICA	Mr. Kenichi Shishido Representative of JICA Sudan	10:10 - 10:20
3.	Urban Road Development Plan of MTR	Mr. Otim Bong Deputy Director Ministry of Transport and Roads GOSS	10:20 - 10:30
4.	Outline of Juba Urban Transport Study	Mr. Tsuneo Bekki Team Leader/JICA Study Team	10:30 - 10:45
5.	Proposed Landuse Plan of Juba	Mr. Kunihiko Sawano	10:45 - 11:00
	COFFEE BREAK		
6.	Proposed Road Network Plan of Juba	Mr. Ryuichi Ueno	11:10 - 11:30
7.	Bridge & Culvert Reconstruction Project	Dr. Jovito Santos/ Mr. Ryoichi Yamasaki	11:30 - 11:50
8.	Environmental Consideration	Mr. Mamoru Shibata	11:50 - 12:00
9.	Discussion		12:00 - 12:30
10.	Closing Remark	Mr. Luis Gore George Director General Ministry of Physical Infrastructure CES Mr. Jacob Marial Maker Director General Ministry of Transport and Roads GOSS	12:30 - 12:40

LUNCH

2.2 Presentation Material

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

2nd Stakeholder's Meeting

Future Land Use Plan and Road Network

November 5, 2008

Location Map

Contents

- Outline of Juba Urban Transport Study ..... T. Bekki
- Road Network ..... R. Ueno
- Bridge & Culvert Reconstruction Project ..... J. Santos
- Environmental Consideration ..... M. Shibata

Study Objectives

1. To formulate a transport network master plan for Juba Town and its surrounding areas with the target year of 2015
2. To formulate a project for reconstruction of bridges/culverts
3. To conduct feasibility studies on high priority projects
4. To prepare a capacity development plan for engineers in-charge of road improvement/ maintenance in MTR, MOPI, CES and other related organizations
5. To support in planning and implementation of pilot projects as part of capacity development

Study Procedure

Step 1: Review Present Transport Condition and Identify Need for Improvement

Step 2: Review Government Development Vision, Strategy and Plan and Recommend Engineering View, if required

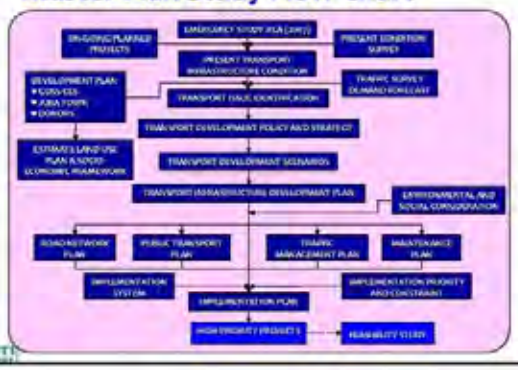
Step 3: Propose a Transport Master Plan in accordance with Government Plan

Step 4: Propose Overall Implementation Plan for Action
- Road Network Development Plan
- Public Transport Development Plan
- Traffic Management System Development Plan
- Maintenance System Development Plan

Step 5: Conduct Feasibility Study on High Priority Projects

Standard Engineering Steps

Master Plan Study Flow Chart



Proposed Land Use Plan of Juba

BASIC CONSIDERATIONS ON LAND USE PLANNING

1. Sufficiency of Urban Functions Required for Modern City (Socio-Economic Activity Center such as Politics, Industry, Culture, Education, Health, Sports, etc.)
   - Provision of Transport Facilities
   - Formation of Central Business District (CBD)
   - Provision of Sufficient Green/Recreation Areas and Shopping Centers
2. Transport Facilities as a Transport Hub of the Region
   - Efficient Inter-State/International Connection
   - Urban Road Network using Circumferential / Radial Pattern
   - New International Airport and New River Port

BASIC CONSIDERATIONS ON LAND USE PLANNING

3. Residential, Business, Commercial, Industrial and Institutional Areas meeting the Respective Future Land Demands and their Distribution
   - Residential : Existing areas maintained and new settlement areas developed in the suburbs and east side of Nile River
   - Business : Central Business District (CBD) in the center of the town
   - Commercial : Scattered in the residential areas
   - Industrial : Riverside for the convenience of transport on the condition that a new port will be constructed on the eastern bank of Nile River
   - Institutional / Religious : Existing areas preserved
4. Green/Recreation Areas
   - Along Nile River and Scattered in the Suburbs

Proposed Land Use Plan of Juba

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

JUTI STUDY

Proposed Road Network Plan of Juba

2ND STAKEHOLDERS MEETING

05 NOVEMBER 2008

1

Contents

- Present Road Network
  - International / Interstate Road Network
  - Urban Street Network in Juba
- Functional Urban Street Classification
- Proposed Urban Street Network Plan in 2015 and 2025
- Design Standards &Typical Cross Sections

2

Present International Road Network

3

Present Interstate Road Network in Central Equatoria

Six (6) primary roads form radial road network from Juba to other cities (Bor, Torit, Nimule, Kajo-Keji, Yei and Mundri).

4

Present Urban Street Network
(Rehabilitation Of Urban Roads Project)

LOT1: total 30km
LOT2: total 35km

6

Present Urban Street Condition

New Paved Street (6km)

- May Street
- Airport Street
- Unity Avenue

(under construction)

Most of the streets in Juba are still unpaved and bad road conditions.

5

Present Urban Street Network In Juba Center By Functional Classification

Functional Urban Street Classification

- Arterial Street (Principal & Minor)
- Collector Street
- Local Street

Geometric Design of Highways and Street (AASHTO, American Association of State Highway and Transportation Officials)

Functional Urban Street Classification

Principal Arterial	Service to the major centers of activity of urbanized areas, the highest volume corridors and the longest trip. The principal arterial should be integrated both internally and between major rural road connections.
Minor Arterial Street	Trips of moderate length at a somewhat lower level of travel mobility than principal arterial
Collector Street	Land access service and traffic circulation within residential neighborhood and commercial and industrial areas.
Local Street	The lowest level of mobility and usually contains no bus routes. Service to though traffic movement usually is deliberately discouraged

Present Urban Street Network In Juba and Surrounding Areas By Functional Classification

Street Network Planning Policy

- Improvement of Surface Condition of Arterial and Collector Street
- Inducement of Urban City Formation
- Construction of New Street (C2,C3,C4)
- Widening (Securing Space)
- Improvement of Drainage Condition

Proposed Urban Street Network Year 2015

Proposed Urban Street Network Year 2025

13

Proposed Typical Cross-section 1/2

Arterial Street (in case of four lanes and parking lane)

14

Proposed Typical Cross-section 2/2

Collector Street (in case of four lanes and parking lane)

Collector Street (in case of two lanes and parking lane)

15

16

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, CES

JUTI STUDY

Bridge Rehabilitation Project on the Main Roads of Juba

2nd Stakeholder's Meeting

November 5, 2008

1

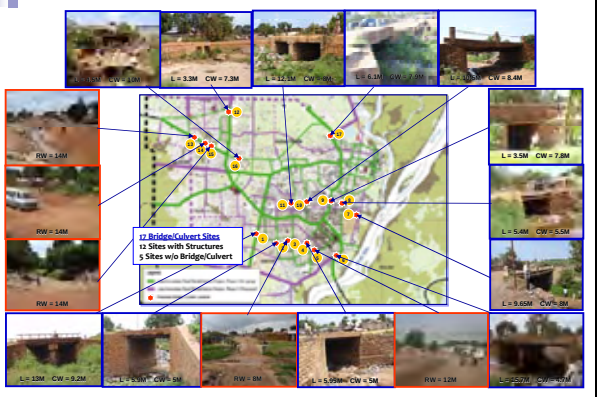
Background and Project Objectives

- Task 7 of the on-going JUTI Study aims at formulating the bridge/culvert reconstruction project in response to the request of GOSS

Project Objective:

- The Project aims at reconstructing old bridges/ culverts, and constructing new bridges at some section of main roads, which are not covered in the RRP. This will make most parts of Juba city become accessible to other part of the city during the rainy season.

2



Bridge Locations and Existing Conditions

3

Existing Conditions

2-Span RC Deck on H-beam
Length: 13m
Carriageway: 9.2m
Opening: 3.8m x 10m
Carriageway < Road Width
1991

No Existing Bridge
River: 12m
Not passable during flood

2-Span RC Deck on H-beam
Length: 15.7m
Carriageway: 4.7m
Opening: 2.65m x 14m
Bridge is too narrow;
Scouring at upstream
1972

ALTA-BARA AREA

1-Span RC Deck on H-beam
Length: 5.9m
Carriageway: 5m
Opening: 3.8m x 4m
Bridge is too narrow
1974

1-Span RC Deck on H-beam
Length: 5.95m
Carriageway: 5m
Opening: 3.8m x 4m
Bridge is too narrow
1974

No Existing Bridge
River: 13m
Not passable during flood

4

Existing Conditions

2-Span RC Deck on H-beam
Length: 12.1m
Carriageway: 8m
Opening: 2.9m x 10m
Carriageway less than road;
Freeboard = 0.3m
1999

1-Cell RC Deck w/ HB Culvert
Length: 3.5m
Carriageway: 7.84m
Opening: 2.4m x 3.5m
Carriageway less than road;
No freeboard during flood
1960

1-Span RC Deck on H-beam
Length: 5.4m
Carriageway: 5.5m
Opening: 2.3m x 4m
Bridge is too narrow;
Freeboard = 0.3m

BULUK AREA

HAI-MALAKAL AREA

1-Span RC Deck on H-beam
Length: 10.5m
Carriageway: 8.4m
Opening: 3.15m x 8.5m
Carriageway less than road;
1983

1-Span RC Deck on H-beam
Length: 9.65m
Carriageway: 8m
Opening: 2.86m x 7.6m
Carriageway less than road;
Freeboard = 0.3m
1995

5

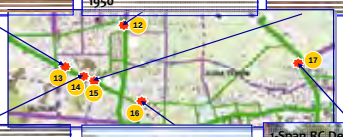
Existing Conditions

No Existing Bridge
Stream: 4m
Corr. Steel Pipe culvert
recently placed

2-Cell RC Culvert
Length: 3.3m
Carriageway: 7.3m
Opening: 2m x 2.5m
Carriageway less than road;
Overflow during flood
1950

No Existing Bridge
Stream: 6m
Corr. Steel Pipe culvert
recently placed

MUNUKI AREA



No Existing Bridge
Stream: 3m
Corr. Steel Pipe culvert
recently placed

1-Cell RC Deck w/ H-B Culvert
Length: 4.5m
Carriageway: 10m
Opening: 1.5m x 3.3m
Carriageway less than road;
Unstable base

1-Span RC Deck on H-beam
Length: 6.1m
Carriageway: 7.9m
Opening: 2.3m x 4m
Carriageway less than road;
Freeboard < 0.3m
1986

6

Considerations for Bridge/Culvert Planning

- Bridge/Culvert Opening

ISSUES	STRATEGY/POLICY
Flood Overflow – No Freeboard/ Clearance	Bridge Opening ≥ Existing, No River Constriction
Scouring at Upstream Side	Raise Bridge Elevation
Debris/Garbage Accumulate in River Reducing Waterway Opening	Design Flood: Calculated vs Actual Experience
Design Flood – one in 50 years but Available Rainfall Data only 6 years	Provide River & Bank Protection
	River Maintenance/ Cleaning

Considerations for Bridge/Culvert Planning

- Bridge/Culvert Geometry

ISSUES	STRATEGY/POLICY
Bridge Deck Width Too Narrow	Bridge Deck Section to be Consistent with Road Section
Carriageway Offset with Road Centerline	Bridge Deck Alignment and Profile to be Consistent with Rd
Road Section not Consistent with Road Functional Class	Bridge Section should be Consistent with Road Function
Existing Road Corridor Insufficient	Bridge Design should Consider Future Expansion/Widening
Social / Environmental Concerns	Bridge Design Width should Minimize Social/Envi Impact

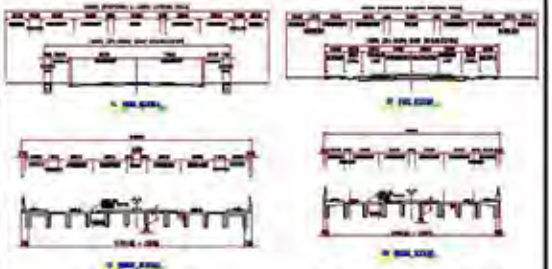
Considerations for Bridge/Culvert Planning

- Bridge/Culvert Structure

ISSUES	STRATEGY/POLICY
Structures Basically Old with some Damages/Defects	Bridge/Culvert Reconstruction Considering Present Load Demands
Structural Load Capacity Insufficient with Present Demand	Cost-Effective Bridge Scheme/ Type Considering Available Technology, Materials, Eqpt., Etc.
High Construction Cost	
Limited Availability of Materials, Equipment, Technology for Bridge	Materials/Details should require Minimal Maintenance
No Maintenance on Bridge Structure	

Proposed Structures (Bridge/Culvert)

Road and Bridge Sections (Arterial)



4-Lanes Arterial

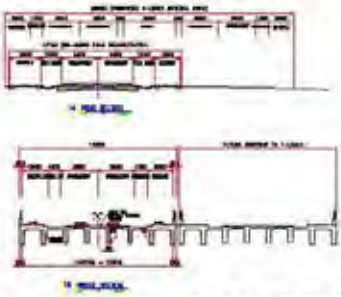
4-Lanes Arterial (Restricted)

Road and Bridge Sections (Collector)

4-Lanes Collector

2-Lanes Collector

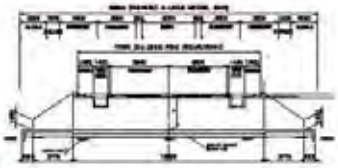
Road and Bridge Sections (Arterial)



4-Lanes Arterial (Final Stage) – Two Stage Construction

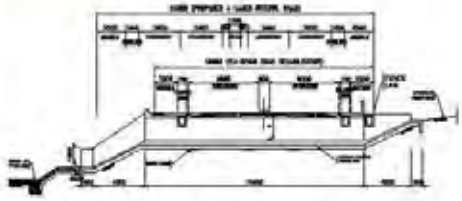
Road and Bridge Sections (Arterial)

4-Lanes Arterial – Two Stage Construction



4-Lanes Arterial – Two Stage Construction

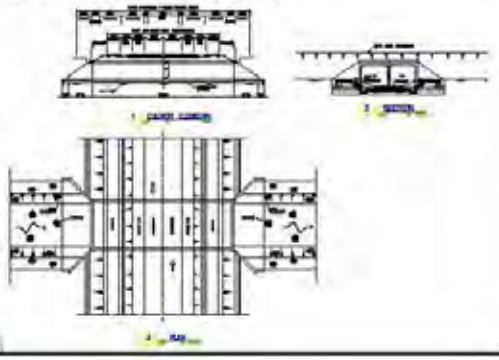
Road and Bridge Sections (Arterial)



4-Lanes Arterial – Two Stage Construction

Typical Bridge (RCDG)

Typical Culvert (RCBC)



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN

JUTI STUDY

ENVIRONMENTAL CONSIDERATION

2nd Stakeholder's Meeting

November 5, 2008

Process of Environmental and Social Consideration in JICA
(Case of Concerned Projects in GOSS)

No. 1 JICA Team collects relevant information and conducts field surveys.

Relevant Information:
Laws, Ordinances and Standards relating to environmental & social considerations ②Involuntary resettlement(Land) ③Biota & Ecosystem ④Cultural heritage ⑤National park & Game reserve ⑥Tribe & Religion ⑦Other donor studies of EIA(Environmental Impact Assessment)

Field surveys:
①Land use ②Road condition(including Bridge) ③Transportation system

MASTER PLAN

No. 2 JICA Team conducts IEE-level (Initial Environmental Evaluation) environmental and social consideration studies.

FEASIBILITY STUDY

No. 3 JICA Team reviews screening based on the results of IEE-level studies and conducts environmental survey, examines mitigation measures to avoid, minimize or compensate for adverse impacts etc. as Pre-EIA studies.

No. 4 JICA Team holds consultations with local stakeholders after information disclosure, in collaboration with the GOSS.

No. 5 JICA Team prepares drafts of final reports, into which are incorporated the results of environmental and social consideration studies, and explain them to the GOSS to obtain comments.

Scoping Sheet

2.3 Minutes of Discussion

MINUTES OF MEETING
2nd Stakeholder's Meeting

Purpose	:	**To present the Study's Findings on Future Land Use Plan and Road Network**
Date and Time	:	**November 5, 2008 (10:00 am)**
Venue	:	**Conference Room** **Home and Away, Juba**

Minutes of Discussion:

1. The meeting was called to order with Opening Remarks by Undersecretary Dr. Wani and Mr. Shishido.
2. Mr. Otim Bong presented some insights on Road Development Activities and Plans of MTR.
3. The Study Team made presentations on the (a) Outline of Juba Urban Transport Study, (b) Proposed Land Use Plan of Juba, (c) Proposed Road Network Plan of Juba, (d) Bridge and Culvert Reconstruction Project , and (d) Environmental Considerations.
4. A series of comments and discussions proceeded after the presentations with the following highlights:
    1. Legal Issues. The issue on legality of land use has to be addressed by the GOSS and CES, since at present land is controlled by the community. Unsettled areas should be left as is until the proper legal framework is put in place. Development projects/private undertakings should comply with the land use plan developed.
    2. Capacity Building. There is a need to develop the MTR/CES Engineer's skills for project sustainability.
    3. Need of Similar Study to Other States in South Sudan. The Juba Urban Transport Study should also be carried-out to the other 10 states since all these states are in similar condition as Juba and will need proper planning for their development.
    4. Project Information Dissemination. The Study is very important and should be made known to the community so that development plans can be implemented smoothly. Information should be extended to the communities through proper media like radio, TV, etc.
    5. Reservation of Road Corridor. The road corridor that will be identified in the study should be reserved and encroachment/settlement should not be allowed within the reserved corridor. Since people are just starting to come in and the city is just being developed, the road reserve should be protected.
    6. Environmental Issues. Careful environmental considerations should be taken into account in planning for land use and road network – including tree cutting, Nile river encroachment, etc.
    7. Compensation Issues. Funding the compensation for right-of-way and resettlement/relocation of project affected persons has been a problem of MTR and should be addressed by GOSS/CES.

8. Implementation/Enforcement of Land Use Plan. The issue on who will implement the formulated land use plan is raised – will it be implemented by GOSS, by CES or other concerned agency?
9. Additional Stakeholders' Meeting/Workshop. More workshops are recommended to discuss other issues and for information dissemination. Invitation should be extended to wider participants/stakeholders including industries, land commission, etc.
10. Discussion with Study Team. The team leader, Mr. Bekki invites and welcomes all stakeholders for more discussions and exchange of opinions at any time regarding the Study.

5. Dir. Gen. Maker closed the meeting with recommendation of widening the stakeholders' participation.

2.4 List of Attendees

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba

Government of South Sudan

05 November 2008

2 ND STAKEHOLDERS MEETING
ATTENDANCE SHEET

	Name	Company	Position	Contact No./E-mail	Signature
01	ALISON O. ABURE	MINISTRY OF COMMUN. & INF.	SENIOR Insp.	0926824755	
02	Michael Lubul	Ministry of Commerce Industry & Mines	D/Director	0477103981 0129354986	
03	David Dramle	Hotel B' Court	A/Chief of Juba	0477449316	
04	Stephen Mach Maker	Ministry of Commerce and Industry	Sr Inspector	0477185546	
05	David Twine	Ministry of Transport Roads	Fin Mgmt Specialist	[illegible]	
06	Lamina Simmons	Ministry of Housing & Urb.	FMS	0477137837	
07	Sebit Ali	ECC	ICC chairman	0477148522	
08	Abraham K.	SPC	Pastor	0926594375	
09	Wilson M	MHPPE	Eng-Civil	0126491721 0914848520	
10	Leal	Univ Juba	Deputy Dean	0122636679	
11	Aniek Tong	University of J	Resident Engineer	0121952150	
12	Andru Zukaria	University of Juba	Lecturer in Geography Dept.	0121914709	
13	Simon Kuol	MHPPSE	AIT Inspector	0919736366	
14	Biem Gai	MHPPSE	Marketing	0126270887	
15	CHAIRMAN Arkow	Local Golf Board	DIRECTOR GENERAL PROGRAMS	0910828570	

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba

Government of South Sudan

05 November 2008

2 ND STAKEHOLDERS MEETING
ATTENDANCE SHEET

Name	Company	Position	Contact No./E-mail	Signature
16 MAURICE REHAN DENG	MIN. OF Transport and Roads	D/G Road Transport Safety	0121945675 rehanmaurice@yahoo.com	[signature]
17 Michael Guta	Ministry of Transport	Contract Manager	12 9560398	[signature]
18 Kuwan Angwan	MTR/TAST	WATS Engineer	0126177124	[signature]
19 James [illegible]	MTR	C/Engineer	0477112070	[signature]
20 Kiyotaka Tamai	JICA	Project Formulation Advisor	091-4636201	[signature]
21 Lomoro [illegible]	MTR	ENGINEER	0477102093	[signature]
22 Kenichi Shibata	JICA	RR	091-4589133	[signature]
23 [illegible]	MTR	Director	[illegible]	[signature]
24 Zippora	MTR	Procurement Specialist	0477232110	[signature]
25 Patricia Gbel	MTR	Environmental MTR Officer	0477194528	[signature]
26 Nyarsuk Richard	MTR	A/Director Bridges	0477112476	[signature]
27 Jacob Manuel	MTR	D/G Roads & Bridges	0477104451	[signature]
28 DANIEL WANI	MTR	U/S	0477102509	[signature]
29 Sebastian, H	MTR	Driver	0477124654	[signature]
30 GEORGE K	MTR	DRIVER	0477162326	[signature]

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba

Government of South Sudan

05 November 2008

2 ND STAKEHOLDERS MEETING
ATTENDANCE SHEET

	Name	Company	Position	Contact No./E-mail	Signature
31	IRINE NYABOKE			nyabzmarya@yahoo.com 0129601242	
32	Tsuneo Bekki	JICA Study Team	Team Leader	tsuneobekki@yahoo.com	
33	Kunihiko Sawano	JICA Study Team	Deputy Team Leader	kunihikosawano@yahoo.com	
34					
35	Mamoru SHIBATA	JICA Study Team	Study Member	shibata-m@mbn.nifty.com	
36	Mitsue Kiuchi	JICA Study Team	Study Member	kiuchi.mitsue67@gmail.com	
37	Jovito C. Santos	JICA Study Team	Study Member	jovito_santos@yahoo.com	
38	Ryoichi Yamasaki	JICA STUDY TEAM	Construction Planning / Cost Estimate	yamasaki@ctii.co.jp	
39	Ryuichi UENO	"	Highway Engineer	uenor@ctii.co.jp	
40					
41					
42					
43					
44					
45					

APPENDIX 3 THIRD STAKEHOLDER'S MEETING (URBAN TRANSPORT DEVELOPMENT PLAN)

3.1 Agenda

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY
Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba
Government of South Sudan

3RD STAKEHOLDER'S MEETING

URBAN TRANSPORT DEVELOPMENT PLAN

Conference Room (2nd Floor), Home and Away Restaurant
February 16, 2009

PROGRAM

1.	Opening Remarks	H.E. Dr. Daniel Wani Undersecretary Ministry of Transport and Roads, GOSS	10:00 –10:10
2.	JICA Remarks	Mr. Kenichi Shishido Representative of JICA Sudan	10:10 –10:20
3.	Problems and Issues in Urban Transport	Mr. Otim Bong Deputy Director Ministry of Transport and Roads, GOSS	10:20 –10:30
4.	Urban Transport Development Policy and Strategy	Mr. Kunihiko Sawano Deputy Team Leader/JICA JUTI Study	10:30 –10:45
5.	Road Network Development Plan	Mr. Ryuichi Ueno JICA JUTI Study	10:45 –11:00
		COFEE BREAK	
6.	Implementation Plan	Dr. Jovito Santos JICA JUTI Study	11:15 –11:30
7.	Pilot Project Plan	Mr. Yasuhiro Yamauchi JICA JUTI Study	11:30 –11:45
8.	Proposed Projects for Feasibility Study	Mr. Kunihiko Sawano Deputy Team Leader/JICA JUTI Study	11:45 –12:00
9.	Discussion	Mr. James Alam Ministry of Transport and Roads	12:00 –12:30
10.	Closing Remarks	Mr. Luis Gore George Director General Ministry of Physical Infrastructure, CES Mr. Jacob Marial Maker Director General Ministry of Transport and Roads, GOSS	12:30 –12:40
		LUNCH	

3.2 Presentation Material

(a) Mr. Otim Bong

The Ministry of Transport & Roads
Government of Southern Sudan (GOSS)

3RD STAKEHOLDER'S MEETING

"URBAN TRANSPORT DEVELOPMENT PLAN"

PROBLEMS AND ISSUES IN URBAN TRANSPORT

February 16, 2009

PROBLEMS AND ISSUES IN URBAN TRANSPORT

- Land for Expansion
- Increment in the traffic volume
- Road encroachment
- Traffic control system
- Accidents
- Design issues
  - Roundabouts/Junctions
  - Parking lanes
  - Bus stops
  - Narrow bridges
  - Road markings, signs, speed control structures
  - Road alignment
  - Footways/Pedestrians path

INCREMENT IN TRAFFIC VOLUME

- It is noted that over the last two years the traffic volume in Juba has increased far beyond previous anticipation.
- The present ongoing rehabilitation of Juba Urban Roads is only confined to the existing alignment with no widening to accommodate the ever increasing traffic.

TRAFFIC CONTROL SYSTEM

- Traffic is managed by the Department of Traffic Police in the Ministry of Internal Affairs. In some countries however, the department is under Ministry of Transport and Roads, Directorate of Transport and Road Safety.
- Presently, traffic in Juba is being controlled by the traffic police. This exercise is however limited only to working days from Monday to Friday.
- The existing jam prone spots in Juba do not have traffic lights installed.

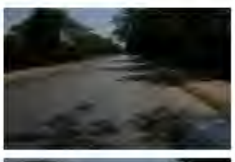
ROAD ENCROACHMENT

- Following the demolition of Custom market, a number of business centres have emerged in areas like Gudele and Tongpiny, etc..resulting in encroachment of the road.
- It is also noted that there is a stiff migration to urban centres for new employment opportunities. This increase in urban population and lack of land for settlement has resulted to road encroachment.
- Less effective laws in force to urgently crack down on road encroachment eases settlement.

LAND FOR EXPANSION

- The road survey for Juba town was done as early as 1934 with no reserve for widening or additional lanes.
- The present tech. spec. of MTR reserves 60m wide for urban roads and 120m for highways but none of the road sections in Juba has that much reserved.

Note:
It is easier and relatively less expensive to claim the reserve land now than 10 or 20 years later. think of New Juba.



DESIGN ISSUES

- NARROW BRIDGES

  - There are 17 bridges within Juba Road Next except for the Main Juba Bridge.

  - These bridges are narrow with average width of 3m.

  - Some of these bridges were built in the 70s, therefore, will not withstand the present volume of Traffic.

DESIGN ISSUES CONT….

- PARKING LANES
  Nearly all of the roads sections in Juba do not have parking lanes. In addition, most roads have not been defined as one-way or two-way traffic. This hinders the free flow of traffic.

- BUS STOPS
  Bus stops have not been incorporated into the road network.

- FOOTWAYS/PEDESTRIANS' PATH
  Footways to be constructed to avoid traffic contact with the pedestrians.

- ROAD MARKINGS, SIGNS
  Signs such as Zebra Crossings and speed control structures such as humps should be included in the road for safety.

THANKS FOR YOUR ATTENTION

(b) Mr. Kunihiko Sawano

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, CES

JUTI STUDY

Urban Transport Development Policy and Strategy

3rd Stakeholder's Meeting
February 16, 2009

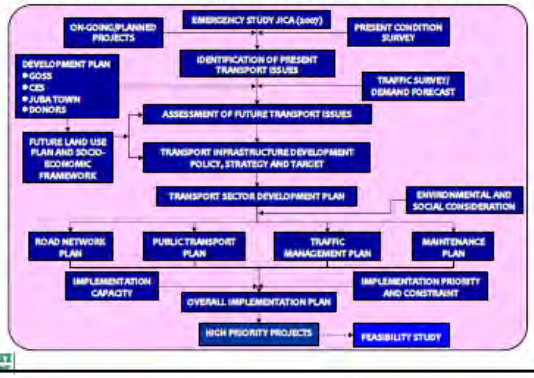
1

Session Contents

- Procedure of Transport Master Plan Formulation
- Present Urban Transport Issues
- Vision
- Policy
- Strategy

2

Procedure of Transport Master Plan Formulation



3

Present Urban Transport Issues

- Lack of institutional structures
- Inadequate technical capacity
- High vehicle operating and transport costs due to deteriorated road condition
- Ineffective or non-functional road network to induce urban development
- Disorganized public transport system
- Lack of enforcement and education on traffic regulation
- Poor roadside amenity and city environment
- Urban sprawl

4

Vision

- Economic Growth
  To provide transport infrastructure to stimulate investment, leading to poverty eradication and enhanced economic growth
- Quality of life
  To develop a safe, secure and efficient transport system, enhancing the quality of life of people
- Transport Hub in the Region
  To initiate world-class transport system as the hub in the region

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Policy

- Institution
  To establish appropriate institutional framework for urban transport system.
- Capacity
  To develop public and private sector capacity for construction, maintenance and operation of urban transport infrastructure
- Finance
  To establish sustainable institutional and financial mechanism for development and maintenance of urban transport infrastructure
- Special Policies
  - Labour-based system for construction and maintenance
  - Road traffic safety
  - Gender equity
  - Environmental and social consideration

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Strategies with Regard to Institution (Strategy 1 &2)

Institution

Strategy 1; Legal and Regulatory Framework on Urban Infrastructure Development

Strategy 2; Roles of Public and Private Sectors

7

Strategies with Regard to Road Development (Strategy 3 to 7)

Road Development

Strategy 3; Immediate Rehabilitation of Existing Roads

Strategy 4; Administrative and Functional Classification of Roads

Strategy 5; Development of Hierarchical Road Network System

Strategy 6; Establishment of Appropriate Standards for Roads Engineering

Strategy 7; International Level of Improvement

8

Strategies with Regard to Public Transport (Strategy 8 to 10)

Public Transport

Strategy 8; Policy and Regulation of Public Transport Operation

Strategy 9; Promotion of Bus Transport

Strategy 10; Provision of Bus Transport Infrastructure

9

Strategies with Regard to Traffic Management (Strategy 11 to 13)

Traffic Management

Strategy 11; Development of Traffic Policy and Regulation on Management

Strategy 12; Enforcement of Traffic Law and Regulation

Strategy 13; Education on Traffic Rule and Safety Behaviour

10

Strategies with Regard to Specific Issues (Strategy 14 to 16)

Specific Issues

Strategy 14; Development of Non-Motorized Transport Facility

Strategy 15; Consideration on Environmental and Social Impacts

Strategy16; Human Resource Development

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12

(c) Mr. Ryuichi Ueno

JAPAN INTERNATIONAL COOPERATION AGENCY

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, CES

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Road Network Development Plan

JICA STUDY TEAM
Ryuichi UENO

February 16, 2009

1

Contents

1. Present Traffic Condition
2. Traffic Demand Forecast
3. Future Traffic Volume
4. Road Network Development Plan

2

1.Present Traffic Condition

Traffic Survey (2008 Oct. ~ Nov.)

- Roadside Traffic Count
- Roadside OD Survey
- Intersection Traffic Count
- Travel Speed Survey
- Bus user's Interview Survey

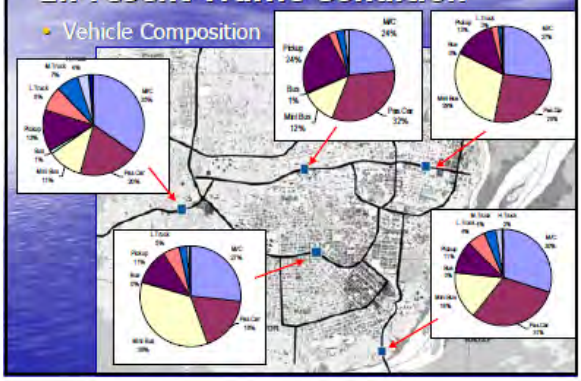
3

1.Present Traffic Condition

- Daily Traffic Volume (2008 Nov.)

1.Present Traffic Condition

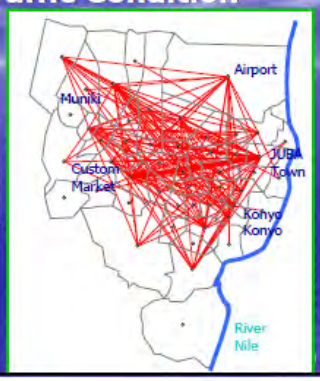
- Vehicle Composition



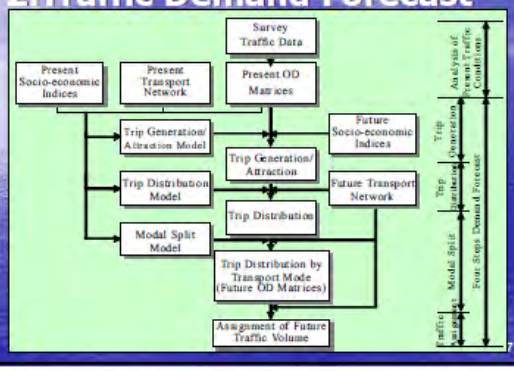
1.Present Traffic Condition

- Desire Line (Vehicle/day)

Based on the Roadside Interview Survey, Study Team made a Present OD (Origin and Destination) Table



2.Traffic Demand Forecast



2.Traffic Demand Forecast

- Trip Generation and Attraction
  - Linear regression model

Gi = ai*X1i + bi*X2i + C
Aj = aj*X1j + bj*X2j + C

Where, Gi: Trip Generation in zone i
Aj : Trip attraction in zone j
X1i, X2j: Attributes in zone i, j
ai, aj, bi, bj: Coefficient
C: Constant

Model Type	Population	Commercial Area (ha)	Business Area (ha)	Constant	Correlation
Trip Generation	0.367	2,794.8	1,662.3	944.9	0.891
Trip Attraction	0.787	2,230.2	1,183.7	-883.7	0.898

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2.Traffic Demand Forecast

- Trip Distribution Gravity model

$Xij = K * Oi^{\alpha} * Dj^{\beta} / Tij^{\gamma}$

Where; Xij: inter zonal trip distribution from zone i to j
Oi: trip generation in zone i
Dj: trip attraction in zone j
Tij: travel time from zone i to j (hr)
K, α, β, γ: model parameters

α	β	γ	K	Correlation Coefficient
0.4578	0.4481	-0.2468	0.02413	0.638

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2.Traffic Demand Forecast

	Unit	Y2008	Y2015	Y2025	'15/'08	'25/'08
Population	'000	300	600	1,100	2.0	3.7
Residential	(ha)	1,800	3,600	6,660	2.0	3.7
Commercial	(ha)	40	160	300	4.0	7.5
Business	(ha)	30	150	340	5.0	11.3
Passenger Trips	'000	342	961	1,806	2.8	5.3
Vehicle Trips	PCU '000	58	206	429	3.6	7.4

Note;
When Census data is acquired, Study Team will revise the socioeconomic data and future traffic demand

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2.Traffic Demand Forecast

Vehicle/day

	Y2008	Y2015	Y2025	'15/'08	'25/'08
M/C	28,660	82,951	200,443	2.89	6.99
CAR	24,274	56,483	120,297	2.33	4.96
BUS	20,648	60,243	114,706	2.92	5.56
TRUCK	21,238	67,937	143,353	3.20	6.75
TOTAL	94,820	267,614	578,799	2.82	6.10
TOTAL(PCU)	83,895	238,455	500,123	2.84	5.96

Note; This trips include external-internal, internal-external trips.

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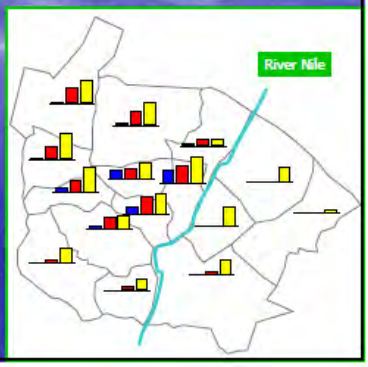
2.Traffic Demand Forecast

- Generation Trips by Zone



2.Traffic Demand Forecast

- Trip Distribution

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2.Traffic Demand Forecast

- Traffic Assignment

The traffic assignment is to allocate the vehicle traffic to individual roadway links.

Do Nothing Case	Based on the present road network condition, estimate the future traffic volume
With Project Case	Based on the proposed road network condition, estimate the future traffic volume

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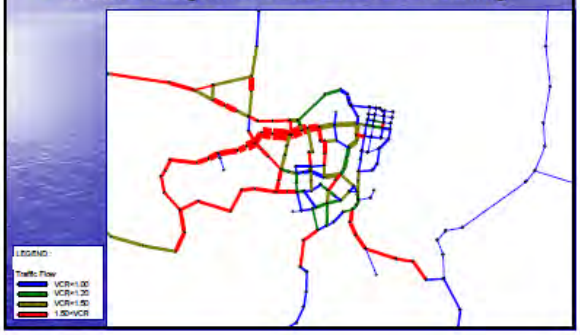
2.Traffic Demand Forecast

- Traffic Assignments in 2008

2.Traffic Demand Forecast

- Traffic Assignments in 2015 Do Nothing



2.Traffic Demand Forecast

- Traffic Assignments in 2025 Do Nothing

2.Traffic Demand Forecast

	Year 2008	Year 2015 D/N case	Year 2025 D/N case	Ratio 2025/2008
Total Vehicle Trips (PCU)	83,895	238,445	500,123	5.96
PCU-km	454,440	1,326,903	3,313,184	7.29
PCU-Hour	23,723	**137,729**	**641,408**	**27.04**
Volume / Capacity	0.38	1.11	2.78	7.31
Average Speed (km/h)	19.2	**9.6**	**5.2**	0.27

PCU: Passenger Car Unit

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3. Future Traffic Volume

Forecast Condition

Present ~ Year 2015 (Short Term)	•Ongoing Project (Urban road rehabilitation) •C-2,C-3(South,West,East) •R-1,R-2,R-6 •Collector Street inside C-1 •Nile Bridge (C-3 South)
Year 2016 ~ 2025 (Medium, Long Term)	•C-3(North),C-4(South,West,East) •R-3,R-4,R-5 •Collector Street inside C-3 •Nile Bridge(C-3 North,C-4 South and R-5)

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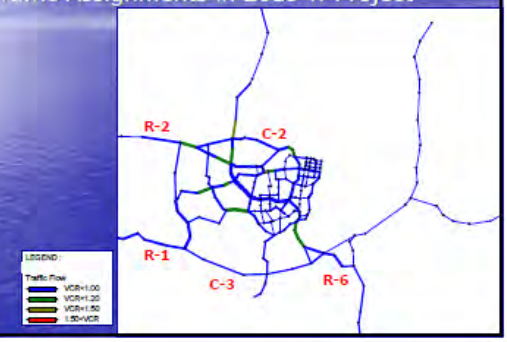
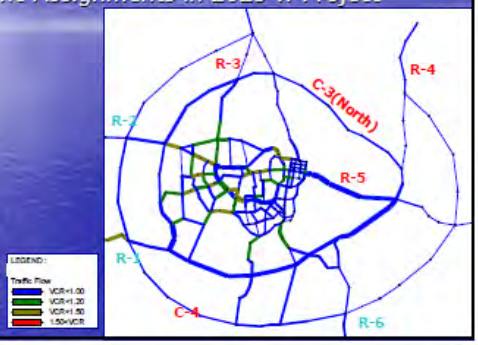
3. Future Traffic Volume

• Traffic Assignments in 2015 w Project



3. Future Traffic Volume

• Traffic Assignments in 2025 w Project



3. Future Traffic Volume (With Project Case)

	Year 2008	Year 2015 W/Project	Year 2025 W/Project	Ratio 2025/2008
Total Vehicle Trips (PCU)	83,895	238,445	500,123	5.96
PCU-km	454,440	1,296,723	3,430,968	7.55
PCU-Hour	23,723	42,119	113,634	4.79
Volume / Capacity	0.38	**0.40**	**0.49**	1.29
Average Speed (km/h)	19.2	**30.8**	**30.2**	1.57

PCU: Passenger Car Unit

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4.Road Development Network Plan

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(d) Dr. Jovito Santos

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, GES

JUTI STUDY

Implementation Plan

3rd Stakeholder's Meeting
February 16, 2009

1

Session Contents

- Implementation Framework and Capacity
- Assumptions for Available Funds for Master Plan Projects
- Implementation Priority and Schedule

2

1. Implementation Framework and Capacity

Time Framework:

- MTR Transport Sector Policy
  - Recovery Phase : 2007 – 2008
  - Development Phase : 2009 - 2011
- JUTI Study Development Phases
  - Short Term : 2009 ~ 2015 (7 years)
  - Medium Term : 2016 ~ 2020 (5 years)
  - Long Term : 2021 ~ 2025 (5 years)
  - Beyond Plan : 2026 ~

3

1. Implementation Framework and Capacity

Institution and Organization:

- Master Plan covers various transport sectors – road network, public transport, traffic management and transport institution
- Need to establish appropriate institutions and organization with clear and streamlined jurisdiction, roles and responsibilities

4

1. Implementation Framework and Capacity

Project Implementation Capacity:

- Administrative and technical capacity for implementation of the Master Plan shall be developed with efficient deployment of government human resources
  - Experienced engineers shall be employed in consulting services from planning, design, tendering and supervision
  - Construction projects shall be executed by professional and reliable contractors
  - All projects shall involve in-service and on-the-job training program for government personnel for capacity creation/improvement

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2. Assumption of Available Funds for Master Plan Projects

Financial Status for 2008-2011:

Unit: in Million US$

Sector		2008	2009	2010	2011	Total
FINANCING NEEDS	(Accountability, Economic Functions, Education, Health, Infrastructure, Natural Resources, Public Administration, Rule of Law, Security, Social and Humanitarian, Block Transfers, Reserves)	2,485	2,798	2,937	3,039	11,258
FINANCIAL GAP	Total GOSS Revenue	1,732	2,391	2,316	2,223	8,662
	Financial Gap	753	407	621	816	2,596
	Committed Donor Funds	305	135	132	33	605
	Net Financial Gap	448	271	488	784	1,992

Source: Expenditure Priorities and Funding Needs (2008-2011), Ministry of Finance & Economic Planning, GOSS

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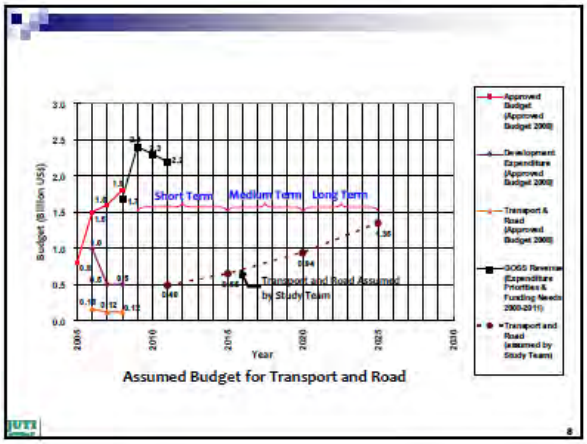
2. Assumption of Available Funds for Master Plan Projects

Assumption of Fund Available for Master Plan:

Year	Fund Needs for Transport & Roads	Fund Available for Master Plan***
2009 – 2010 (2 years)	907.6*	90
2011 – 2015 (5 years)	3,000**	300
2016 – 2020 (5 years)	4,000**	400
2021 – 2025 (5 years)	6,000**	600

*Based on GOSS Expenditure Priority
** Projected from 2011 Needs at 7.5% annual escalation
***Assumed at 10% of Total Fund Needs for Transport & Roads

7



Assumed Budget for Transport and Road

8

3. Implementation Priority and Schedule

Critical Priorities in Implementation:

Road Sector
- Local Street Rehabilitation
- Collector Street Construction
- Circumferential Road Construction
- Radial Road Construction
- Nile River Bridge Construction

Public Transport
- Policy and Regulation on Operation
- Bus Promotion
- Vehicle Registration
- Bus Terminal

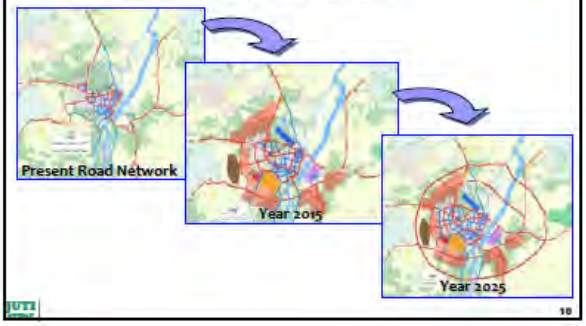
Traffic Management
- Policy and Regulations
- Enforcement
- Education

Transport Institution
- Human Resources Dev't
- Institutional Development

9

3. Implementation Priority and Schedule

Critical Priorities in Implementation:



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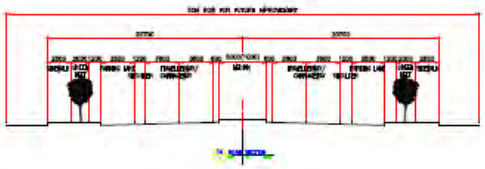
Proposed Typical Cross-section 1/2

Arterial Street (in case of four lanes and parking lane)



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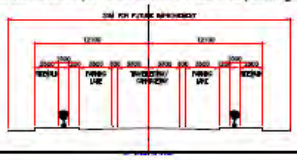
Proposed Typical Cross-section 2/2

Collector Street (in case of four lanes and parking lane)

Collector Street (in case of two lanes and parking lane)



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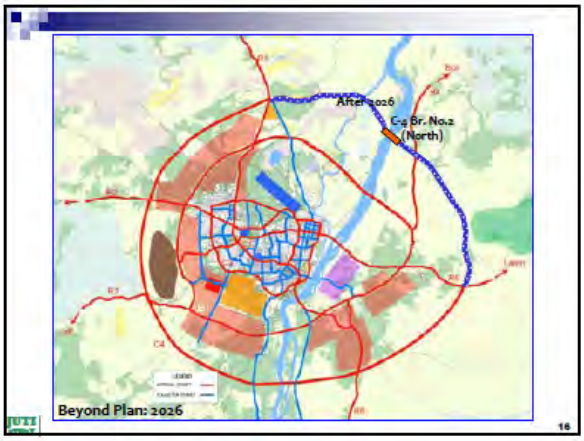

3. Implementation Priority and Schedule

Overall Implementation Schedule:

Sector	Project Code	Project Name	Remarks
Road Sector		Jaba Urban Roads Rehab	On-going
	L	Local Street Rehabilitation	
	L-C	Local Street Inside CCD	AC/CR
	L-C1	Local Street Inside C-1	AC/CR
	L-C2	Local Street Inside C-2	AC/CR
	L-C3	Local Street Inside C-3	AC/CR
	L-C4	Local Street Inside C-4	AC/CR
		Sub-total	
	C	Circumferential Road Const.	
	C-1	C-1	On-going
	C-2 (1)	C-2 (South, East)	AC
	C-2 (2)	C-2 (North, West)	AC
	C-3 (1)	C-3 (South, West, East)	AC
	C-3 (B1)	C-3 (Nile Bridge No.1)	Br. C-3 (1)
	C-3 (2)	C-3 (North)	AC
	C-3 (B2)	C-3 (Nile Bridge No.2)	Br. C-3 (2)
	C-4 (1)	C-4 (South, West, East)	AC
	C-4 (B1)	C-4 (Nile Bridge No.1)	Br. C-4 (1)
	C-4 (2)	C-4 (North)	AC
	C-4 (B2)	C-4 (Nile Bridge No.2)	Br. C-4 (2)
		Sub-total	

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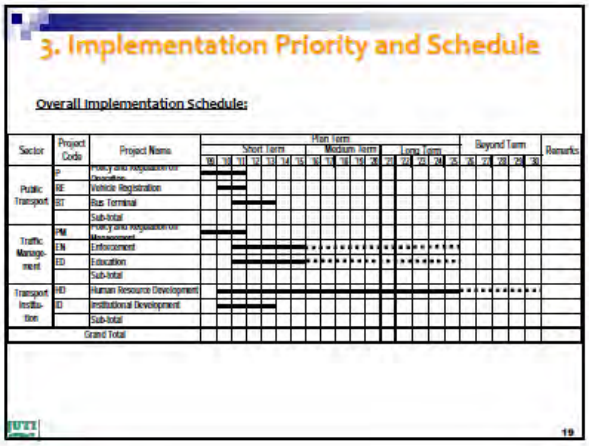
3. Implementation Priority and Schedule

Overall Implementation Schedule:

Sector	Project Code	Project Name	Remarks
Road Sector	R	Radial Road Construction	
	R-1	R-1	AC
	R-2	R-2	AC
	R-3	R-3	AC
	R-4	R-4	AC
	R-5	R-5	AC
	R-5 (B)	R-5 (Nile Bridge)	Br. R-5
	R-6	R-6	AC
		Sub-total	
	CS	Collector Street Construction	
	CS-1	CS-1	AC/CR
	CS-2	CS-2	AC/CR
	CS-3	CS-3	AC/CR
	CS-4	CS-4	AC/CR
	CS-5	CS-5	AC/CR
	CS-6	CS-6	AC/CR
	CS-7	CS-7	AC/CR
		Sub-total	
		Total (Road Sector)	

18


3. Implementation Priority and Schedule
Overall Implementation Schedule:
Sector
Project Code
Project Name
Plan Term
Short Term
Medium Term
Long Term
Beyond Term
Remarks
Public Transport
RE
Vehicle Registration
BT
Bus Terminal
Sub-total
Traffic Manage-ment
EN
Enforcement
ED
Education
Sub-total
Transport Institu-tion
HD
Human Resource Development
ID
Institutional Development
Sub-total
Grand Total
19


Thank You
20

(e) Mr. Yasuhiro Yamauchi

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, CES

JUTI STUDY

Pilot Project Plan

3rd Stakeholder's Meeting
February 16, 2009

1

Session Contents

- Capacity Development and Pilot Project
- Project Concept and Structure
- Outline of Pilot Project
- Implementation Plan
- Coming Tasks and Problems

2

Capacity Development and Pilot Project

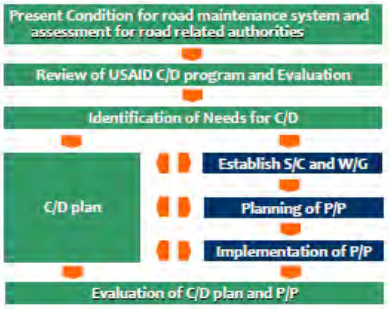
Objectives:
- General Support for Establish of decision making system for road development consists of project find to evaluation by themselves

Target:
- Authorities relating to Road Administration

Methodology:
- Review Report, Interview and Meeting to Authorities
- Implement Pilot Project (P/P) with Public Authorities
- Forming the C/D plan and Evaluation

3

Capacity Development and Pilot Project



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Capacity Development and Pilot Project

Kick-off Meeting for C/D:

MPI staffs Meeting:
- PCM (Project Cycle Management)
- Stakeholder Analysis
- Problem Analysis

MTR and MPI Joint Meeting:
- Roll of each organization
- Problem Analysis

Munuki Community Meeting:
- How to find project
- How to Participate in Local Project

5

Project Concept and Structure

Justification for Pilot Project:
- To meet the needs for Technical Matters on Project Finding, Planning, and Community participation

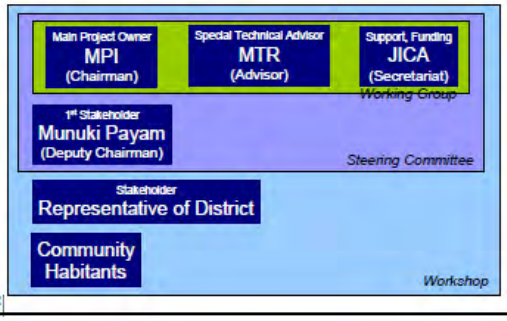
Pilot Project Work:
- Recovery of feeder road function related to surface stabilizing and drainage

Characteristics:
- Project based on local needs
- Small in Size
- W/G S/C W/S oriented
- Community participation
- Labor-intensive construction

6

Project Concept and Structure

Structure for Pilot Project:



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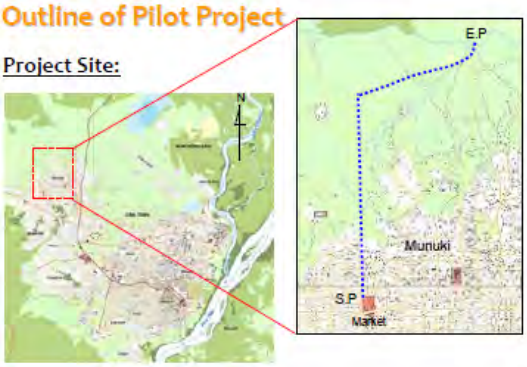
Outline of Pilot Project

Project Site:



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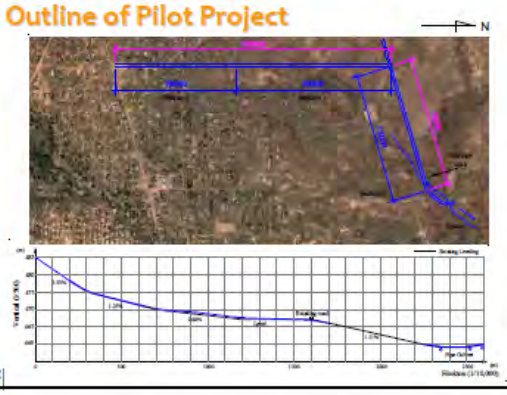
Outline of Pilot Project



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Outline of Pilot Project

10

Outline of Pilot Project

11

Outline of Pilot Project

12

Outline of Pilot Project

Flat Section (Embankment)

13

Outline of Pilot Project

End of section 2

14

Outline of Pilot Project

Existing road (Section 3)

15

Outline of Pilot Project

End of Project Road (Stream)

16

Outline of Pilot Project

Embankment and Install of Culvert 1

17

Outline of Pilot Project

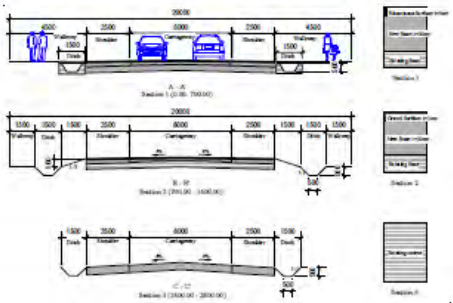
Embankment and Install of Culvert 2

18

Outline of Pilot Project

19

Outline of Pilot Project



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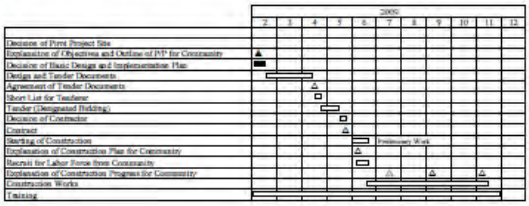
Implementation Plan

Schedule and Present Status:

- Designated Tender System
- Recruit labor force from community



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Coming Tasks and Problems

Tasks:

- Site Measuring
- Design and Cost Estimation
- Tender Document
- Workshop including community habitants

Problems:

- Construction work in Rainy Season
- Design and Cost Estimation

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

GOVERNMENT OF SOUTHERN SUDAN
Ministry of Transport & Roads
Ministry of Physical Infrastructure, CES

JUTI STUDY

Thank you

3rd Stakeholder's Meeting
February 16, 2009

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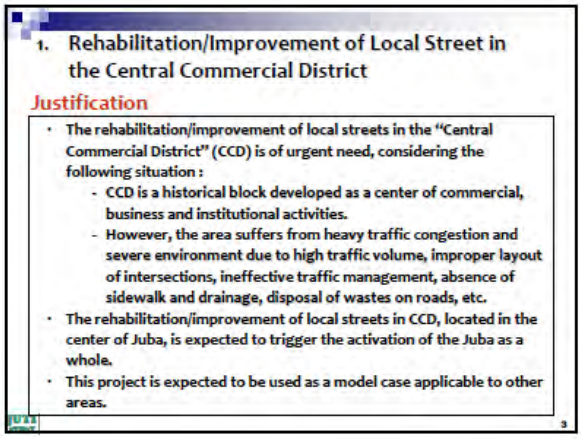
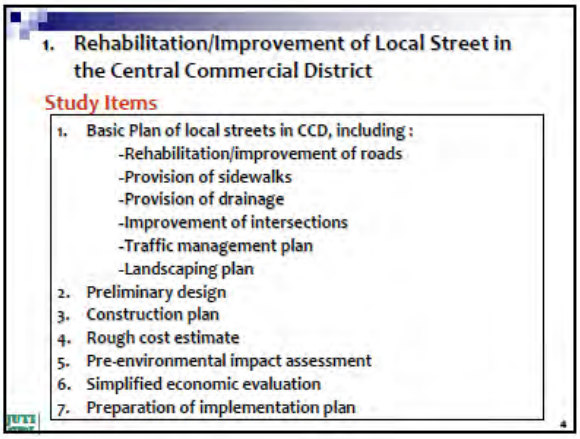
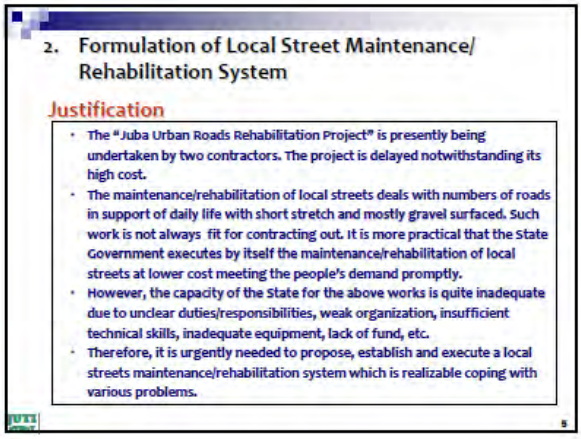
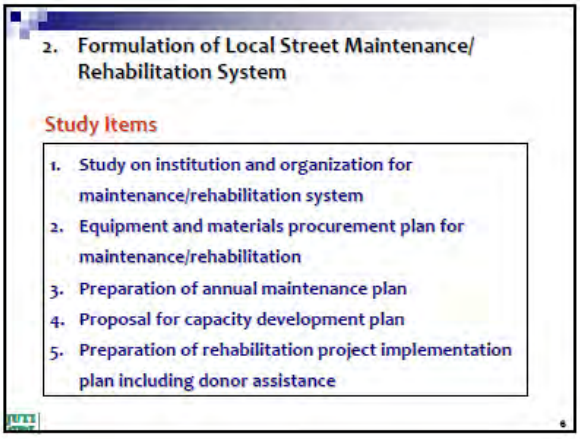
(f) Mr. Kunihiko Sawano









3. Route Location Study for Selected Arterial Roads

Subject Roads

- Circumferential Road 2 (C-2) (about 18 km)
- Circumferential Road 3 (C-3) (about 35 km)
- Radial Road 5 (R-5) (about 8km)

3. Route Location Study for Selected Arterial Roads

Justification

- There is no road network plan in Juba as yet, except for the road network plan prepared in the previous study: "Emergency Study on the Planning and Support for Basic Physical and Social Infrastructure in Juba Town and the Surrounding Areas" in 2007. Presently, a road network development master plan is being formulated under our Study. However, these plans are just conceptual plans, not at levels showing the definite routes of component roads and giving the basis of actual construction work as is.
- It is essential to define the routes and secure the right-of-ways for arterial roads not only for the future formation of orderly urban area but also for minimizing social and environmental problems and reducing the project costs.
- Therefore, it is urgently needed to define the routes of 4 circumferential and 5 radial roads proposed in our Study, except for the roads with existing routes and C-4 which is considered to be constructed in the distant future.

3. Route Location Study for Selected Arterial Roads

Study Items

1. Establishment of schemes for route alignment including alternatives
2. Comparative analysis of schemes and selection of the best scheme
3. Preparation of plan showing the selected route alignment on Satellite Images

4. Pre-Feasibility Study for Selected Arterial Roads

Subject Roads

- C-2 South Section (about 8 km)
- C-3 South and East Section (about 20 km), including the study on the location of Nile River Bridge and discussion on the bridge type at preliminary level
- 2 Secondary Radial Roads connected to C-2 and C-3
  - in Lologo (about 3 km)
  - in Nyakuron (about 3 km)

4. Pre-Feasibility Study for Selected Arterial Roads

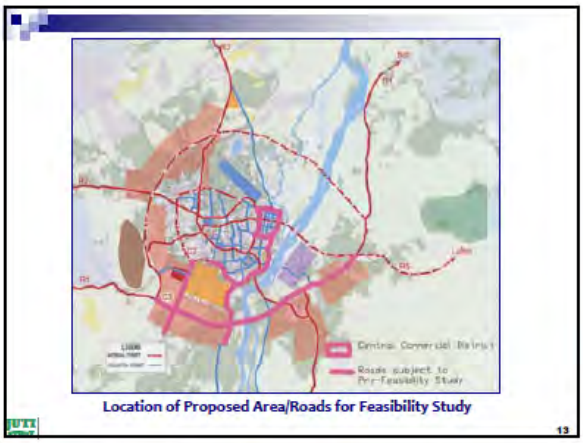
Justification

- Juba is assuming the aspect of rapid increase of population due to refugees/IDPs returning and migrating from rural areas - making it an urgent matter for expansion of urbanized and residential areas. Provision of roads, water and electricity is vital for the expanded areas. The expansion is going on mainly in the east and southward, and especially in the south, disordered development is in progress.
- The east area of the Nile River is also expected to be developed with the plans of construction of new international airport, industrial area and residential areas.
- To promote the above development, arterial roads traversing the areas are necessary to be constructed at first, followed by provision of water and electricity and construction of local roads in support of daily life.
- Thus, it is desirable to urgently formulate the project for construction of the arterial roads serving the areas in the south of Juba and in the east of the River Nile, so as to timely implement the project.

4. Pre-Feasibility Study for Selected Arterial Roads

Study Items

1. Preliminary design of road including alignment, intersections, structures, pavement, drainage, ancillary facilities
2. Selection of location of Nile Bridge on C-3 and preliminary study on type of the bridge
3. Construction plan
4. Rough cost estimate
5. Pre-environmental impact assessment
6. Simplified economic evaluation
7. Preparation of implementation plan



Location of Proposed Area/Roads for Feasibility Study

13

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3.3 Minutes of Discussion

MINUTES OF MEETING
3rd Stakeholder's Meeting
Urban Transport Development Plan

Purpose : **To present the Study's Recommendations on Urban Transport Development Plan**
Date and Time : **February 16, 2009 (10:00am)**
Venue : **2nd Floor, Conference Room, Home and Away**

Minutes of Discussion:

1. The meeting was called to order by Mr. Otim Bong of the MTR with Opening Remarks given by Mr. Tamari of JICA. Undersecretary Wani gave his remarks during the course of the presentation and stressed the importance of urban transport to development. Dr. Wani further noted that the road network development should focus on: (a) improvement of traffic safety or reducing traffic accidents, (b) improving traffic flow efficiency, and (c) involving the government especially the human resources.
2. Mr. Otim gave a presentation on the Problems and Issues on Urban Transport which includes : land expansion, increase in traffic volume, road encroachment, traffic control system, traffic accidents and design issues (roundabout/junctions, parking lanes, bus stops, narrow bridges, road markings and signs, road alignment, and footways/pedestrian paths).
3. The Study Team gave brief presentations on the following topics: (a) Urban Transport Development Policy and Strategy, (b) Road Network Development Plan, (c) Implementation Plan, (d) Pilot Project Plan , and (d) Proposed Projects for Feasibility Study.
4. A series of comments and discussions proceeded after the presentations with the following highlights:
    1. Timeliness of the Master Plan. Juba has changed completely with the last 3 years and is still continuously evolving on a daily basis. Commercial development are planned in different areas and with the increase in population, traffic demand has increased tremendously. Road structures and facilities, including bridges that need to be improved, are being outdated by the present state of development in Juba. Formulation of the Road Network Master Plan is very timely to restrain uncontrolled development in Juba. Acquisition of the necessary road right-of-way corridor/reserve should be done as early as possible to minimize future problems and conflicts in realizing the Master Plan.
    2. Defining the Road Alignment and Road Width. The road alignment corridor and the proposed road width should be established as soon as possible, considering the availability of land and room for expansion in the existing road alignments. This will minimize right-of-way acquisition and future compensation for relocation of encroachers. The Study should utilize GOSS's specifications and standards on roads. The Study should also look into alternative routes to important destinations, e.g. more access roads should be provided to the Juba Airport.
    3. Pilot Project Capacity Development. Involvement of local community in road construction and maintenance will encourage job creation and skills improvement of the local people. At least 7 local contractors have been trained on labor-based road construction and it will be better to utilize them during the Pilot Project. Utilization

of prisoners as workforce is suggested to make them more productive.

4. Drainage Facilities for Roads. The issue of drainage facilities for roads is recommended to be considered in the Master Plan since the on-going road rehabilitation considers mostly road surface drain. Roads should be made accessible in all weather.
5. Implementation Plan and Utilities. The Implementation Plan for the road Network Development Master Plan should complement the service delivery/utilities and consider a corridor for these utilities.
6. Environmental and Social Issues. Challenges in compensation and land policy is raised with queries on how to handle land problems/acquisitions and compensations for affected persons/structures within the road reserve.
7. Development of New City/Commercial Areas Outside Juba. The old Juba was planned way back in 1934 and there is not much room for improvement within the existing commercial center. It is recommended that the Study Team should consider in the Master Plan possible new development areas for business, commercial, residential, etc. use. New developments, including hotels are being planned on the east side of the Nile River – the Study Team is recommended to coordinate with MOPI regarding new development plans in the area. Suggestions to establish model towns are raised.
8. Land Act and Land Policy. The Land Act in South Sudan has been approved by the Parliament last January 26 and is expected to be signed into law soon. The Land Act can promulgate the Compensation Act which will deal with land acquisition and compensation. The Land Policy is under preparation – consultation with communities regarding land and land development issues are being taken up.
9. Government Support for the Master Plan. The government should establish a legal framework/policy to adopt and support the Master Plan and utilize it for the development of Juba and the surrounding areas. It is better to implement the Master Plan soon to minimize future problems.
10. Funding Requirements and Project Costs. The Study Team should establish the costs of the different projects identified in the Master Plan so that the GOSS can prepare for the funding requirements to execute such projects. Costs on securing the ROW and compensation on affected families/houses should be included in the project cost so that GOSS can allocate the necessary funds.

5. The Closing Remarks were given by MOPI 1st Dir. Gen Luis Gore George and Land Commission Chairman Robert Ladu.

3.4 List of Attendees

NAME	AGENCY/ COMPANY	POSITION	CONTACT No./EMAIL
1. Antony Muriithi	LBG	Policy Advisor	murithi@hotmail.com +254733234397
2. David Maganda	LBG	Senior Roads Engineer/Advisor	dmaganda@ama.co.ke
3. Simon kuol	Ministry Of housing GOSS	I.T Professional	091963766
4. Eng. Samuel Taban	SSUWC		0477164443
5. Nyarsuk Richard	MTR/GOSS	Deputy Director	Lowurda02@yahoo.com 0477112076
6. David Scribner	ARD	Chief of party	scribner@ardinc-sudan.com
7. Diress Mengistu	ARD	Advisor	0477246381 dmengistu@yahoo.com
8. John Bosco Iyadema	ARD	Advisor	0955014356 iyademajean@yahoo.com
9. Peter West	LBG	PMT	pjwest@tpg.com.au
10. Kiyotaka Tamari	JICA	Project Formulation Advisor	
11. Humphrey Munyendo	LBG	PMT	hmunyendo2001@yahoo.com
12. Obiri Luke	LBG	PMT	lukeobiri@yahoo.co.uk
13. Kweku Adentwi	LBG	PMT	Anguah@consultant.com
14. Ambrose chongbil	Juba Concrete	contractor	chongbilokok@yahoo.com
15. Lamin Sanyang	LBG / TAST MHPPE	Financial Mgt. Specialist	Lamin.s@hotmail.com
16. Michael Counte	LBG	Contracts specialist	gugalamichael@yahoo.com
17. Labanya M. Mary	SSCCSE GOSS	Director General	maryauyiki@yahoo.com
18. Louis Gore	Physical infrastructure CES	1st Director General	0477112364
19. Barnabbas Ariga	LBG /TAST	Transportation Engineer	bgariga@yahoo.com
20. Maurice Rehan	MTR	Director General	0477110834
21. Elizabeth S.	Munuki Payam	Deputy Director	0121621036
22. Otim Bong	MTR	Deputy Director	0477112080
23. Patricia Gibul	MTR	Environmental officer	patriciagibul@gmail.com
24. Remo Samuel	Lach &brothers Co.	Contractor	0477115369 Samuelremo@yahoo.com
25. Afekuru Animu	C.E.C	Contractor	0477109992/0957109992 Afe.animu@gmail.com
26. Robert Ladu	Land commission	Chairperson	0477241834 0122330626
27. Dr.Daniel Wani	MTR	Undersecretary	
28. Dr. Jovito Santos	JICA Study Team	Team Member	
29. Ryuichi Ueno	JICA Study Team	Team Member	
30. Kunihiko Sawano	JICA Study Team	Team Member	
31. Ruth Wanjiru	JICA Study Team	Team Member	

APPENDIX 4 FOURTH STAKEHOLDER'S MEETING (JUTI INTERIM REPORT PRESENTATION)

4.1 Agenda

JUTI STUDY

JUBA URBAN TRANSPORT INFRASTRUCTURE AND CAPACITY DEVELOPMENT STUDY

Ministry of Transport and Roads, Yei Road Jebel Kujur, Juba

Government of South Sudan

4TH STAKEHOLDER'S MEETING

JUTI Interim Report

Conference Room (2nd Floor), Home and Away Restaurant

June 02, 2009

PROGRAM

1.	**Opening Remarks**	H.E. Dr. Daniel Wani Undersecretary Ministry of Transport and Roads, GOSS	10:00 –10:05
2.	**JICA Remarks**	Mr. Kenichi Shishido Representative of JICA Sudan	10:05 –10:10
3.	**Necessity of Urban Transport Development**	Mr. Otim Bong Deputy Director Ministry of Transport and Roads, GOSS	10:10 –10:20
MAJOR OUTPUTS OF THE MASTER PLAN			
4.	**The Study**	Mr. Kunihiko Sawano Deputy Team Leader/JICA JUTI Study	10:20 –10:25
5.	**Population and Land Use**	Mr. Kunihiko Sawano Deputy Team Leader	10:25 –10:30
6.	**Road Network Development Plan**	Mr. Kunihiko Sawano Deputy Team Leader	10:30 - 10:40
7.	**Public Transport Development Plan**	Mr. Ryuichi Ueno JICA JUTI Study	10:40 –10:50
8.	**Traffic Management System Development Plan**	Mr. Ryuichi Ueno JICA JUTI Study	10:50 –11:00
	COFEE BREAK		11:00 –11:15
9.	**Proposed Road Maintenance System**	Mr. Tsuneo Bekki Team Leader/JICA JUTI Study	11:15 –11:25
10.	**Overall Implementation Plan**	Mr. Tsuneo Bekki Team Leader/JICA JUTI Study	11:25 –11:35
11.	**Pilot Project Plan**	Mr. Yasuhiro Yamauchi JICA JUTI Study	11:35 –11:45
12.	**Proposed Projects for Feasibility Study**	Dr. Jovito Santos JICA JUTI Study	11:45 –11:55
13.	**Discussion**	Mr. James Alam Ministry of Transport and Roads	11:55 –12:20
14.	**Closing Remarks**	Mr. Lewis Gore George Director General Ministry of Physical Infrastructure, CES Mr. Jacob Marial Maker Director General Ministry of Transport and Roads, GOSS	12:20 –12:30
	LUNCH		