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1.0. INTRODUCTION

1.1 Introduction

1-1. The National Transport Master Plan Including a Transport Master Plan for Greater Kampala Metropolitan Area (NTMP/GKMA) sets out a framework for development of the transport sector over the next 15 years, 2008-23. This Plan provides analysis and a realistic 15-year sector investment plan, also addressing the necessary management framework. It reflects the key role that transport plays in facilitating economic and social development.

1-2. Key objectives of NTMP/GKMA include the following:

(i) to provide a long-term multi-modal reference framework within which consistent plans for individual modes can be developed;
(ii) at the same time, to serve as a key input to the overall national planning process spearheaded by the National Planning Authority (NPA);
(iii) to serve also as a key input to regional transport planning at East African Community, COMESA and African Union levels;
(iv) thus to create a framework within which well-informed investment decisions can be made by both public and private sectors;
(v) to establish a permanent high-quality long-term transport planning capability within MoWT, equipped to monitor Plan performance, periodically update the Plan, and prepare subsequent Plans.

1.2 Need for a National Transport Master Plan

1-3. A plan is a bundle of commonly-purposed, time-bound activities intended to achieve a specified objective or objectives. NTMP/GKMA aims to act as a controlling reference frame for all other sectoral short and medium-term plans. It achieves this, not because of detail, but because of its broad coverage of all relevant issues over the fifteen-year Plan period.

1-4. Uganda’s rapid economic and social development of the last twenty years is expected to continue. Existence of long-term development plans for the different economic sectors will help ensure that the overall planning effort will be well-coordinated, and that critical blockages do not obstruct the overall development thrust. NTMP/GKMA sets a 15-year scenario for future development and management of the transport sector, which aims to be consistent with the country’s overall development goals, as outlined in other medium-term and long-term planning documents.

1.3 Conceptual Framework for the NTMP

1-5. NTMP/GKMA has been developed taking account of the needs of both users and providers of transport services, the roles of the different modes, and the implications of regional integration.
1-6. Uganda is a member of several regional organisations in Africa, notably the African Union, the COMESA, and the EAC. It lies on the Northern Corridor route from Mombasa to Uganda/Rwanda/Burundi/DR Congo, the Trans-African route from Mombasa to Lagos and Dakar, and possibly also on a future Cape-to-Cairo route.

1-7. Without ruling out the possibility, on a selective basis, of carefully-assessed “development potential stimulation” as a reason for transport infrastructure development, the Plan has generally been drafted to meet current and projected socio-economic demand.

1.4 Structure of the Plan

1-8. The full Plan consists of an Executive Summary, a Main Report and supporting appendices. Volume I contains the Executive Summary, followed by the Main Report, consisting of four main sections with 20 individual chapters. Five Appendix Volumes of supporting data and analysis are attached to the Plan.
2.0 TRANSPORT SECTOR VISION, POLICIES AND STRATEGIES

2.1 Development Policy Background

2-1. Transport policy and strategy must be formulated within the overall framework of the national development thrust. The policy must support key national development targets, and conform to goals set out in key planning documents.

2-2. The Poverty Eradication Action Plan (PEAP) of 2004\(^1\) was formulated in accordance with the Government’s development strategy, and is directed towards advancing under the following five pillars:

- **Pillar 1**: Economic management;
- **Pillar 2**: Production, competitiveness and incomes;
- **Pillar 3**: Security, conflict resolution and disaster management;
- **Pillar 4**: Governance;
- **Pillar 5**: Human development.

2-3. Improved transport infrastructure and services will support most of these pillars.

2-4. Eight Millennium Development Goals (MDGs) for developing nations, to be achieved by 2015, were defined in 2000 by the United Nations, as below:

- **Goal 1**: Eradicate extreme hunger and poverty;
- **Goal 2**: Achieve universal primary education;
- **Goal 3**: Promote gender equality and empower women;
- **Goal 4**: Reduce child mortality;
- **Goal 5**: Improve maternal health;
- **Goal 6**: Combat HIV/AIDS, malaria and other diseases;
- **Goal 7**: Ensure environmental sustainability;
- **Goal 8**: Develop a global partnership for development (including a reformed aid and trade regime).

2-5. Again, better transport infrastructure and availability of affordable and efficient transport services will do much to advance achievement of the above goals.

2-6. ‘Vision 25’ was a ‘National Long-Term Perspective Study’, designed to set a long-term perspective for Uganda’s economic and social development up to the year 2025. The Working Draft, produced in February 1999\(^2\), listed many weaknesses in basic infrastructure, of which the most prominent relating to transport included:

- (a) *Poor services and inadequate* infrastructure facilities;
- (b) Lack of *maintenance culture*, leading to poor services and heavy losses;
- (c) Insufficient *funding* for maintenance and new construction;
- (d) *High tariffs* for services and utilities;
(e) *Water hyacinth* affecting vessel movements and navigation.

2-7. ‘Vision 2025’ was followed in 2005 by the Working Draft for the successor document ‘Vision 2035’, with a new 30-year perspective. This draft noted that: “The provision of public transport infrastructure, especially in urban areas, will focus on the need to have a more integrated, efficient and comfortable transport network”.

### 2.2 Transport Policy and Strategy

#### 2.2.1 Transport Policy Framework

2-8. The broad outline of Ugandan transport sector policy is guided by the MoWT’s ‘Transport Sector Draft Policy and Strategy Paper’. Its goals are consistent with Government’s overall economic policy and strategy, which include the eradication of poverty, liberalisation of the economy, and decentralisation of public sector responsibilities. The transport sector is expected to provide cost-effective, efficient, safe and environmentally sensitive transport services.

#### 2.2.2 Key Features of Draft Policy and Strategy Paper

2-9. Key features of policy and strategy for the sector as a whole include the following:

(a) Contribute, through transport services, to an increase in trade, employment and economic output, and a reduction in poverty;
(b) Improve access to public services, markets, and employment, through improvement and maintenance of rural and urban transport infrastructure;
(c) Ensure good customer choice by promoting provision of efficient inter-modal interchange facilities;
(d) Promote private sector operation of transport services, and encourage private sector investment in infrastructure;
(e) Promote equitable treatment of different transport modes, allowing efficiency and modal suitability to determine modal split;
(f) Promote modal integration, including container transhipment facilities at interchange points between all modes;
(g) Ensure safety of transport networks and operations;
(h) Establish a long-term master plan to guide rational and complementary development of all modes;
(i) Promote greater integration of transport and land use planning in urban areas;
(j) Promote improved capacity of the local consulting and contracting sector, including the performance of labour-based maintenance;
(k) Maintain high-quality trading links through the Northern and Central Corridors to the ports of Mombasa and Dar es Salaam;
(l) Contribute actively to regional co-operation in transport within the East African Community and the COMESA;
(m) Ensure that all transport development projects are subject to environmental impact assessments (EIA’s).
2-10. Specific policy and strategy items relating to individual transport modes are also outlined in the statement, following the general guidelines listed above.

2.3 Prospective Strategy Modifications

2.3.1 Recent Developments

2-11. Recent institutional changes have included concessioning of the railway in 2006, establishment of the Uganda National Roads Authority in 2008, and the prospective establishment of a Road Fund by mid-2009. An important prospective reform is the proposed establishment of a multi-sectoral transport regulatory authority for road, rail and water transport, reporting to MoWT. Air transport will continue to be regulated by CAA, in view of their acquired specialist expertise.

2.3.2 Prospective Developments

2-12. Policies and strategies must always be dynamic and flexible in the face of changing conditions. Potential areas of strategy development include the following:

(a) Development of a long-term transport sector vision, and of sub-sectoral visions for individual modes;

(b) For the Roads Sub-Sector, development of (i) a robust model for roads planning, development and management in the country (feeding into regional networks), and (ii) a System of Principles for Public Private Partnerships;

(c) For the Rail Sub-Sector, emphasis on (i) infrastructure up-grading through a wider gauge and track re-alignment, (ii) a review of PPP’s in the light of RVR experience, and (iii) definition of rail as a key provider of bulk transport;

(d) The Inland Water Transport Sub-Sector may require government action to revive socially essential services to remote islands and shorelines, where the market may not necessarily fulfil the required role;

(e) For the Air Sub-Sector, without a visionary Air Transport Master Plan for Uganda it may be less feasible for Entebbe International Airport (EIA) to be developed as an international hub
Box 2.1: A Transport Sector Vision and Mission for Uganda*

I. Vision

1) The existing Transport Strategy emphasises the need to provide:
   (a) Quality
   (b) Quantity
   (c) Cost-effectiveness
   (d) Efficiency
   (e) Sustainability,

   in the provision of transport infrastructure and services.

2) The Transport Sector calls for a specific statement on a “desirable future state” of transport in Uganda.

3) A sectoral (or any other) vision must give:
   (a) Direction;
   (b) Destination; and
   (c) Build a New Consensus,

   with the Success Parameters of being:
   (a) Simple (and, hence, memorable, measurable and time-bound)
   (b) Inspirational; and
   (c) Going a step beyond the norm, viz thinking bold (“outside the box”) while remaining realistic.

4) Seeing that key problem variables of the Uganda Transport Sector devolve around:
   (a) Access
   (b) Development; and
   (c) Sustainability,

   one could now suggest a possible Uganda Transport Sector Vision, for discussion, modification and then sharing, as:

A fully-developed and sustainable national transport system for all by 2050.

II. Mission

(a) The resultant Uganda Transport Sector Mission statement would then be:
(b) Strategies, for mission attainment, have already been discussed (Sub-Sections 2.3.3-2.3.7 and 2.4).
(c) Policy framework is covered in Sub-Section 1.4.

To transform the current disjointed and inadequate transport system in Uganda into a fully-developed and sustainable national transport system for all by 2050.
Chapter 2: References


3.0 DEMOGRAPHIC AND ECONOMIC FORECASTS

3.1 Population Growth and Distribution

3.1.1 Historical Trends

3-1. The population of Uganda was enumerated at 24.2 million in September 2002, and estimated to have reached 29.6 million by mid-2008. Greater Kampala is by far the largest urban centre, with a mid-2008 population estimated at 2.50 million. Outside GKMA the largest town is Gulu with an estimated mid-2008 population of 141,500, while another ten towns had populations in the range 50-100,000. Total population grew at an average annual rate of 3.3 percent in the 1990s, and continues to grow at about the same rate. The rural population proportion remained very high at 88 percent in 2002.

3.1.2 Future Population Growth

3.1 Government has now made detailed population estimates and projections by district for post-census years from 2003 to 2017. On the basis of these projections, and assuming a slowly declining population growth rate after 2017, further projections to 2023 have been made for NTMP as per Table 1 below. Thus, total population is expected to grow from 2008 at 3.6 percent per annum to 35 million in 2013, then at an average 3.4 percent to 49 million in 2023. Overall population growth for the Plan period 2008-23 is forecast at 66.6 per cent. Population distribution between the four regions is expected to change between 2003 and 2023, with the share of the Eastern and Northern regions rising steadily from 47.1 percent in 2003 to 52.7 percent in 2023.

Table 1 Population Estimates and Projections for Years 2003 to 2023

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Northern Region</td>
<td>5.374</td>
<td>6.653</td>
<td>8.337</td>
<td>10.368</td>
<td>12.749</td>
</tr>
<tr>
<td></td>
<td>Total, Uganda</td>
<td>25.089</td>
<td>29.593</td>
<td>35.357</td>
<td>41.961</td>
<td>49.304</td>
</tr>
</tbody>
</table>

Source: 2003-13, UBoS as in Table 1; 2018-23, projections by NTMP

3.1.3 Population Projections for Greater Kampala

3-3. The detailed population projections made by UBoS show the population of Kampala District alone rising from 1.19 million at the September 2002 census to 1.48 mn in mid-2008 and 2.07 mn in 2017. The Greater Kampala Metropolitan Area (GKMA), as defined in Chapter 10, also contains a small part of Mukono District and much of Wakiso District. Population projections were prepared for all these areas up to 2023, as shown in Table 2 below. Thus, population of GKMA is estimated at 2.50 million in mid-2008, rising to 3.08 mn in 2013 and 4.50 mn in 2023. The overall increase over the 15-year Plan period is forecast at 79.9 per cent.
3.2 Economic Growth

3.2.1 Growth of Gross Domestic Product

3-4. According to the ‘Statistical Abstract, 2008’, details of Gross Domestic Product (GDP) at market prices for the years 2000-2007 were as shown in Table 3 below, with an average real growth rate of 7.7 percent per annum. Market price GDP includes taxes on products and imports.

Table 3: Gross Domestic Product at Market Prices, 2000-2007 (UShs billion; constant prices are for 2002)

<table>
<thead>
<tr>
<th>No</th>
<th>Year</th>
<th>GDP at Current Prices</th>
<th>GDP at Constant Prices</th>
<th>Real Annual Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2000</td>
<td>10,030</td>
<td>10,297</td>
<td>...</td>
</tr>
<tr>
<td>2.</td>
<td>2001</td>
<td>11,132</td>
<td>11,199</td>
<td>8.8</td>
</tr>
<tr>
<td>3.</td>
<td>2002</td>
<td>11,990</td>
<td>11,990</td>
<td>7.1</td>
</tr>
<tr>
<td>4.</td>
<td>2003</td>
<td>13,843</td>
<td>12,728</td>
<td>6.2</td>
</tr>
<tr>
<td>5.</td>
<td>2004</td>
<td>15,271</td>
<td>13,467</td>
<td>5.8</td>
</tr>
<tr>
<td>6.</td>
<td>2005</td>
<td>17,878</td>
<td>14,814</td>
<td>10.0</td>
</tr>
<tr>
<td>7.</td>
<td>2006</td>
<td>20,166</td>
<td>15,859</td>
<td>7.0</td>
</tr>
<tr>
<td>8.</td>
<td>2007</td>
<td>23,009</td>
<td>17,282</td>
<td>9.0</td>
</tr>
</tbody>
</table>


3.2.2 GDP Composition

3-5. Composition of constant price GDP at market prices in the years 2003-07 is shown in Table 4 below. The agricultural sector grew at only 0.8 percent per annum on average, while the industrial sector grew at 9.7 percent, and the services sector at 8.9 percent.
Table 4: Composition of GDP at Constant Market Prices, 2003-07
(UShs billion at 2002 constant prices)

<table>
<thead>
<tr>
<th>No.</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agriculture, forestry and fishing</td>
<td>2,743</td>
<td>2,773</td>
<td>2,842</td>
<td>2,791</td>
</tr>
<tr>
<td>2.</td>
<td>Industry:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td>918</td>
<td>959</td>
<td>1,050</td>
<td>1,087</td>
</tr>
<tr>
<td></td>
<td>Mining and quarrying</td>
<td>35</td>
<td>39</td>
<td>47</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Electricity and water</td>
<td>455</td>
<td>478</td>
<td>489</td>
<td>471</td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>1,478</td>
<td>1,663</td>
<td>2,071</td>
<td>2,278</td>
</tr>
<tr>
<td></td>
<td>Sub-Total, Industry</td>
<td>2,887</td>
<td>3,139</td>
<td>3,658</td>
<td>3,892</td>
</tr>
<tr>
<td>3.</td>
<td>Services</td>
<td>6,200</td>
<td>6,590</td>
<td>7,170</td>
<td>7,908</td>
</tr>
<tr>
<td>4.</td>
<td>Adjustments (a)</td>
<td>898</td>
<td>965</td>
<td>1,144</td>
<td>1,269</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Total GDP at Market Prices</strong></td>
<td><strong>12,728</strong></td>
<td><strong>13,467</strong></td>
<td><strong>14,814</strong></td>
<td><strong>15,859</strong></td>
</tr>
</tbody>
</table>

Note: (a) Financial intermediation services indirectly measured (FISIM) plus taxes on products.
Source: Statistical Yearbook, 2008

3.2.3 *Per Capita Income*

3-6. In 2007, GDP at current market prices was measured at Ushs 23,009 bn (see Table 3), implying a per capita income of Ushs 805,000, equivalent to a per capita income of US$ 468. Per capita income has grown at around 4 per cent per annum since the early 1990s.

3.2.4 *Prospects for Future Economic Growth*

3-7. Over the last ten years, the economy has grown consistently at around 7 percent per annum. Future growth will depend on a number of factors, which include *inter alia* the following:

(i) the continuation of sound macro-economic policies;
(ii) the avoidance of high inflation;
(iii) trends in agricultural commodity prices;
(iv) exploitation of Uganda’s natural resources;
(v) continuing development of adequate infrastructure, including the transport network;
(vi) world trade prospects;
(vii) development of trade within the East African Community and with other regional neighbours.

3-8. A significant potential threat to economic stability and growth is certainly posed by the international financial crisis of 2008, the major rise in oil prices since 2006, and the perceived serious prospect of a world recession. On the other hand, positive factors for Uganda include a long-established growth record, the prospect that significant volumes of oil will be produced and refined in the country within the next few years, and the return of peace to northern areas. It is considered reasonable to expect continuing
economic growth of around 8.0 percent per annum up to 2013 (as the oilfields come on stream), and at least 6.5 percent annually over the following ten years 2013-23. Per capita income should grow at around 4.2 percent per annum in 2008-13 and 3.0 per cent in 2013-23.
4.0 CURRENT AND FUTURE TRANSPORT DEMAND

4.1 Existing Transport Demand

4.1.1 Road Traffic

4-1. The most recent comprehensive set of traffic data available, for all national roads in the country, are those produced by NTMP consultants for the year 2003, covering the 360 sections of national road defined for their road transport model. Key results may be summarised as follows:

(a) Results were given for 10,615 km of the national road network, of which 2,647 km (25 percent of the total) were paved;
(b) Average ADT flows excluding motor-cycles, were 2,271 vehicles per day (vpd) on paved roads, 260 vpd on unpaved roads, and 762 vpd on all roads;
(c) Average flows for motor-cycles were 393 vpd on paved roads, 146 vpd on unpaved roads, and 208 vpd on all roads;
(d) Average ADT flows including motor-cycles were 2,664 vpd on paved roads, 406 vpd on unpaved roads, and 969 vpd on all national roads;
(e) Total annual flows of motorised traffic on national roads in 2003 were computed at 3,756 million vehicle-kilometres.

4-2. By vehicle type these flows were as shown in Table 5 below. Motor cycles accounted for 21 percent of total traffic. Of the 2,951 mn veh-kms moved by other motorised traffic, cars accounted for 28 percent, light goods vehicles for 27 percent, minibuses for 25 percent, buses for 2 percent, and trucks for 18 percent.


<table>
<thead>
<tr>
<th>No</th>
<th>Type</th>
<th>Veh-Kms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>1.</td>
<td>Cars and taxis (special hire)</td>
<td>817.4</td>
</tr>
<tr>
<td>2.</td>
<td>Light goods vehicles (inc 4WD)</td>
<td>785.8</td>
</tr>
<tr>
<td>3.</td>
<td>Minibuses and taxis (‘Kamunye’)</td>
<td>752.2</td>
</tr>
<tr>
<td>4.</td>
<td>Buses</td>
<td>59.2</td>
</tr>
<tr>
<td>5.</td>
<td>Trucks (single-unit)</td>
<td>417.8</td>
</tr>
<tr>
<td>6.</td>
<td>Trucks (trailers and articulated)</td>
<td>118.9</td>
</tr>
<tr>
<td></td>
<td>Sub-Total</td>
<td>2,951.3</td>
</tr>
<tr>
<td>7.</td>
<td>Motor cycles</td>
<td>804.4</td>
</tr>
<tr>
<td></td>
<td>Total motorised traffic</td>
<td>3,755.8</td>
</tr>
</tbody>
</table>

Source: ‘Consultancy Services for Preparation of National Transport Master Plan, Interim Report 3; Tahal Consulting Engineers, February 2004

4-3. Traffic levels (including motor cycles) on 92 percent of the national network were below 2,500 ADT, but these roads carried only 52 percent of total traffic.

4-4. Traffic flows exceeded 10,000 vehicles per day (vpd) on 96 km of road, all within the Greater Kampala Metropolitan Area. Four sections, with total length of 22 km, had flows exceeding 20,000 vpd.
4-5. New surveys were carried out by several consultants during 2008, but only partial results from 97 stations in several central districts around Kampala were available at the time of Plan preparation. Derived overall growth rates for traffic on the main radial routes out of Kampala are shown in Table 6 below. The results for all 97 stations indicated an overall traffic growth rate of around 8 percent per annum since 2001.

Table 6: Traffic Growth on Main Radial Routes from Kampala (2001-2008)

<table>
<thead>
<tr>
<th>No.</th>
<th>Route</th>
<th>Length in Km</th>
<th>Daily Traffic in '000 Veh-kms</th>
<th>Growth Rate (% p.a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kibuye – Entebbe Airport</td>
<td>36.9</td>
<td>383.3</td>
<td>733.6</td>
</tr>
<tr>
<td>2.</td>
<td>Kibuye – Masaka – Lyantonde</td>
<td>198.0</td>
<td>822.8</td>
<td>1,291.2</td>
</tr>
<tr>
<td>3.</td>
<td>Busega – Mubende – Kabarole Brd</td>
<td>177.9</td>
<td>166.2</td>
<td>431.3</td>
</tr>
<tr>
<td>4.</td>
<td>Nansana – Busunju – Lwamata</td>
<td>96.3</td>
<td>94.9</td>
<td>278.0</td>
</tr>
<tr>
<td>5.</td>
<td>Kalerwe – Lweru – Kafu Bridge</td>
<td>178.5</td>
<td>361.7</td>
<td>569.8</td>
</tr>
<tr>
<td>6.</td>
<td>Kalerwe – Gayaza – Kalagi</td>
<td>34.5</td>
<td>129.6</td>
<td>279.5</td>
</tr>
<tr>
<td>7.</td>
<td>Gayaza – Zirobwe*</td>
<td>31.5</td>
<td>53.8</td>
<td>56.6</td>
</tr>
<tr>
<td>8.</td>
<td>Mukono – Kayunga</td>
<td>33.8</td>
<td>65.4</td>
<td>102.1</td>
</tr>
<tr>
<td>9.</td>
<td>Kayunga – Galiraya*</td>
<td>77.5</td>
<td>75.5</td>
<td>60.1</td>
</tr>
<tr>
<td>10.</td>
<td>Nakawa – Mukono – Njeru</td>
<td>71.4</td>
<td>455.1</td>
<td>923.6</td>
</tr>
</tbody>
</table>

Total Paved roads only: 827.2
Total Paved and unpaved roads: 936.2

Note: * Unpaved sections


4-6. Another indication of increasing road traffic is given by the sustained rapid increase in the vehicle population, as shown in Table 7 below. Numbers of cars, buses and trucks increased from 99,000 in 1997 to 134,200 in 2002 and 201,100 in 2007, at annual growth rates of 6.3 percent per annum from 1997 to 2002, 8.4 percent from 2002 to 2007, and 7.3 percent from 1997 to 2007. This growth is consistent with the traffic survey results, and also with growth of the economy at 7.7 percent per annum between 2000 and 2007 (see Chapter 3).

Table 7: Numbers of Registered Vehicles in Uganda (1997-2007)

<table>
<thead>
<tr>
<th>No.</th>
<th>(0)</th>
<th>(’000)</th>
<th>1997 (2)</th>
<th>2002 (3)</th>
<th>2005 (4)</th>
<th>2006 (5)</th>
<th>2007 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cars and taxis</td>
<td>42.0</td>
<td>54.2</td>
<td>65.5</td>
<td>70.7</td>
<td>81.3</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Light goods/4WD</td>
<td>33.1</td>
<td>45.5</td>
<td>53.2</td>
<td>53.2</td>
<td>56.0</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Minibuses</td>
<td>13.4</td>
<td>18.0</td>
<td>27.6</td>
<td>32.0</td>
<td>39.5</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Buses</td>
<td>0.6</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Trucks (rigid/trailers/artics)</td>
<td>9.9</td>
<td>15.7</td>
<td>18.7</td>
<td>20.5</td>
<td>23.3</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Motor-cycles</td>
<td>48.0</td>
<td>71.2</td>
<td>108.2</td>
<td>134.0</td>
<td>176.5</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Agricultural tractors and others</td>
<td>3.5</td>
<td>3.8</td>
<td>4.6</td>
<td>4.8</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>150.5</td>
<td>209.3</td>
<td>278.6</td>
<td>315.9</td>
<td>382.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: MoWT
4-7. Application of an 8 percent annual growth rate to the 2003 total of 3,756 million vehicle-kms would indicate a 2008 traffic total of around 5,500 million vehicle-kms. 

Assuming that the proportion of trucks was around 14 percent, total truck performance in 2008 may be assessed at 770 mn veh-km. The 2003 surveys indicated an average truck load (after allowance for empty running) of 5.7 tonnes per truck (see Volume 2, Section E.2.5). Hence, the total freight movement on national roads in 2008 may be broadly estimated as:

\[ 5.7 \times 770 \text{ million} = 4,400 \text{ mn freight tonne-kms}. \]

4-8. Assuming that freight movements by truck on the national road network comprise 80 per cent of the total for all roads, this estimate would indicate a total annual freight movement in 2008 of around 5,500 million tonne-kms.

### 4.1.2 Rail Traffic

4-9. According to the Uganda Bureau of Statistics, Uganda Railways Corporation reported traffic levels up to 2005 as shown in Table 8 below.

#### Table 8: Uganda Railways Goods and Other Coaching Traffic (1997-2005)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>---</td>
<td>799.2</td>
<td>856.3</td>
<td>903.7</td>
<td>854.2</td>
<td>878.9</td>
<td>755.0</td>
</tr>
<tr>
<td>2.</td>
<td>Traffic Flows (mn t-kms):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>144.0</td>
<td>209.5</td>
<td>219.5</td>
<td>217.5</td>
<td>212.6</td>
<td>229.4</td>
<td>185.6</td>
</tr>
<tr>
<td>3.</td>
<td>Parcels, luggage, mail</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Livestock ( (head)</td>
<td>1,332</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Uganda Railways Corporation

4-10. Thus traffic, after recovering significantly from 1997 to 2002, then showed a declining trend up to 2005, the last full year of operation before commencement of the concession agreement with Rift Valley Railways (RVR) from November 2006. Under the 25-year agreement, targets were set for a substantial increase within two years. In fact stipulated investment has not yet been made, and traffic has fallen even further, with RVR statistics showing goods flows of only 128.1 million tonne-kms in the year April 2007 to March 2008.

### 4.1.3 Air Traffic

4-11. Air traffic in Uganda is dominated by international passenger and cargo traffic to and from Entebbe International Airport (EIA). Traffic data at EIA for years from 1997 to 2007 are shown in Table 9 below.

#### Table 9: Passenger and Cargo Traffic at Entebbe, 1997-2000

Table 10: Passenger Traffic at Up-Country Airports (1997-2006)

<table>
<thead>
<tr>
<th>No</th>
<th>('000)</th>
<th>1997</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Arua</td>
<td>17.0</td>
<td>23.3</td>
<td>29.8</td>
<td>26.9</td>
<td>23.5</td>
<td>17.4</td>
<td>11.9</td>
</tr>
<tr>
<td>2.</td>
<td>Gulu</td>
<td>2.9</td>
<td>3.8</td>
<td>10.8</td>
<td>7.8</td>
<td>5.4</td>
<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>Other international (a)</td>
<td>0.8</td>
<td>2.5</td>
<td>1.6</td>
<td>1.9</td>
<td>2.5</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Other Domestic Airports (b)</td>
<td>0.7</td>
<td>1.0</td>
<td>1.6</td>
<td>2.7</td>
<td>2.7</td>
<td>1.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>21.3</td>
<td>30.6</td>
<td>43.8</td>
<td>39.3</td>
<td>34.1</td>
<td>25.1</td>
<td>21.9</td>
</tr>
</tbody>
</table>

Notes: (a) Kasese, Pakuba, Kidepo (b) Jinja, Lira, Masindi, Mbarara, Moroto, Soroti, Tororo, Kisoro.

Source: Civil Aviation Authority
4.1.4 Inland Water Traffic

(a) Wagon Ferries

4-15. URC formerly had three wagon ferries, sailing mainly to and from Mwanza (Tanzania) and Kisumu (Kenya). With one Tanzanian and one Kenyan ferry also in service, total capacity on Lake Victoria was some 600-700,000 tonnes per annum, and a flow of 566,000 tonnes was actually recorded in 1995, reducing to around 300,000 tonnes per annum in the early 2000s. Then in 2005 the Uganda MV ‘Kabalega’ sank, and the other Uganda ferries were withdrawn from service. With the Kenyan vessel also withdrawn, only a limited service is now provided by the single Tanzanian ferry.

4-16. The two Ugandan vessels will be brought back into service, together with a rehabilitated Port Bell dry dock, while a new vessel will also replace MV ‘Kabalega’. Wagon ferry capacity on the lake should thus return towards previous levels. Since the lake services are included in the railway concession, these wagon ferry flows may in effect be considered as part of the railway service.

(b) Vehicle Ferries

4-17. The ‘road bridge’ ferries at river and lake crossing points around the country include three on Lake Victoria, two on the Victoria Nile, one at the north end of Lake Albert, and one on the Albert Nile.

4-18. The Paraa ferry in Murchison Falls National Park is operated by the Uganda Wildlife Authority, while the other ferries have been recently transferred from MoWT to the Uganda National Roads Authority (UNRA). All ferries are shown on Map A, and may be considered as a small but essential part of that network. Complete traffic statistics for the former MoWT ferries are available for the year 2002, when they carried traffic as shown in Table 11 below.

<table>
<thead>
<tr>
<th>No</th>
<th>Route</th>
<th>Vehicles (Exc M/Cycles)</th>
<th>Bicycles (Inc M/Cycles)</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bukakata – Luku</td>
<td>14.8</td>
<td>7.0</td>
<td>92.9</td>
</tr>
<tr>
<td>2.</td>
<td>Nakiwogo – Kyanvubu</td>
<td>0.5</td>
<td>31.1</td>
<td>127.5</td>
</tr>
<tr>
<td>3.</td>
<td>Kiyindi – Buvuma</td>
<td>0.0</td>
<td>1.1</td>
<td>16.9</td>
</tr>
<tr>
<td>4.</td>
<td>Masindi Port – Kungu</td>
<td>6.4</td>
<td>2.9</td>
<td>131.9</td>
</tr>
<tr>
<td>5.</td>
<td>Wanseko – Panyimur</td>
<td>1.0</td>
<td>6.1</td>
<td>151.4</td>
</tr>
<tr>
<td>6.</td>
<td>Laropi – Umi</td>
<td>4.9</td>
<td>9.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>27.6</strong></td>
<td><strong>58.1</strong></td>
<td><strong>523.8</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Works and Transport (MOWT)

4-19. Most of the crossings are very short, of 5 kms or less; traffic flows over the longer crossings at Wanseko and Kiyindi were very low. The transport performance in terms of vehicle-kms, even including motor cycles, was less than 1.0 million vehicle-km per
annum, and thus well below even 0.1 percent of the total road transport output of 3,756 million veh-km reported in Section 4.1.1 for the year 2003.

4-20. Only partial data could be obtained for the years 2006 and 2007, but suggest that recorded traffic may have risen by a factor of two to three at most crossings. However, it still remains a minimal component of the overall road transport output.

(c) Other Water Transport

4-21. The only other formal ferry service is the newly-introduced crossing between Nakiwogo (near Entebbe) and Lutoboka in the Ssese Islands. This service has been franchised by MOWT to a private operator. Otherwise, water transport is provided by small informal sector operators on the lakes and rivers, normally using small boats or motorised canoes, and carrying passengers, goods and livestock. No estimates are available of total passenger and cargo volumes, but the services provide essential services in remote areas.

4.1.5 Overview

4-22. Both goods and passenger traffic move in Uganda overwhelmingly by road. The current goods transport performance by road has been estimated in Section 4.1.1 at 5,500 million tonne-km. Against this rail freight amounts to no more than about 200 million tonne-km, and domestic air cargo only some 30,000 tonne-km (100 tonnes over 300 km). Water transport of cargo is negligible, except in the informal sector. Thus road carries around 95 percent of total goods cargo in the country.

4-23. A crude assessment of passenger numbers carried by cars, minibuses and buses would suggest a total annual flow of around 40,000 million passenger-km. No passengers are now carried by rail. In the air sector, domestic passenger flow is only about 9 million pass-km per annum. The Nakiwogo-Lutoboka ferry may carry about 1,200 passengers a week over a distance of 100 km, indicating a total annual flow of 6 million pass-km; together with the informal sector the water transport total may be around 20 million pass-km. Hence the road sector clearly carries well over 99 percent of the total passenger flow.

4.2 Future Traffic Growth

4-24. The dominant growth will be in the road sector, where traffic is expected to reflect economic growth through traffic growth at about 8 percent to 2013, and 7 percent thereafter.

4-25. Despite the dominance of road, the rail sector should be able to increase its market share substantially, in particular by capturing up to 30-40 percent of foreign trade flows to and from Mombasa and Dar es Salaam. Rail is well suited for long-distance carriage of commodities such as fuels, containers, export crops and cement, though
much of the fuel traffic on both road and rail may transfer to the Eldoret-Kampala pipeline. A re-opened Kampala-Kasese line might carry up to a million tonnes of cement per annum.

4-26. The potential for rail transport is reflected in forecasts for 2015 and 2025 prepared by a Consultant for the East African Community, as shown in Table 12 below. The achievement of such rail traffic levels is a prime aim of the railway concession.

Table 12: Forecast Traffic for Uganda Rail System (2015/25)

<table>
<thead>
<tr>
<th>No</th>
<th>Traffic Measure</th>
<th>Scenario</th>
<th>Traffic Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>1.</td>
<td>Tonnes (‘000)</td>
<td>High</td>
<td>1,909</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Base</td>
<td>1,602</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>1,308</td>
</tr>
<tr>
<td>2.</td>
<td>Tonne-kms (million)</td>
<td>High</td>
<td>433</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Base</td>
<td>364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>297</td>
</tr>
</tbody>
</table>

Source: 'East African Railways Master Plan Study', CPSC; Draft Final Report, April 2008

4-27. In the air sector stagnation in the international passenger market over the years 1997-2002 was followed by rapid growth in 2002-07. Earlier forecasts of growth at 4.8 percent per annum for international traffic, and 4.5 percent for regional traffic, appear low, and should perhaps be revised to 7.5 percent for all international passengers, though short-term market growth may be affected by the recent fuel price rises. International air freight has grown rapidly in recent years, particularly in the export market, and the market as a whole may expand at about 9 percent annually over the next 15 years. Before 2023, perishable products may also be exported directly from other airports such as Gulu or Arua. Domestic air traffic should be capable of growing at between 5 and 10 percent annually, with strong growth in general aviation a possibility as the tourist sector expands. Domestic air freight will remain at a low level.

4-28. In the water sector, traffic by wagon ferry will be determined by the development of rail traffic, and also by the relative use of the Southern Route through Tanzania for imports and exports. Similarly, utilisation of the ‘road bridge’ ferries will follow growth of road traffic. Growth of other lake and river traffic will follow that of local economies in the districts concerned, where the waterways will remain a lifeline for some rural communities.
5.0 CO-ORDINATION AND COMPETITION BETWEEN MODES

5.1 Background

5-1. From 1900 Uganda developed a multi-modal transport system, based initially on railway and waterway services, followed later by roads and air services. Road has now become the dominant mode of transport, carrying over 95 per cent of total traffic, and civil aviation has also expanded rapidly, while rail and waterway services are generally in a run-down state. Nevertheless, all four modes can still play their own roles in the future transport system.

5.2 Individual Transport Modes

5.2.1 Road Transport

5-2. Road transport offers the great advantages of flexibility, the ability to move many small passenger groups and goods consignments between many origins and destinations, with widely available door-to-door collection and delivery. Modal interchange can easily be effected with all other modes. A good road network is thus an indispensable part of a well functioning transport system, providing not only the main inter-urban links, but also access to farms and villages.

5.2.2 Rail Transport

5-3. Rail was formerly Uganda’s lifeline, providing the main import and export link from Mombasa. But from the 1970s, traffic was steadily lost to road, and a vicious circle of decline set in as finances deteriorated, investment and maintenance were cut back, services deteriorated, unit costs rose, and rail became increasingly uncompetitive.

5-4. Yet rail still offers strong potential advantages by virtue of its ability to offer bulk transport over long distances at costs which should be well below those of road. It is especially suitable for carrying commodities such as wheat, cement, fuels, and containers. In addition, a significant transfer of traffic from road to rail should lessen the impact of overloaded heavy trucks, which have been a major cause of persistent premature failure of road pavements over the past thirty years.

5-5. Recent statements of intent by Uganda and its neighbours to convert the East African rail network to modernised standard gauge need to be pursued with vigour. Despite the high costs of the necessary investments, a new and well-maintained ‘high-tech’ rail network could be the catalyst which can bring modern, efficient and attractive rail services to the whole Eastern Africa region.

5.2.3 Inland Water Transport

5-6. Inland water transport offers unit costs which are much lower than those by the land-based modes, but the transport provided is slow, and cargo handling at ports is
expensive. In Uganda, water transport is, in many places, a necessity, either to and from islands, or across ‘road bridges’ between opposite shores of rivers and lakes.

5-7. The railway wagon ferries on Lake Victoria played a useful role in the transport system up to 2005, and it is important that these wagon ferries be restored to service (see also Chapter 9). The ‘road bridges’ across Lakes Victoria and Albert and the River Nile include key links in some of the country’s important road routes.

5.2.4 Air Transport

5-8. Air passenger transport offers the over-whelming advantage of speed between airports, but is expensive and available only to a few. For longer-distance international journeys it has become indispensable, as is reflected by the rapid traffic growth of recent years. With short distances within Uganda, there has been little growth in domestic passenger traffic, though there are important potential markets for business, tourism and emergency services.

5-9. International cargo traffic at Entebbe has grown rapidly, and proved invaluable in developing exports of high-value, perishable products. In future, cargo exports may develop also from other airports such as Gulu and Kasese.

5.2.5 Urban Transport

5-10. In larger towns, and especially in Kampala, urban transport merits consideration as a separate mode. This is because it presents particular problems, reflected in congestion and delay caused by heavy and conflicting traffic flows. Serious problems are now being experienced in Greater Kampala whose population has reached 2.5 million, and will continue to grow (see Chapter 3).

5-11. Much can be done to alleviate urban congestion problems, including major road improvements such as ring-roads and fly-overs; an effective public transport system; good traffic management measures; an effective parking policy; good pedestrian and cyclist facilities; controls on city centre access of heavy goods vehicles; and effective integration of land use, housing and transport planning.

5-12. In a large city the role of public transport is likely to be crucial to the provision of acceptable urban traffic flow. This will require efficient high-capacity rapid transit systems, based on buses, light rail, heavy rail, metro, or a combination of these.

5.2.6 Pipelines

5-13. The existing oil pipeline from Mombasa to Eldoret in western Kenya is to be extended from Eldoret to Kampala. This will attract traffic from both road and rail, thus offering relief to the problem of overloaded vehicles on the roads, but also reducing the traffic base for the railway. With development of the fields in western Uganda, pipelines are also likely to be constructed elsewhere in the country.
5.2.7 Other Modes

5-14. Other non-motorised modes include bicycles, animal carts and walking. In some rural areas, these may be the only form of transport available. Nevertheless, adequate tracks and footpaths must be maintained, and community roads must remain open so as to connect with the district and national road network.

5-15. In the cities, especially Kampala, good facilities must also be provided for cyclists and pedestrians, who comprise much of the traffic both in residential estates and on the main arteries.

5.3 The Role of Competition

5-16. In a liberalised economy, competition between modes will inevitably occur; in Uganda particular areas of competition will be for goods traffic between road and rail, and for passenger traffic between road and air. Competition should allow freight shippers and passengers to make optimal modal choices on the basis of price, speed and quality of service. These choices should be made without inter-modal tax distortions, and with customers paying the full attributable costs of transport.

5-17. On the railway, the concessionaire is required to maintain track and rolling stock, whose costs should therefore be reflected in rates charged. By road fuel taxes will finance the Road Fund, and it is important also that the tax system recover full attributable costs of road maintenance from heavy trucks, that axle load control be rigorously enforced, and that overloading penalties reflect additional maintenance costs incurred.

5-18. For air transport, commercial operation of the airports should ensure that costs of airport handling including security are recovered through the airport charges.

5.4 The Need for Modal Integration

5-19. NTMP/GKMA aims to map out a long-term strategy where the individual advantages of each mode can be best utilised. A judicious balance of inter-modal co-ordination and competition will help create a well-integrated overall transport network.

5-20. A prime requirement will be for good interchange facilities at the principal inter-modal transfer points. Thus major rail terminals need to be well equipped with cranes, including container cranes, for rapid transfer of cargo between rail wagons and road vehicles. Port facilities must offer adequate hardstanding facilities for stacking of containers and other cargo, and for accommodation of road vehicles or rail wagons awaiting loading or unloading. Airports must provide easy access to passenger terminals, adequate parking space, and suitable facilities for rapid transfer of air freight between cargo shed and road vehicle. Pipeline terminals must be located where there is easy access to the road network.
5-21. Where two modes can conveniently co-operate with each other in providing seamless multi-modal services, all should be done to facilitate such co-operation. For instance, proposals have been made in the past for roll-on roll-off ferries to convey road vehicles across Lake Victoria, and private investors willing to invest in such services should be welcomed.

5-22. Multi-modal thinking must enter into addressing the urban transport problems in Kampala, and in other larger towns in future. Rail or light rail contributions to meeting the mass passenger transport demand should be considered along with the currently proposed busway solutions; both may be required, and there is potential capacity along three railway corridors. Adequate parking and waiting facilities must be available at busway and long-distance bus terminals. Good access to Entebbe airport is also important, and a dedicated high-speed link may eventually be required.

5.5 Conclusions

5-23. The following conclusions may be drawn:

(1) While road will remain the dominant transport mode due to its great flexibility, all modes have a role to play in the future Ugandan transport system;

(2) Good inter-modal transfer facilities must be available at railheads, airports, ports, and landing sites;

(3) Effective and fair competition between modes will enhance overall transport efficiency;

(4) A multi-modal approach is needed to solve the urban transport problems of Greater Kampala;

(5) The future system must be all-embracing, both catering for heavy traffic flows on trunk routes, and ensuring reliable access to remote rural areas.
6.0 ROADS AND ROAD TRANSPORT

6.1 Introduction

6-1. Road is the dominant transport provider in Uganda, providing both the main highways and access to individual villages, workplaces and homesteads. The network was estimated, in early 2008, to be 78,100 km long, comprising the following:

(i) National Roads 10,800 km
(ii) District Roads 27,500 km
(iii) Urban Roads 4,800 km
(iv) Community Roads 35,000 km.

6-2. Since July 2008 national roads have been planned, administered and maintained by the Uganda National Roads Authority (UNRA), a semi-autonomous agency reporting to MoWT.

6-3. This chapter reviews the road network, the road transport that uses it, traffic growth, road maintenance and its funding, key issues such as road safety and vehicle overloading, and the need for future network improvement, ending with a 15-year road investment plan and outline expenditure schedule.

6.2 The Road Network

6.2.1 National Roads

6-4. The national road network has expanded over the years, largely through re-classification of district roads as national roads. Its approximate total length was 9,300 km in 1996, rising to 10,800 km by mid-2008. Then in 2008, the Government decided to transfer some 8-10,000 km of district roads into the national network; the exact total length is still to be determined, and a selection process involving stakeholder consultation is currently taking place.

6-5. Much of the national network is not yet paved. In mid-2008 the paved length was 3,051 km, or 28.3 % of the network, as shown in Map A. UNRA has prepared an upgrading programme for the next five years, which should see the length of paved road expand to 4,100 km by mid-2013. The planned national network for 2013 (not including transferred district roads) is shown in Map B.

6-6. The NTMP investment plan foresees a further 3,000 km of national roads being tarmacked during the 10 years 2013-23, giving a paved network of 7,100 km by the end of the Plan. Assuming the national network is by then about 20,000 km, this will represent 36 percent of the enlarged network. The target paved network for 2023 is shown in Map C, while an outline network for 2050 is also shown in Map D.
6-7. In 2003, 92 percent of paved national roads, and 81 percent of unpaved roads, were classified as in good or fair condition. The overall condition has almost certainly deteriorated in the last five years, most notably along the main Northern Corridor route from Malaba via Kampala to Katuna, which is now under major rehabilitation.

6-8. Presently, there are only about 20 km of dual-carriageway national road, all close to Kampala or other main towns. Part of the Kampala Northern By-Pass, currently under construction, is being built to a dual standard. The UNRA programme to 2012/13 includes dualling of an additional 70 km, including the remainder of the Kampala Northern By-Pass, the Zana–Entebbe road, and the Kampala-Mukono road.

6.2.2 District, Urban and Community Roads

6-9. District, urban and community roads are generally unpaved. They are the responsibility of the respective levels of local government, whom MoWT assists with services including micro-planning, guidance on work standards, training, and assistance with procurement.

6.2.3 Extended Procurement Cycles

6-10. The issue of extended procurement cycles must be highlighted. In theory implementation of a typical road project, from project identification to completion, should take no more than about five years; in practice it often takes nine years or more. UNRA and MoWT are working together to reduce the long lead periods. Alternative procurement and financing strategies, such as ‘design-and-build’ and public-private partnerships (PPP), are also being considered.

6.3 Road Transport

6.3.1 Vehicle Numbers and Traffic Flows

6-11. There has been a rapid and sustained rise in the vehicle park, as shown in Table 4.3, showing that the total number of registered vehicles rose from 150,500 in 1997 to 382,800 in 2007. There was a particularly rapid rise in motor-cycles, from 48,000 in 1997 to 176,500 in 2007. The average age of the vehicle fleet is approximately ten years.

6-12. Traffic flow data were shown in Section 4.1.1. About 91 percent of the paved network had an ADT exceeding 500 vpd, while 74 percent of unpaved national roads had flows below 500.

6.3.2 Passenger and Goods Services

6-13. Commercial passenger and goods transport by road is exclusively performed by the private sector. Passengers travel largely by 14-seat minibuses known in Uganda as ‘taxis’ or kamunyes, which are generally organised into operator associations. There is a rather small fleet of large buses, used mainly for long-distance journeys, and there are several
medium-sized bus companies; however, even on long-distance routes, many journeys are made by *kamunye*. Short feeder journeys to and from the bus and taxi routes are often made by commercial motor-cycles or *boda-bodas*.

6-14. Freight is carried by small and medium-sized trucking companies. Heavy truck congestion occurs at border posts, and at towns used as overnight stops. A number of trucks are over-loaded, causing damage to the roads,

6-15. The Transport Licensing Board (TLB) is responsible for licensing of public service vehicles (PSVs) and commercial trucks, but is seriously constrained in performing these duties by shortages of staff and other resources.

6.3.3 **Quality of Public Transport Services**

6-16. The overall quality of public transport services is not high, with overcrowding, high accident rates, and in Kampala serious traffic congestion. Competition is limited, with effective control of many services by bus and taxi park operators tending to restrict service quality and passenger choice. The dominance of small *kamunyes* in the Kampala public transport services, the general absence of designated stopping points, and the practice of routing most *kamunye* journeys through city centre taxi parks, are factors compounding congestion, delay and passenger discomfort.

6-17. Accident rates in Uganda are unacceptably high, being compounded by speeding, reckless driving and poor attention to vehicle maintenance requirements.

6-18. Government now intends to set up a new Multi-Sectoral Transport Regulatory Authority (see also Chapter 12), which will absorb TLB and its functions, and extend its activities to all transport modes except air transport.

6.4 **Road Maintenance**

6-19 Road maintenance has been a longstanding problem in Uganda, with funding shortages leading to serious maintenance shortfalls. The funding mechanism will change with full establishment of the Uganda Road Fund (URF) set for mid-2009. URF’s chief funding source will be a fuel levy, to be paid direct by fuel suppliers into the URF account. The flow of maintenance funds will thus be increased, and should result in very considerable improvement in the condition of roads.

6-20. Failure to perform preventive maintenance has become a serious and persistent problem, with the outstanding backlog maintenance requirement for national roads being estimated by UNRA at US$ 567 million in mid-2008. This seriously affects the road development programme, from which funding must inevitably be diverted.

6-21. A policy of contracting out road maintenance is being implemented to replace the traditional force-account system. This will develop the capacity of local contractors, and give more effective maintenance performance.
6-22. The UNRA Strategic Plan for 2008-13 assesses the annual maintenance need for national roads at US$ 100.0 million in 2008/09, rising to US$ 121.0 mn by 2013/14. The need is then estimated by NTMP to reach US$ 160.0 mn by 2018/19.

6.5 Other Key Road Transport Issues

6.5.1 Road Safety

6-23. Road safety must be a matter of great concern in Uganda. Numbers of recorded road accidents and casualties in recent years are summarised in Table 13 below, showing that there were 61.0 fatalities per 10,000 vehicles in 2007. This indicator is fifty times as high as in some developed countries.*

Table 13: Road Accident Data in Uganda (2000–2007)

<table>
<thead>
<tr>
<th>No (0)</th>
<th>Descriptive (1)</th>
<th>2000 (2)</th>
<th>2004 (3)</th>
<th>2005 (4)</th>
<th>2006 (5)</th>
<th>2007 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I. Number of Accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Fatal</td>
<td>1,438</td>
<td>1,658</td>
<td>1,732</td>
<td>1,792</td>
<td>1,737</td>
</tr>
<tr>
<td>2.</td>
<td>Serious</td>
<td>4,606</td>
<td>6,212</td>
<td>6,793</td>
<td>6,614</td>
<td>6,732</td>
</tr>
<tr>
<td>3.</td>
<td>Minor</td>
<td>8,340</td>
<td>10,258</td>
<td>11,258</td>
<td>9,686</td>
<td>8,959</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14,384</td>
<td>18,128</td>
<td>19,783</td>
<td>18,092</td>
<td>17,428</td>
</tr>
<tr>
<td></td>
<td>II. Number of Casualties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Fatalities</td>
<td>1,678</td>
<td>2,032</td>
<td>2,034</td>
<td>2,171</td>
<td>2,334</td>
</tr>
<tr>
<td>2.</td>
<td>Serious injuries (a)</td>
<td>10,213</td>
<td>8,931</td>
<td>9,376</td>
<td>9,503</td>
<td>9,277</td>
</tr>
<tr>
<td>3.</td>
<td>Minor injuries</td>
<td>N/A</td>
<td>2,969</td>
<td>2,899</td>
<td>2,655</td>
<td>2,779</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11,891</td>
<td>13,932</td>
<td>14,309</td>
<td>14,329</td>
<td>14,390</td>
</tr>
<tr>
<td></td>
<td>Population (million)</td>
<td>22.575</td>
<td>25.896</td>
<td>26.741</td>
<td>27.629</td>
<td>28.581</td>
</tr>
<tr>
<td></td>
<td>Number of Vehicles (’000)</td>
<td>189.1</td>
<td>247.0</td>
<td>278.6</td>
<td>315.9</td>
<td>382.8</td>
</tr>
</tbody>
</table>

Notes: (a) Includes serious and minor injuries; N/A = Not separately available.

Source: Statistical Abstracts, from Uganda Police

6-24. Reasons for the disturbing record include low driving standards, lack of traffic law enforcement, poor condition of vehicles, inadequate road design and road furniture, poor pedestrian and bicycle facilities, and vehicle over-loading. Drivers widely ignore the Highway Code, and the problem is exacerbated by the many untrained boda-boda drivers. All these problems must be addressed.

6-25. Strong measures must be taken to improve the standard of driving schools, and ensure that drivers do not use the road without receiving a stipulated minimum of formal instruction and passing a driving test. A sustained crackdown on driving without a valid licence and on unsafe vehicles is also needed. The traffic police are committed and have introduced several useful initiatives, but lack sufficient resources.

6-26. Safety is promoted through the National Road Safety Council, which meets regularly. But the Road Safety Secretariat is grossly understaffed, and unable to launch widespread

* Uganda is currently assessed to have the 2nd highest accident rate in the world (after Ethiopia); driving standards have visibly deteriorated, along a Quasi-Poissonian Curve over the last ten (10) years or so.
safety awareness initiatives in any effective way. This institutional deficiency is serious, and will be addressed by the prospective establishment of a new National Road Safety Authority (NARSA).

6.5.2 Vehicle Over-loading

6-27. Over-loading of vehicles, especially trucks, is a persistent problem which has without doubt been a major cause of the premature failure of some of Uganda’s main roads. Yet clear legislation exists, which has already to a large extent harmonised in Eastern and Southern Africa. In view of the volume of international traffic passing through Uganda, it is important that the over-loading problem be addressed at both national and regional levels. Weighbridges have been in place for many years, but have still had only limited success. Police enforcement must be stricter and more regularly enforced, and strong steps must be taken against all cases of improper evasion.

6.5.3 Road Nomenclature

6-28. In Uganda, roads are named by origin to destination, e.g. Kampala-Entebbe Road. Only the main Malaba-Kampala-Katuna road is labelled (as A104), but it is common, in many other countries, for roads to be classified and numbered. As the road system is now on the verge of significant take-off, it is recommended that the MoWT commissions a study to advise on the most suitable system and criteria for classifying roads in Uganda, bearing in mind the desirability of future integration, firstly into the EAC regional network and later into a Trans-Africa system.

6.5.4 Road Furniture

6-29. Road furniture in Uganda is often scarce or missing, and where it exists is neither standardized locally nor in keeping with regional or international standards. It is often “hidden” from the motorists and clustered with other road-side signs, especially on approaches to urban centres. Uganda also registers a high rate of road furniture vandalism. There is a clear need for a dedicated study of all the above issues, again co-ordinated with regional initiatives at EAC and Trans-African levels. The study should address the issues of nomenclature and of required institutional measures.

6.5.5 National Vehicle Stock Management

6-30. As shown in Table 4.3, the Uganda vehicle population was 377,600 in 2007 (excluding agricultural tractors). This fleet comes in all colours, sizes, sources, age, sustainability and at a wide range of vehicle prices. This state of total laissez faire needs some measured regulation for the future. This is because under the present system there is lack of standardisation (thus creating problems in obtaining spares), while at the same time foreign exchange is required for all vehicle purchases. It is doubtful that the Uganda
vehicle population can grow to over 1 million, in the current unstructured state, without dire and permanently damaging consequences for the economy of Uganda.

6-31. Since a local motor industry would require a huge domestic market, initiatives in this connection should be regionally co-ordinated between EAC, COMESA and SADC. As a start the Government of Uganda needs basic data to expose the full nature of this problem, and a study needs to be commissioned for this purpose.

<table>
<thead>
<tr>
<th>Box 6.1: Comparative International Experience in Motor Vehicle Stock Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Examples abound, in history, of how purposively (or market)-managed national motor vehicle stocks can have a positive economic implosion; examples are sourced from the USA, Japan, Korea, India, and Malaysia.</td>
</tr>
<tr>
<td>(b) For the USA, the first notable uniformly-manageable vehicle, was the Ford Model T 10; this was the first mass produced car (from 1910) and was, thus, affordable and captured the entire USA car market, influencing road and parking design as well as standardized bays, and subsequently exploding into the dominant USA-car industry for the whole world.</td>
</tr>
<tr>
<td>(c) Japan did the same; with Toyota beginning to manufacture cars after World War II, imported cars were selectively either heavily taxed or subject to import quota or restricted or banned; market consequences, for Japan, speak for themselves to-day.</td>
</tr>
<tr>
<td>(d) Korea, India, and Malaysia have tended to follow the Japanese route; in the case of India, for a long time, viz from the 1950’s to the 1990’s, the locally-manufactured Ambassador car was just about the only car available in India until the economy reached a minimum threshold for “opening-up”, even to very luxurious cars like Mercedes Benz (for local assembly); some positive economic fruits speak for themselves.</td>
</tr>
</tbody>
</table>

6.6 Deficiencies and Constraints

6-32. Major deficiencies and constraints affecting the road sub-sector may be summarised as follows:

(a) Much of the network, including over 70 per cent of the national network, remains unpaved; none of the district network is paved;
(b) Many roads, both paved and unpaved, are in poor condition;

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*The vehicle population of Uganda (excluding motorcycles) has been growing at an average of 7.3 % p.a. over the last ten (10) years. If this were to stabilize at, say 5-6 % after 2020, then by 2050 the total vehicle population of Uganda will have grown to over 2 million.*
(c) Under-maintenance of roads has been a longstanding problem, though this deficiency should be relieved through the creation of UNRA and URF;
(d) Few trunk roads are dual carriageway, despite high and rising traffic levels;
(e) Road projects are regularly subject to long and wasteful procurement delays;
(f) The country has few large buses, with public transport being largely by minibuses, thus aggravating congestion and increasing transport costs;
(g) Trucks are currently often heavily overloaded, damaging the country’s trunk roads, and greatly increasing the costs of road maintenance and rehabilitation;
(h) Road accident rates are very high, indeed amongst the highest in the world;
(i) Driving standards are low and deteriorating;
(j) Vehicles are often in poor condition;
(k) Enforcement of loading restrictions, vehicle safety standards and driving standards is inadequate, due to limited capacity of police and regulatory bodies;
(l) Road signage is generally poor, and often completely absent.

6.7 Investment Plan

6.7.1 Introduction

6-33. An investment plan has been prepared for the 15-year Plan period, 2008-2023. This is based on the current Road Sector Development Programme (RSDP), the UNRA Strategic Plan for 2008-13, the District and Urban Roads Improvement Programme (DUCARIP) of 2008, and results of the planning exercise carried out by NTMP consultants in 2003/04, using the EMME-2 Road Planning Model.

6.7.2 National Roads

6-34. The UNRA Strategic Plan, for the five years to 2012/13, covers road upgrading and reconstruction; backlog periodic maintenance and emergencies; bridge schemes; feasibility and detailed design studies; investments in ‘road bridge’ ferry crossings; upgrading of district roads transferred to the national network; and purchase of equipment and other services for local governments. Roads to be upgraded to a paved standard by mid-2013 have a total length of 1,055 km, bringing the total length of paved national road to just over 4,100 km, as shown in Map B. By mid-2013 a further 1,141 km will be also be under construction.

6-35. Major reconstruction works on roads in serious disrepair will also continue during the next five years, including those on the 660-km Northern Corridor route from Malaba/Busia to Katuna. Work will also start on rehabilitating or replacing the main Nile Bridge at Jinja, at an estimated cost of US$ 50 million.

6-36. After mid-2013, the road up-grading programme will continue at a rate of 300 km per annum. With an estimated unit cost (at mid-2008 prices) of US$ 750,000 per km, the annual upgrading cost will be US$ 225 million per annum. Additional roads for paving by 2022/23 have also been identified, based on criteria including overall network
connectivity, balance between regions, inclusion of roads to borders, and economic feasibility results from the NTMP consultant’s study of 2003/04.

6-37. From mid-2015, the most heavily trafficked roads will also be upgraded to dual carriageway at an average rate of 25 km per annum, costing US$ 50 million per annum, thus raising the total annual upgrading cost to US$ 275 million. By 2023 about 300 km of roads will be dual carriageway.

6-38. Roads included in the onward NTMP programme are shown in Map C of the projected road network for 2023. Most are already national roads, but some are presently district roads, expected to be reclassified in the upcoming programme.

6-39. Road investment costs are summarised below in Tables 14 and 15. The costs shown include all investments including upgrading, reconstruction and backlog maintenance, but do not include normal routine and periodic maintenance costs. Total investment costs are expected to be US$ 2.02 billion in 2008-13, US$ 1.64 billion in 2013-18, and US$ 1.52 million in 2018-23, giving a grand total of US$ 5.18 billion for the 15-year Plan period.

Table 14: Planned National Road Network Investments (2008-13) in US$ Millions

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Backlog periodic maintenance and emergencies</td>
<td>30.00</td>
<td>30.75</td>
<td>10.51</td>
<td>10.77</td>
<td>11.04</td>
<td>93.07</td>
</tr>
<tr>
<td>2.</td>
<td>Reconstruction of national roads</td>
<td>87.74</td>
<td>184.16</td>
<td>215.40</td>
<td>79.40</td>
<td>473.90</td>
<td>566.70</td>
</tr>
<tr>
<td>3.</td>
<td>Upgrading of national roads</td>
<td>34.20</td>
<td>190.60</td>
<td>312.80</td>
<td>336.75</td>
<td>241.80</td>
<td>1,116.15</td>
</tr>
<tr>
<td>4.</td>
<td>Upgrading of ex-district roads</td>
<td>35.00</td>
<td>35.00</td>
<td>35.00</td>
<td>35.00</td>
<td>35.00</td>
<td>175.00</td>
</tr>
<tr>
<td>5.</td>
<td>Bridge schemes</td>
<td>4.91</td>
<td>15.86</td>
<td>8.95</td>
<td>8.95</td>
<td>18.95</td>
<td>57.62</td>
</tr>
<tr>
<td>6.</td>
<td>Ferry investments at ‘road bridges’</td>
<td>0.53</td>
<td>5.21</td>
<td>3.03</td>
<td>3.03</td>
<td>3.03</td>
<td>14.83</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>192.38</td>
<td>461.58</td>
<td>585.69</td>
<td>473.90</td>
<td>309.82</td>
<td>2,023.37</td>
</tr>
</tbody>
</table>


Table 15: Planned National Road Network Investments, (2013-23) in US$ Millions

<table>
<thead>
<tr>
<th>No.</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
<th>2016/17</th>
<th>2017/18</th>
<th>5-Year Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Provision for Emergencies</td>
<td>15.00</td>
<td>15.00</td>
<td>15.00</td>
<td>15.00</td>
<td>15.00</td>
</tr>
<tr>
<td>2.</td>
<td>Upgrading of National Roads</td>
<td>298.90</td>
<td>339.20</td>
<td>275.00</td>
<td>275.00</td>
<td>275.00</td>
</tr>
<tr>
<td>3.</td>
<td>Bridge Schemes</td>
<td>30.00</td>
<td>30.00</td>
<td>10.00</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>4.</td>
<td>Ferry investments at ‘Road Bridges’</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>346.90</td>
<td>387.20</td>
<td>303.00</td>
<td>303.00</td>
<td>303.00</td>
</tr>
</tbody>
</table>
### Table 16: Summary of Total DUCARIP Expenditures (2008-18) in US$ Millions (at 2008 Prices)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>District Roads</td>
<td>280.58</td>
<td>296.95</td>
<td>577.52</td>
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<tr>
<td>2.</td>
<td>Urban Roads</td>
<td>76.89</td>
<td>98.06</td>
<td>174.95</td>
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<td>3.</td>
<td>Kampala City Roads</td>
<td>76.07</td>
<td>73.08</td>
<td>149.15</td>
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<tr>
<td>5.</td>
<td>Bridge Works</td>
<td>6.09</td>
<td>6.09</td>
<td>12.18</td>
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<tr>
<td>6.</td>
<td>Capacity Building</td>
<td>2.55</td>
<td>1.33</td>
<td>3.88</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>466.41</td>
<td>499.76</td>
<td>966.17</td>
</tr>
</tbody>
</table>


### Table 17: Summary of Total DUCARIP Expenditures (2018-23) in US$ Millions (at 2008 Prices)

<table>
<thead>
<tr>
<th>2018/19</th>
<th>2019/20</th>
<th>2020/21</th>
<th>2021/22</th>
<th>2022/23</th>
<th>5-Year Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Provision for Emergencies</td>
<td>15.00</td>
<td>15.00</td>
<td>15.00</td>
<td>15.00</td>
</tr>
<tr>
<td>6.</td>
<td>Upgrading of National Roads</td>
<td>275.00</td>
<td>275.00</td>
<td>275.00</td>
<td>275.00</td>
</tr>
<tr>
<td>7.</td>
<td>Bridge Schemes</td>
<td>10.00</td>
<td>10.00</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>8.</td>
<td>Ferry investments at Road Bridges</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>303.00</td>
<td>303.00</td>
<td>303.00</td>
<td>303.00</td>
</tr>
</tbody>
</table>

Source: NTMP (2008), projecting estimates from UNRA Strategic Plan (2008-13)

### 6.7.3 District, Urban and Community Roads

6-40. A ten-year plan for district, urban and community roads was prepared by MoWT in March 2008 – identified by the acronym DUCARIP. It contains broad estimates of the investments that will be required to develop and sustainably maintain the country’s district, urban and community access roads (DUCAR). These roads will provide vital support to agriculture and other rural economic activities.

6-41. DUCARIP is currently estimated to cost Ushs 1,594 billion (equated to US$ 966 million at mid-2008 prices). Support in bridging a funding gap of US$ 221 million will be sought from development partners. The Plan is on a rolling frame, adjustable every year and to be reviewed after five years. Projected expenditures over ten years are summarised by main expenditure group in Table 16.

6-42. After the DUCARIP programme is completed, it is assumed that the same expenditures as were incurred in 2017/18 will continue to be incurred in the five years 2018/19 to 2022/23. These projected expenditures are shown in Table 17 below.
<table>
<thead>
<tr>
<th>No (0)</th>
<th>Purpose of Expenditure (1)</th>
<th>Annual Expenditure (2)</th>
<th>5-Year Totals (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>District Roads</td>
<td>57.35</td>
<td>286.74</td>
</tr>
<tr>
<td>2.</td>
<td>Urban Roads</td>
<td>19.43</td>
<td>97.16</td>
</tr>
<tr>
<td>5.</td>
<td>Bridge Works</td>
<td>1.22</td>
<td>6.09</td>
</tr>
<tr>
<td>6.</td>
<td>Capacity Building</td>
<td>0.24</td>
<td>1.21</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td><strong>97.51</strong></td>
<td><strong>487.56</strong></td>
</tr>
</tbody>
</table>

*Source: Derived from DUCARIP, with conversion to US dollars*

### 6.7.4 Budgetary Envelope for Roads

6-43. For budgetary purposes, the financial envelope for roads expenditure must cover not only the investment costs shown in Tables 17 to 18, but also all national road maintenance costs, plus some additional UNRA expenditures on district, urban and community roads budgeted by UNRA for the years 2008/9 and 2009/10. The total amounts to be included for the road sector are as shown in Table 18.

6-44. The maintenance item in this table applies mainly to national roads, but includes also small amounts (as budgeted in the UNRA Strategic Plan) for security roads, projected to total US$ 29.0 million over the 15 years of the Plan. The additional expenditures budgeted by UNRA for district, urban and community roads in the years 2008-10 amount to US$ 158.2 million, including US$ 149.5 million on district roads, US$ 6.2 million on Kampala city roads, and US$ 2.5 million on other urban roads.

**Table 18:** Total Road Expenditure to Fall within Budget Envelope (2008-23)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National Roads</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. From Tables 6.5/6.6</td>
<td>2,023.37</td>
<td>1,643.10</td>
<td>1,515.00</td>
<td>5,181.47</td>
<td></td>
</tr>
<tr>
<td>2. Maintenance (a)</td>
<td>561.00</td>
<td>691.00</td>
<td>805.00</td>
<td>2,057.00</td>
<td></td>
</tr>
<tr>
<td><strong>DUC and Kampala Roads</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. From Tables 6.8/6.9</td>
<td>466.41</td>
<td>499.76</td>
<td>487.55</td>
<td>1,453.72</td>
<td></td>
</tr>
<tr>
<td>4. UNRA Plan, 2008-10</td>
<td>158.25</td>
<td>---</td>
<td>---</td>
<td>158.25</td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>3,209.03</strong></td>
<td><strong>2,833.86</strong></td>
<td><strong>2,807.55</strong></td>
<td><strong>8,850.44</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note: (a) Including maintenance for national and security roads, but excluding backlog maintenance and emergencies shown in Tables 6.5 and 6.6.*

*Source: NTMP (2008), using projections from UNRA and DUCARIP*

6-45. Table 6.6 shows that a total amount of of US$ 8,850 million (at 2008 prices) is to be spent on roads over the 15 years 2008-23. This is the same amount that has been transferred to the financial analysis in Chapter 14.
6-46. As also discussed in Chapter 14, there are likely to be opportunities during the Plan period for construction of high-class multiple-lane roads with high traffic flows through private-public partnership (PPP). This could afford some relief to the government budget in respect of some of the investments.
Box 6.2: Beyond 2023: The Long-Term View

- The Investment Plan described above covers the period up to 2023, with 2008-2013 as Phase I.
- Beyond 2023, a fresh Uganda Road Transport Master Plan will be required.
- Future perspectives, beyond 2023 to say 2050, are to do with
  1. Road development
  2. Road vehicle management; and
  3. Road use.

- On Road Development, it is expected that, by 2050:
  1. All national roads in Uganda, of whatever width or structure, to be tarmacked.
  2. The main arterial roads to be Six-Lane Highways namely:
     b. South-North (Kampala-Nakasongola-Gulu-Nimule, with a branch-off to Kigumba-Masindi-Tonya).
     c. Kampala-Entebbe (as part of the GMKA Road Network).
  3. Principal national Ring Roads and/or 2nd order arterial roads, e.g. for the future Trans-African system, should be Dual Carriageways as below:
     a. Mbale-Soroti-Lira-Gulu-Nimule
     e. Kampala-Busunju-Hoima-Butiaba
     f. Hoima-Kaiso-Tonya
  4. All Branch Roads from either the Six-Lane Highways or Dual Carriageways to (a) District Capitals or (b) big Jetties/Landing Sites (c) Tourist Attractions, e.g. Mweya/Katwe & Katungulu-Ishasha to be Class A Single Carriageways, viz 7.5 metres wide.
  5. Special Road Development Programme for Kalangala District and other significant Islands on Lake Victoria together with Jetties/landing sites, to be developed.

- A Vehicle Stock Management Policy in place and implemented partly over the 15-year Plan and certainly in the period after 2023.
- Driving culture, including proper and courteous use of the road, dual carriageways, motorways, up to international standards.
- Therefore, developments over the 15-Year Plan (2008-2023), especially demarcation of Road Reserves, should be planned bearing in mind the above-projected long-term scenario.
Chapter 6 References

7.0 RAIL TRANSPORT

7.1 Background

7-1. Uganda’s former rail network of 1,266 km has now been reduced to a system of just 330 km, including the main line from Malaba to Kampala, the Tororo-Mbale and Kampala-Port Bell lines, and some other short branches. A map of the existing network is shown in Map E.

7-2. From the 1970s, the railway experienced increasing problems, as traffic fell away, finances came under stress, and condition of track and rolling stock deteriorated. Even after commercialisation and cost reduction measures in the 1990s, revenues remained insufficient to provide for debt repayment or capital investment. Then, after feasibility studies, a joint concession was let by the Governments of Kenya and Uganda to Rift Valley Railways (RVR) to run the two networks for a period of 25 years from late 2006 to June 2032.

7.2 The Railway Concession

7.2.1 Concession Agreement

7-3. Under the Agreement, all freight services (including the Lake Victoria wagon ferries) are conceded on a defined core network, and the Concessionaire has First Option of Refusal if the Government wishes to operate freight services on other lines, or to resume passenger services on any line. The Concessionaire, having paid an initial entry fee, is required to pay annual fees based on gross revenues. An account will be kept by URC of depreciation and new investments by either party, and due compensation will be paid at the end of the concession by one party to the other. All assets will revert to Government at the end of the concession period.

7-4. Uganda Railways Corporation (URC) presently acts as regulator, though in future this function will pass to the Multi-Sector Transport Regulatory Authority (MTRA).

7.2.2 Concession Performance

7-5. Initial performance of the concession has failed to reach agreed targets. In particular:

(i) Concession fees due remain unpaid;
(ii) There has been inadequate maintenance of assets;
(iii) Investment targets have not been achieved; and
(iv) Traffic targets have also not been met.

7-6. With similar problems in Kenya, parallel negotiations have taken place since mid-2008 to amend the concession agreements. It is still hoped that a satisfactory amended agreement can be reached with a new enlarged RVR consortium.
7.3 Future Rail Performance

7.3.1 Benefits of a Well-Functioning Concession

7-7. The railway ought to be the mainstay of transportation for bulk haulage. Once a satisfactory concession arrangement is in place, the railway system can begin to play its true potential role in moving bulk and unitised cargoes by block train over long distances. This will depend on successful rehabilitation and subsequent maintenance of deteriorated track, structures and rolling stock, which can lead to improved operational performance, and reduce operating costs. A well-run railway should be able to carry 30 to 40% of Uganda’s import and export traffic, and a reliable service of direct container trains from Mombasa to Kampala can help develop a rail market for both Uganda and neighbouring land-locked countries.

7-8. It is important that all existing railway reserves should be preserved at least until such time as it becomes clear that they will never be required for public purpose. Severe illegal encroachment has already occurred in both rural and urban areas, and vigorous and early action is now required to correct the situation.

7.3.2 Potential for Commuter Rail

7-9. There is a potential role for rail in helping solve the serious public transport problems in Kampala. The three urban rail corridors (towards Mukono, Port Bell and Nalukolongo) could provide mass transit facilities by heavy or light rail, compatible with goods train operations and able to supplement the bus rapid transit and traffic management measures which have also been proposed (see Chapter 10). Hence there is a particular need to preserve the railway reserves on these urban lines.

7.4 Deficiencies and Constraints

7-10. Despite the mode’s significant potential, the rail network and services are at present severely constrained, with deficiencies including the following:

a) Longstanding traffic loss as cargoes have transferred to road;

b) Longstanding inadequate maintenance of track, structures and rolling stock;

c) Historical failure to offer speedy or reliable service;

d) Longstanding financial constraints as traffic levels have dropped, inhibiting both investment and maintenance;

e) Serious problems which have already been experienced with the long-term RVR concession, let in 2006.
7.5 Potential Rail Investments

7.5.1 Introduction

7-11. The rail system in Uganda needs both re-structuring and growth. Several new railway investments have been proposed, either on presently disused routes, or along completely new alignments. These include rehabilitation of the Western and Northern Lines to Kasese and Pakwach, extension of the Northern Line from Gulu towards Juba and Wau in Sudan, extension also from Pakwach to Arua, and possible extensions of the East African network to Kigali in Rwanda and Kisangani in DR Congo. Feasibility studies are in the process of being commissioned regarding the Kasese line and the new link via Gulu into Sudan. The need to connect the rail network to developing Ugandan oilfields (for instance near Lake Albert or west of Gulu) will also need to be appraised.

7-12. The EAC countries have recently announced their long-term aim of converting all lines to standard gauge (1.435 m), and, in particular, the Kenyan and Ugandan governments have stated their intention to reconstruct the Mombasa-Kampala route to the wider gauge. This suggests that all future railway investments should also be built to standard gauge.

7.5.2 Western Extension (Nalukolongo to Kasese)

7-13. The distance from Nalukolongo (5 km west of Kampala Railway Station) to Kasese is 330 km; extensions to Hima Cement and Kilembe Mines would add a further 15 km for a total of 345 km.

7-14. The major potential traffic would be cement to Kampala and other destinations. Volumes could approach one million tonnes per annum, allowing movement of several block trains per day. The eastern part of the route could also be considered for rail or light rail operation of Kampala commuter traffic. A feasibility study for the Kasese line is to be commissioned shortly, financed by government.

7-15. Cost of restoring the infrastructure are provisionally estimated at around US$ 700 million. The cost will be more precisely estimated in the feasibility study.

7.5.3 Northern Extension (Tororo–Mbale–Gulu–Pakwach)

7-16. The distance from Tororo to Gulu is 375 km, with a further 132 km on to Pakwach. Although the 55-km Tororo–Mbale section is currently operational, it would also require rehabilitation. Traffic could include limestone from Karamoja to Tororo; agricultural products from along the route; and transit traffic between Mombasa and Sudan. The World Bank is supporting a feasibility study for rehabilitation of the line.

7-17. Cost of rehabilitation up to Pakwach is provisionally estimated at US$ 1.50 to 2.00 million per km, giving an estimated cost over 500 km of around US$ 800 million.
7.5.5 **New Route (Gulu–Nimule–Juba–Wau)**

7-18. The end of many years of war in Southern Sudan has created new economic activity and development potential in the area, which has already been reflected in increasing trade between Juba and Mombasa.

7-19. A feasibility study is being commissioned for a new railway line from Gulu to Juba and Wau in Sudan. This would create a continuous rail route from Mombasa to Juba of some 1,750 km, including around 500 km in Uganda. The estimated length of new track between Gulu and Nimule would be about 140 km. At a unit cost of US$ 2.0 million per km, total cost within Uganda would be around US$ 280 million.

7.5.6 **New Extension (Pakwach–Arua)**

7-20. Extension of the Tororo–Pakwach line to Arua has long been planned in principle. Over a distance of 140 km, construction cost would be about US$ 300 million.

7.5.7 **New Extensions (Bihanga–Kigali and Kasese/Pakwach–Kisangani)**

7-21. These two lines would extend the existing East African network into Rwanda and DR Congo, and are proposed in the East African Railways Master Plan. The Kigali line would leave the Kasese line at Bihanga, and pass via Ntungamo and Kabale to the Rwanda border, giving potential access to iron ore and kaolin reserves in south-western Uganda. Length in Uganda would be approximately 300 km, and with mountainous terrain around Kabale might cost US$ 1,000 million or more.

7-22. An extension from Uganda to Kisangani in DR Congo would give a through rail route from Mombasa to the major city of north-eastern Congo, from where the Congo River is navigable to Kinshasa. Two possible starting points in Uganda would be Kasese and Pakwach. Distances within Uganda would be approximately 50 and 80 km respectively, with costs of the order of USD 100 and 150 million. Serious environmental concerns have been expressed on both routes.

7.5.8 **Upgrading (Mombasa–Malaba–Kampala)**

7-23. In late 2008, high-level proposals were made by Uganda and Kenya to reconstruct and upgrade the Mombasa-Malaba-Kampala main line from the existing 1.00 metre-gauge to standard gauge of 1.435 metres. The stated target is to bring the new line into operation by 2017, at a cost within Uganda of about US$ 500 million.

7.5.9 **Overall Appraisal**

7-24. The Kasese line rehabilitation, giving the opportunity of capturing large flows of cement and other traffic, appears likely to give the greatest direct benefits; however, the rehabilitated Gulu/Pakwach line, with Nimule extension, would have important regional significance in opening up a 1,750-km route from Mombasa to Juba. These
routes appear to be the prime candidates for construction during the 15-year Plan period up to 2023. A map of the rail network as it may appear in 2023 is shown in Map F, including reconstructed Kampala-Kasese and Tororo-Pakwach lines, with the possible Nimule, Arua and Kigali extensions shown as dotted lines.

7.5.10 Other Relevant Issues

(a) Choice of Gauge

7-25. The original railways of Kenya, Uganda, and Tanzania were constructed to a gauge of 1.0 metre. This was in contrast to the ‘Cape’ gauge of 1.067 metres (3 foot 6 inches) prevalent in most surrounding countries from Sudan to South Africa. North African countries have, by contrast, systems of standard gauge (1.435 metres), which is also the European and American standard gauge.

7-26. The five EAC governments, together with Sudan, have agreed, in principle, that future new railways should always be constructed to standard gauge. Conversion of the whole network, though involving a high initial cost, would improve network connectivity and permit higher speeds.

Box 7.1: Standardize the Rail Gauge?

*It is important that clear co-ordinated decisions on future gauge of the entire rail network be made by EAC countries before construction of any new lines in the region.*

(b) Financing of Investments

7-27. The investments described above would be expensive, with the Uganda Government responsible in principle for infrastructure. Since the GoU would be unable to finance the required investments without adverse impact on other infrastructure programmes, other options include donor finance (still part of the public sector investment programme), or some form of public private participation (PPP). A major European investor has already expressed potential interest in the new Sudan link. Such investors may be expected to require some level of government involvement as security for large-scale investment, and it is assumed that, say, 20 per cent of investment costs will need to be borne by Government.

7.6 Investment Costs

7-28. Within the 15-year Plan period, it is considered appropriate at this stage to allow for rehabilitation of the Kasese and Pakwach lines, with new construction from Gulu to Nimule. Total costs of the proposed investments, making allowance for standard gauge construction, may be summarised as in Table 19 below.
Table 19: Estimated Railway Investments (2008-23)

<table>
<thead>
<tr>
<th>No.</th>
<th>Line</th>
<th>Length of Route (Km)</th>
<th>Investment Cost (US$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kasese Line</td>
<td>345</td>
<td>700.00</td>
</tr>
<tr>
<td>2.</td>
<td>Pakwach Line</td>
<td>505</td>
<td>800.00</td>
</tr>
<tr>
<td>3.</td>
<td>Gulu-Nimule Line</td>
<td>140</td>
<td>280.00</td>
</tr>
<tr>
<td>4.</td>
<td>Malaba-Kampala Line</td>
<td>250</td>
<td>500.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1,240</td>
<td>2,280.00</td>
</tr>
</tbody>
</table>

Source: NTMP; URA

7-29. A Government share of 20 per cent would be US$ 456 million, or US$ 461 million including US$ 5 million for feasibility studies. Reconstruction of the Kampala-Kasese line is considered as the first priority, to be followed by the Tororo-Pakwach line reconstruction. The following provisional schedule of works has been assumed:

- 2012-15 Kampala-Kasese line
- 2013-16 Tororo-Pakwach line
- 2014-17 Malaba-Kampala line (from Mombasa/ Nairobi)

Box 7.2: Beyond 2023: The Long-Term View

- The above Rail Transport Sub-Sector Investment Plan is up to 2023.
- Beyond that, another Rail Master Plan will be required.
- Long-Term perspectives would include
  
  1. Introduction of **Double Track** Rail Systems mainly for arterial routes, e.g.
     - (i) East to West, viz Mombasa-Malaba-Kampala-Western Region-Eastern Congo & Rwanda-Burundi; and
     - (ii) South-North, viz Tororo-Gulu-Nimule-Juba-Wau
     - (iii) Quite possibly, Kampala-Nakasongola-Gulu, with a branch off to the **Oil-Fields** in the Albertine catchment area
     - (iv) Possible electrification of the network, in total or in part.

  2. Up-grading and Standardization of the rail gauge to the new (agreed) AU **standard gauge** of 1.435 metres and “realignment” of tracks for **higher speeds**.
    - The above expansion may call for “abandonment” of all (or some) sections of the existing rail network in Uganda; in fact, this could be the preferred option as it would **minimize disruption of rail services** while modernization of the rail system to: (i) double track (ii) a wider gauge and (iii) straighter tracks, is going on.
    - Therefore, developments over the next 15-Year Plan Period should take this into account.
8.0 AIR TRANSPORT

8.1 Introduction

8-1. Air transport in Uganda has become the normal means of travel for long-distance international passengers, and has played an important role in boosting Uganda’s exports of high-value products such as flowers, fruits, and fish. Both passenger and cargo transport are largely international (see Section 4.1.3). Nevertheless, domestic air transport has a major potential role in delivery of emergency services, and can also be a major instrument in developing untapped tourist potential.

8-2. Management of the air sector is entrusted to the Civil Aviation Authority (CAA), an autonomous body reporting to MOWT, and responsible for sector regulation; air traffic control, safety and security; and operation of 14 of the country’s main airports.

8-3. The master plan for air transport defines the airfield network required to meet the country’s demand for air transport over the next 15 years, in compliance with the national goals and policies set by the Government, and outlines an Investment Plan.

8.2 Airports

8.2.1 Entebbe International Airport

8-4. The main international airport is at Entebbe, situated 39 km south-west of Kampala City Centre. This has a main runway of 3,600 metres, bounded by Lake Victoria at both ends. Major improvements were carried out in 2006/07 to the passenger terminal, and the passenger flow can still be comfortably handled, despite a rapid rise in throughput to 841,000 international and domestic passengers in 2007. Continuing growth at around 7.5 percent per annum, as projected in Chapter 4, would see a throughput of around 2.7 million passengers in 2023, still within the capacity of the airport site.

8-5. Cargo traffic has also grown rapidly, under the impetus of growing export markets in Europe for cut flowers and fish, to 63,700 tonnes in 2007. A new cargo centre is now to be constructed by private investors.

8-6. The question of access to Entebbe airport is important, since traffic and congestion levels on the Kampala-Entebbe road have increased rapidly. The road investment plan includes a project to provide a dual carriageway by 2012. A dedicated rapid transit system may eventually be required.

8.2.2 Up-Country Airports

8-7. While there are 60 licensed airfields around the country, only about 30 are in current use, with 19 having regular services. These 19 airports comprise the Up-Country Airfield Network (UCN). All are shown on Map E.
5. Five upcountry airports, designated as entry-exit points, are owned and run by CAA, at Gulu, Arua, Kasese, Pakuba, and Kidepo. Of the five airports, only Gulu has a paved runway, of 3,100 metres.

6. By far the highest traffic flow is at Arua, situated near the borders with both Sudan and DR Congo, and therefore convenient for passengers from those countries. The total passenger flow at Arua in 2006 was 17,400 (down from 29,800 in 2003). The highest other flow was at Gulu, with 3,500 passengers in 2006 (down from 10,800 in 2003). Total traffic flow at Kasese, Pakuba and Kidepo totalled only 2,200 passengers in 2006.

7. Eight other up-country airfields, owned and run by CAA, handle domestic traffic only. Total flow at all these airfields was only 1,900 in 2006. Six privately-owned and operated airfields complete the airfield system. Ten additional sites have been identified as potential new district airports. Of these Ntungamo is proposed as a new regional airport for the south-west of the country; possibly the site of this regional facility may now be moved to near-by Rwentobo. All the international and domestic airports described above are shown on Map F.

8.2.3 Kampala Municipal Airport

9. A previous draft of NTMP proposed a new municipal airport for Kampala, to serve short-distance domestic and possibly regional routes. Such an investment would reduce total travel time and make domestic air transport more attractive. However, no suitable government-owned site has yet been located.

8.3 Airlines and Services

10. A total of 17 international scheduled carriers now serve Uganda. There is no Ugandan flag carrier since the demise of Uganda Airlines, but Air Uganda is fulfilling the role of national airline, though not flag carrier. This airline operates regional services to Juba, Nairobi, Mombasa, Dar es Salaam, Kilimanjaro and Zanzibar. It hopes by 2010 to be able to commence Airbus services to Europe. Royal Daisy operates to Juba and Kisumu.

11. On the domestic scene Eagle Air operates to Arua, Gulu, Pakuba, Kidepo, Moyo, and Murchison Falls, and plans to renew services to Kasese and Kisoro. It also flies regionally to Juba, and hopes also to resume flights to Bunia and Goma in eastern DR Congo. Air Uganda also intends to enter the domestic market.

8.4 Regulation and Safety

12. CAA fulfils regulatory, safety and security roles on behalf of MOWT. In the regulatory field, it practises a liberalised policy on traffic rights in keeping with the spirit of the all-African Yamoussoukro Declaration. It works closely within the efforts of the East
African Community to harmonise aviation policies in the member states. The East African safety and security organisation, CASSOA, seeks to enforce a high standard of safety and security throughout the region.

8.5 Soroti Flying School

8-15. Prior to 1977, Soroti was the location of the East African Flying School, training pilots from Uganda, Kenya, and Tanzania. On the demise of the first EAC, in 1977, it continued operations for private entrants and the air force. A Strategic Plan for the Flying School is now needed, to be prepared within a regional framework.

8.6 Civil Aviation Authority

8-16. CAA plays the prime role in air sector administration in Uganda. It is responsible both for operation and administration of airports and for other regulatory activities. This means that airport income may have to subsidise the regulatory activities, with income from Entebbe also cross-subsidising losses at small domestic airports.

8-17. Recent financial results are summarised in Table 20 below. Operating losses were recorded in each of the three years; when financial gains and losses are taken into account, there was an average annual loss of UShs 3.89 billion. Since CAA is financially autonomous, these results must be a cause for concern.

8-18. The Government of Uganda has accepted in principle the separation of airport management from regulatory and safety activities, that has already taken place in Kenya and Tanzania. Provision has been made in the CAA management structure for the two businesses to be separated.

<table>
<thead>
<tr>
<th>Table 20: Financial Performance of CAA, 2005/06–2006/07 (in U.Sh. Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No (0)</td>
</tr>
<tr>
<td>I. Income</td>
</tr>
<tr>
<td>1. Aeronautical Income</td>
</tr>
<tr>
<td>2. Non-Aeronautical Income</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
</tr>
<tr>
<td>II. Operating Expenses</td>
</tr>
<tr>
<td>1. Staff costs</td>
</tr>
<tr>
<td>2. Other expenses</td>
</tr>
<tr>
<td>3. Depreciation and doubtful debts</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
</tr>
<tr>
<td>Surplus (Loss) from Operations</td>
</tr>
<tr>
<td>Financial gains (losses)</td>
</tr>
<tr>
<td><strong>Surplus (Loss) Before Tax</strong></td>
</tr>
<tr>
<td>Cash Surplus Net of Depreciation</td>
</tr>
</tbody>
</table>

*Source: CAA Business Plans*
8.7 Potential Role of the Private Sector

8-19. In much of the world, it is now common for management of airports to be divested from government and entrusted to the private sector. This can promote operational efficiency, innovative marketing techniques, and access to a wide range of potential funding sources. Management on a long-term concession retains ownership of infrastructure with government, while still allowing these benefits of private sector operation to be realised.

8-20. For now and for years to come, Entebbe will remain the only large airport in Uganda. It is, therefore, a cornerstone of government and CAA strategy for developing the Ugandan air sector, and also the only airport likely to provide CAA with a stable revenue base. The strategy here should be to allow specialised activities to be carried out by the private sector, as is already done, for instance, in duty-free shops. Private sector participation and financing is already planned for the new cargo centre.

8-21. Regarding up-country airports, CAA has already decided, in principle, to privatise the eight airports not gazetted as entry-exit points. These, however, have very low revenue bases, and are, therefore, unlikely to be attractive to private operators.

8-22. A new municipal airport for Kampala (see Section 8.2.3) could play a key role in stimulating new domestic scheduled and charter traffic, and might, therefore, prove a more attractive proposition for the private sector.

8.8 Future Airport Investments

8.8.1 Introduction

8-23. An earlier draft of the NTMP included a detailed investment programme covering both Entebbe and the up-country airports. This plan was based on the 20-year Investment Development Programme (IDP) for Entebbe, and assessment of need for the up-country network.

8-24. The plan was to include the five (5) components below:

(i) *Entebbe International*: Implementation of the IDP;
(ii) *Other Entry-Exit Airports (5)*: Improvement or installation of runways, aprons, navigational aids and radio, terminal buildings, and other infrastructure;
(iii) *Other CAA Airports (8)*: Refurbishment of facilities and deferred maintenance;
(iv) *Non-CAA Airports (5)*: Refurbishment of facilities and deferred maintenance (note that Fort Portal is not included as it is privately owned);
(v) *Kampala Municipal Airport*: Development of a new airport.
8-25. At the five up-country entry-exit airports, only the Gulu runway, already 3,100 m in length, will not require to be extended. Runways at the other four airports will be lengthened to between 2,400 and 2,650 m.

8-26. The investment costs and schedules prepared at the end of 2003 were for a total expenditure of US$ 152.4 million over 15 years. This programme has now been revised by making the following amendments:

a) deducting amounts for works already carried out up to 2007/08;
b) excluding costs for a new Kampala municipal airport;
c) adding costs for ten new up-country airports to be developed;
d) revising all costs to reflect inflation since 2003;
e) noting detailed plans shown in the CAA Business Plan, 2007/08-2012/13;
f) revising the allocation of investment into three five-year phases of the Plan.

8-27. Proposed new up-country airports include Yumbe, Ntungamo/Rwentobo, Rukungiri, Pader, Apac, Nakasongola, Kiboga, Sembabule, and Rakai. All will be constructed to provide simple runway and terminal facilities, costing approximately US$ 400,000 each, except that Rwentobo will be constructed as a regional facility for south-western Uganda at an estimated overall cost of US$ 35 million. A higher cost of US$ 3.5 million is also estimated for Rukungiri.

8-28. Costs for airport investment works have risen very considerably since 2003, especially when expressed in dollar terms, and an escalation factor of 1.70 has been applied to the 2003 costs.

8-29. Hence, a revised investment schedule has been prepared for the 15-year period 2008/09–2022/23 as shown in Table 21 below. The new overall total investment over 15 years at 2008 prices is US$ 234.5 million. The totals for the three five-year phases are:

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/09–2012/13</td>
<td>US$ 88.2 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013/14–2017/18</td>
<td>US$ 91.7 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018/19–2022/23</td>
<td>US$ 54.6 million</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 21:** Summary of Revised NTMP Airport Investment Programme, (2008) in US$ Millions

<table>
<thead>
<tr>
<th>No</th>
<th>Component</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Totals (for the 15-Year Plan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Entebbe International</td>
<td>37.20</td>
<td>25.60</td>
<td>93.00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Other entry-exit Airports</td>
<td>42.00</td>
<td>23.50</td>
<td>89.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Other CAA Airports</td>
<td>3.50</td>
<td>2.00</td>
<td>7.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Non-CAA Airports</td>
<td>1.50</td>
<td>1.00</td>
<td>3.50</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>New Up-Country Airports</td>
<td>4.00</td>
<td>3.00</td>
<td>42.00</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>88.20</td>
<td>91.70</td>
<td>54.60</td>
<td>234.50</td>
<td></td>
</tr>
</tbody>
</table>
Table 8.3 is for projected investments in the Air Transport Sub-Sector over the 15-Year Investment Plan to 2023.

Thereafter, a new plan will be required.

Long-term possible perspectives include

(i) A purposively-designed International Hub Airport (IHA), including a large Uganda Cargo Base, covering 20-30 sq.kms once Entebbe “fills up” as she is “hemmed” in by the Lake (Nakasongola is often mentioned as a futuristic possible site).

(ii) Attendant rapid transit road (6-lane highway) and rail (rapid double track) systems to serve the new Airport or IHA.

A Municipal Airport for Kampala City.

Selectively up-grade Regional Airports to over 3,000 m runway, viz

(i) Gulu
(ii) Arua
(iii) Kasese
(iv) Pakuba
(v) Kidepo
(vi) Rwentobo.

Up-graded “District” Airports, mainly to

(i) Tarmac Runways
(ii) Of up to 2,000 metres long (on a selective basis).
9.0 INLAND WATER TRANSPORT

9.1 Background

9-1. With 17 percent of Uganda’s surface area covered by water or swamp, there has been a long history of water transport on the lakes and rivers. But from the 1960s the traditional water transport sector declined rapidly, as road transport spread through the country, and especially after disastrous flooding in 1962-64 swamped several vessels and many landing facilities. However, railway wagon ferries were introduced on Lake Victoria in the 1960s to convey wagons between the rail networks of Uganda, Kenya and Tanzania.

9-2. The present-day inland water transport system has three (3) main components, namely:

(i) Wagon ferry services on Lake Victoria between ferry terminals of the three East Africa countries, including Port Bell and Jinja;
(ii) A number of short–distance road vehicle ferries across rivers and lakes, acting as ‘road bridges’ between adjacent parts of the road network.
(iii) Other lake and river services including a new regular service to the Ssese Islands, and many informal sector operations by private canoes.

9-3. Wagon ferry routes and locations of the ‘road bridges’ are shown on Map A.

9.2 Present Services

9.2.1 Wagon Ferry Services

9-4. The wagon ferry services operating out of Port Bell largely ceased after two of the Ugandan ferries were involved in a mid-lake collision in 2005, when the ‘Kabalega’ sank; thereafter the remaining Ugandan vessels were also withdrawn from service pending rehabilitation. Since 2005 a single Tanzanian wagon ferry has provided only a limited service between Port Bell and Mwanza.

9-5. The Ugandan wagon wagon ferry services and terminals were included in the railway concession, and will, therefore, now be operated by Rift Valley Railways (RVR). Provision of US$ 2.4 million has been made under an IDA project for the withdrawn ferries to be rehabilitated.

9.2.2 Road Bridges

9-6. Vehicle ferries are operated as ‘road bridges’ at seven crossings around the country, including three on Lake Victoria, two on the Victoria Nile and and one each on Lake Albert and the Albert Nile.

9-7. The Paraa ferry is operated by the Uganda Wildlife Authority (UWA). The remaining six are now operated by UNRA. Most crossings are short, of 2 km or less, with longer
crossings at Bukakata–Luuku (8Km), Kiyindi–Buvuma (8 km) and Wanseko–Panyimur (16 km). They are operated by pontoons of 40 to 120 tonnes capacity. New ‘road bridges’ to be added to the UNRA network include a 20-km Lwampanga-Namasale crossing over Lake Kyoga, and a 1-km crossing of the Victoria Nile at Mbulamuti.

9.2.3 Other Water Transport Services

9-8. Besides the wagon ferries and road bridges, the only other formal service is a new ferry, the MV ‘Kalangala’, between Nakiwogo, near Entebbe, and Lutoboka in the Ssese islands. This service has been contracted out by MoWT to a private operator. Otherwise, informal services are provided on the lakes and rivers by private operators in motorised canoes, mostly open boats of about 15-passenger capacity, carrying passengers, livestock and goods. These vessels are often grossly overloaded, and regular serious accidents occur.

9.2.4 Condition of Infrastructure

9-9. Infrastructure in the form of jetties and other landing sites is often very basic and in dilapidated condition, with poor access from both land and water sides. Navigation aids are now often damaged or missing, even on Lake Victoria where formal services still operate. A comprehensive new survey of the lake, leading to an up-to-date definition of shipping lanes and the replacement of navigation aids, constitutes one of the important activities already identified by LVBC, and a consultant has undertaken a pre-feasibility study.

9.2.5 Regulation

9-10. Regulation is the responsibility of the Transport Licensing Board (TLB), but in practice lack of resources limits the Board’s registration and inspection activities. The Marine Police is similarly deficient in capacity, and unable to exercise the required level of control. TLB is also now responsible for domestic implementation of EAC legislation for Lake Victoria, working closely with the Lake Victoria Basin Commission (LVBC). Much of the legal and regulatory framework requires revision, and MoWT now intends to appoint a consultant to propose new legislation and regulatory procedures for the Ugandan water sector, to be harmonised with the EAC legislation already introduced for Lake Victoria.

9.2.6 Search and Rescue

9-11. Existing search and rescue facilities in Uganda are currently very limited. LVBC, however, plans to establish co-ordinating centres in each of the Lake Victoria states.
9.3 Future Role of Water Transport

9-12. Water transport can carry bulk loads at low cost, though at slow speeds and with potentially high port costs, and should have a significant role to play in a modern and integrated Ugandan transport system.

9-13. The wagon ferry services must be brought back to service as soon as possible, in order to boost the capacity of the railway network, and enhance the ability of the concessionaire to increase the rail share of import and export flows. The ‘road bridges’ across lakes and rivers are a key element of the UNRA road infrastructure, and safe and punctual ‘road bridge’ services will allow passenger and goods operators to offer better transport between communities separated by water. The residual sector includes the recently introduced Entebbe-Lutoboka service to the Ssese Islands, and the many informal services made mainly by motorised canoe. As lifelines to some remote areas, these services must be available and affordable to poor communities, and must also guarantee safe passage of passengers and goods.

9.4 Water Sector Organisation

9-14. The guiding philosophy for the future will follow the overall strategy of developing MoWT as the originator of planning and policy, while leaving operations increasingly to the private sector (see Chapter 4).

9-15. The operation of wagon ferry services on Lake Victoria has already been conceded to the railway concessionaire. Under the revised concession, the exclusivity clause concerning roll-on roll-off (RoRo) operations at Port Bell and Jinja will be removed, thus also allowing operators other than RVR to use the RoRo facilities. The recent transfer from MoWT to UNRA of responsibility for most of the ‘road bridges’ should bring about substantial improvements in service and reliability. The services may be privatised in future under concession from UNRA.

9-16. In other water transport activities, the formal private sector is presently active only in running the Entebbe-Lutoboka ferry. However, interest has been shown also in new private sector operations on Lake Victoria, possibly including direct barge transport of jet fuel from Kisumu to Entebbe, and truck ferry services across the lake. The informal private sector provides motorised canoe services on the lakes and rivers. With many landing sites in very poor condition, government needs to facilitate better services by rehabilitating infrastructure, but should not become involved in service operation.

9-17. There is also an urgent need for better enforcement of operator safety procedures, since services are often characterised by gross over-loading, use of defective vessels, and absence of basic safety equipment such as lifebelts. The proposed new Multi-Sector Transport Authority (MTRA) must be equipped with sufficient resources and staff to carry out vessel inspections regularly, with powers to suspend licences where owners persistently flout the legal safety requirements.
9.5 Deficiencies and Constraints

Deficiencies and constraints in the inland water transport sub-sector may be summarised as follows:

a) Shoreline infrastructure is largely basic and dilapidated;
b) Land access to landing sites is often poor and remote;
c) Water access to landing sites is also sometimes poor, especially where lakes or rivers are affected by water hyacinth;
d) Vessels are often in poor condition;
e) Potential performance of wagon ferries is also constrained by the failure to date of the railway concession to revitalise the railways;
f) There is a long history of poor and unreliable service at most of the ‘road bridges’, though this should now improve under UNRA management;
g) Overloading of vessels frequently occurs, leading to often fatal accidents;
h) Navigation routes are archaic and need to be re-surveyed;
i) Navigation aids are often damaged or missing;
j) Severe capacity constraints in both the Transport Licensing Board and the Marine Police result in poor enforcement of water transport standards;
k) Search and rescue capacity on the waterways is poor.

9.6 Investment Needs over the 15-Year Plan

A 15-year investment programme has been prepared for the sector. This aims to bring the standard of infrastructure back to an acceptable standard so as to enhance the largely private water transport services. Larger investments will be made at ports with higher traffic potential, such as Port Bell, Jinja or Butiaba. At Port Bell, the existing dry dock will also be rehabilitated. The two Ugandan wagon ferries will be rehabilitated, while the MV ‘Kabalega’ which sank in 2005 will be replaced.

The programme is similar to that prepared by NTMP consultants in 2004, except that it now also includes a sum for rehabilitation and replacement of the Ugandan wagon ferries, and that cost estimates have been up-dated. Also shore works and vessels at the UNRA road bridges have no longer been included as these have already been costed as part of the roads programme.

The updated programme has a total estimated cost at 2008 prices of US$ 130.00 million, divided into three five-year phases as per Table 22. Of this total cost, US$ 53.0 million will be spent on Lake Victoria, US$ 52.50 million on Lakes Kyoga and Albert, and US$ 24.50 million on other lakes and on the Nile. Full details by waterway and timing of investment are shown in Table 22.

Table 22: Estimates for Re-development of the Uganda Inland Water Transport
<table>
<thead>
<tr>
<th>No (0)</th>
<th>Phase (1)</th>
<th>Amount (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2008/09 – 2012/13</td>
<td>54.50</td>
</tr>
<tr>
<td>2.</td>
<td>2013/14 – 2017/18</td>
<td>59.00</td>
</tr>
<tr>
<td>3.</td>
<td>2018/19 – 2022/23</td>
<td>16.50</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>130.00</td>
</tr>
</tbody>
</table>

*Source:* ‘Preparation of NTMP including Master Plan for GKMA’, Interim Report, Table M-5; Tahal Consulting Engineers, February 2004 (with updated prices and adjustments as described)
Box 9.1: Beyond 2023: The Long Term View

- As with roads, rail, and air, the above Inland Water Transport Investment Plan lasts up to 2023.

- A fresh Inland Water Transport Investment Master Plan will be required, thereafter.

- Long-term perspectives to 2050 include:
  
  (i) Introduction of
      (a) Modern cargo boats for roll-on roll-off and container cargo on Lakes Victoria, Albert and Kyoga,
      (b) fast, luxurious passenger boats on Lakes Victoria, Albert, and on the Victoria Nile.

  (ii) Introduction (by the Private Sector) of circular luxury cruises on Lake Victoria, calling at selected “tourist” ports, e.g. Entebbe-Jinja-Kisumu-Musoma-Mwanza-Bukoba-Kalangala-Entebbe, and/or Entebbe-Mwanza-Entebbe.

  (iii) Introduction of Water Sports through construction (by the Private Sector) of Water Marinas at selected locations best-suited for such purposes.

  (iv) Predominantly private sector operations of water services and port facilities.
10.0  GREATER KAMPALA METROPOLITAN AREA
(TRANSPORT MASTER PLAN)

10.1  Introduction

10-1. Greater Kampala has developed a transport system with unique characteristics and problems of its own. Mass commuting to workplaces causes heavy morning and evening congestion and delay on an inadequate and over-loaded road network. Parking in the city centre has become a major problem, and the quality of life has progressively deteriorated. These problems justify the need to implement the National Transport Master Plan for GKMA.

10-2. The findings and recommendations of this Transport Master Plan (TMP) for the Greater Kampala Metropolitan Area (GKMA) are based largely on the detailed surveys and comprehensive model-based urban transport analysis carried out by NTMP consultants in 2003/04 (see Volumes IV and V).

10.2  The Existing Situation

10.2.1  Background Data

10-3. Population of the Greater Kampala Metropolitan Area (GKMA), as defined in Section 10.2.2, is estimated at 2.5 million in 2008, and expected to reach 4.5 million by 2023. The size of the GKMA work force was about 700,000 in 2003, and may now approach 900,000. The Kampala metropolitan area is by far the largest single production centre of Uganda and the centre for industry, commerce and services.

10-4. The number of public transport trips (not including boda bodas) in 2003 was about 460,000 in the peak AM period or about 800,000 daily trips; these figures have probably now risen to about 575,000 and one million respectively. The 2003 total indicated that about 146 trips per person per year were being made by public transport. This low figure suggested: (i) insufficient public transit capacity; (ii) probably, a large number of walking and bicycle trips; and (iii) a low level of public transport accessibility. Public transport is provided mostly by minibuses (known as “taxis” or “kamunyes”), operating almost solely on the main radial urban roads without fixed stations, time-tables or loading and off-loading bays, thus both suffering from road congestion and, in large measure, contributing to it.

10-5. Except for part of the city centre and some low-income settlements, the urban area is mostly covered with low density housing. It is also characterized by inadequate roads, poor public transport and high congestion, with the roads continuing to deteriorate due to low budget allocations for roads.. There is almost no central land-use/transport planning. Kampala City also possesses some of the worst-planned storm water drainage systems in the world, with road-flooding being a common occurrence and adding to congestion.
10.2.2 Greater Kampala Metropolitan Area

10-6. The Greater Kampala Metropolitan Area is a geographical zone encompassed by a circle of some 20 km radius from Kampala City Centre, extended to nearly 40 km in the direction of Entebbe, as illustrated in Figure 1 below. The total area of GKMA is about 970 km$^2$

Figure 1 Definition of Proposed Greater Kampala Metropolitan Area

10-7. The GKMA area, as defined by the Consultant for the Transport Master Plan, includes land territories administered by the following local government authorities:

Kampala City Council.
Entebbe Municipal Council.
Mukono Town Council.
Kira Town Council (except for Kimwanyi Parish).
Wakiso Town Council.
Mukono District (part thereof).
Wakiso District (part thereof).
10-8. Populations of Kampala District, and of the municipalities and parishes in Mukono and Wakiso Districts also lying within GKMA, are summarised in Table 23 below for the census years 1991 and 2002, with estimates also for 2003 and 2008.

**Table 23. Population of GKMA, 1991-2008 (in ‘000)**

<table>
<thead>
<tr>
<th>No. (0)</th>
<th>District (1)</th>
<th>Census Data (2)</th>
<th>Based on UBoS/ NTMP Estimates (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kampala</td>
<td>774.2</td>
<td>1,189.1</td>
</tr>
<tr>
<td>2.</td>
<td>Mukono (GKMA)</td>
<td>93.5</td>
<td>119.3</td>
</tr>
<tr>
<td>3.</td>
<td>Wakiso (GKMA)</td>
<td>386.2</td>
<td>685.3</td>
</tr>
<tr>
<td><strong>Total, GKMA</strong></td>
<td></td>
<td><strong>1,211.5</strong></td>
<td><strong>1,963.3</strong></td>
</tr>
</tbody>
</table>

*Source: UBoS; NTMP allocations*

10-9. Further projections made in Chapter 3 show the GKMA population reaching 3.08 million in 2013, and 4.50 mn in 2023. The average expected growth rate for the 15 years 2008-23 is 4.0 percent per annum, giving an overall population increase of 79.9 percent over the Plan Period. Since 1991, the main population growth has been in the outer ring of Kampala District and in a belt to the east, generally along Jinja Road. At the same time, the inner core of Kampala District has seen considerable de-population as the demand for business premises has displaced residential uses. There has also been considerable urban sprawl, with many areas outside Kampala District experiencing high population growth rates and increases in density. This has been partly due to land cost and availability, but also due to the lack of comprehensive land use planning for GKMA.

10-10. The travel time survey carried out in 2003 showed that 57 percent of journeys were for work or business, 14 percent for education, and 29 percent for shopping and other purposes.

**10.2.3 The Road Network**

10-11. The GKMA road network classification system is illustrated in Figure 10.2, which shows that national roads do not run continuously through the city centre. Figure 10.3 and the corresponding central enlargement in Figure 10.4 illustrate in a simplified, two-tier fashion the fundamental nature of the GKMA road network. The regional road network linkages form a cross-shaped north-south and east-west array of intersecting axes with the nexus located in the city centre. The main sub-regional or metropolitan network linkages are radial with respect to that central nexus, or form connecting branches from the regional network axes at a short distance from the central nexus. The 21-km Kampala Northern By-Pass, now under construction, will provide some relief to
the city centre, but, at only 4-10 km from the city centre, runs through largely built-up areas, and seems likely also to be heavily loaded as soon as it is fully open.

10-12. The Kampala District network of 2003 was 618 km in length, consisting of 290 km paved and 328 km unpaved, not including minor local access roads. Condition of the paved road network was given for 2003 as 28 % good, 46 % fair, 15 % poor and 11 % very poor, while that of the unpaved network was only 7 % good, 40 % fair, 40 % poor and 13 % very poor. No up-dating of these data for 2003 is yet available, but the overall condition is unlikely to have improved.

10.2.4 Public Transport

(a) Vehicle Fleet

10-13. A Kampala City Council (KCC) survey in 2003 identified 6,851 minibuses as operating in the city. KCC also had over 4,000 boda-bodas registered at this time. These are motor-cycles used for informal sector public transport, mainly on short distributor routes, or for journeys where speed is essential. The boda-boda total has certainly risen rapidly since 2004, though various estimates made for 2008 vary widely between 8,000 and 20,000; a detailed estimate of 15,979 was made by consultants in November 2007.

10-14. Passenger transport within GKMA is mainly dependent on the minibuses, known locally as "taxis" (kamunyes), most having a 14-passenger capacity. An established operator association, the Uganda Taxi Operator and Driver Association (UTODA), represents the majority of taxi owners and drivers. The estimated number of passenger places offered by the existing fleet is 120,000. For an estimated GKMA population of 2.5 million, the place-capacity offered is the equivalent of one "standard" 40-seat bus for every 830 persons. With only limited access to private cars, this low ratio confirms a shortage of public transport capacity in GKMA.

10-15. Home-work-home travel patterns in GKMA tend to be radial, meaning that many of the urban poor from peripheral area have to walk long distances to workplaces or schools.

**Box 10.1:** Environmental Impact of Low-Capacity Vehicles Dominance on the GMKA

- These data also are reflections of significant environmental-impact implications.
- Delivering an on-street passenger-place capacity of 120,000 could be achieved by using 1,700 seventy-seat buses or 2,700 forty-five seat buses.
- Instead, over 10,000 sets of tailpipe emissions are on the GKMA streets daily, thus increasing the hydrocarbon exhaust (read carbon) emissions generated by a factor of four.
(b) Uganda Taxi Owners and Drivers Association

10-16. Since most GKMA taxi owners and drivers are its members, UTODA controls or influences the operation of some 8,000 minibuses in Kampala and GKMA, overseeing all aspects of the taxi operations. Under a fee-based franchise contract with the KCC, it manages the two main GKMA minibus terminals ("taxi parks"), and therefore has a very dominant market position in the city. Severe congestion occurs for much of the day around the main parks, causing long delays and therefore additional operating costs for the kamunyes using them. Relocation of these parks to the city periphery must be the aim for the future.

(c) Institutional and Regulatory Issues

10-17. Institutional and regulatory issues are of importance. Private sector capital has shown little inclination to invest in areas of passenger transport other than second-hand imported minibuses or single-passenger boda-bodas, thus displaying all the classic symptoms of "short-termism". Some form of government intervention or incentive will be needed to encourage the widespread introduction of larger buses, which can both be more efficient and offer major travel cost reductions.

10-18. Lax regulation of GKMA passenger operations also acts as a disincentive to long-term investment, since the present system fails to ensure effective protection of route and service exclusivity for new services or routes. The procedures for licensing of public transport operations require comprehensive review, and must be an early concern of the proposed Multi-Sector Regulatory Transport Authority (MTRA). There must also be tighter control over licensing of boda-bodas for hire.

10.2.5 Cargo Traffic in Kampala

10-19. Since freight movements through and within GKMA are vital for the national economy, it is necessary to avoid disjointed planning of infrastructure and traffic management on GKMA corridors carrying this traffic. A fully integrated approach to planning and funding is needed at all levels. No artificial budgetary or responsibility demarcations can be made between “national” and “urban” roads, since they should be a single, and integrated, national economic asset.

10.2.6 Road Safety

10-20. The serious issue of road safety is of concern at GKMA, as at national, level (see also Chapter 6). Roads are heavily congested, and driver behaviour has deteriorated alarmingly in recent years. The rapidly growing numbers of erratically driven boda-bodas exacerbate the traffic problems, as they cause accidents by openly flouting many traffic laws. Speed limits are routinely ignored by drivers of all vehicle types, and pedestrian facilities are very poor, with inadequate provision of both pavements and crossing facilities. The traffic police are well aware of the poor driver discipline, but lack resources for consistent enforcement. A concerted effort is required by police, road
users and both transport and land use planners to improve road construction standards, construct pedestrian facilities, improve road discipline, and ensure the roadworthiness of all vehicles

10.2.7 Parking

10-21. The parking situation in the city centre is rapidly becoming critical. A system is in place of paying for parking by pre-paid vouchers, and works reasonably well, except that most parking places are occupied for most of the day, so that illegal double-parking is becoming the norm. Therefore, the main city streets are continuously congested as parked cars obstruct traffic flow on the running lanes. Some sites have been opened up for commercial parking, but are quite insufficient to meet the demand. Many city buildings have been built without adequate, or sometimes any, provision for parking.

10-22. In future city planners must ensure that all new premises are constructed with adequate parking space; in the meantime it may be necessary to induce the private sector to construct new public car parks, at suitable central and peripheral sites; to restrict or ban parking in certain streets and designate the same as pedestrian concourses; to introduce park-and-ride schemes, where buses convey passengers from peripheral car parks to the city centre; and to take other appropriate measures. A substantially improved public transport system is also needed to help meet the central parking problem, and this should result from the upcoming Bus Rapid Transport (BRT) Study.

10.2.8 Deficiencies in the Present System

10-23. The GKMA transport system suffers from many deficiencies. Many of these are a function of the continuous lack of funds, while some are the result of insufficient physical planning, poor engineering practices, and the lack of a functional organization to meet the needs of a growing urban population. Given the forecast demographic and economic growth, it appears that with a ‘Business As Usual’ approach (see Section 10.3), today’s problems will only be aggravated in the future.

10-24. Current transport issues include the following:

i. Rapid population growth and rising vehicle ownership have greatly increased traffic congestion in much of the city;

ii. Lack of structural planning has caused unplanned urban sprawl to proliferate along main radial routes, further adding to traffic congestion;

iii. The city lacks a clearly defined functional road hierarchy which could be helpful in rational planning of traffic flows;

iv. Traffic management is not well planned or effective;

v. Pollution from vehicle emission is substantial, exacerbated by poor control over vehicle condition and excessive time spent in vehicle queues;

vi. The public transport service is not well-organized, being provided by “taxis” operating without fixed stops, and stopping (and setting off) everywhere;
vii. Roads were designed and constructed without taking into account the needs of pedestrians and non-motorized vehicle (NMV) transport;
viii. Many inhabitants have to walk long distances in order to be served by public transport, which limits the “space of choice”;
ix. While the number of walking trips is not known, it appears to be high. Both bicycles and motorcycles are used as a mode of “for-hire” transport, and it is common to see dangerously overloaded bicycles;
x. Road maintenance is not up to date, adding to the congestion and road safety problems, and increasing travel costs;
xi. The design of some main intersections is outdated and not appropriate for the present-day traffic volumes and composition;
xi. Because of the lack of ring roads, almost all traffic crossing the city along the Northern Corridor must pass through the city centre, aggravating congestion there. Relief from opening of the Northern By-Pass will only be partial;
xi. The congestion problem is compounded by the many heavy trucks that pass through the centre, either in transit or en route to and from city centre premises;
xiv. There are very few traffic management devices in the area (and no area traffic control or central monitoring devices);
ixv. Road safety has become an issue of great concern, due to traffic congestion, poor driving behaviour, and a serious lack of pedestrian facilities;
ixvi. Driving standards have deteriorated sharply, and are insufficiently policed;
ixvii. In many areas road safety is further compromised by the rapid growth of the boda-boda fleet, many of which are driven recklessly by untrained drivers;
ixviii. Very few large buses are available to provide local public transport services;
ixix. Since taxis must go through the “taxi parks”, the roads surrounding these parks are normally extremely congested;
ixx. The public transport licensing system does not encourage competition in the provision of services, and requires early review;
ixxi. Although parking in the city centre is organised, the system cannot meet demand, and is greatly strained because of a near-absence of off-street parking.

10.3 GKMA Future Development

10.3.1 Development Needs

10-25. In preparing a Transport Master Plan for a metropolitan area like GKMA, it is necessary to establish a practical and achievable future scenario. One problem associated with planning of cities in ‘developing countries’ is that these entities can often seek to emulate the development patterns of their ‘developed’ counterparts, without fully analyzing the mistakes already made by the latter.

10-26. The proliferation of the private car in "developed" cities has in some cases, notably in the United States, made public transport virtually extinct; thus much of the American public transport network was abandoned between 1920 and 1940. Cities around the world are now attempting to reinstate public transport systems that they discarded years ago, and it is important that GKMA avoid making similar mistakes.
10-27. In many large cities worldwide, development of underground, tram or commuter rail services early in the twentieth century served as the catalyst for their growth. In the context of GKMA, the following issues must be addressed:

a) The chances of developing such systems in GKMA;
b) The affordability of such systems for GKMA;
c) How to develop good urban transport services without massive investment costs;
d) The possibilities of using an efficient transport network to support an improved living environment and greater prosperity within the metropolitan area;
e) Above all, the ways in which the communities and local authorities can jointly create the organisation needed to carry out the plan successfully.

10.3.2 Options for Development

10-28. Three possible development scenarios were analysed, as follows:

Scenario I: ‘Business as Usual’ (BAU),
Scenario II: ‘Planned Development’ (PD),

10-29. The three scenarios are briefly discussed and illustrated in Figures 2 to 3 below.

**Figure 2: Scenario I Development Pattern**
10-30. **Business as Usual**: Under Scenario I GKMA would continue with the status quo, with the transport system managed very much as at present, and probably continuing to develop along radial lines, with further extension of urban sprawl, and with journey times to and from work continuing to increase.

**Figure 3: Scenario II Development Pattern**

![Scenario II Development Pattern](image)

10-31. **Planned Development**: Under Scenario II preferred locations for industrial and commercial development would be defined around the Kampala periphery. This would create new out-of-town growth poles, reduce journey distances to workplaces, and encourage the development of circumferential as well as radial arteries.
Figure 4: Scenario III Development Pattern

10-32. **Transit Oriented Development**: Scenario III assumes that more rational decision-making processes would be developed in GKMA, to guide and control land use and transport development. It seeks positively to develop a high-quality public transport network which can actively promote development of a well-balanced overall land use, planning and transport scenario for the city. It would necessitate creating a single metropolitan-level transport authority for the whole conurbation.

10-33. Transit-oriented development is the recommended NTMP strategy. While the scenario favours the extensive use of public transport, it does not mean that road networks will not be further developed, or that the needs of car owners will be neglected. It does, however, provide the opportunity to design the urban form so as to become movement-efficient, facilitating development of high-capacity transit modes and services. Low-income residents can, thus, be served by cheaper and faster transit services, spend less of their income and time on travel, and have better access to jobs and other urban facilities. In the long term, TOD planning principles will contribute to slower motorisation, and mitigate some of its negative effects.

10-34. The central idea behind the TOD scenario is to cluster areas of more intensive land use in the inner metropolitan area, in major *mixed-use corridors* and along some *circumferential corridors*, all in a development pattern that is movement-efficient. This strategy will promote the attainment of corridor trip-volume thresholds that can economically support better public transport services, while being attractive to residents because of reduced travel time and cost. It will also stimulate development of economic
activities and public services by virtue of reduced overall congestion, better transport facilities for employees, and concentrated catchment areas for business, retail and public services.

10-35. This scenario envisages the construction of paved *circumferential roads*, along with reconstruction of existing roads to international standards, following road safety principles, and accommodating vehicular and non-motorised traffic as well as public transport operations. The scenario also envisages that most of the population will continue to depend heavily on public transport.

10-36. A new GKMA land use plan will be prepared, one that will allow for higher densities and location of specific types of land use. Construction of dedicated bus-ways on key central and *radial roads* is envisaged, while the entire public transport system will be regulated through a metropolitan-level institutional framework.

10-37. Figure 4 above depicts schematically the deployment of land uses under Scenario III, assuming that bus lanes are incorporated in radial road re-design and reconstruction. Land uses will intensify along major public transport corridors.

10.3.3 The GKMA Transport Model

10-38. The GKMA Transport Model, developed by NTMP consultants in 2003, was a specialised and project-specific version of the common four-step transportation model, calibrated to reflect local traffic conditions. It quantified aggregated indices of system performance under different scenarios including a base scenario. The model included the following four components:

a) Zone system and road network model,
b) Public transport network model,
c) Demand model,
d) Assignment models.

10-39. The model was applied to morning peak hour conditions, when the transport network is most fully loaded. Scenarios for modelling included the following:

a) Current situation,
b) Current situation, with improved routes (fewer transfers in taxi parks),
c) Committed network, improved routes, current demand,
d) Committed network, improved routes, large buses, current demand
e) Committed network, future demand (BAU scenario), 2018

10-40. The TOD scenario was found to give clear advantages over the BAU scenario in terms of average values for vehicle and passenger times and speeds. Thus the TOD scenario in 2018 gave improvements in vehicle speed from 19.4 to 32.7 km/h; and in average passenger speed from 14.2 to 30.0 km/h.
10-41. Conclusions were drawn from the model runs as per Box 10.2 below:

**Box 10.2: Business -As -Usual Model Disastrous by 2018**

- Route improvements by excluding obligatory transfers in taxi parks would bring only a small reduction in passenger-hours, but afford considerable relief in traffic overload in the central area;
- Road improvement measures would bring about further reduction in the traffic overload;
- The introduction of large buses would reduce the flow of public transport vehicles, but, by reducing congestion, would also attract more private cars to the central area. It would also have a significant effect in reducing air pollution, which could not be well evaluated by the 2003 version of the model;
- Continuation of the BAU scenario without improvement measures would bring the whole transportation system in GKMA to an unacceptable status by 2018;
- On the other hand, introduction of the TOD-based system would bring GKMA to a 2018 transport situation better than the present BAU scenario, despite a considerable increase in travel demand.

10-42. There would be a significant change in the major public transport corridors in GKMA. This would allow relief to the most over-loaded city centre traffic points by re-directing flows onto relatively under-loaded surrounding roads, including the proposed new southern direct connection from Jinja Road to Masaka Road.

**10.3.4 Potential Use of Rail Corridors**

10-43. The road-based transport model did not consider potential use of the railway network. The three railway corridors from Kampala station towards Mukono, Port Bell, and Nalukulongo must, however, remain open as part of the concession. All these lines have at least 30-metre reserves, sufficient for double-track railways, which could be used for heavy or light rail operations along with existing freight-based activities. Even if this option is not pursued in the foreseeable future the railway reserves must be retained for any possible later mass-transit needs.

**10.4 GKMA Transport Master Plan**

**10.4.1 Overview of Master Plan Goals**

10-44. The Transport Master Plan comprises four main elements, namely:
a) Reorganisation of GKMA transport planning under a single authority;
b) Adoption of the transit-oriented development (TOD) concept for long-term development and integration of transport and land use planning;
c) Reorganisation and restructuring of the public transport services and fleet;
d) Improvement to the existing road network to improve traffic flow and safety.

10-45. While much of the above programme will require government expenditure, the private sector is also expected, given the right incentives, to become involved.

10.4.2 Proposed Investment Programme

(a) Road Developments

10-46. A 15-Year Investment Programme is proposed, to run from 2008/09 to 2022/23. This includes road, traffic management and safety improvements. Locations of these works are shown in Figure 4. New roads will be constructed to one of the standards described below.

10-47. Dual Carriageway with Railway Viaduct: This will apply to one major scheme to bypass the city centre to the south from Jinja Road to Kibuye, starting from Jinja road with a fly-over crossing of the Mukono and Port Bell railway lines east of Kampala station. This will be an important new artery giving relief to the congested city centre. It is conceived as a 4-lane or 6-lane dedicated motor vehicle route, which may incorporate reserved lanes for high-capacity express bus services. It is shown in yellow in Figure 10.8, and has an estimated length of 4.7 km.

10-48. Dual Carriageways: This classification is conceived as a 4-lane or 6-lane route, which may include provision for high-capacity public transport services. Separate provision would also be made for pedestrians and non-motorised vehicles (NMV). Roads in this category would include principal radial roads, the Northern By-Pass presently under construction, and other connecting and circumferential routes. They are shown in red in Figure 10.8, and have a total length of 122.9 km.

10-49. It should be noted that around 80 km of the roads in this category shown in Figure 10.8 fall within the national roads programme described in Chapter 6, and will be costed within that programme in the summary of total transport investment costs in Chapter 14 (see Table 14.3). In this chapter, however, they will be considered as an integral part of the GKMA programme shown in Table 10.2. Total costs for these 80 km of dual carriageway are estimated at US$ 199.8 million.

10-50. Single Carriageways: These will be upgraded and properly engineered secondary roads with a minimum of two motor vehicle lanes, adequate shoulders and proper drainage. They will mostly be paved in the city and inner suburbs, but some will be gravel in the outer areas of GKMA. These roads are shown in blue in Figure 10.8, and have a total length of 572.9 km.
10-51. **Busways**: It is envisaged that dedicated busways will be introduced to provide more rapid high-capacity public transport along major arteries. A feasibility study for a Bus Rapid Transit (BRT) network will be carried out during 2009. Initial projections under this project make provision for construction of four BRT corridors by 2023, at a total cost of US$ 431.0 million.

**(b) Traffic Management and Safety Measures**

10-52. Traffic management and safety measures will comprise junction improvements, railway crossing improvements, and construction of pedestrian pavements. These three classes of work are described briefly below.

10-53. **Road Junction Improvements**. Junction improvements have been identified as necessary at 62 locations, depicted by small green circles in Figure 10.8. At some of these grade-separated crossings may be necessary.

10-54. **Railway Crossings**. With increasing road and rail traffic, delays and accident risks at crossings will increase rapidly. Improved crossings will be provided at 27 locations.

10-55. **Pedestrian Pavements**. The widespread lack of adequate pedestrian facilities in GKMA, and high associated accident risk, will be addressed by providing proper pedestrian side pavements and crossing facilities along 1,053 km of road.

10-56. A summary of proposed investment expenditure is given in Table 24. The items are, in most cases, those identified by NTMP consultants in 2004, with the notable addition of the BRT corridors, and with a cost escalation factor of 1.70 to reflect inflation in dollar prices since 2003.

**Table 24. Recommended GKMA Transport Investment (2008-23) in US$ Millions**

<table>
<thead>
<tr>
<th>No. (0)</th>
<th>Investment Type</th>
<th>Length / No of Sites (2)</th>
<th>Estimated Investment Cost (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Roads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Dual Carriageway with Railway Viaduct</td>
<td>4.74 km</td>
<td>50.80</td>
</tr>
<tr>
<td>2.</td>
<td>Other Dual Carriageways</td>
<td>122.85 km</td>
<td>300.73</td>
</tr>
<tr>
<td>3.</td>
<td>Single Carriageway</td>
<td>572.93 km</td>
<td>473.37</td>
</tr>
<tr>
<td>4.</td>
<td>Bus Rapid Transit Network</td>
<td>4 busways</td>
<td>431.00</td>
</tr>
<tr>
<td>Total (R)</td>
<td>Roads</td>
<td>700.52 km</td>
<td>1,255.90</td>
</tr>
<tr>
<td>II.</td>
<td>Safety improvements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Junction Improvements</td>
<td>62 locations</td>
<td>81.60</td>
</tr>
<tr>
<td>2.</td>
<td>Railway Crossings</td>
<td>27 locations</td>
<td>12.65</td>
</tr>
<tr>
<td>3.</td>
<td>Pedestrian Pavements and Crossings</td>
<td>1,053 km</td>
<td>30.26</td>
</tr>
<tr>
<td>Total (S)</td>
<td>Safety Improvements</td>
<td></td>
<td>124.51</td>
</tr>
<tr>
<td>Total (Investment Costs)</td>
<td></td>
<td></td>
<td>1,380.41</td>
</tr>
</tbody>
</table>

*Source: Updated from ‘Preparation of the NTMP and Including Master Plan for GKMA’, Final Report; Tahal Consulting Engineers, May 2005*
Details of expenditure from 2008/09 to 2022/23 are shown in Table 24. The investment spacing by five-year stages is:

- 2008-2013: US$ 181.97 million
- 2013-2018: US$ 508.88 million
- 2018-2023: US$ 689.57 million

10.5 Implications for Other Cities in Uganda

Greater Kampala is by far the largest conurbation in Uganda, and the only one where serious traffic problems have yet been experienced. However, several other cities are growing rapidly, and by 2023 some could have populations approaching 300,000, and also be facing moderate congestion problems. In order to avoid future congestion such as is now experienced in GKMA, it is important that other cities, including Gulu, Lira, Mbale, Jinja and Mbarara, take stock of existing traffic patterns in their towns, and devise and adopt integrated land use, planning and transport policies which are able and ready to cope with future demand patterns.

Box 10.3: Planned Macro-Transport Network for the GKMA (2008-2023 And Ahead To 2050)

- From the above discourse, major GKMA transport developments, over the 15-Year Plan Period (2008-2023) and thereafter up to 2050 to include:
  - (i) **Radial Roads**: All Dual Carriageways (and 6-lane Highways)
  - (ii) **Circumferential Roads**: All Dual Carriageways (and later 6-lane Highways)
  - (iii) **GKMA Rail Network**: Along selected **Radial Routes**; eventually, a GKMA Railway Network (or Underground Rail System).

- **Radial Routes are to be**
  - (i) Kampala-Entebbe
  - (ii) Kampala-Mpigi (on Masaka Road)
  - (iii) Kampala-Buloba (on Mityana Road)
  - (iv) Kampala-Wakiso (on Hoima Road)
  - (v) Kampala-Mutuga (on Bombo Road)
  - (vi) Kampala-Kasangati (on Gayaza Road)
  - (vii) Kampala-Mukono (on Jinja Road)
  - (viii) Kampala-Port Bell.

- **Circumferential Roads** will comprise three (3) Ring Roads (as below):
  - (i) Inner Ring Road: Possibly as per the 1969 Kampala Roads Master Plan
  - (ii) Mid Ring Road: Northern-By-Pass & Southern By-Pass

- **GKMA Rail Network**, will be along existing rail lines (to be up-graded to double track for the purpose), on routes
  - (i) Kampala-Natete/Busega
  - (ii) Kampala-Mukono
  - (iii) Kampala-Port-Bell.
N.B. (i)*Some of the Circumferential Roads, e.g. Outer Ring Road, to dovetail in the National Road Network.
(ii)Radial Roads to feed into long-distance Dual Carriage National Roads (eventually 6-lane Highways).
(iii)A Rapid Rail Transit System for Kampala-Entebbe-Entebbe International Airport should be studied over the Plan Period; certainly for the next Plan Period.
11.0 OTHER TRANSPORT MODES

11.1 Pipelines

11-1. The existing Kenya oil pipeline from Mombasa to Eldoret is now to be extended to Kampala, and should capture much of the oil import traffic from road and rail. Costs of importing oil will be reduced, and many heavy trucks will be removed from the road, with beneficial effects in terms of congestion, vehicle overloading and pollution; on the other hand, the railway will lose some of its potential traffic base.

11-2. Development of Uganda’s oil reserves will also lead to construction of other pipelines in the country, so as to supply refineries, distribute refined products around the country, and potentially for regional export. Pipelines are thus set to become an important component of the transport sector well before the end of the 2008-23 Plan period. There will be need for close co-operation between MoWT and the Ministry of Energy and Mineral Development (MEMD), as pipelines will be subject to regulation by MoWT. Environmental requirements for oil pipelines and depots will also need to be strictly enforced, following requirements of the National Environmental Management Authority (NEMA). It will be important to avoid oil spillages and explosion risks at inter-modal transfer points with road and rail.

11-3. Since prime responsibility for planning of pipeline infrastructure and services will remain with MEMD, pipeline investment costs have not been included in the NTMP investment programme.

11.2 Non-Motorised Transport

11-4. Non-motorised transport (NMT) is of great importance in developing countries such as Uganda, especially in remote rural areas where infrastructure is poor and incomes are low. Adequate transport is essential in these areas in order to create opportunities for marketing of crops, livestock products and fish. NMT transport modes include walking, bicycles, wheelbarrows and animal traction, all of which are low-cost and can contribute to alleviating poverty. Carts and tractors can be communally purchased and operated at the village level, though they are dependent on the infrastructure of tracks and pathways being maintained in adequate condition for most, or preferably all, of the year.

11-5. Non-motorised transport also has a role to play in Kampala and other urban areas, where it is important to provide adequate facilities in the form of pavements or bicycle paths and lanes. Pedestrian crossing facilities are also an urgent requirement, especially in Kampala, where crossing a busy road can now be extremely hazardous.
12.0 INSTITUTIONAL ISSUES

12.1 Approach to Institutional Reform

12.1.1 Institutional Needs and Existing Constraints

12-1. There are many actors in Uganda’s transport sector whose mandates, functions and relationships need to be appropriately defined and harmonized. The institutional measures under NTMP/GKMA seek to address the following major constraints:

a) Lack of coherent public policy guidance and dialogue, leading to disjointed plans and programmes;

b) Fragmentation of planning, funding and management responsibilities among different ministries;

c) Shortage of trained and experienced transport planning personnel;

d) Absence of a one-stop information centre for transport sector data;

e) Inadequate financial resources to support the institutional framework; and

f) Weak corporate governance and management.

12.1.2 Guiding Principles

12-2. NTMP/GKMA is conceived within Uganda’s Sector-Wide Approach (SWAP) to national development, and therefore guided by the following principles:

a) Liberalization of the economy; separation of roles and responsibilities of state and non-state actors based on public-private partnerships (PPPs);

b) Decentralization, calling for transfer of responsibility for construction and maintenance of local roads to urban and local governments;

c) Building of the requisite institutional technical and financial capacity to enable sustainable execution of institutional mandates.

12.1.3 Goals and Objectives of the Institutional Arrangements

12-3. The overall goal of the proposed institutional arrangements is to ensure that Uganda’s transport sector is serviced by the right organisations, making the right responses to emerging opportunities and challenges. Specific objectives of the structures established under the NTMP are to:

i) Put in place effective institutional frameworks for policy making, higher level planning, funding and regulation of the transport sector;

ii) Enhance and sustain the coordinated delivery capacity of public sector transport actors; and

iii) Enhance sustainable public-private partnerships for development of a regional multi-modal transport sector.
12.2 Existing and Proposed Institutional Structures

12.2.1 Introduction

12-4. The institutional strategy is set at three levels:

i) **Regional initiatives** aimed at promoting cooperation and collaboration in transport sector policy, infrastructure development and management;

ii) **National governments** responsible for formulating national and regional inter-modal transport policy, and for establishing the legal framework;

ii) **District and Municipal authorities**, including the proposed GKMA, responsible for determining their own priorities, and allocating available resources to achieve municipal objectives.

12-5. Implementing agencies, many of which are private, are responsible for performing the tasks assigned, or services contracted, to them by the above authorities.

12.2.2 Regional Structures

12-6. Regional arrangements are provided for within the framework of The Treaty for the Establishment of the East African Community (see Article 89). Regional transport co-operation is addressed by the EAC Sectoral Committee on Infrastructure. The EAC Secretary General is expected to put in place the technical capacity to enable the relevant EAC organs and institutions to coordinate their mandated functions with relevant transport sector players in each Partner State.

12-7. In the policy field, EAC strives to set common standards in areas such as road vehicle axle loading regulations, validity of vehicle insurance documents, and airport security standards. Regional transport planning issues are also addressed by EAC, in areas such as the East African Road Network, East African Railways Master Plan, and Northern Corridor Infrastructure Master Plan.

12-8. The Community of Eastern and Southern Africa (COMESA) is a larger regional organisation, based in Lusaka, Zambia, which also undertakes transport planning activities for an extensive area of Eastern and Southern Africa.

12.2.3 Transport Sector Policy Formulation, Strategic Planning and Monitoring

(a) **Ministry of Works and Transport (MoWT)**

12-9. MoWT is the lead government agency in the national transport sector, charged with the following responsibilities:

i) Transport sector *policy formulation*;

ii) Provision of higher-level *planning* directives and guidelines;

iii) *Coordination* of policy, and NTMP/GKMA *implementation*;
iv) *Overall regulation* of the transport sector;
v) *Monitoring*, evaluation and reporting of transport sector performance; and
vi) Transport sector *database* management.

12-10. MoWT will work closely with other Government Ministries, Departments and Agencies (MDAs), the Parliamentary Committee on Works, Transport and Communications, and the Transport Sector Working Group, to ensure effective co-ordination of all sector-wide transport matters addressed by NTMP/GKMA. The Ministry shall also ensure necessary collaboration with private sector stakeholders; act as the focal point for all Uganda’s regional and international transport sector cooperation; and be responsible, with the Ministry of East African Affairs, for ensuring implementation of regional agreements and protocols.

12-11. A new structure for MoWT is being implemented from 2009. The Department of Planning and Policy Analysis will be responsible for developing transport sector plans and policies; monitoring and evaluating their implementation; and maintaining an up-to-date data base. The Department will be headed by a Commissioner reporting directly to the Permanent Secretary.

12-12. A Transport Master Plan Unit (TMPU) will be established within the Department to serve as a central office responsible for undertaking all long-term planning activities, for monitoring implementation of NTMP/GKMA, and for periodic updating of the Plan. Within TMPU there will be two divisions responsible for NTMP and GKMA respectively, the latter working closely with the Metropolitan Area Transport Authority (MATA).

12-13. TMPU will be staffed with experts in transport sector planning, monitoring and evaluation. These experts will perform full-time functions related to execution, monitoring and updating of NTMP/GKMA, although they will also keep in close touch with the other day-to-day planning activities of MoWT and the different transport agencies.

(b) **Ministry of East African Affairs**

12-14. The Ministry of East African Affairs (MoEAA) is the focal point for coordinating Uganda’s political commitments and responses within the framework of the EAC Treaty. MoEAA will work closely with MoWT on transport matters.

(c) **National Planning Authority (NPA)**

12-15. The NPA function is to produce comprehensive and integrated development plans for the country, supporting the national vision and long-term objectives. NPA will provide the Comprehensive National Development Planning Framework (CNDPF), within which NTMP is expected to support other development sectors.
12.2.4 Transport Sector Funding

(a) Ministry of Finance, Planning and Economic Development

12-16. MoFPED is responsible for making available funding for the approved transport sector investment plan, and will also provide oversight to the Road Fund Management Board.

(b) Uganda Road Fund

12-17. The Uganda Road Fund (URF) was established by Parliament, as part of the government strategy to commercialize the roads sub-sector. URF objectives include financing routine and periodic maintenance of public roads, ensuring that these roads are always maintained, and advising on control of vehicle overloading.

12.2.5 Transport Sector Regulation

12-18. Transport sector regulation is currently carried out for roads and water by the Transport Licensing Board (TLB), for air by the Civil Aviation Authority (CAA), and for rail by Uganda Railways Corporation (URC). The regulatory functions of TLB and URC will be assumed by a new Multi-Sectoral Transport Regulatory Authority (MTRA), which will in future regulate all modes except aviation.

(a) Multi-Sectoral Transport Regulatory Authority (MTRA)

12-19. There is need for a strong and functional institution to ensure effective regulation of the country’s transport sector. An independent and adequately resourced Multi-Sector Transport Regulatory Authority (MTRA) shall be established by law to be responsible for licensing, economic regulation, safety and environmental issues, and legal services pertaining to all commercial transport operations in the country.

12-20. MTRA shall regulate primarily transport sector services, not infrastructure. Responsibility for air sector regulation and safety enforcement shall, however, remain with CAA, which is already experienced in this specialist role. Also, specific responsibility for road safety will be transferred to a new National Road Safety Authority (NRSA). MTRA will also regulate pipelines, once these are constructed.

12-21. MTRA shall assume the functions hitherto performed by the Transport Licensing Board (TLB), and shall also liaise closely with the Uganda Revenue Authority, Uganda Police Force, UNRA, URC, and relevant regional and international bodies on matters of joint concern.

12-22. Government will employ a competent Change Manager (CM) to work closely with the MTRA Executive Director so as to facilitate the transition process in a systematic way, including recruitment of key technical staff.
(b) Civil Aviation Authority (CAA)

12-23. MoWT have entrusted regulation of the civil aviation sector to the Civil Aviation Authority (CAA). CAA has a well-established reserve of the required technical knowledge and experience, and is thus well-equipped to continue regulation of the air sector, which will not be assumed by MTRA.

12.2.6 Road Sub-Sector

(a) Uganda National Roads Authority (UNRA)

12-24. UNRA was established by the Uganda National Roads Authority Act, 2006, to manage, maintain and develop the national road network, becoming fully operational from July 1, 2008.

(b) Uganda Road Fund (URF)

12-25. This is a body corporate established by Parliament, as part of government strategy to commercialize the roads sub-sector. The Fund is expected to become fully operational during 2009, with core functions of financing routine and periodic maintenance of public roads, and advising the Minister of Finance on the preparation and implementation of the Annual Road Maintenance Programme. It will report to a Road Fund Management Board.

(c) Ministry of Local Government (MoLG)

12-26. The MoLG is responsible for coordinating the financing and delivery of road services on local road networks. MoLG is expected to harmonize and coordinate requests for inputs from Local Governments or from MoWT; act as a conduit for roads grants disbursed by MoFPED to Local Governments; and offer technical assistance, supervision and training to all Local Governments.

(d) Ministry of Water and Environment (MWE)

12-27. The MWE, through NEMA, issues guidelines for carrying out environmental impact assessments and executing environmental mitigation measures for road transport projects. The Ministry also sets procedures for acquiring land for road reserves.

(e) Ministry of Lands, Housing and Urban Development (MOLHUD)

12-28. The MOLHUD is mandated to develop and manage policy and standards relating to land management, housing, and urban development. In relation to NTMP/GKMA, MOLHUD will be responsible for administrative services relating to all identified transport reserves.
(f) **Urban and District Local Governments**

12-29. The District Local Governments (Councils), including Kampala City Council (KCC), are responsible for the construction, rehabilitation and maintenance of District, urban and community access roads in their areas. MoWT will support urban and district local governments in building the capacity of their works departments, so as to enable them to maintain and develop their roads effectively.

(g) **Transport Licensing Board**

12-30. Under current arrangements, all commercial road vehicles and marine vessels must be registered with, and regularly inspected by, TLB. The Board has, however, been unable to execute its mandate effectively due to serious shortages of personnel and funding. TLB functions will now be transferred to the proposed new MTRA, which must be equipped with sufficient resources and staff to carry out its functions.

(h) **National Road Safety Council / National Road Safety Authority**

12-31. Road safety is supposed to be enforced by the National Road Safety Council (NRSC). But, while the NRSC has held regular meetings, the NRSC Secretariat is grossly understaffed, and thereby unable to implement and sustain its initiatives. NRSC functions will now be transferred to a new National Road Safety Authority (NARSA), which must be adequately resourced to enforce a comprehensive safety policy framework for roads. NARSA will be a semi-autonomous statutory body responsible for implementing safety measures that can reduce the high accident rate on Uganda’s roads. A feasibility study will be completed during 2009.

(i) **Private Sector Service Providers**

12-32. The private sector includes the organized road construction industry associations that, *inter alia*, promote professionalism and self-regulation of standards in the transport infrastructure sector. There are also the organized road transport users (including UTODA, other bus and truck associations, and other road user bodies). Some of these user associations are contracted by local government authorities to manage public vehicle parking facilities (‘vehicle parks’), and they, too, can play a role in promoting professionalism and self-regulation of standards. MoWT is expected to provide leadership in capacity building for strengthening partnerships between the public institutions and the non-state actors.

12.2.7 **Air Transport Sub-Sector**

12-33. The Civil Aviation Authority exercises both regulatory and operational authority over Entebbe international airport and up-country airfields. It also designates domestic and international air carriers. CAA shall retain its current responsibility for regulation and standards management of air safety and security, as well as the East African Flying Academy at Soroti.
12.2.8 Railway Sub-Sector

(a) Railway Concessionaire (Rift Valley Railways)

12-34. Government strategy for the rail sub-sector is through long-term concessioning of infrastructure maintenance and rail services to the private sector, while retaining regulatory powers. Rift Valley Railways (RVR) were awarded a long-term concession to manage the Uganda railway system from 2006 to June 2032. Government shall build the capacity of MTRA to assume the regulatory functions presently performed by the residual URC. The Governments of Uganda and Kenya have formed a Joint Railway Commission to supervise the RVR Concession.

(b) Uganda Railway Asset Holding Company

12-35. Government will establish a limited liability company (Uganda Railway Asset Holding Company) to manage URC assets that were excluded from the RVR concession. An alternative way forward, which may minimise costs of assets maintenance, could be to divest all relevant core assets to the Concessionaire and sell all non-core assets to other private buyers.

12.2.9 Inland Water Sub-Sector

12-36. Government shall in principle concession operation of the inland water sub-sector with a view to ensuring cost-effective regional maritime services on Lake Victoria, as well as essential low-cost ‘road bridges’ around the country. Ugandan wagon ferry services, presently suspended while the vessels await rehabilitation, have already been conceded to RVR as part of the railway concession.

12-37. It is envisaged by EAC that all three states bordering Lake Victoria will have a ports authority. This body is yet to be established in Uganda, but should include at least the ports of Port Bell, Jinja and Entebbe (Nakiwogo), and possibly also ports on Lakes Kyoga and Albert (for instance Butiaba).

12-38. MoWT, MTRA and the Uganda Police Force shall work closely to establish an effective regulatory regime to ensure maritime safety and appropriate standards of service for all commercial transport services on the lakes and rivers.

12.2.10 Greater Kampala Metropolitan Area

12-39. Transport problems of Kampala and the surrounding area are so specific and acute that a separate though related Transport Master Plan (TMP) has been formulated for the GKMA. Major problems and constraints to be addressed include:

i) Inadequate co-ordination between the various transport stakeholders;

ii) Poor planning or deviation from planned activities and operations;
iii) *Inadequate and irregular resources* for funding transport infrastructure construction and maintenance without clear disbursement criteria;
iv) Lack of *personnel* to fill existing positions due to their low remuneration;
v) Limited *capacity* of contracted third-party service providers; and
vi) *Low* levels of *integrity*, transparency and accountability.

12-40. To address these challenges, the GKMA Transport Master Plan calls for establishment of a Greater Kampala Metropolitan Area Transport Authority (MATA), to act as a single-purpose urban transport authority on behalf of seven local authorities. MATA will act to exercise urban transport functions delegated under a formal protocol jointly and severally agreed by the seven local authorities. MATA will also receive delegated authority from MTRA to enforce regulatory provisions for licensing, economic regulation and environmental issues, and to perform transport-related legal services. MTRA shall provide MATA with the necessary guidelines and assist it to build the requisite regulatory capacity.

12-41. The MATA Board shall have representatives drawn from each of the seven GKMA municipalities, as well as representation from MoWT, MoLG, MoFPED, MoWLE, MOLHUD, MTRA; Uganda Police Force, transport operators, transport users associations and civil society.

**Box 12.1: A Brief on Institutionalisation of the MATA**

- In order to ensure proper overall co-ordination of the urban transport planning activities for the national capital, taking into account that Kampala is a central hub for the Northern Corridor (from Mombasa to Central Africa), and hence, to integrate GKMA activities into the national and planning effort as well as to effectively meet the needs and aspirations of all Greater Kampala stakeholders, the MATA will be a national authority, with the MoWT as the line ministry, and, thus, the policy advocate of the MATA at Cabinet level.
- For this reason, the MoWT will develop:

  (i) detailed functions of the MATA;
  (ii) key result areas;
  (iii) suitable competence profiles for both the Chairman and Members of the MATA Board and appoint the same;
  (iv) Terms and Conditions of Service of the Chairman and Members of the MATA;
  (v) logistical requirements for the MATA;
  (vi) sources of funding for the MATA.

- The Board of the MATA will be structured in a such way that key stakeholders, viz the relevant District Councils, are adequately and effectively represented on the Board.

- All the above, amongst others, shall be stipulated in the MATA enabling legislation (see also Chapter 13).
12-42. MATA will be supported by the Metropolitan Area Transport Executive (MATE), staffed by well qualified experts in planning, finance, engineering and transport operations, to handle the technical work involved in programming of investments and implementation of transport strategies, as well as system management. The Executive will function as an autonomous unit reporting to the MATA Chair.

### 12.3 Costs of Institutional Reforms

12-43. The institutional reforms should give rise to substantial benefits in terms of transport cost reductions, and in the quality, speed and safety of transport services. At the same time, they will create new lines of expenditure, while also bringing savings in existing lines; for instance the reorganisation of MoWT is expected to reduce the annual wage bill from Ushs 4.74 billion to Ushs 3.50 billion. While many of the new costs and cost savings will be in current expenditure, each of the new organisations will incur start-up costs needed to establish them and make them operational. Such costs constitute development rather than current expenditure, and should therefore be added into the NTMP road sector investment costs to be brought together in Chapter 14 (see Table 28). Estimates of these start-up costs for the four proposed new institutions are shown in Table 25 below.

#### Table 25. Projected Start-Up Costs for New Institutions

<table>
<thead>
<tr>
<th>Start-Up Costs By Organisation (US$ million)</th>
<th>TMPU</th>
<th>MTRA</th>
<th>NRSA</th>
<th>MATA/ MATE</th>
<th>Totals</th>
</tr>
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<tbody>
<tr>
<td>Office premises</td>
<td>0.25</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>4.75</td>
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<tr>
<td>Furniture and fittings</td>
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<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>1.75</td>
</tr>
<tr>
<td>Office equipment</td>
<td>0.25</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>1.75</td>
</tr>
<tr>
<td>Vehicles and plant</td>
<td>0.25</td>
<td>0.50</td>
<td>1.00</td>
<td>0.50</td>
<td>2.25</td>
</tr>
<tr>
<td>Initial consultancy</td>
<td>0.10</td>
<td>0.75</td>
<td>0.50</td>
<td>0.75</td>
<td>2.10</td>
</tr>
<tr>
<td>Technical assistance</td>
<td>0.40</td>
<td>0.50</td>
<td>0.75</td>
<td>0.75</td>
<td>2.40</td>
</tr>
<tr>
<td>Capacity building</td>
<td>0.15</td>
<td>0.25</td>
<td>0.25</td>
<td>0.50</td>
<td>1.15</td>
</tr>
<tr>
<td>Sundry expenses</td>
<td>0.33</td>
<td>0.90</td>
<td>1.00</td>
<td>1.00</td>
<td>3.23</td>
</tr>
<tr>
<td><strong>Total Start-Up Costs</strong></td>
<td><strong>1.98</strong></td>
<td><strong>5.40</strong></td>
<td><strong>6.00</strong></td>
<td><strong>6.00</strong></td>
<td><strong>19.38</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- TMPU: Transport Master Plan Unit
- MTRA: Multi-Sectoral Transport Regulatory Authority
- NRSA: National Road Safety Authority
- MATA: Metropolitan Area Transport Authority
- MATE: Metropolitan Area Transport Executive

**Source:** NTMP estimates

12-44. It is assumed that these costs will be spread over the first five years of the Plan period (2008-13). Funding is expected to come from Government and development partners. Once the institutions are established, current expenditures of MTRA,
NRSA and possibly MATA/MATE can be partly funded by user fees and by the private sector.

12.4 Risk Management

12-45. No plan is devoid of implementation risk. Successful implementation of NTMP/GKMA must address important challenges, including dysfunctionalities in the public procurement system; limitations in monitoring and evaluation (M & E); corruption and work culture; and volatilities within the East Africa region.

12-46. The Public Procurement and Disposal of Assets (PPDA) Act requires review to address the long service delivery intervals experienced in most public procurement processes. It is also important to ensure that all actors in the procurement processes understand and comply promptly with their obligations. It may be desirable to consider introducing Service Delivery Intervals (SDIs).

12-47. Effective monitoring, evaluation and accountability of progress in Master Plan implementation will call for strengthening of the M & E capacity of the various actors. While it is relatively easy to equip staff with M & E technical knowledge and skills, the real challenge lies in bringing about change in the mindset of these actors. It is crucial to institutionalise the right attitude towards work and respect for public office at all levels, so as to minimise corruption and complacency.

12-48. A major dimension of NTMP/GKMA is the need to ensure effective integration of Uganda’s transport strategy into the regional frameworks, including those of EAC, COMESA and the African Union. It is therefore vital that all relevant stakeholders step up efforts aimed at amicable resolution of issues that may adversely affect the realisation of agreed policies and programmes for regional integration.

12.5 Capacity Building

12-49. Capacity building to facilitate successful implementation of the NTMP and the TMP for GKMA is a key issue of the Master Plans and is discussed in Chapter 17.
13.0 LEGAL ISSUES

13.1 Existing Transport Legal Framework

13.1.1 Road Transport

13-1. The Traffic and Road Safety Act, 1998, is the main law governing road transport in Uganda. This Act covers licensing of vehicles and drivers, the use of motor vehicles on the road, and the control of traffic. It also establishes the Transport Licensing Board (TLB) and the National Road Safety Council (NRSC). TLB issues licences to regulate the use of public service vehicles, private omnibuses and goods vehicles. NRSC functions include the promotion of road safety. Vehicle registration is performed by the Uganda Revenue Authority.

13-2. The National Transport Master Plan recognises that a good public transport system contributes to poverty alleviation and improves quality of life. The Plan recommends that the proposed Transport Master Plan Unit (TMPU) should undertake a study to determine the type of services to be provided and prepare a route plan.

13-3. The Government of Uganda (GoU) intends to establish an autonomous Multi-Sector Transport Regulatory Authority (MTRA) to regulate road, rail, water, and pipelines, with TLB being absorbed into MTRA. New legislation will be required to establish MTRA, and the Traffic and Road Safety Act will also have to be amended.

13-4. The critical area of road safety will now be addressed through a new National Road Safety Authority (NARSA), with stronger powers and resources than the existing NRSC. Establishment of this new authority will also require enabling legislation.

13-5. The Uganda National Roads Authority Act, 2007, provides for the creation of a National Roads Authority. The Authority is established as a body corporate and mandated to manage the national road network in an economic and businesslike manner. The new institutions of a TMPU, MATA and MATE proposed under NTMP can be established without necessarily affecting this legislation.

13-6. The Uganda Road Fund Act, 2008, establishes a Road Fund for financing routine and periodic maintenance of public roads in Uganda. The Fund is to be managed by a Board representing both public and private sectors, and will have a Secretariat responsible for day-to-day operations. It is to be operational by mid-2009.

13-7. Roads represent the major component of transport infrastructure, and this will remain true for the foreseeable future. The Road Fund legislation, thus, plays a
crucial role by ensuring a stable and sustainable flow of funds for road maintenance.

13.1.2 Rail Transport

13-8. The **Uganda Railways Corporation Act, 1992**, is the main law currently governing the rail sector in Uganda. The law established the URC as a body corporate and provided for its management, finances and operations. However, Government has now drafted a Uganda Railways Bill to repeal this law, so as to reflect the concessioning of URC operations to Rift Valley Railways (RVR). The new Bill establishes the office of the railway regulator to be located within the MoWT. However, the MTRA Study Report recommends that MTRA should assume the responsibility for railway regulation. The URC Bill will now need revision to accommodate the more recent proposal to establish MTRA.

13.1.3 Air Transport

13-9. The **Civil Aviation Authority Act** is the main law governing civil aviation in the country, establishing the Civil Aviation Authority (CAA) as a body corporate with the objective of promoting safe, secure, regular and efficient use and development of civil aviation. The CAA functions include licensing of air transport, regulation of safety and security, and establishment, operation and ownership of aerodromes. In the long term, Government intends to privatise airport operations, but until such a time the current aviation legislation need not be affected.

13.1.4 Inland Water Transport

13-10. Inland water transport in Uganda is governed by the Inland Water Transport Act, the Vessels Registration Act, the Ferries Act, and the East African Community’s Lake Victoria Transport Act. However, substantial overhaul of both operations and management of the water transport sub-sector are recommended in NTMP.

13-11. The **Inland Water Transport (Control) Act, 1964**, controls the carriage of goods and passengers on the inland waters of Uganda, while the **Vessels Registration Act, 1964**, provides for registration of all vessels, except where a vessel is exempted by the Minister. The **Ferries Act, 1964**, regulates market entry of public ferry services through a licensing regime, although the Act is short on detail regarding technical standards and licensing procedures.

13-12. The main objective of the **Lake Victoria Transport Act, 2007**, of the EAC is to make provision for the Lake Victoria Basin Commission (LVBC) to regulate maritime safety on Lake Victoria waters, covering registration, licensing and seaworthiness of vessels, and other relevant matters. The Act has introduced a new regulatory regime, specifying high standards for vessels operating on Lake Victoria
13-13. The MTRA study of 2006 recommended that MTRA become the regulator of inland water transport, and that inland water transport legislation be overhauled. Reforms are necessary in this legislation to give effect to recommendations of both the NTMP and MTRA studies, and also to bring Ugandan inland water laws into conformity with the EAC Lake Victoria Transport Act. Although the EAC law affects only transport on Lake Victoria, it would be highly desirable to harmonise standards, laws and regulations for all waterways in Uganda, taking the cue from the Lake Victoria Act.

13-14. It has also been proposed at EAC level that Uganda should establish a Uganda Ports Authority, similar to those already existing in both Kenya and Tanzania. Besides the principal ports on Lake Victoria, this could also include ports on other lakes, such as Butiaba.

13-15. Reforms in water transport legislation will include making provision for the active participation of the private sector in regulating water transport, and designating MTRA to register and license vessels on the inland waters of Uganda. An in-depth study will be required to prepare detailed reform proposals.

13.1.5 Transport Master Plan Unit (TMPU) and the NTMPC

13-16. NTMP/GKMA recommends that a Transport Master Plan Unit (TMPU) be established, with the main roles of monitoring Plan implementation and regularly revising and updating the Plan. Implementation of this proposal will not call for new legislation or for amendment of existing legislation. Nor will legislation be required to establish the proposed National Transport Master Plan Committee (NYMPC) to provide oversight for TMPU.

13.2 Greater Kampala Metropolitan Area

13.2.1 Metropolitan Area Transport Authority (MATA)

13-17. Establishment of a Greater Kampala Metropolitan Area Transport Authority (MATA) will cover land governed by Kampala City Council (KCC) and another six districts and town councils. New legislation will be required to establish MATA and to furnish it with the legal powers and authority to perform its functions effectively. This legislation must conform to provisions of the Constitution of Uganda, the Local Governments Act, the Town and Country Planning Act, the proposed Physical Planning Bill, and legislation relating to the functions of KCC. The legislation must properly reflect the key role of NTMP/GKMA in addressing the transport problems both of the nation and of GKMA.

13-18. As previously stated, a detailed study will be necessary to thrash out the extended legal implications of this proposal, covering in particular the relationships of MATA with MOWT and the seven local authorities within the GKMA boundaries.
13.2.2 Metropolitan Area Transport Executive (MATE)

13-19. NTMP also proposes to establish a Metropolitan Area Transport Executive (MATE), to function as an autonomous executive unit providing professional and technical support to MATA. Separate legislation should not be necessary, since the legislation establishing MATA should also be able to provide for defining the structure and functions of the MATE.

13.3 Decentralized Governance Transport Legal Framework

13-20. One result of the Local Governments Act 1997 (Amended 2001) was decentralization of a number of public services, including maintenance of District, Urban and Community Access Roads. Although a ten-year District, Urban, and Community Access Roads Investment Plan (DUCARIP) was published in 2008, there is so far no legislation governing these roads and how they dovetail with national roads in terms of functional responsibilities. Therefore, a proposed legislation under NTMP will be a Uganda District, Urban and Community Access Roads Act, for which a bill is to be drafted after a detailed study.

13-21. MoWT will seek the opinion of the Attorney General as to whether the Local Governments Act needs to be amended to implement NTMP recommendations including (i) enlargement of LCI and LCIII Committees to include a Secretary for Public Infrastructure; (ii) extended roles of LCs and communities in respect of road reserves.

13.4 Regional Transport Governance Legal Framework

13-22. As previously noted, Uganda is a member of the AU, the COMESA, and the EAC, all of which have plans for futuristic transport networks. These plans have been taken into account in NTMP within the provisions of the following three treaties, to all of which Uganda is a signatory:

a) Constitutive Act of the African Union (2000),
b) Treaty for the Common Market for Eastern and Southern Africa (1993), and

13-23. The EAC is a special case, calling for harmonising legislation in order to pave a smooth passage for NTMP into the proposed Eastern Africa Transport Network. Further research may be required to establish whether new EAC legislation may be required to integrate regional investments with national transport plans, and such legislation will then require to be domesticated in Uganda and other Member States.
14.0 FINANCIAL FRAMEWORK

14.1 Introduction

14-1. Investment plans for the road, rail, air and water transport sectors, and for transport in the Greater Kampala Metropolitan Area (GKMA), have been presented in Chapters 6 to 10. These must now be compared with the expected government expenditure projections made by the Ministry of Finance, Planning and Economic Development (MFPED) for the transport sector over the 15-year Plan period.

14.2 Summary of Planned Investments

14-2. Costs of the sectoral investments proposed in Chapters 6 to 10 are summarised in Table 26 below. These are given in US dollars at estimated 2008 prices. For the years 2008-13 estimated costs are based as far as possible on current plans of agencies, namely UNRA for roads and CAA for air transport. The rail sector considers only possible major future rehabilitations and extensions of the network, which would be beyond the scope of the existing concession agreement, and here it is assumed that only 20 percent of costs would be borne by Government in a public-private partnership (PPP) arrangement. Inland water investments and proposed expenditures for GKMA are updated and revised from earlier NTMP proposals made and costed in 2004.

14-3. It should be noted that investment costs for inland water transport shown in Table 14.1 do not include UNRA investments at ‘road bridge’ crossings, which have been included as road sector investments. Similarly, Greater Kampala road investment costs do not include major upgrading works on national roads within GKMA, also included under the road sector.

14-4. The GKMA investment schedule set out in Table 28 shows an expected expenditure of US$ 300.7 million over the Plan period for dualling of 122 km of roads (excluding the inner city southern by-pass with viaduct). Of this length approximately 80 km are national roads, whose costs are already included under the road sector. It has therefore been assumed that two thirds of the US$ 299.7 mn shown in Table 28 to be spent between 2010 and 2023 will be on national roads, and one third on GKMA roads; hence US$ 199.8 mn has been removed from the GKMA dual carriageway costs over the period 2010-23 to avoid double-counting.

14-5. Total proposed expenditure over the 15 years is US$ 10,876 million. Of this amount, roads will account for 81.4 percent, Greater Kampala (excluding national roads) for 10.9 percent, the rail sector for 4.2 percent, the air sector for 2.2 percent, inland water (excluding ‘road bridges’) for 1.2 percent, and institutions for 0.2 percent. .
Table 26: Summary of Investment Proposals, 2008-23

<table>
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<tr>
<th></th>
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<tr>
<td><strong>Roads</strong></td>
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<td>National Roads (a)</td>
<td>2,584.37</td>
<td>2,334.10</td>
<td>2,320.00</td>
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<td>District, Urban and</td>
<td></td>
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<tr>
<td>Community roads (b)</td>
<td>624.66</td>
<td>499.75</td>
<td>487.55</td>
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<td><strong>Sub-Total</strong></td>
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<td>2,833.85</td>
<td>2,807.55</td>
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<td><strong>Rail Sector (c)</strong></td>
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<td>Entebbe International Airport</td>
<td>37.20</td>
<td>30.20</td>
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<td>Other airports</td>
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<td><strong>Sub-Total</strong></td>
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<td><strong>Inland Water Transport</strong></td>
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</tr>
<tr>
<td><strong>Greater Kampala (GKMA)</strong></td>
<td>156.91</td>
<td>413.66</td>
<td>610.07</td>
<td>1,180.64</td>
</tr>
<tr>
<td><strong>Institutions</strong></td>
<td>19.38</td>
<td>0.00</td>
<td>0.00</td>
<td>19.38</td>
</tr>
<tr>
<td><strong>Total, Transport Sector</strong></td>
<td>3,579.69</td>
<td>3,788.87</td>
<td>3,507.39</td>
<td>10,875.95</td>
</tr>
</tbody>
</table>

**Notes:**
(a) Backlog maintenance, routine and periodic maintenance, rehabilitation, reconstruction and upgrading;
(b) Routine and periodic maintenance, and low-cost sealing;
(c) Government contribution only (estimated at 20% of cost).

**Source:** NTMP

14.3 Government Expenditure Envelope

14-6. MFPED prepares each year a medium-term expenditure envelope for each sector. The envelope for transport and works for the five years 2008-13 is shown in Table 14.2. This was originally expressed in Uganda shillings, with an in-built assumption of 5% per annum price inflation. It may therefore be converted into constant prices by removal of the inflation element, and then to United States dollars at an appropriate exchange rate.

14-7. Rates on the foreign exchange market have been volatile in the last few years, with large relative shifts between major world currencies. However, in mid-2008 the US dollar exchange rate remained close to US$ 1,600-1,650 for several months, which was consistent with MFPED projected exchange rates for budgetary purposes of UShs 1,601 for 2008/09, UShs 1,668 for 2009/10, and UShs 1,670 for 2010/11. Hence it was considered appropriate to use an overall exchange rate of US$ 1 =
UShs 1,650 for conversions of Uganda shilling values to US dollar values at mid-2008 prices.

14-8. These inflation and exchange rate adjustments are made to Uganda shilling values in the first column of Table 27 below to give, in the third column, values at mid-2008 dollar prices of the expenditure envelope for the next five years.

Table 27: Medium-Term Expenditure Framework for Transport and Works, 2008-13

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>MTEF In UShs Billion</th>
<th>Deflated for 5% p.a. Inflation</th>
<th>US Million Dollar Equivalent At US$ 1 = UShs 1,650</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/09</td>
<td>1,083.71</td>
<td>1,083.71</td>
<td>656.79</td>
</tr>
<tr>
<td>2009/10</td>
<td>1,199.74</td>
<td>1,142.61</td>
<td>692.49</td>
</tr>
<tr>
<td>2010/11</td>
<td>1,344.07</td>
<td>1,219.11</td>
<td>738.86</td>
</tr>
<tr>
<td>2011/12</td>
<td>1,161.74</td>
<td>1,003.55</td>
<td>608.21</td>
</tr>
<tr>
<td>2012/13</td>
<td>1,245.42</td>
<td>1,024.61</td>
<td>620.98</td>
</tr>
</tbody>
</table>

Source: MFPED, with NTMP adjustments to constant 2008 dollar prices

14-9. The transport sector envelope has been enlarged in the three-year period 2008-11 to accommodate major expected expenditures on rehabilitation of the Northern Corridor route. However, a decision has also been taken to increase permanently the proportion of the total envelope allocated to Transport and Works. Hence the level of US$ 621 million in 2012/13 (accounting for 18.5 percent of the total government budget, against 12.8 percent in 2007/08) can be considered ‘representative’ of the weight to be given to transport in future years.

14-10. It was not possible to fit transport investment expenditure for the next five years 2013-18 into the Long-Term Economic Framework (LTEF) to 2017/18, which was expected to be available early in the financial year starting on July 1, 2008, but was never in fact released. Hence assumptions on the likely size of the envelope for the years 2013/14 to 2022/23 have been made on the basis of the MTEF only. After 2013 it has been assumed firstly that the transport sector allocation will rise in real terms for the first five years at 6.5 percent per annum, in line with present projections for growth in national income; then a more modest growth rate of 5 percent per annum has been assumed for the final five years to 2023.

14.4 Comparison of Investment Plan with Financial Envelope

14-11. The financial envelope also covers expenses other than transport sector investments, including notably both routine and periodic road maintenance. Also about 7.5 percent of the envelope is allocated for recurrent expenses or non-transport related investments. Hence a proportion of 92.5 percent of the transport sector envelope will be compared with investment costs inclusive of all road
maintenance costs, as shown in Table 14.3. Costs are generally those shown in Chapters 6-10, with GKMA roads expenditure adjusted as in Section 14.2. For the rail sector it is assumed that only 20 percent of the planned investments would be funded by government, with private partners supplying the remaining 80 percent.

14-12. The bottom row of Table 28 compares projected expenditures with the 92.5 percent of the transport and works envelope considered available for investment. Over the whole Plan period, proposed investments total US$ 10.88 billion, giving a 2.2 percent margin within the US$ 11.12 billion envelope.

14-13. It is seen, however, that there is a significant deficit against available finance in the seven-year period 2009-16, totalling US$ 969.0 million, with a peak annual value of US$ 230.2 million in 2011/12. Over those seven years the overall deficit is equivalent to 21.9 percent of the expected envelope.

14-14. The major factor contributing to the deficit in these years is the high level of roads expenditure foreseen in the draft UNRA Strategic Plan and the DUCARIP draft. To put the problem in proportion, however, the envelope could still be observed if the investment programme were modestly decelerated to allow an overall slippage of about one and a half years on the schedule for 2008-16. Thereafter it should be possible to allow a compensating acceleration of subsequent expenditure.

14-15. Pressure on the budget envelope may be relieved to an extent if some future road investments are partly financed by the private sector, an option that may well soon be activated, though it is not yet practicable to forecast prospective amounts.

14-16. Detailed adjustments will, in any case, need to be made to the Plan from year to year, in response to various factors including changes in construction costs, implementation delays, and regular revisions of the medium and long-term expenditure frameworks. Such adjustments will be initiated by the Transport Master Plan Unit (TMPU), as part of its continuous monitoring role.

14-17. Prospective railway expenditure has been concentrated in the second five-year period, since feasibility studies have yet to start on any of the proposed projects. The first construction expenditure is provisionally scheduled for 2012-13.

14-18. The overriding conclusion to be drawn from Table 14.3 is that, over the 15 years of the Plan, the expenditure programme is compatible with the projected availability of funds. Thus, as an overall blueprint for the transport sector, the Plan is realistic and affordable.
14.5 Sources of Funding

14-19. Since Uganda can finance only a proportion of the required transport sector investments, funds must also be sought from other sources. Thus for many years Uganda has relied heavily also on donor finance channelled through international agencies bilateral aid.

14-20. Table 14.4 gives details of the role played by donor loans and grants in recent years. Over the three years 2005-08, donor loans and grants were planned to account for 59 per cent of the total recurrent and development budget. The much lower proportion of 31 per cent in 2008/09 was affected partly by the large increase in the works and transport budget itself, and also by the increasing donor practice of funding through direct budget support rather than dedicated loans and grants.

Table 28: Budget Proposals for Works and Transport Expenditures, 2005/08 – 2008/09

<table>
<thead>
<tr>
<th>Proposed Expenditure</th>
<th>Annual Expenditures (UShs Billion)</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08</th>
<th>2008/09</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Recurrent Expenditure (including Road Maintenance)</td>
<td>81.61</td>
<td>80.13</td>
<td>152.88</td>
<td>196.03</td>
<td></td>
</tr>
<tr>
<td>- Other Development Expenditure</td>
<td>297.17</td>
<td>366.63</td>
<td>449.25</td>
<td>921.71</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>378.78</td>
<td>446.76</td>
<td>602.13</td>
<td>1,127.74</td>
<td></td>
</tr>
<tr>
<td>- of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Funding</td>
<td>161.13</td>
<td>160.07</td>
<td>266.43</td>
<td>780.67</td>
<td></td>
</tr>
<tr>
<td>Donor Loans and Grants</td>
<td>217.65</td>
<td>286.69</td>
<td>335.70</td>
<td>347.07</td>
<td></td>
</tr>
<tr>
<td>Donor Proportion (per cent)</td>
<td>57.5</td>
<td>64.2</td>
<td>55.8</td>
<td>30.8</td>
<td></td>
</tr>
</tbody>
</table>

Note: (a) For 2008/09 budget covers both MoWT (Ushs 125.80 bn) and UNRA (Ushs 795.91 bn)
Source: Budget Policy Statements, Works and Transport, June 2005 to June 2008

14-21. Government’s long-term aim is to reduce this dependence on donor finance, but it is still likely to be a major source of funding up to 2023. The fiscal position should, however, improve to some extent once Uganda’s oilfields come on stream.

14-22. In recent years private investors have shown increasing interest in potential transport sector investments. Government policy supports the principle of public-private partnership (PPP) in provision of transport services, and it is therefore logical that the private sector should fund, own and maintain a proportion of the national transport infrastructure. A policy on PPP is to be put in place in 2009.

14-23. Potential areas for private sector construction, operation and financing include highly-trafficked toll roads, new railways, the Entebbe air cargo terminal, and new ports and jetties on the waterways.
15.0 LAND AND ENVIRONMENT ISSUES

15.1 Land for Transport Reserves

Box 15.1: Land is the Most Basic Resource

- Land is a basic resource (in terms of the space it provides, the environmental resources it contains and supports, and the capital it represents and generates).

- It is a commercial asset that can be used and traded, it is a critical factor of all production; it is an essential part of the national patrimony; it is a key factor in shaping individual and collective identity through its history, the cultural expressions and idioms with which it is associated; and it influences spirituality and aesthetic values of all human societies.

- Thus, land is perhaps the most essential pillar of human existence and national development.


15.1.1 Requirements

15-1. Amongst the many demands for land is its use for transport infrastructure. “Land for transport frameworks” manifests itself on five (5) fronts, namely:

- Acquisition,
- Tenure,
- Land rights management,
- Land use and management, including environmental protection,
- Legal and institutional framework.

15-2. Article 237 (1) of the Constitution of the Republic of Uganda (1995) vests the Radical Title for Land in the Citizens of Uganda, to the effect that “…all land in Uganda belongs to the citizens of Uganda….”. The Transport Master Plan, will, therefore, require land “not owned by the State”, to be registered as public land for transport infrastructure development. Some land parcels held in trust by the State, e.g. wetlands, national parks, may also be required for transport infrastructure.

15.1.2 Acquisition

15-3. The Government will have to acquire land for transport infrastructure development on a massive scale over the next fifteen (15) years as, for instance, over 4,000 km of gravel road are to be paved. All privately-owned land affected will have to be
acquired through compulsory purchase (see Article 26 of the Constitution), involving the need for “…prompt compensation……”. To avoid massive acquisition costs, it may be necessary to devise alternatives to immediate cash compensation, such as issuance of interest-bearing Government Bonds.

15.2 Land Tenure for Transport Reserves

15-4. The Constitution of Uganda legislates for four (4) types of land tenure, namely: freehold, mailo, leasehold, and customary land. Some tenure problems will arise, depending on the previous status. Current practice is that public land, especially for road reserves, is surveyed and titled (with owners being compensated), and this practice should become routine and be strictly enforced. Hence, all such “transport sector reserves” should be registered as public land (to be managed by the Government as a trustee). Thereafter, Government could act as below:

<table>
<thead>
<tr>
<th>Tenure Type</th>
<th>Conversion Route to Freehold Public Land</th>
</tr>
</thead>
</table>
| ➢ Public Land, e.g. Wetlands | ▪ Carry out EIA  
▪ Demarcate, survey and title as “Transport Reserve”. |
| ➢ Freehold           | ▪ Demarcate, survey and title.         |
| ➢ Mailo              | ▪ Demarcate and title (as Mailo Tenure is a form of Freehold Tenure). |
| ➢ Leasehold          | ▪ Deal with the Lessor, viz holder of the Superior Title (for the Freehold Title)  
▪ Lessee to be compensated by the Lessor  
▪ Demarcate, survey and title. |
| ➢ Customary Land     | ▪ Customary Land is also another form of Freehold  
▪ If registered, demarcate and survey; then enter into a sub-division process to carve off the “Transport Reserve” to be registered as public land on Freehold Tenure.  
▪ If unregistered, first execute a systematic demarcation of the Customary Land; then register the same in the names of the customary holder and carve off the desired “Transport Reserve” through sub-division, which is then registered as public land on Freehold Tenure. |

15.3 Transport Reserves Rights Management

15-5. Land rights administration relates to structures and processes through which land rights and land incidents are defined, refined, created and recorded. An administration system involves at least four core functions, including demarcation and survey, dispute processing, information management and revenue generation.
15.4 Transport Reserves Land Management

15.4.1 Land Management

15-6. Under the Uganda Land Use Policy (and the up-coming Uganda National Land Policy), the entire landscape of Uganda is to be declared a Physical Planning Area. Transport Reserves would contribute to this process through systematic demarcation and physical planning of “greater transport reserves” for orderly development, leading to optimal economic use of the infrastructure so developed.

15-7. All future infrastructure design should take particular account of Uganda’s Land Use Policy, National Land Policy, National Housing Policy, and Urbanisation Policy. Infrastructure design should also be conceptualised so as to promote conservation, and deter soil erosion and degradation.

15.4.2 Land Use

15-8. The primary purpose of transport reserves should be for design, development and maintenance of transport infrastructure. However, a few “fall-out” issues will arise, including “idle land” use, encroachment, and environmental management.

15-9. Land on “idle transport reserves” could be leased to temporary developers until required for development, when the Government, as trustee, would excise her reversionary rights (without compensation). Such leasing would be temporary, but legal. By contrast, unauthorised encroachers on transport reserves should promptly be removed, with proper notice but without compensation.

15-10. Environmental protection will be a critical factor in infrastructure development. All NEMA requirements, including a detailed EIA with mitigation measures, should be fulfilled, while various international obligations must also be met. As regards donor-financed projects, some international development banks, e.g. the World Bank and AfDB, also have their own environmental requirements to be met.

15.5 Institutional Framework for Transport Reserves

15-11. Implementation of NTMP/GKMA will call for far-reaching institutional reforms in the transport sector in Uganda (see Chapter 12). As regards transport reserves,

a) A dedicated Uganda Transport Reserves Management Act, will be required;

b) Both the TMPU and the MATA will need to designate a Transport Reserves Management Officer to manage all land-related issues,

c) These officers would execute activities aimed at enhancement of stakeholder information and participation in management of the transport sector in Uganda.
16.0 STAKEHOLDER INFORMATION AND PARTICIPATION

16.1 Introduction

16-1. Every Ugandan can be considered as a stakeholder in transport infrastructure, in one way or another. Nevertheless, it is clear that stakeholders have been short-changed in the past, as regards both availability of information and participation in decision-making. Transport sector stakeholders could be grouped as in Table 29 below.

<table>
<thead>
<tr>
<th>No (0)</th>
<th>Level (1)</th>
<th>Examples [Public]</th>
<th>Examples [Private]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>International</td>
<td>(i) Multilateral Donors, e.g. IBRD, AfDB</td>
<td>(i) Consultants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) Regional Block Donors, e.g. EU</td>
<td>(ii) Contractors.</td>
</tr>
<tr>
<td>2.</td>
<td>Regional</td>
<td>(i) EAC Partner States</td>
<td>(i) EAC Consulting Firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(ii) EAC Contractors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) User Parastatals &amp; Executive Agencies</td>
<td>(ii) National Contractors.</td>
</tr>
<tr>
<td>4.</td>
<td>Local Governments</td>
<td>(i) District Roads Offices</td>
<td>(i) Local Consultants</td>
</tr>
<tr>
<td>[District Level]</td>
<td></td>
<td>(ii) District User Departments</td>
<td>(ii) National Consultants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(iii) Local Contractors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(iv) National Contractors.</td>
</tr>
<tr>
<td>5.</td>
<td>Local Councils</td>
<td>(i) L.C. III Council</td>
<td>(i) Road Maintenance Gangs</td>
</tr>
<tr>
<td>[L.C. I, II, III]</td>
<td></td>
<td>(ii) LC II Council</td>
<td>(ii) Road Maintenance Materials Suppliers, e.g. murram, culverts etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(iii) LC I Council</td>
<td>(iii) Local Artisans</td>
</tr>
<tr>
<td>6.</td>
<td>Communities</td>
<td>--</td>
<td>(i) The Local Press</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(ii) Roads Maintenance Gangs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(iii) Unstructured Road Works Volunteers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(iv) Groups and Individual Households</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(v) Traders.</td>
</tr>
</tbody>
</table>

16.2 Stakeholder Information

16.2.1 Typology

16-2. On information, different stakeholders will require information in a diversity of typologies, for different group interest purposes, as in Table 30 below.
Table 30: A Typology of Transport Infrastructure Information by Stakeholder Needs

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Information</th>
<th>Examples</th>
<th>Stakeholder Information Need Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0)</td>
<td>Basic Data</td>
<td>(i) Name (ii) Length (or Size) (iii) Proposed development (iv) Total Expected Development Period (v) Sequences of Activities and Dates (vi) Estimated Cost (vii) Cross-Border Linkages.</td>
<td>(i) All Stakeholders.</td>
</tr>
<tr>
<td>1.</td>
<td>Bid Data for Consultants</td>
<td>(i) Aide Memoire (ii) General Procurement notice (iii) Call for Expression of Interest, or (iv) Open International (or Domestic) calls for Proposals.</td>
<td>(i) International Consultants (ii) Regional Consultants (iii) National Consultants (iv) Local (District) Consultants (on a selective basis).</td>
</tr>
<tr>
<td>3.</td>
<td>Expected Economic Benefits and/or Impacts</td>
<td>(i) Estimated Internal Rate of Return, IRR, (for the Development). (ii) Increase in Agriculture. (iii) Increase in Value Addition. (iv) Increase in Trade. (v) Enhanced Household Incomes (including higher rents for physical and other properties, and services). (vi) Enhanced Tax Revenue.</td>
<td>(i) Funders including Donors (ii) Local communities and Local Governments (iii) Local communities and Local Governments (iv) Local communities and Local Governments (v) Local communities and Local Governments (vi) Uganda Revenue Authority (and/or successors) + Local Governments</td>
</tr>
<tr>
<td>4.</td>
<td>Expected Social Impacts</td>
<td>(i) Enhanced faster delivery of social services, e.g. water &amp; sanitation, health, education. (ii) Enhanced spread of epidemics, e.g. HIV/AIDS. (iii) Enhanced spread of anti-social behavior, e.g. crime, drunkenness, prostitution, “bad” religion. (iv) Likely change in social values of localities, including</td>
<td>(i) Local communities + Local Governments (ii) Local communities + Local Governments (iii) Local communities + Local Governments (iv) Local communities + Local Governments</td>
</tr>
<tr>
<td>No</td>
<td>Type of Information</td>
<td>Examples</td>
<td>Stakeholder Information Need Centres</td>
</tr>
<tr>
<td>----</td>
<td>---------------------</td>
<td>----------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>0</td>
<td>(0)</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>6</td>
<td>Expected Land</td>
<td>(i)</td>
<td>(v)</td>
</tr>
<tr>
<td></td>
<td>Ownership and</td>
<td>Land (and type of tenure of land) to be compulsorily acquired for the development.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tenancy Impacts</td>
<td>(ii)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>List of Landlords to be compensated.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(iii)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>List of households to be re-located and how (RAP).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(iv)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arrangements for Compensation of Landlords and Tenants affected by the development.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(v)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public Land to be affected by the development.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 16.2.2 Information Needs and Information Delivery

16-3. Broadly speaking, stakeholder information can be listed, by purpose, as being for:

(i) *commercial* purposes, e.g. provision of services;
(ii) *community* sensitization on the socio-economic *benefits* (and costs);
(iii) sensitization of persons to be *re-settled* to make way for the development.

16-4. For potential contractors to government, it is recommended that the TMPU opens a dedicated Website, e.g. a *Uganda Transport Development News*, at which all relevant data as per Items 1, 2, and 3 of Table 31 will be deposited and continually up-dated in order to inform all potential commercial interests on the development.

16-5. Up to now the least informed groups have been and continue to be local communities, with respect to:

(i) socio-economic benefits of the development;
(ii) social impacts; and
(iii) re-settlement requirements.

16-6. All that is currently done is to establish the economic viability of a proposed transport infrastructure development (e.g. up-grading of a road) through estimation of an Internal Rate of Return (IRR), together with assessment of its environmental acceptability (through an EIA), and its potential social impact (through an SIA), with the development then being put up for funding (if it passes on all three fronts). The rest is technical. The likely “owners” of additional traffic to be generated are as a rule not informed, let alone consulted or involved. Nor are the potential producers
necessarily identified during a feasibility study, or informed and sensitized on economic opportunities which may result from a road upgrading.

16-7. A worse omission is not to involve persons to be either compensated or re-settled or both. Cases have been recorded, in Uganda, in which people to be moved hear of it “…. for the first time …” from the contractor-on-site (or his earth-moving equipment). Clearly, development of the SIA, often leading to a RAP (Resettlement Action Plan), should be a participatory process in order to carry along local governments, and in particular the local population directly affected.

16-8. For this reason, it is recommended that for each proposed transport infrastructure development project, a detailed, stakeholder analysis-driven IEC (Information, Education and Communication) Strategy be developed and implemented. This should cover amongst other matters: (i) potential economic benefits; (ii) potential social impacts; (iii) environmental impacts and mitigation measures (especially by communities); and (iv) resettlement actions. The IEC Implementation Report should normally also include a Monitoring and Evaluation (M&E) Mechanism for future monitoring of socio-economic effects.

16.3 Stakeholder Participation

16.3.1 Introduction

16-9. Stakeholder participation has been discussed at a general level in the previous subsection, and is now detailed as:

(i) Public sector participation;
(ii) Private sector participation; and
(iii) Community participation.

16-10. In all typologies of participation, the driving principle should be partnership in order to enhance both ownership and optimal utilization by all stakeholders (rather than the historically based “up-down” flavour, e.g. between central and local governments, or donors and national governments).

16.3.2 Public Stakeholder Participation

16-11. Public participation for transport infrastructure development in Uganda flows from international to regional interests, to the mainstay of national interests, then down to district councils and finally to lower local governments.

16-12. International public cooperation for transport infrastructure development is likely to be through loans or grants from development partners. A new cooperation platform needs to be built, possibly along the lines of the Gleneagles Accord (2006) on international aid. Regional participation should also be co-operative, primarily within the EAC framework, but also with DR Congo and Sudan, who should
negotiate cooperation agreements with the EAC so as to minimize chances of international transport projects suffering from the “Kalahari Road Syndrome”\footnote{1}.

16-13. Public participation at national level has already been covered through creation of a Uganda National Transport Master Plan Committee, with stakeholder representation participating in oversight of the TMPU in the MoWT. At district level, stakeholder participation will manifest itself through (i) effective management of district roads as feeders to the national network, and (ii) participation in implementing IEC Strategies for infrastructure development. District Roads Offices will need to engage Public Land Specialists, to handle land and resettlement issues.

16-14. Participation of both lower local governments and local communities will be vital for sustaining transport infrastructure. Local councils will mobilise communities firstly to develop and implement IEC Strategies, and then to

(i) participate in environmental measures, such as grassing of embankments;
(ii) carry out tree-planting and maintenance along local transport reserves;
(iii) act as community watch-dogs against violation or abuse of the transport facility by anti-social elements, who might vandalise road furniture and rails, block drainage channels, or cut down trees planted to mark transport reserves.

\begin{center}
\textbf{Box 16.1: Post of LC Secretary for Public Infrastructure}
\begin{itemize}
\item For “transport reserve trees” management, local communities will be enabled to: (i) plant the trees, (ii) nurture the trees, and (iii) safeguard the trees.
\item For this reason, it is recommended that the post of Secretary for Public Infrastructure be created on both LCI and LC III Executive Committees to care for this function, amongst others.
\item Other functions will include: Carriageways, Tracks, Water and Sanitation Installations, Telecommunication Installations etc, as applicable.
\end{itemize}
\end{center}

16.3.3 Private Sector Participation

16-15. International participation will mainly be through provision of consultancy services and contractors for construction. Another avenue, important since projected investments will be capital-intensive, will be through Public/Private Partnerships (PPPs). These should be handled meticulously within the principles indicated in Annex 5. Regional private sector actors will provide similar services, with perhaps less emphasis on PPP’s. Under the up-coming East African Common Market, Partner State actors should receive similar treatment to Uganda nationals.

16-16. This raises the question: How should Ugandan private sector nationals be treated as participants in transport infrastructure development for Uganda? The MoWT
has on her books initiatives for (i) promoting utilization of local consultants and contractors, and (ii) capacity building for the same groups. These initiatives require a study to determine a *policy framework* (or a participatorily agreed *system of principles*), after which the principles agreed are to be legislated for and appropriate implementational arrangements put in place.

16-17. District councils in Uganda already have a “system of preferences” for locals in award of local tenders, but the “system” is poorly structured, inefficient and not cost-effective. Within the above study, the MoWT could appraise and recommend improvements to the system in general, while district councils could selectively evaluate tenders awarded to “locals” and recommend specific improvements.

16.3.4 **Community Participation**

16-18. Community participation has already been covered, as has sensitization of communities on how to benefit economically from new transport infrastructure developments. For households or groups of households, sound transport infrastructure acts not only as a production catalyst, but also as a marketing artery. Therefore, as part of infrastructure development in any district or lower local government area, part of the IEC Strategy will be to imbibe into the thinking of communities: (i) the *importance of pooled production* (say of passion fruits), and (ii) principles for creation and good management of *marketing cooperatives*. Membership in the NTMPC of the Ministry of Tourism, Trade and Industry (MTTI) will help ensure that this primary purpose for transport infrastructure improvement receives due attention.

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**Chapter 16: Reference**

1 The “Kalahari Road Syndrome” refers to an incident in the 1980’s in which Botswana and Namibia agreed to build a Trans-Kalahari Highway from Gaborone to Windhoek and then to the port of Walvis Bay; Botswana did her bit, but the road section within Botswana from Ghanzi to Mamuno (on the Namibia Border) lay fallow for years before Namibia could construct a highway from Mamuno to Windhoek.
17.0 CAPACITY BUILDING

17.1 The Need for Capacity Building

17-1. Improving the institutional capability, professional skills and ethical outlook of the different actors is crucial to the successful implementation of NTMP/GKMA. An integrated approach to capacity building for the transport sector must seek to identify the right people, put in place cost-effective processes, ensure timely information flows, and rationalize the roles and responsibilities of institutional actors. The investments and institutional reforms proposed under the Plan will be compromised if the requisite capacity building activities are not also undertaken.

17.2 Required Initiatives

17-2. Successful implementation of NTMP/GKMA will require an array of qualified specialists, including planners, engineers, economists, management specialists, contractors and administrators. These personnel must be available in the required numbers, and also imbued with the work ethic and integrity necessary to work for the public good rather than for individual or vested interests.

17-3. Actions which support the human resource objective are to include:

i) Competently filling vacant positions at all levels;
ii) Creating awareness on the roles and relationships of actors in central and local government;
iii) Improving channels of communication to ensure better information flow;
iv) Providing necessary training for corporate governance and for technical, managerial and administrative skills development;
v) Ensuring sustainability of key institutional actors through provision of government and donor support; and
vi) Ensuring that key stakeholders participate meaningfully in policy formulation, planning and monitoring.

17-4. The Management Services Department (MoPS) will support MoWT in identifying the functional and skills gaps and other needs that should inform preparation of a National Transport Sector Capacity Building Master Plan (NTSCBMP). The Government will take steps to ensure that transport sector actors and stakeholders acquire the governance, technical and financial capacity required to support implementation of this NTSCBMP.
**Box 17.1: A Brief on Institutional Capacity**

- Institutional capacity is to do with (i) readiness, (ii) willingness and (iii) ability to deliver all institutional functions in both time and space.

- Thus, key institutional components for capacity (i) assessment (ii) development and (iii) building are normally concerned with:
  - Institutional structures
  - Institutionally systems and processes
  - Institutional Human Resources
  - Institutional financial and logistical support
  - Institutional information.

- Therefore, the proposed *Transport Sector Capacity Building Master Plan* will be premised on a number of data collection and analytical studies relating to
  
  i. *Institutional and Organisational Design* (and/ or Re-Structuring), including Job Design and Establishment Analysis, of all proposed actors in the Transport Sector (see Chapter 12), especially the TMPU, MATA, MATE.

  ii. Review and design (or re-design) of transport sector *management systems and processes*, especially (but not limited to)
      - Procurement Cycle(s)
      - Contract Management
      - Monitoring and Evaluation.

  iii. *Competence Profiling* of all Job Titles of key transport sector institutions followed by a *HR Capacity Needs Assessment*, leading to a Transport Sector Human Resource Development Plan (to be embedded in the Capacity Building Master Plan).

  iv. Data collection, analysis and compilatory planning of logistical and financial needs, for implementation of the NTMP.

  v. Review of information needs for smoothly-effective and efficient implementation of the NTMP, leading to Design and Development of the NTMP Information Database.

- As further mentioned (in Chapter 20), the starting point would be for the MoWT to set up a Task-Force to identify
  
  i. how much of the above work-load could be internally carried (by the MoWT);
  
  ii. what assistance is required from other GOU Departments, e.g. the Management Services of the MPS;

  iii. work which will need to be out-sourced (through consultancy services).
18.0 INTEGRATED 15-YEAR TRANSPORT INVESTMENT PLAN

18-1. The National Transport Master Plan (NTMP), including Transport Master Plan for the Greater Kampala Metropolitan Area (GKMA), aims to set a clear planning framework for development of the transport sector over the next 15 years, 2008-23. The Plan covers several complementary areas, including vision, policy and strategy; institutional needs; and transport sector investments. This chapter now summarises the proposed 15-year Transport Investment Plan for 2008-23, while Chapter 19 presents an overall matrix of policy, institutional and investment activities.

18-2. The Transport Investment Plan includes road, rail, air transport, inland water, and GKMA investments, and is summarised by sector and for the three five-year phases of the Plan in Table 31. Total investment by Government over the 15 years is costed at mid-2008 prices as US$ 8,800 million, divided between plan phases as follows:

<table>
<thead>
<tr>
<th>Year Phase</th>
<th>Investment (US$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-13</td>
<td>US$ 2,999.3 mn</td>
</tr>
<tr>
<td>2013-18</td>
<td>US$ 3,097.9 mn</td>
</tr>
<tr>
<td>2018-23</td>
<td>US$ 2,702.4 mn</td>
</tr>
<tr>
<td>Total</td>
<td>US$ 8,799.6 mn</td>
</tr>
</tbody>
</table>

18-3. This total is 19 per cent lower than the total of US$ 10,876 million shown as ‘Proposed Investments’ in Table 14.3, comparing proposed expenditure with the expected 15-year expenditure framework. This is because the framework is expected to include certain items which cannot be considered as true investment costs, notably normal (i.e. not backlog) maintenance expenditures for national roads. The start-up costs of establishing new institutions in the first five years of the Plan are also excluded.

Table 31: Summary of Government Transport Investment Expenditure, 2008-23 (in US$ Million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>National Roads</td>
<td>2,023.4</td>
<td>1,643.1</td>
<td>1,515.0</td>
<td>5,181.5</td>
</tr>
<tr>
<td>2.</td>
<td>District, Urban, and Community Roads</td>
<td>624.7</td>
<td>499.7</td>
<td>487.5</td>
<td>1,612.0</td>
</tr>
<tr>
<td>3.</td>
<td>Railways</td>
<td>51.7</td>
<td>390.7</td>
<td>18.6</td>
<td>461.0</td>
</tr>
<tr>
<td>4.</td>
<td>Air Transport</td>
<td>88.2</td>
<td>91.7</td>
<td>54.6</td>
<td>234.5</td>
</tr>
<tr>
<td>5.</td>
<td>Inland Water Transport</td>
<td>54.5</td>
<td>59.0</td>
<td>16.5</td>
<td>130.0</td>
</tr>
<tr>
<td>6.</td>
<td>Greater Kampala (GKMA)</td>
<td>156.9</td>
<td>413.7</td>
<td>610.1</td>
<td>1,180.6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>2,999.3</strong></td>
<td><strong>3,097.9</strong></td>
<td><strong>2,702.4</strong></td>
<td><strong>8,799.6</strong></td>
</tr>
</tbody>
</table>

Sources: UNRA, DUCARIP, URC, CAA, KCC, NTMP
19. SUMMARY OF ACTIVITIES

19.1 Scope of Transport Master Plans

19-1. As mentioned in Chapter 18, the National and GMKA Transport Master Plans cover several complementary areas including vision, policy, and strategy; institutional needs; and transport sector investments. A clear policy outlook and a sound institutional structure are essential building blocks of a successful transport system, in which the potential benefits of sector investments can be fully realized.

19-2. Proposed investments have been summarised and costed in Chapter 18, and this chapter now presents in Table 32 a matrix of activities in the complementary areas.
Table 32: Matrix of Activities for National Transport Master Plan Period, 2008-23

<table>
<thead>
<tr>
<th>No</th>
<th>Implementation Field</th>
<th>Activities, 2008-13</th>
<th>Activities, 2013-18</th>
<th>Activities, 2018-23</th>
</tr>
</thead>
</table>
| 1. | Policy and Strategy   | A. Continue specialisation of functions by government, agencies and operators, e.g.  
- MOWT to concentrate on overall policy, planning and co-ordination;  
- Integrate planning into regional context (EAC/COMESA/AU);  
- Sector regulation by specialist agencies under MOWT guidelines;  
- Infrastructure provision by specialist agencies (UNRA, CAA etc);  
- Provision of transport services by private sector where possible.  
B. Promote efficiency through competition and choice, with carefully-managed concessioning where possible.  
C. Service and user standards to be set and enforced by regulatory agencies, traffic police, safety agency etc.  
D. Improve co-ordination of transport, land use, urban, and environmental planning.  | As for 2008-13, but with modifications in light of experience, or in response to regional decisions etc.  | As for 2013-18, but with modifications in light of experience, or in response to regional decisions etc. |

Table 33 (p.2): Matrix of Activities for National Transport Master Plan Period, 2008-23 (cont.)
<table>
<thead>
<tr>
<th>No.</th>
<th>Implementation Field</th>
<th>Activities, 2008-13 (2)</th>
<th>Activities, 2013-18 (3)</th>
<th>Activities, 2018-23 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Institutional Needs</td>
<td>A. Consolidate establishment and operation of UNRA.</td>
<td>As for 2008-13, but with modifications in light of experience, or in response to regional decisions</td>
<td>As for 2013-18, but with modifications in light of experience, or in response to regional decisions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Ensure timely establishment of URF, with secure and sufficient supply of funds.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>C. Act to ensure financial viability of an autonomous CAA.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>D. Create TMPO to manage NTMP.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>E. Create MATA and MATE to plan and manage transport facilities for GKMA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F. Create MTRA to ensure effective regulation of road, rail and water transport sectors, with basis for fair competition between modes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 34 (p.3): Matrix of Activities for National Transport Master Plan Period, 2008-23

<table>
<thead>
<tr>
<th>No.</th>
<th>Implementation Field</th>
<th>Activities, 2008-13 (2)</th>
<th>Activities, 2013-18 (3)</th>
<th>Activities, 2018-23 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Transport Sector Investments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.1 Road</td>
<td>A. Eliminate maintenance backlog on national roads.</td>
<td>A. Complete construction of Nile bridge</td>
<td>A. Upgrade approx 1,500 km of national roads to paved.</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Reconstruct Northern Corridor road.</td>
<td>B. Upgrade approx 1,500 km of national roads to paved.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>Plan and start construction of new bridge at Owen Falls.</td>
<td>C. Dual approx 75 km of national roads.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>Upgrade approx 8,000 km of district roads to national roads.</td>
<td>D. Implement second 5 years of DUCARIP programme.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Upgrade approx 1,050 km of national roads to paved.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F.</td>
<td>Dual approx 70 km of existing national roads.</td>
<td>B. Dual approx 125 km of national roads.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.</td>
<td>Implement first 5 years of DUCARIP programme.</td>
<td>C. Continue investments in DUC roads at same rate as in 2017/18.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.2 Rail

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Plan for and arrange partnerships and finance for expected rehabilitation and new line works.</td>
<td>A. Rehabilitate Kasese and Pakwach lines.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Start construction of Gulu-Sudan line.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A. Complete Gulu-Sudan line.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Plan additional investments depending on perceived markets, international agreements etc (lines to Kisangani, Kigali, conversion to standard gauge etc).</td>
</tr>
</tbody>
</table>

(continues...)
<table>
<thead>
<tr>
<th>No (0)</th>
<th>Implementation Field (1)</th>
<th>Activities, 2008-13 (2)</th>
<th>Activities, 2013-18 (3)</th>
<th>Activities, 2018-23 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transport Sector Investments (cont.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.</td>
<td>Air</td>
<td>A. Continue investments at Entebbe to meet growing demand.</td>
<td>A. Continue investments at Entebbe to meet growing demand.</td>
<td>A. Continue investments at Entebbe to meet growing demand.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Upgrade other entry-exit airports.</td>
<td>B. Invest at other entry-exit airports.</td>
<td>B. Invest at other entry-exit airports.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Construct new up-country airports to serve districts.</td>
<td>C. Construct proposed Rwentobo regional airport.</td>
<td>C. Construct new up-country airports to serve districts.</td>
</tr>
<tr>
<td>3.4</td>
<td>Inland Water</td>
<td>A. Rehabilitate selected ports and landings.</td>
<td>A. Continue infrastructure improvements on lakes and rivers.</td>
<td>A. Continue with infrastructure improvements as required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Rehabilitate and augment wagon ferry fleet on Lake Victoria.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Greater Kampala</td>
<td>A. Design and construct dual carriageways on main arteries, including inner city centre southern by-pass; also to meet bus rapid transit proposals expected by 2010.</td>
<td>A. Continue all types of improvements.</td>
<td>A. Continue all types of improvements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Improve also single-carriageway roads.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>C. Institute traffic management and safety improvements at junctions and railway crossings.</td>
<td></td>
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</tr>
</tbody>
</table>
20.0 CONCLUDING REMARKS AND WAY FORWARD

20.1 Significance of the Plan

20-1. Preparation of NTMP/GKMA constitutes an important advance in transport sector planning in Uganda. For the first time, there is now a comprehensive long-term plan for the whole sector, covering not only investment needs, but also the whole transport framework, including policy and strategy; the institutional, legal and financial framework; and other relevant aspects. The Plan plays a key role as a reference framework for identifying key needs and goals, preparing for emerging challenges, and painting a picture of sector development over the next 15 years.

20.2 Future Needs

20-2. Since the transport landscape is constantly changing, it is important that NTMP/GKMA be adopted and used as a flexible and ‘living’ document, rather than as a fixed programme for the next 15 years. A key feature of NTMP is the establishment of TMPU and MATE as teams of dedicated professionals, specialising in regular monitoring of the long-term goals and performance indicators, and in revising investment and institutional targets as the Plan evolves. Without this capacity, the Plan will not be effectively executed.

20-3. NTMP/GKMA shows, in particular, the importance of integrating land use, housing, and transport planning in GKMA. This need must be effectively addressed, if the serious congestion problems throughout the metropolitan area are to be resolved.

20.3 Indicative Implementation Milestones

20-4. In order to launch the implementation process, the reference dates shown below are indicatively recommended.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Approved by Cabinet</td>
<td>• Within two (2) months of Acceptance of Final Report.</td>
</tr>
<tr>
<td>(ii) Set up a NTMP Steering Committee (Task Force)</td>
<td>• Within two (2) months of Acceptance of Final Report.</td>
</tr>
<tr>
<td>(iii) Set up the NTPU</td>
<td>• Within four (4) months of Acceptance of the Final Report. The Steering Committee to work, towards establishment of the NTPU, and then hand over to the same unit.</td>
</tr>
<tr>
<td>(iv) Set up the MATA</td>
<td>• Within six (6) months of Acceptance of the Final Report.</td>
</tr>
<tr>
<td>(v) Set up the MATE</td>
<td>• Within six (6) months of Acceptance of the Final Report.</td>
</tr>
<tr>
<td>(vi) Act selectively on further studies recommended in this Plan</td>
<td>• Starting as soon as possible • Certainly within six (6) months of acceptance of the Final Plan</td>
</tr>
</tbody>
</table>