**Explanation of Negative Environmental Impact**

**Predicted Major Negative Impacts (1)**

*During construction*

1. Dust Noise & Vibration

Bahr el-Jebel

2. Loss of trees

Construction will be carried out in Govt. Land or Right of way along Roads

3. Run-off Turbid water by earth work near river

**Predicted Major Negative Impacts (2)**

*Post construction*

1. Dust Noise & Vibration

Bahr el-Jebel

2. Loss of trees

Construction will be carried out in Govt. Land or Right of way along Roads

3. Run-off Turbid water by earth work near river

**Predicted Major Negative Impacts (3)**

*Post construction*

1. Dust Noise & Vibration

Bahr el-Jebel

2. Loss of trees

Construction will be carried out in Govt. Land or Right of way along Roads

3. Run-off Turbid water by earth work near river

**Level of Negative impacts**

<table>
<thead>
<tr>
<th>Foreseeable Adverse Impacts</th>
<th>Grade of Adverse Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Stage</td>
<td></td>
</tr>
<tr>
<td>Air pollution, noise and vibration by construction works</td>
<td>B</td>
</tr>
<tr>
<td>Flora and fauna</td>
<td>B+</td>
</tr>
<tr>
<td>Landscape</td>
<td>B</td>
</tr>
<tr>
<td>Solid waste</td>
<td>B</td>
</tr>
<tr>
<td>Operation Stage</td>
<td></td>
</tr>
<tr>
<td>Air pollution, Noise and vibration</td>
<td>B-</td>
</tr>
<tr>
<td>Water pollution due to increased wastewater</td>
<td>B</td>
</tr>
<tr>
<td>Sludge disposal from WTP</td>
<td>B</td>
</tr>
<tr>
<td>Loss of job in case of private pump operators</td>
<td>B+</td>
</tr>
<tr>
<td>Water logging near WTPS and public tap stands</td>
<td>B</td>
</tr>
</tbody>
</table>

**Mitigation Measures (1)**

*Construction Stage*

<table>
<thead>
<tr>
<th>Item</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape</td>
<td>No significant impact expected</td>
<td>Installation of information desk to collect complaints from residents and neighborhoods</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>Generation of particulates and exhaust gases</td>
<td>Dust control through water sprinkling at construction site Preventive maintenance of construction machinery and vehicles Attention operation and speed restrictions of construction vehicles and equipment</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>Generation of noise and vibration from heavy vehicles and equipments</td>
<td>Announcement of construction schedule and content at site Attention operation and speed restrictions of construction vehicles and equipment</td>
</tr>
<tr>
<td>Flora and Fauna</td>
<td>Few trees might be required to cut in the proposed location of the WTP or along the alignment of the pipes</td>
<td>Cutting of trees should be avoided as much as possible In unavoidable cases, new trees should be planted after construction completes</td>
</tr>
</tbody>
</table>

**Mitigation Measures (2)**

*Construction Stage*

<table>
<thead>
<tr>
<th>Item</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of information desk to collect complaints from residents and neighborhoods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust control through water sprinkling at construction site Preventive maintenance of construction machinery and vehicles Attention operation and speed restrictions of construction vehicles and equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Announcement of construction schedule and content at site Attention operation and speed restrictions of construction vehicles and equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting of trees should be avoided as much as possible In unavoidable cases, new trees should be planted after construction completes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mitigation Measures (2) ~ Construction Stage ~

<table>
<thead>
<tr>
<th>Items</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic/Public Facilities</td>
<td>Carrying in and out of materials/construction waste can result into possible adverse impacts on health, air pollution level, and noise and vibration along access road</td>
<td>- Announcement and public notification concerning construction contents and its schedule  - Assigning of watchmen or traffic control staff  - Water sprinkling  - Covering the loading platform  - Arrangement of information desk and deployment of responsible person  - Attentive operation and speed restrictions of vehicles  - Preventive maintenance of construction machineries and vehicles</td>
</tr>
<tr>
<td>Public Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Health Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Pollution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>Disposal of construction waste and soil</td>
<td>- Disposal at appropriate location such as landfill site, etc.</td>
</tr>
</tbody>
</table>

Mitigation Measures (3) ~ Operation Stage ~

<table>
<thead>
<tr>
<th>Items</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise and Vibration</td>
<td>Noise from blower, pumps, and generators is expected</td>
<td>- Facilities shall be installed inside buildings to reduce noise level significantly</td>
</tr>
<tr>
<td>Water Pollution</td>
<td>Water uses pattern being same, very little increase in wastewater discharge is expected within few years.</td>
<td>- In long run, planning is required towards appropriate handling and disposal of wastewater.</td>
</tr>
<tr>
<td>Public Health Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>Generated sludge will be from sedimentation tanks and not hazardous in nature</td>
<td>- Sludge removed from sedimentation tank shall be thickened using existing sludge tanks at WTP. - Thick sludge can be removed through vacuum switch pump to sewage truck and should be disposed off at appropriate landfill site.</td>
</tr>
</tbody>
</table>

Mitigation Measures (4) ~ Operation Stage ~

<table>
<thead>
<tr>
<th>Items</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of jobs in case of pump operators</td>
<td>Due to operation of WTPS, several pump operators might lose present job.</td>
<td>- Affected pump operators should be informed of project activities during implementation. When bidding is announced for O&amp;M of these WTPS, pump operators should be informed as well.</td>
</tr>
<tr>
<td>Water logging near WTPS and Public tapstands</td>
<td>Operation of WTPS and public tap stands might result into water logging in its surroundings.</td>
<td>- Appropriate drainage facilities should be considered during design. Operation should be carried out appropriately to avoid water logging in its neighbourhoods.</td>
</tr>
</tbody>
</table>

Location Map of Facilities

Confirmed Landowner by preliminary survey

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Location</th>
<th>Facilities</th>
<th>Landowner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UWC Premises</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>2</td>
<td>Open ground on the west of the Parliament Building</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>3</td>
<td>Along main roads in the right of way</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>4</td>
<td>Near Kator Church, Jebel Market, Lantata Payam Branch office, JDP, Dar-e-Salam, Munuki, Munuki Church</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>5</td>
<td>50 locations in Munuki, 50 locations in Kator, and 20 locations in Juba Payam along roads in right of way</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>6</td>
<td>Rehabilitation of old pipelines</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Source: Payam Engineers
Water Tanker Filling Station (2) near UNDP
Belongs to CES/Juba Payam

Water Tanker Filling Station (2) near UNDP

Water Tanker Filling Station (3) in Dar-e-Salam
Belongs to CES/Munuki Payam

Water Tanker Filling Station (3) in Dar-e-Salam

Water Tanker Filling Station (4) in Gudele
Belongs to CES/Munuki Payam

Water Tanker Filling Station (4) in Gudele
**Most Concerned Issue:**

**Getting Land Use Permissions**

- Basic Design (2010-)
  - Detailed locations are identified under agreement with stakeholders.

- Before Implementation Stage (by the end of 2010)
  - Government should get land use permission (and if needed land acquisition) for identified locations for this Project.

**Land Acquisition Process for Public-Use**

- Note) this process was explained by MOPI 2008 Topo-measurement (this Study)

**CONCLUSIONS**

1. Planning side (MWRI/GOSS, SSUWC and JICA study team) informed about Project Components to the Stakeholders
2. The Stakeholders understood
   - Water supply system
   - Outline of the Project
   - Benefits and Negative Impacts of implementation of the Project
3. Both sides exchanged opinions and the planning side will consider opinions in Project Implementation
   - A
   - B
   - C
   - D
   - E

**EXCHANGE OPINIONS**

1. Both sides build basic consensus on the JUBA Water Supply Improvement Project
2. Go to next steps (preparation for smooth implementation of project)

**Safe Water for All**

Thank you for Attention
Subject: APPROVAL OF AN ENVIRONMENTAL IMPACT ASSESSMENT REPORT.

Reference to your letter dated 30th December, 2010 in regards to the submission of your Environmental Impact Statement (EIS) for the improvement of water supply system project in Juba. We regret to inform you that we could not get the attachment as mentioned in your letter. Until we received an explanation from one of your officials, we could not be able to give this delayed reply. However, JICA had already been given an approval and as this was meant for the same project, we would like to forward to you the same terms.

Hence, in the absence of your EIS, basing ourselves on JICA’S Environmental Report for the same project and given the fact that JICA will be the implementer of the Project in question in accordance with the EIA and SIA requirements, we therefore certify that the initial Environmental Examination Report submitted by JICA Sudan Office has been reviewed and an Authorization is hereby granted for the implementation of the project, subject to the following conditions:-

1. You the project proponent and the implementer must comply with all mitigation measures detailed within the EMP as in tables 1.8 and 12.9, section (1.3); pages (1.4 and 1.15) in the report.
2. The proponent shall avoid destruction of any sites with high amenity values such as the Archaeological/historical remains, recreational sites etc.
3. The proponent must take measures to closely monitor and repair damages causing leakages and contamination from cracked structures, damage pipes, faulty valves etc.
4. The proponent shall provide fencing to protect the water supply points.
5. The proponent shall compensate the affected population according to the international/JICA’S social safeguards guidelines and shall ensure adherence to the occupational health and safeguards requirements during the different construction phases.
6. The proponent and the implementer shall throughout the project construction period, manage and mitigate all potential environmental impacts, keep high engineering and construction standards and practices.

Amb. (Rtd.) Kuol Alor Kuol
Under Secretary
Ministry of Environment
GOSS/Juba

CONTACT: +249 (0) 908651973 Email: ambkak9@gmail.com
STATE MINISTRY OF PHYSICAL INFRASTRUCTURE
DIRECTORATE OF SURVEY
CENTRAL EQUATORIA STATE
JUBA.

SKETCH MAP.

Town: ___________________________
Plot No: ___________________________ Area -- 4, 31.2 -- Sq. Mts.
Block No: ___________________________
Property of Mr./Mrs. ___________________________

This is to certify that, the dimensions shown on the above drawing are for the above quoted Plot, not to scale. The Sum of SDG. 2, 002.00 have been collected as croquets fees vide R.O. NO. 4, 066, 96 Date: 17-12-2012

Director General,
Directorate of Survey
State Ministry of Physical Infrastructure,
Central Equatoria State
Juba.
Appendix-6 Environmental and Social Considerations (4) Land Use Permission

3. FORMS:

(1) Application for allotment under Para 1 (3) of the Town Lands Scheme 1947.

Town: Juba

Plot No. 23

Block No. 4,500m²

S.T.P.D. Minute Number:

If Relevant.

S.T.P.D. Plan Number: Southern Sudan Urban Water Corporation (GOSS)

Proposed Allottee: Water Tank

Purpose of Allotments: To be constructed in permanent materials

Whether Allotment is to Final: Final

Conditions of Allotment: (if any)

EMMANUEL MATAYO WANJ

CHAIRMAN

Date: 16.12.2010

(a) An allotment shall be in the following form:

FINAL/ALLOTMENT

STRIKE-OUT

WHICH IS NOT REQUIRED.

Town: Juba

Plot No. 4,500m²

Area: Square metres approximately

S.T.P.D. Minute No.

Final Allotment of the above mentioned plot is

STRIKE OUT

WHICH IS NOT REQUIRED.

Hereby made under Para 1 (3) The Town Land Scheme, 1947 to

Unit: Water Tank

For the purpose of

CONDITION (IF ANY)

To be built in permanent material:

KALISTO LADU SAVERO

DIRECTOR
(Letter Head of MOPI/CES)

Date: 15th December, 2010

To: JICA Preparatory Survey Team

Subject: Land for Water Tanker Filling Stations
Re: The Project for the Improvement of Water Supply System of Juba in Southern Sudan

With regard to the sites for water tanker filling stations, of which the layout plans were presented by the Team as the Attachments, the Payam representatives and JICA Survey Team identified these locations in July 2010. We, hereby, confirm that the sites are the public lands under management of the Payam, the sites shall be properly secured by responsibility of the Payam, the sites shall be used and accessible only for the JICA Project and the sites shall not be occupied by any other entities of private nor public, whatsoever legally or illegally.

Sincerely,

[Signature]

Mr Director General,
Ministry of Physical Infrastructure,
Central Equatoria State
Appendix 6: Environmental and Social Considerations (4) Land Use Permission
The layout plan is prepared based on preliminary site survey by using simple measurement apparatus. It shall be finalized based on accurate topographic survey to be carried out in Detailed Design.

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</tbody>
</table>
Appendix-7  Outline Design Drawing