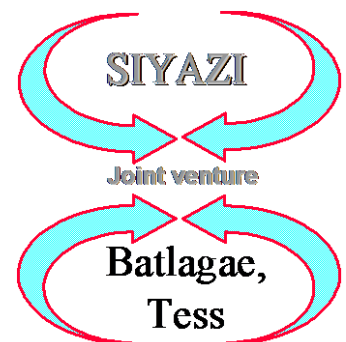


**VHEMBE DISTRICT MUNICIPALITY**  
**CURRENT PUBLIC TRANSPORT RECORDS (VDM-CPTR)**

**JULY 2003**



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## **EXECUTIVE SUMMARY**

### **Terms of reference**

Each district municipality that is a planning authority is responsible in terms of the National Land Transport Transition Act (Act 20 of 2000) for preparing a Current Public Transport Record (CPTR) for its entire area.

### **Purpose of the study**

Based on the *Government Gazette* published on 24 July 2002 the purpose of the CPTR is to provide a record of public transport services, facilities and infrastructure, which will constitute the basis for the development of the operating licence strategies, rationalisation plans and integrated transport plans for the Vhembe District Municipality.

### **Study area**

The scope of the work covers the whole area of jurisdiction of the Vhembe District Municipality, which includes the four Local Municipality areas of Thulamela Municipality; Makhado Municipality; Musina Municipality; and Mutale Municipality.

### **Approach followed and report**

The report contains two main sections, namely the process followed and the actual record of public transport.

The elements of the process followed include consultation and liaison, site visits, surveys, database development, the capturing, dissemination and storage of data, and the preparation of the report.

The following role players were consulted:

- Limpopo Province Department of Transport – Public Transport Division.
- Limpopo Province Department of Transport – Registrar of Taxis.
- Limpopo Province Department of Transport – Operating Licence Board.
- Vhembe District Municipality – Community Service Department.
- Vhembe District Taxi Council and Executive
- Local municipalities
- Bus industry
- Vhembe District Transport Forum

### III

Site visits were arranged to the different local public transport facilities, so that the study team could acquaint themselves with the conditions, circumstances, operational practices and all practical issues that would be essential for the planning process.

Once all the necessary arrangement and liaison had been completed, planning to execute the surveys commenced. The planning process was communicated and discussed with the Vhembe District Municipality and with the role players in the relevant public transport industries.

The surveys were executed in accordance with the Vhembe District Municipality's Terms of Reference for the preparation of a Current Public Transport Record (February 2003).

The following surveys were conducted:

- Facilities
- Routes determination
- Rank utilisation
- Route utilisation
- Waiting times

The database was developed to assist with the interpretation of data. The report contains a summary of the information determined from the Vhembe District Municipality Current Public Transport Record (VDM-CPTR) Database. The purpose of the database is therefore to complement the report, reduce the thickness of the report and provide a tool that can easily be updated from time to time.

#### **Actual record of the public transport system in the Vhembe District Municipality**

The report provides a summary of information collected as part of the VDM-CPTR. It will provide to all stakeholders a view of what is involved in public transport in the Vhembe District Municipality with regard to facilities, capacity utilisation of ranks and routes, waiting times of passengers and vehicles, the operational vehicles and the number of trips made per operational vehicle.

The facility surveys were conducted at taxi ranks, bus termini and train stations.

The facility surveys conducted indicate that the Vhembe District Municipality has a total of 129 taxi facilities of which more than 90 percent are informal.

## IV

There are four bus termini in the Vhembe District Municipality.

The currently operating rail line for the transportation of passengers runs between Johannesburg and Musina.

The findings of the route surveys conducted were that there were 244 taxi routes in the Vhembe District, of which 122 routes is forward and 122 is reverse routes, and just over 45% of the routes were in the Thulamela Local Municipality.

Of the 151 subsidised bus routes in the CDM, 70% are in Makhado LM, 24% in Thulamela and 6% in Mutale.

The only message from the route utilisation analysis is that there is a vast oversupply of taxis on most routes in the VDM.

No route utilisation survey was done for the bus services.

The results of waiting-time surveys only make sense if they are examined for the individual routes. The information on waiting times should be considered from the point of view of seeing whether passengers are waiting for taxis or whether the vehicles are waiting for more passengers before they can depart.

The route utilisation survey noted 1 625 taxi vehicles that provided services in the VDM area during the survey periods (06:00 to 9:00 and 15:00 to 18:00)

There were 199 buses in operation on the subsidised routes in the VDM area

There are no metered taxis in operation in the VDM area.

Light delivery vehicles (LDVs) are utilised for learner trips and were noted during the surveys on the route between Musina and Mutale and Vivo and Alldays in the Musina LM.

Donkey-carts were active as transport mode on the bad roads and provided low-demand services for recreation purposes in the Mutale LM in the vicinity of Tshipise.

Cross-border services between Musina and destinations in Zimbabwe were very active before the instability in Zimbabwe but currently only about four vehicles departs per day.

The information of the Board and Registrar of Taxis could not be compared with the CPTR information despite numerous efforts to obtain the detailed information from the RAS and LPTS systems. The intended comparison can be done whenever the RAS and LPTS information becomes available.

## **Recommendations**

It is recommended that:

- As the results of the CPTR surveys indicate a general over-supply of taxis, no permits should be considered before the OLS has been compiled and approved.
- The CPTR information as available on the database should be used for developing an Operating Licence Strategy (OLS) as guideline for the Operating Licence Board with regard to the issuing of new permits.
- The CPTR information should furthermore be used for developing a Public Transport Plan, which would guide the implementation of Public Transport projects and strategies, and could serve as input into the Integrated Transport Plan (ITP).
- For the 2004 update of the CPTR, the operations at the major ranks should also be considered to be surveyed during Friday afternoons and Saturdays to determine the utilisation of services.
- For the 2004 update of the CPTR, the route utilisation for busses should also be considered to be surveyed.

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## Chapter

### 1. INTRODUCTION AND BACKGROUND

This chapter contains the following:

- a) Terms of reference
- b) Purpose of the study
- c) Study area
- d) Outline of the report

#### 1.1 *TERMS OF REFERENCE*

Each district municipality that is a planning authority is responsible in terms of the National Land Transport Transitional Act (Act 20 of 2000) for preparing a Current Public Transport Record (CPTR) for its entire area. On 25 March 2003 the Vhembe District Municipality appointed Siyazi-Batlagae-Tess Joint Venture to compile the Vhembe District Municipality's Current Public Transport Records (VDM-CPTR) for the 2002/2003 financial year.

#### 1.2 *PURPOSE OF THE STUDY*

Based on the *Government Gazette* published on 24 July 2002 the purpose of the CPTR is as follows:

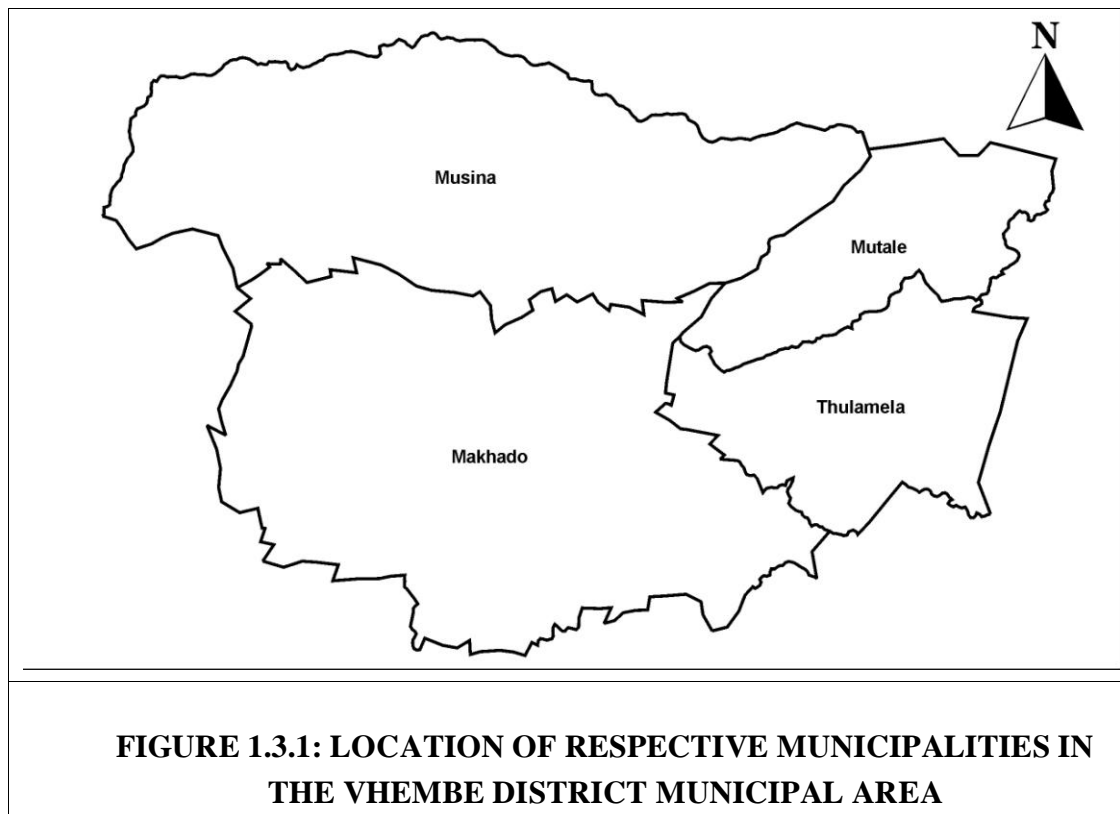
- a) “The purpose of the CPTR as outlined in section 23 of the Act, is to provide a record of public transport services, facilities and infrastructure, which will constitute the basis for the development of the operating licence strategies, rationalisation plans and integrated transport plans.
- b) In terms of section 18(1) of the Act, transport plans must form the transport component of the integrated development plans.
- c) All activities in collecting information for the CPTR must be guided by the question *‘for what purpose do we need the information’*
- d) Subject to the Act, these Requirements and other relevant legislation such as local government legislation, the information collected should not be a wasteful status quo of the past, but should rather be defined and focused by the priorities established in the integrated development planning process and the transport planning process in the whole.”

### 1.3 STUDY AREA

The scope of the work covers the whole area of jurisdiction of the Vhembe District Municipality. The four Local Municipality areas covered include the –

- a) Thulamela Municipality;
- b) Makhado Municipality;
- c) Musina Municipality; and
- d) Mutale Municipality;

None of the above-mentioned local municipalities has prepared or will prepare a CPTR for their respective municipal areas. Figure 1.3.1 indicates the location of the respective municipalities in the Vhembe District Municipality.



### 1.4 OUTLINE OF THE REPORT

Chapter 1 serves as an introduction and summary. Chapter 2 contains a brief description of the approach to the study and explains how the study was carried out, and Chapter 3 elaborates on the process followed in developing the CPTR. Chapter 4 provides more information about the actual record of the public transport records. The report concludes with a bibliography in Chapter 5, followed by the appendices.

## Chapter

## 2. STUDY APPROACH

The report contains two main sections, namely:

- a) Process followed.
- b) Actual record of public transport.

The above-mentioned are discussed in more detail in the subsequent subsections.

### 2.1 *PROCESS FOLLOWED*

The process followed contains the following elements:

- Consultation and liaison
- Site visits
- Surveys
- Database development
- Capturing, dissemination and storage of data
- Preparation of report

### 2.2 *ACTUAL RECORD OF PUBLIC TRANSPORT*

The actual record of public transport consists of the following:

- Facilities
- Capacity utilisation of ranks
- Routes
- Routes utilisation
- Waiting times
- Taxi related information
- Comparison of information of the Operating Licence Board with the information of the Registrar of Taxis.
- Comparison of information of the Operating Licence Board with the CPTR information.
- Comparison of information of the Board and the Registrar of Taxis with the CPTR information.
- Bus facilities
- Bus operators
- Bus fleet
- Bus route and time table information

Figures B-1 to B-4 of Appendix B of this report provides detailed base maps prepared to indicate all the public transport facilities in the Vhembe District Municipal Area for the respective local municipalities. In addition a basic database was prepared in Microsoft Access to support the basic information submitted as part of this report. This database will make it possible to update the VDM-CPTR on a continuous basis. Such updates will enable trends to be drawn of the changes in passenger transport provision from year to year.

## Chapter

### 3. PROCESS FOLLOWED

Chapter 3 contains the following information:

- a) Consultation and liaison
- b) Site visits
- c) Surveys
- d) Database development
- e) Capturing, dissemination and storage of data
- f) Preparation of report

This information is elaborated on in the subsections below.

#### 3.1 *CONSULTATION AND LIAISON*

Consultation and liaison are an integral part of the compilation of the VDM-CPTR. It is extremely important to involve all role players to ensure that the process is acceptable and reliable. The users of the system should have confidence in the process as well as in the results. The following role players were consulted:

- a) Limpopo Province Department of Transport – Public Transport Division.
- b) Limpopo Province Department of Transport – Registrar of Taxis.
- c) Limpopo Province Department of Transport – Operating Licence Board.
- d) Vhembe District Municipality – Community Service Department.
- e) Vhembe District Taxi Council and Executive
- f) Local municipalities
- g) Bus industry
- h) Vhembe District Transport Forum

##### **3.1.1 Limpopo Province Department of Transport – Public Transport Division**

The Limpopo Province Department of Transport plays an important role in the process of the compilation of the VDM-CPTR, for the following reasons:

- a) The Department is responsible for ensuring that well-planned and co-ordinated public transport services are provided in the Limpopo Province.
- b) The Department should ensure that all the CPTRs prepared for the respective districts in the province have compatible as well as usable information.

Siyazi-Batlagae-Tess Joint Venture consulted on a continuous basis with the Senior Manager of Public Transport in the Limpopo Province, Ms M Hetisane, as well as with other members of the Public Transport Division with regard to the process.

### **3.1.2 Limpopo Province Department of Transport – Registrar of Taxis**

Since the Registrar of Taxis plays an extremely important role in the Limpopo Province it was necessary to consult Mr D Makgahlela on a regular basis. One of the aims was to use the information obtained from the existing RAS information system that could be verified in the field and updated through the process. Unfortunately the information from the RAS system was not available from the Registrar of Taxis, as the RAS system for the Limpopo Province was not effectively available. The ideal situation would have been to use all the existing information as a point of departure for capturing and updating data.

### **3.1.3 Limpopo Province Department of Transport – Operating Licence Board**

Mrs Sathege, head of the Operating Licence Board Division, and other members of the division were consulted and informed continuously about the process. In addition, LPTS information was obtained from the Operating Licence Board.

### **3.1.4 Vhembe District Municipality – Community Service Department**

The client of the project, Vhembe District Municipality, was consulted on a continuous basis, in order to report progress as well as the problems identified. Mr TE Lalumbe as Community Services Department acted as project leader of the project.

### **3.1.5 Vhembe District Taxi Council**

The Vhembe District Taxi Council plays an important role in the compilation of the VDM-CPTR, since a high percentage of public transport in the Limpopo Province consists of taxis. All liaison with the taxi industry was conducted through the Vhembe District Taxi Council. Meetings to explain the process were held with the executive of the Vhembe District Taxi Council respectively on –

- a) 08 April 2003 at the Vhembe Department of Transport Offices;
- b) 14 April 2003 at the Vhembe Parliament Hall.



A copy of the minutes of the meetings held with the Vhembe District Taxi Council is available in Appendix A of this report.

In order to build the capacity of the Vhembe District Taxi Council, members of the Executive were continuously consulted and informed. The knowledge of the members of the taxi industry about the operations of the system in the area should never be under-estimated.

### **3.1.6 Local municipalities**

The Vhembe District Municipality informed the respective local municipalities in Vhembe District about the VDM-CPTR. As part of the agenda of the Vhembe District Transport Forum, the respective local municipalities were informed. The respective local municipalities are actively part of the Vhembe District Transport Forum.

### **3.1.7 Bus industry**

There are two different types of bus operators in the Vhembe District, namely:

- a) Subsidised operators
- b) Non-subsidised operators

The Vhembe Bus Association is an active member of the Vhembe District Transport Forum, and therefore plays an active role in the process.

#### *3.1.7.1 Subsidised operators*

All subsidised bus operators in the Vhembe District are shown in table 3.1.7.1.1.

<b>TABLE 3.1.7.1.1: SUBSIDISED BUS OPERATORS IN THE VHEMBE DISTRICT MUNICIPAL AREA</b>	
<b>Subsidised Bus Operator</b>	<b>Operational Area</b>
Great North Transport Louis Trichardt	Louis Trichardt/ Makhado
Mabidi Bus Service	Thulamela
Mabirimisa Bus Service	Thulamela
Magwaba Bus Service	Thulamela/Makhado
Mukondeleli Bus Service	Thulamela
Mulaudzi Transport	Thulamela/Makhado/Mutale
Netshituni Bus Service	Thulamela/Makhado
R. Phadziri Bus Service	Thulamela/Makhado
Swangi's Transport	Thulamela

Source: Mr H de Beer – Limpopo DoT

### *3.1.7.2 Non-subsidised operators*

There are eight (8) non-subsidised bus operators in the Vhembe District Municipal Area. Since these buses are not used for commuter transport, no detailed information was obtained about these operations. The distribution of these operators with regard to the respective local municipalities in the Vhembe District is shown in Table 3.1.7.2.1 below.

<b>TABLE 3.1.7.2.1: DISTRIBUTION OF NON-SUBSIDISED BUS OPERATORS IN THE VHEMBE DISTRICT MUNICIPAL AREA</b>		
<b>Municipality of Operation</b>	<b>Location of Operation</b>	<b>Number of Operators</b>
Thulamela unicity	Thohoyandou	2
Thulamela unicity	Phiphidi	1
Makhado Municipality	Ndzilele	2
Makhado Municipality	Vleifontein	1
Mutale Municipality	Mutale	1
Mutale Municipality	Musisi	1

### **3.1.8 Vhembe District Transport Forum**

The Vhembe District Transport Forum is the core of all transport-planning processes in the Vhembe District, and it was therefore important that the project should be discussed at this forum since the information would be utilised by this forum at the end of the day. Detailed discussions were held with the Vhembe District Transport Forum (VDTF) on Tuesday 1 April 2003. It was decided at the latter VDTF meeting that a steering committee as well as a technical committee would play an integral role in the process.

### 3.1.9 Local Transport Forums

The role of local transport forum is vital for ensuring sustainable and reliable public transport for any local municipality. Since not all local transport forum are fully active in the Limpopo Province, it is the responsibility of the respective representatives of the local municipalities to transfer the information discussed at the Vhembe District Transport Forum to the respective local municipalities.

### 3.1.10 Spoornet

Spoornet is the owner of all the railway system in the Vhembe District area. The study team obtained some information from the “Provincial Land Transport Framework for the Northern Province” in terms of railway facilities (train stations), timetables and fares, train routes, the number of trains, train capacity and service capacity of mainline services in the Vhembe District. None of the daily commuters in the Vhembe District Municipal Area is transported by means of rail.

## 3.2 *SITE VISITS*

Site visits were arranged to the different local public transport facilities, so that the study team could acquaint themselves with the conditions, circumstances, operational practices and all practical issues that would be essential for the planning process.

Site visits to all the public transport facilities for the different modes were conducted after consultation and liaison with the following parties:

- a) Taxi industry
- b) Bus industry
- c) Spoornet

Site visits have the following purposes:

- a) To familiarise the consulting team with the circumstances at the rank.
- b) To meet the important role players at the public transport facilities.
- c) To plan the surveys to be conducted at the public transport facilities.

Section 3.3 contains more details of the surveys of facilities.

### 3.3 SURVEYS

Once all the necessary arrangements and liaison had been completed, planning to execute the surveys commenced. The planning process was communicated to and discussed with the Vhembe District Municipality as well as the relevant role players from the public transport industry.

The surveys were executed as per the Vhembe District Municipality's Terms of Reference for the preparation of a Current Public Transport Record (February 2003). A strictly controlled data collection process was followed. Spot checks were done to ensure that surveys were being executed correctly. The Siyazi-Batlagae-Tess JV added some value to the VDM-CPTR project, as some information was collected which is not specified in the Terms of Reference. Examples of this information are as follows:

- a) Additional information on the facilities.
- b) All taxi routes had been captured using a GPS instrument and GIS-related programs.
- c) Detailed information about bus information was also obtained and included.
- d) Detailed calculations were done with the captured information.

The following surveys were conducted:

- a) Facility
- b) Rank utilisation
- c) Routes determination
- d) Route utilisation
- e) Waiting times

The above-mentioned surveys are described in detailed below, and Appendix A-2 contains definitions of taxi ranks; pick-up points, holding areas, routes and corridors.

#### 3.3.1 Facility surveys

The purpose of facility surveys is to determine and facilitate the following:

- a) The physical location of facilities
- b) Attributes of the facilities
- c) Information to role players in the Vhembe District so that they can make informed decisions about the upgrading of rank facilities.

The following include some of the specific information that was collected:

- a) Location of facilities, for example geographical co-ordinates such as the latitude and longitude of the positions of facilities as well as the physical addresses, including a photo of the facility.
- b) Type and status of facilities so as to indicate whether the facility is formal or informal as well as to distinguish the type of transport mode making use of the facility.
- c) The condition of facilities was assessed to identify the infrastructure items needed or that should be obtained to upgrade the facilities.
- d) All amenities at facilities were recorded and comments made on the condition of these amenities.
- e) Facility dimensions were recorded that could serve as good input into the taxi recapitalisation project for the taxi industry.
- f) The contact details of rank and association officials were taken to ensure that communication could be maintained in preparation for the surveys and for other future purposes.

More detailed information about the facility surveys is given in section 4.1 of this report and is also available in the VDM-CPTR database. Table B-1 of Appendix B of this report contains a summary of the Public Transport Facilities Survey in the Vhembe District.

### **3.3.2 Capacity utilisation of ranks**

The purpose of rank utilisation surveys is to determine whether the rank has sufficient capacity to accommodate the taxis that operate there. During these surveys, the following information was collected:

- a) The total number of facility bays, i.e. loading, holding or combined.
- b) The count of the operational vehicles on the rank for specific time intervals (15 minutes)

The surveys were conducted respectively for the morning (AM Peak), midday peak and afternoon (PM Peak). More detailed information about rank utilisation is given in section 4.2 of this report and is also available in the VDM-CPTR database. Table C-1 of Appendix C of this report contains a summary of the rank utilisation surveys for the Vhembe District.

### **3.3.3 Route determination**

Route determination is vital in order to understand the operational methods of the public transport industry. It is a process according to which the route information is collected, and a detailed description given of the routes or networks on which public transport services operate.

The route information that is usually collected includes specifying the origin and destination of the route as well as intermediate points which could be the relevant street names, road numbers, suburbs, towns, villages, and points where passengers are picked up and dropped off.

After discussions with the relevant role players it was decided that the routes as verified by the Limpopo Province Registrar of taxis should be used as the base information for the route determination process.

The route determination process started with the facility visits and continued throughout the project. The Siyazi-Batlagae-Tess Joint Venture furthermore captured the taxi route data electronically. This capturing was done on the team's own initiative and is furthermore probably one of the first in South Africa. The details of the bus routes are contained in the database.

Tables D-1.1 and D-1.2 of Appendix D of this report respectively contain a summary of the survey of Public Transport Routes in the Vhembe District for the taxis and the buses. Section 4.3 of this report as well as the VDM-CPTR database contains more details about the route information.

### **3.3.4 Route utilisation**

The purpose of route utilisation surveys is to determine how frequently a particular taxi uses a particular route. This information will be extremely important when determining the route Operating Licensing Strategy (OLS) because it will assist the local authority to make informed decisions about the provision of operating licences.

The following information was collected as part of this survey:

- a) Route number, Rank ID, fare for the trip
- b) The time when the trip starts
- c) Vehicle's registration number
- d) Capacity of the vehicle
- e) Number of passengers in the taxi when it departs

The route utilisation surveys were conducted in the peak period during which the specific point was fully operational. Most of the ranks linked to the Central Business District (CBD) of local municipalities are active during the Afternoon Peak whereas the ranks located close to residential areas are active during the Morning Peak. Owing to the operational methods of taxis during the AM peak, when passengers are picked up along the route or, as it is generally called, taxis are "touting" for passengers, strategic points had to be selected to obtain a combined and representative result for the area. The route utilisation surveys were conducted accordingly. More detailed information about route utilisation is given in section 4.4 and is

also available in the VDM-CPTR Database. Table E-1 of Appendix E of this report contains a summary of the route utilisation surveys.

### 3.3.5 Waiting times

The purpose of these surveys is to determine the balance between the supply of and demand for transport in the taxi industry. The calculation of waiting times requires the following information to be collected:

- a) The route number
- b) Passengers' waiting time in a queue
- c) Passengers' waiting time in a taxi
- d) Number of taxis in a taxi queue when the taxi departs
- e) Number of passengers in a taxi when a taxi departs
- f) A vehicle's capacity
- g) The vehicle's registration number

The surveys were conducted at the same time as the survey on route utilisation. It is, however, important to note that the operational methods that taxis in the rural areas used during the morning peak made it impossible to survey the waiting times for all operations during the morning peak. More detailed information is given in section 4.5 of this report and is also available in the VDM-CPTR Database. Appendix F of this report contains a summary of the waiting time survey.

## 3.4 DATABASE DEVELOPMENT

The report contains a summary of the information determined from the VDM-CPTR Database. The purpose of the database is to assist in the following manner:

- a) Complement the report
- b) Reduce the number of pages of the report
- c) Interpret and manipulate the data
- d) Provide a tool that can easily be updated from time to time
- e) Provide a tool that can easily compare the CPTR information with the RAS and LTPS information

The aim was to also save paper by not providing the information in hard copy, but instead submitting the information by means of the database.

Siyazi-Batlagae-Tess Joint Venture will provide training for the official/s who would make use of the database. The database was developed in Access 2000 and has two main parts:

- a) Captured data
- b) Output

The subsequent sections of the report discuss these two parts of the database in more detail.

### **3.4.1 Captured data**

The captured data part of the database refers to the actual information that was obtained via field surveys, interviews and existing reports. The captured data part of the database consists of the following elements:

- a) VDM-CPTR information
- b) Information from the Limpopo Registrar of Taxis Administration System (RAS)
- c) Limpopo Province Operating Licence Information (LPTS)

The subsequent subsections of the report discuss the above-mentioned elements in more detail.

#### *3.4.1.1 VDM-CPTR information*

The two major modes that form part of the Vhembe District Municipality CPTR are the –

- a) taxi mode, and
- b) the bus mode.

In terms of the taxi industry, the following CPTR information was captured:

- Facilities
- Capacity utilisation of ranks
- Routes
- Route utilisation
- Waiting times

From the bus industry, which is much better organised than the minibus-taxi industry, information was obtained about the following:

- Facilities
- Operators
- Fleets
- Routes and timetables



### 3.4.1.2 Limpopo Registrar of Taxis Administration System (RAS)

The following information could typically be obtained from the Limpopo RAS:

- Rank information
- Taxi operators' information
- Verified route information
- Vehicle registration information

### 3.4.1.3 Limpopo Province Operating Licence Information (LPTS)

The following information could typically be obtained from the Limpopo LPTS:

- Starting point of route (origin, A point))
- End of route (destination, B point)
- Certificate number
- Issue date
- ID number of operator
- Trade name
- Initials
- Vehicle registration number

### 3.4.1.4 Checks

To ensure that the above-mentioned captured information would be reliable and useable it was necessary to develop checks for the following:

#### a) Facilities

- A rank mentioned in the facility information but not in rank utilisation information
- A rank mentioned in the facility information but not in the route information as an origin rank
- A rank mentioned in the facility information but not in the route information as a destination rank.

#### b) Rank capacity utilisation

- A rank mentioned in the rank utilisation information but not in the in facility information.

c) Routes

- A rank mentioned as origin in the route information but not in the facility information.
- A rank mentioned as a destination in the route information but not in the facility information.
- A route mentioned in the route information but not in the route utilisation information.
- A subroute mentioned in the route information but not in the waiting-time information.

d) Route utilisation

- A route mentioned in the route utilisation information but not in the route information.
- A subroute mentioned in the route utilisation information but not in the route information.

e) Waiting times

- A route mentioned in the waiting-time information but not in the route information.
- A subroute mentioned in the waiting-time information but not in the route information.

### 3.4.2 Output

The purpose of the output data is to provide a set of information that is –

- a) non-editable;
- b) includes basic calculations;
- c) provides information per district municipality, local municipality, facility or route; and
- d) can be exported to other Microsoft-based programs for use in reports and discussions.

The following main sections were developed as part of the output information:

- a) Taxi output
- b) Bus output

The following subsections elaborate on these two kinds of output.

### 3.4.2.1 Taxi output

The following taxi output is relevant:

- a) Facilities
  - All taxi facility information
  - All taxi facility information for the Vhembe District Municipality
  - All taxi facility information for a specific local municipality
  - All taxi facility information for a specific facility code number
- b) Capacity utilisation of ranks
  - All taxi rank utilisation information
  - All taxi rank utilisation information for Vhembe District Municipality
  - All taxi rank utilisation information for a specific local municipality
  - All taxi rank utilisation information for a specific facility code number
- c) Routes
  - All taxi route information
  - All taxi route information for the Vhembe District Municipality
  - All taxi route information for a specific local municipality
  - All taxi route information for a specific facility code number
  - All taxi route information for a specific main route code
- d) Route utilisation
  - Taxi route utilisation results for all main routes
  - Taxi route utilisation results for all subroutes
- e) Waiting times
  - All taxi waiting-time information
  - All taxi waiting-time information for the Vhembe District Municipality
  - All taxi waiting-time information for a specific local municipality
  - All taxi waiting-time information for a specific facility ID code
  - Taxi waiting-time information for a specific route
- f) Taxi-related information
  - Taxi associations

- Number of minibus-taxi vehicles in the Vhembe District Municipality.
- Number of minibus-taxi vehicles per local municipality.

g) Minibus-taxi information comparisons

- Operating licence information versus Registrar of Taxis information
- Operating licence information versus CPTR information
- Registrar of Taxis information versus CPTR information

### 3.4.2.2 *Bus output*

The following bus output is relevant:

a) Bus facilities

- All bus facility information
- All bus facility information for the Vhembe District Municipality
- All bus facility information for a specific local municipality
- All bus facility information for a specific facility code number

b) Bus operators

- All bus operator information
- All bus operator information for the Vhembe District Municipality
- All bus operator information for a specific local municipality

c) Bus fleet

- All bus fleet information
- All bus fleet information for the Vhembe District Municipality
- All bus fleet information for a specific local municipality

d) Bus route and timetable information

- All bus route and timetable information
- All bus route and timetable information for the Vhembe District Municipality
- All bus route and timetable information for a specific local municipality
- All bus route and timetable information for a specific facility code number

### 3.5 *CAPTURING, DISSEMINATION AND STORAGE OF DATA*

Data capturing for the VDM-CPTR Database is a continuous process. As already stated, the database has been prepared in Access 2000. The information captured that does not yet appear on the existing base-map will be transferred to the base-map.

Back checking, clearing and quality control of data are part of the capturing process. In section 3.4 it can be noted that this process is part of the VDM\_CPTR Database.

### 3.6 *PREPARATION OF REPORT*

It is important to record the processes, results and the way forward in a report and also to communicate the findings of the project to the stakeholders to ensure that all will take note of the findings and know about the information. The communication process is necessary to build confidence in the information among the stakeholders.

## Chapter

### 4. ACTUAL RECORD OF THE PUBLIC TRANSPORT SYSTEM IN THE VHEMBE DISTRICT MUNICIPALITY

The purpose of Chapter 4 is to provide a summary of the information collected as part of the VDM-CPTR. The summarised information will allow all stakeholders to obtain a view of what is involved in public transport in the Vhembe District Municipality. Chapter 4 contains specific information about the following:

- a) Facilities
- b) Capacity utilisation of ranks
- c) Routes
- d) Route utilisation for taxis
- e) Waiting times for taxis
- f) Operational vehicles
- g) Comparison of information from the Operating Licence Board with information from the Registrar of Taxis
- h) Comparison of information from the Operating Licence Board with the CPTR information
- i) Comparison of information from the Board and Registrar of Taxis with the CPTR information

The subsequent subsections elaborate on the above-mentioned information.

#### 4.1 *FACILITIES*

The facility surveys were conducted for the following types of facilities:

- a) Taxi ranks
- b) Bus termini

Furthermore facility information for train stations were also obtained from the “Provincial Land Transport Framework for the Northern Province, November 2000”

The results of the surveys on the above-mentioned facilities are given in summarised form in the subsections below. Appendix B contains more detailed information about the public transport facilities.

##### 4.1.1 **Taxi ranks**

The results from the facility surveys conducted for the Vhembe District Municipality as represented in Table 4.1.1.1 show that the VDM has a total of 129 taxi facilities. Table 4.1.1.1 furthermore shows the number of taxi facilities situated in the different local municipality

areas, the percentage of formal taxi facilities and the percentage of taxi facilities per municipal area in relation to the total number of taxi facilities in the Vhembe District Municipality. Table 4.1.1.1 indicates that more than half of the ranks in the VDM are in the Thulamela LM followed by Makhado with just more than 26%.

<b>TABLE 4.1.1.1: TAXI FACILITY STATISTICS FOR THE VDM AREA</b>			
<b>Local Municipality</b>	<b>Number of taxi facilities</b>	<b>% Formal</b>	<b>% in relation to VDM</b>
Thulamela	73	4,1	56.6
Makhado	34	8,8	26.4
Musina	9	22,2	7
Mutale	13	7,7	10
<b>Total for VDM</b>	<b>129</b>	<b>7.0</b>	<b>100</b>

In terms of taxi facilities in the Vhembe District Municipal Area, the following information is also relevant:

- a) 29,5 % of taxi facilities are on-street facilities
- b) 93,0% of taxi facilities are informal facilities
- c) 7,8% of taxi facilities have lighting
- d) 11,8% of taxi facilities are paved
- e) 14,0 % of taxi facilities have public telephones
- f) 4,7% of taxi facilities have offices
- g) 7,0 % of taxi facilities have shelters
- h) 8,5 % of taxi facilities have ablution blocks

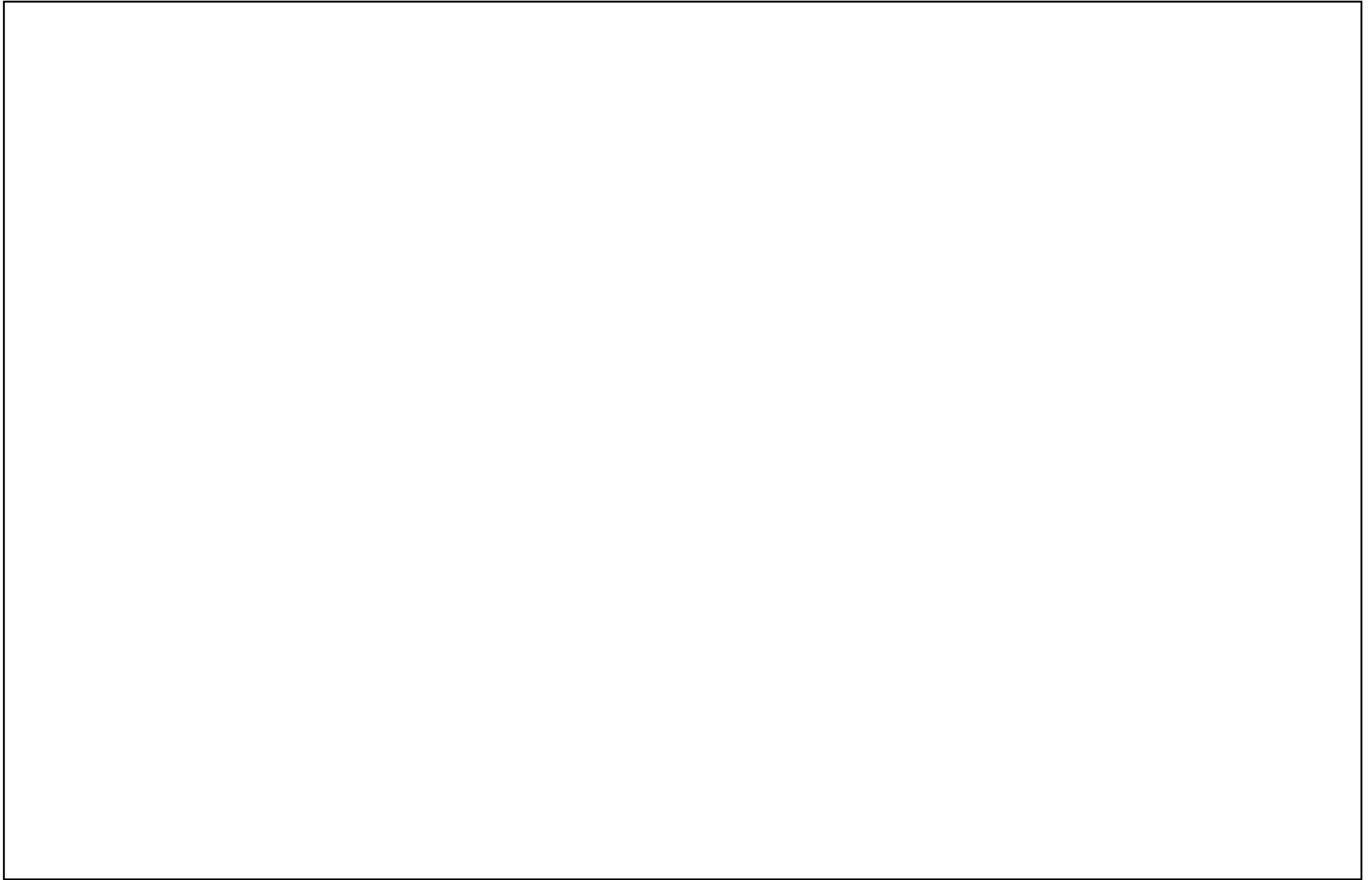
Table B-1 of Appendix B of this report contains more information about taxi facilities.

#### **4.1.2 Bus termini**

Bus facilities in the Vhembe District Municipality are limited to four main bus termini namely in Makhado, Eltivillas, Thohoyandou and Sibasa and then the many loading and off-loading bus stops through the district. The bus termini are in general not well provided with facilities. See Table B-2 for more detail on the facilities provided at bus termini.

#### **4.1.3 Train stations**

The current operating rail line for the transportation of passengers runs between Johannesburg and Musina. The existing line, which runs as a double line between Pretoria North and Pienaars River, falls partly under the commuting area of the Gauteng Province.



**FIGURE 4.1.3.1: SCHEMATIC ILLUSTRATION OF RAIL NETWORK AND STATIONS / HALTS**



#### 4.1.4 Metered taxis

There are no metered taxis that operate in the VDM.

### 4.2 CAPACITY UTILISATION OF RANKS

Facility utilisation is described in terms of the following parameters:

- a) **Frequency**, which implies the number of taxis using the facility in specified morning or evening peaks for each type of public transport service or off-peak periods for stand-alone holding facilities.
- b) **Facility capacity**, which implies the number of loading bays available.
- c) **Utilisation**, which implies the average number of bays occupied in the facility.

It is extremely important to realise that a high number of facilities in the Vhembe District Municipality are informal facilities. In practice, this implies that it is virtually impossible to determine the rank utilisation. In order to indicate the burden that an informal facility places on the public transport system, the capacity of informal facilities was indicated as 1. Table C-1 indicates the average capacity utilisation of taxi ranks respectively for the –

- a) AM Peak between 06:00 and 08:00
- b) MID Peak between 11:00 and 13:00
- c) PM Peak between 16:00 and 18:00

The higher the percentage capacity utilisation above 100%, the greater the overload on the facilities. In Table C-1 the Louis Trichardt/Mokhado OK Bazaars Taxi Rank (Number L-F0003V) has a mid-peak utilisation value of 4148% and the Beitbridge Taxi Rank (Number L-F0010V) has a mid-peak utilisation value of 1856%, which is a clear indication of the stressful conditions that everyone at these ranks probably experiences because of the informal character of a rank where so many vehicles and people gather. Another rank in a similar but less serious state is the Tshikombani Taxi Rank (with a value of 452%),

More detailed information per 15-minute interval is available in the VDM-CPTR database.

### 4.3 ROUTES

As part of the process of capturing the route information, it was possible to determine that the verified routes provided by the Limpopo Province Department of Transport have not been 100% accurately described.

Route surveys were conducted for the following types of modes:

- a) Taxi
- b) Bus

These modes are discussed in more detail in the subsequent subsections of this report.

#### 4.3.1 Taxi routes

Based on the surveys conducted for the VDM-CPTR it is crucial to realise that socio-economic factors in the province make it completely uneconomical to restrict a taxi operator to one particular road in order to fulfil his commitments as service provider. The typical socio-economic factors influencing the operational methods of the taxi industry are as follows:

- a) The widespread distribution of villages
- b) The level of income in villages
- c) The employment level in the Limpopo Province, with specific reference to villages

The taxi industry implemented a rotation system to ensure that all operators could earn a living. It is, however, important that taxi operators should only be permitted to operate between an A and B point, although it should be possible for them to operate on different roads to maintain the route.

The findings of the route surveys that were conducted, show that there were 244 taxi routes in the Vhembe District but the forward and reverse routes were separately described. Table 4.3.1.1 indicates that just over 46% of the routes were in the Thulamela Local Municipality, followed by 41% of the routes in the Makhado LM. Table 4.3.1.1 provides a more detailed breakdown of the routes per local municipality.

<b>TABLE 4.3.1.1: DISTRIBUTION OF TAXI ROUTES PER LOCAL MUNICIPALITY IN THE VHEMBE DISTRICT</b>		
<b>Local Municipality</b>	<b>Number of routes</b>	<b>% in relation to VDM</b>
Thulamela	113	46,3
Makhado	100	41,0
Musina	21	8,6
Mutale	10	4,1
<b>Total VDM</b>	<b>244</b>	<b>100</b>

Table D-1.1 of Appendix D-1 of this report contains a summary of taxi routes in the Vhembe District, indicating the following:

- a) Route number
- b) Association

- c) Point A
- d) Point B
- e) Local Municipality

More detailed information is available as part of the VDM-CPTR Database.

#### 4.3.2 Bus routes

As the bus industry is formalised, route information was easily available. The information about routes for subsidised services was quite accurate.

Based on the bus route information obtained, there are 151 subsidised bus routes in the Vhembe District of which 70% are in the Makhado LM. Table 4.3.2.1 provides a more detailed breakdown of the bus routes per local municipality in the Vhembe District.

<b>TABLE 4.3.2.1: DISTRIBUTION OF SUBSIDISED BUS ROUTES PER LOCAL MUNICIPALITY IN THE VHEMBE DISTRICT</b>		
<b>Local Municipality</b>	<b>Number of routes</b>	<b>% in relation with VDM</b>
Thulamela	36	24
Makhado	106	70
Musina	0	0
Mutale	9	6
<b>Total for VDM</b>	<b>151</b>	<b>100</b>

Table D-2.1 of Appendix D of this report contains a list of bus routes in the Vhembe District, indicating the following:

- a) Route number
- b) Operator
- c) Point A
- d) Point B
- e) Local municipality
- f) Fares

More detailed information is available as part of the VDM-CPTR Database with specific reference to the timetables and fare structures.

### 4.3.3 Train routes

The Bosveldier is the only scheduled mainline service operating on a daily frequency to and from the Limpopo Province as follows:

- Johannesburg – Makhado – Musina; and
- Musina – Makhado – Johannesburg.

A service (called the Special Train) provides a non-scheduled service over weekends.

The departure and arrival times of trains are only estimates, but trains do not depart before the times of departure indicated.

Table D-3.1 shows the timetable for the Bosveldier while tables D-3.2, D-3.3 and D-3.4 respectively provide the fares for first, second and third-class passengers. The last mentioned information were obtained from the “Provincial Land Transport Framework for the Northern Province, November 2001”.

Children aged 4 years and younger, accompanied by an adult in possession of a valid ticket, travel free of charge, but those between 5 and 12 years pay half the adult fare. Children aged 12 years and older pay the full adult fare.

The information with regard to the trains was obtained from the “Provincial Land Transport Framework for the Northern Province, November 2001”.

## 4.4 ROUTE UTILISATION FOR TAXIS

In order to conduct the route utilisation survey, the following figures from the route utilisation data were calculated for a specific route for a specific time interval:

- a) Number of passengers
- b) Number of seats
- c) Percentage utilisation of seats
- d) Number of trips
- e) Average occupation per vehicle
- f) Unique number of taxi trips
- g) Average number of trips per taxi

Tables E-1 and E-2 of Appendix E of this report respectively provide information about the above-mentioned route utilisation for the following peaks for all captured main routes:

- a) AM Peak from 06:00 to 09:00
- b) PM Peak from 15:00 to 18:00

Table 4.4.1 provides the average number of trips per taxi for each municipality in the Vhembe District for the AM and PM peaks respectively.

<b>TABLE 4.4.1: AVERAGE NUMBER OF TAXI TRIPS PER TAXI IN THE VHEMBE DISTRICT BY LOCAL MUNICIPALITY</b>		
<b>Local Municipality</b>	<b>AM PEAK (06:00 to 09:00)</b>	<b>PM PEAK (15:00 to 18:00)</b>
Thulamela	1,3	1,2
Makhado	1,1	1,0
Musina	1,4	1,1
Mutale	1,0	1,1

The summarised information in Tables E-1 and E-2 show that the busiest route in the VDM is the route between Thohoyandou and Shayandima (with 1 608 passengers in the morning peak). The 67% utilisation of the seats indicates that the taxis do not always leave when full. The taxis on this route only do 1,64 trips per taxi during a specific peak. The second-busiest route is the route between Kaphaphazela and Thohoyandou, with 1 601 passengers during the morning peak period. Utilisation of the available services was a relatively low 54% during the morning peak. The economic viability was very low with 1,40 trips per taxi during the morning peak. This was the case for the number of trips per taxi for most of the routes. During the afternoon peak period, the route between Thohoyandou and Phiphidi was the busiest with 1 159 passengers between 15:00 and 18:00 and 2,89 trips per taxi, which was also the highest of all routes in the VDM, followed by 2,47 trips per taxi on the route between Thohoyandou and Makwarela.

To conclude, it is possible to determine the route utilisation for any time period by means of the database, and therefore much more detailed information is available as part of the database.

No route utilisation surveys were conducted for the bus services.

#### 4.5 WAITING TIMES FOR TAXIS

Detailed calculations were done on waiting times, using the surveyed information. The following is typical of the information available per main route for a specific time interval:

- a) Survey size
- b) Maximum waiting time for passenger in queue

- c) Average waiting time for passenger in queue
- d) Maximum waiting time for passenger in vehicle
- e) Average waiting time for passenger in vehicle
- f) Maximum total waiting time for passenger
- g) Average total waiting time for passenger
- h) Maximum number of passenger left in queue
- i) Average number of passenger left in queue
- j) Maximum number of vehicles remaining in queue
- k) Average number of vehicles remaining in queue

The above-mentioned detailed waiting-time calculations were conducted for each local municipality. Tables F-1 to F-4 of Appendix F of this report contain the respective results for the following:

- a) Table F-1: Thulamela Municipality
- b) Table F-2: Makhado Municipality
- c) Table F-3: Musina Municipality
- d) Table F-4: Mutale Municipality

Table F-5 of Appendix F was prepared to indicate the results for the Vhembe District. In conclusion, the VDM-CPTR database contains all the detailed information about waiting times by specific routes.

Table 4.5.1 presents a summary of the data for the average waiting times in the queues and in the vehicles for the time intervals between 15:00 and 18:00 for the different local municipalities. Table 4.5.1 clearly indicates that there is generally an over-supply of minibus-taxi services in the Vhembe DM. Take for example the Thulamela LM where the waiting time in the queue is 1 or 0, whereas the average waiting times in the vehicles are 11 minutes for the hours starting at 15:00 and 16:00 and 7,3 minutes for the hour starting at 17:00. People wait for this long a time in the vehicle though very few people arrive in the queues and there are between 5 and 8 vehicles queuing to load. This is generally the case for minibus-taxi services in all the local municipalities. The demand for services on Saturdays and Friday afternoons could justify more vehicles but this would have to be investigated for each route during the update of the CPTR in 2004. The waiting time information will be utilised in more detail when developing the OLS for the Vhembe District Municipality.

**TABLE 4.5.1: AVERAGE WAITING TIMES IN QUEUES AND IN VEHICLES FOR DIFFERENT TIME INTERVALS BY LOCAL MUNICIPALITY**

Time Interval	Thulamela				Makhado				Musina				Mutale			
	Waiting Time in		Number left in		Waiting Time in		Number left in		Waiting Time in		Number left in		Waiting Time in		Number left in	
	Queue	Veh.	Queue	Veh.	Queue	Veh.	Queue	Veh.	Queue	Veh.	Queue	Veh.	Queue	Veh.	Queue	Veh.
15:00-16:00	1	11	2	10	0,25	20,6	2	9	0	14,6	0	3	0	45,6	1	1
16:00-17:00	0	11	4	8	0,5	13,75	1	7	0,5	24,6	0	3	0	20	0	1
17:00-18:00	0	7,3	3	5	0,25	10,5	1	5	0	10	0	2	-	-	0	1
Sample size	594				274				40				7			

## 4.6 OPERATIONAL VEHICLES

One of the most frequently asked questions concerns the number of operating vehicles for a specific area. It is important to realise that the numbers determined as part of this report only reflect the information obtained in the field for a specific day and peak period, as part of the VDM-CPTR, with specific reference to the minibus-taxi industry. It is therefore possible that for various reasons a taxi operator might not have operated on the day when the survey was conducted and therefore such an operator would not have been included in the calculations.

Information about the number of operational vehicles is therefore available for –

- a) Minibus-taxi operators, and
- b) Bus operators

The table below shows the total number of different taxis operating in the Vhembe District for each of the local municipalities. Table 4.6.1 shows that 1 625 taxi vehicles were observed in the VDM area during the survey, of which 977 vehicles were noted in the Thulamela LM. The lowest number was observed in the Musina LM, namely 68 vehicles. It is important to note that some of the vehicles were observed in more than one local municipality because the A and B points of the routes are in different local municipal areas. The result is that the sum of the operational vehicles for all the respective municipalities is higher than the number of operational vehicles in the VDM.

<b>TABLE 4.6.1: OPERATIONAL TAXIS IN THE VHEMBE DISTRICT MUNICIPAL AREA AND LOCAL MUNICIPALITIES</b>	
<b>Local Municipality</b>	<b>Number of taxis</b>
Thulamela	977
Makhado	594
Musina	68
Mutale	120
<b>Vhembe DM</b>	<b>1625</b>

There are 199 subsidised buses in operation in the VDM, 107 in Mokhado and 92 in Thulamela LM.

The following information about operators appears in Appendix G of the report:

- a) Table G-1: Taxi associations operating in the Vhembe District.
- b) Table G-2: Subsidised and non-subsidised bus operators in the Vhembe District.



#### **4.7 COMPARISON OF INFORMATION OF OPERATING LICENCE BOARD WITH INFORMATION OF THE REGISTRAR OF TAXIS**

No operating licence (LPTS) and Registrar of Taxis (RAS) information was electronically available from the Limpopo Province Department of Transport. It was therefore not possible to make a comparison at this stage.

#### **4.8 COMPARISON OF INFORMATION OF OPERATING LICENCE BOARD WITH CPTR INFORMATION**

No operating licence (LPTS) and Registrar of Taxis (RAS) information was electronically available from the Limpopo Province Department of Transport. It was therefore not possible to make the comparison at this stage.

#### **4.9 COMPARISON OF INFORMATION OF BOARD AND REGISTRAR OF TAXIS WITH CPTR INFORMATION**

No operating licence (LPTS) and Registrar of Taxis (RAS) information was electronically available from the Limpopo Province Department of Transport. It was therefore not possible to make the comparison at this stage.

## Chapter

### 5. FINDINGS AND RECOMMENDATIONS

#### 5.1 FINDINGS FROM THE CPTR PROCESS

The main findings of the CPTR for the Vhembe District Municipality are as follows:

##### a) Facilities

- There is a lack of public transport facilities, as more than 90% of the taxi facilities are informal.
- The following figures illustrate the state of the ranks in the VDM area:
  - 29,5 % of taxi facilities are on-street facilities
  - 93,0 % of taxi facilities are informal facilities
  - 7,8 % of taxi facilities have lighting
  - 11,8 % of taxi facilities are paved
  - 14,0 % of taxi facilities have public telephones
  - 4,7 % of taxi facilities have offices
  - 7,0 % of taxi facilities have shelters
  - 8,5 % of taxi facilities has ablution facilities

##### b) Capacity utilisation of ranks

- The capacity utilisation of many of the informal ranks could not be measured, as there was no capacity or no provision of facilities such as shelters, paving and amenities
- Disorderly operations at informal or poorly planned ranks sometimes give rise to conflict among operators.

##### c) Routes

- Of the 244 (122 forward and 122 reverse routes) taxi routes in the VDM, 46% are in Thulamela LM, 41% in Makhado, 9% in Musina LM and 4% in Mutale LM.
- Of the 151 subsidised bus routes in the VDM, 24% are in Thulamela LM, 70% in Makhado, 1,7% and 6% in Mutale.
- The only rail line is the route from Pretoria (Tshwane) to Makhado and Musina, which are the major points of access for mainline passengers in the VDM area.

d) Route utilisation survey for taxis

- The routes are not all equally busy
- The only message from the route utilisation analysis is that on all but two of the taxi routes, there are fewer than two trips per taxi, with some only achieving one trip per taxi during the peak, which gives two trips per day. These routes are not economically viable
- No route utilisation survey was done for the bus services.

e) Waiting times for taxis

- The results of waiting-time surveys make better sense if they are examined for the individual routes
- The information should be considered from the point of view of seeing whether passengers are waiting for taxis or whether the vehicles are waiting for more passengers before they can depart
- The summarised information on the waiting times and the passenger and vehicles left in the queues when the sample vehicle left, gives a clear message, namely that there is a general over-supply of taxi services.

f) Operational vehicles

- The route utilisation survey noted 1 625 taxi vehicles that provided services in the VDM area during the survey periods (06:00 to 9:00 and 15:00 to 18:00)
- There were 977 taxis noted in the Thulamela LM area, 594 in Makhado LM, 68 in Musina LM and 120 in Mutale LM.
- There were 196 buses in operation on the subsidised routes in the VDM area
- There are no metered taxis in operation in the VDM area.
- Light delivery vehicles (LDVs) are utilised for learner trips and were noted during the surveys on the route between Musina and Mutale and Vivo and Alldays in the Musina LM
- Donkey-carts were active as transport mode on the bad roads and provided low-demand services for recreation purposes in the Mutale LM in the vicinity of Tshipise.
- Cross-border services between Musina and destinations in Zimbabwe were very active before the instability in Zimbabwe but currently only about four vehicles departs per day.

- g) Comparison of information of the Board and Registrar of Taxis with CPTR information
- Despite numerous efforts to obtain detailed information from the RAS and LPTS systems, the study team did not receive any information apart from the route verification information about the A and B points of routes
  - There seemed to be a lack of capacity in various departments to operate the RAS and LPTS, without the assistance of Fischer and Associates
  - The intended comparison can be done whenever the RAS and LPTS information becomes available.
- h) Information for the development of the Operating Licence Strategy (OLS):
- The method used for compiling the CPTR was sufficient to have captured the data in the towns and the rural areas, although the facilities and operations in the far rural areas were very limited and, even though the method was good, many of the items to be surveyed were just not available.
  - The information collected as part of this first CPTR is adequate to estimate the extent of the operations on the different routes;
  - The information could be used and is adequate for compiling the OLS for the Vhembe District Municipality.

## 5.2 *RECOMMENDATIONS*

It is recommended that:

- a) As the results of the CPTR surveys indicate a general over-supply of taxis, no permits should be considered before the OLS has been compiled and approved.
- b) The CPTR information as available on the database is of ample quality and standard to be used for developing an Operating Licence Strategy (OLS) as guideline for the Operating Licence Board with regard to the issuing of new permits.
- c) The CPTR information should furthermore be used for developing a Public Transport Plan which would guide the implementation of Public Transport projects and strategies, and could serve as input into the Integrated Transport Plan (ITP)
- d) For the 2004 update of the CPTR, surveying of the operations at the major ranks during Friday afternoons and Saturdays, to determine the utilisation of services, should also be considered.

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