



SABOA

GO GEORGE - GEORGE INTEGRATED PUBLIC TRANSPORT NETWORK

**Lionel Daniels and Safiyyah Aboo
10 March 2016**



GO GEORGE

Integrated Public Transport Networks



Need for an IPTN in George

- Deteriorating standard of Mini Bus Taxi (MBT) vehicles
- Sporadic MBT industry violence
- Lack of off-peak connectivity
- Public concerns about safety, security & quality of service
- Failure of MBT system to address needs of choice users and visitors
- Complexity relating to governments management of the industry
- Travel assistance to the poor to access opportunities & services
- The need to address a range of environmental concerns

Need for an IPTN in George

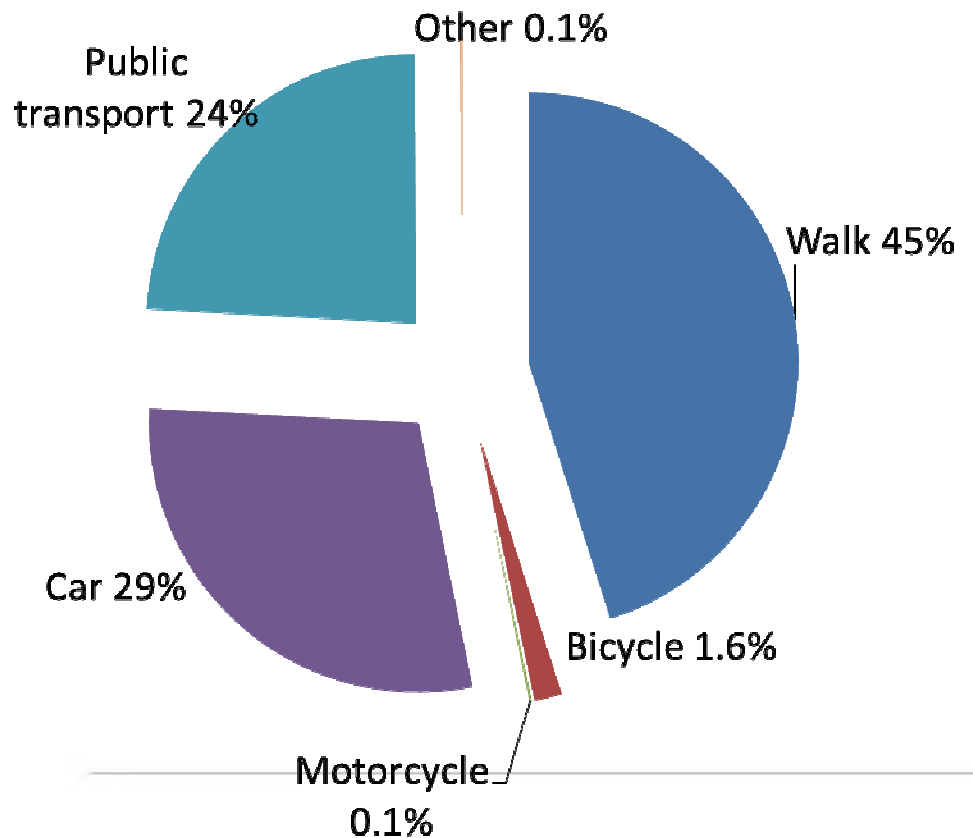
Laying a foundation for future holistic urban & rural development

- The private car has had a major influence on the decision making & the urban structure – resultant spatial distortions
- With this has been a failure to provide adequately for NMT & formal Public Transport (PT) that can overcome some of these distortions
- The growth in informal para-transit (MBT's) operations attempted to fill a huge PT gap
- The introduction of quality public transport will profoundly alter the way urban & rural structures perform in future
 - Will enhance citizens quality of life
 - Will change the way land is developed
 - Enable government to respond positively to a number of global & local environmental challenges

George Integrated Public Transport Network (GIPTN)



George Transport Needs



George previously had no formal scheduled bus service

Existing public transport is too expensive for a large portion of the George community

Existing PT does not provide full coverage excluding certain communities

Majority of commuters walk

- Long distances (avg. 3.8km one way)
- Bad weather

George has one of highest pedestrian fatality rates in SA

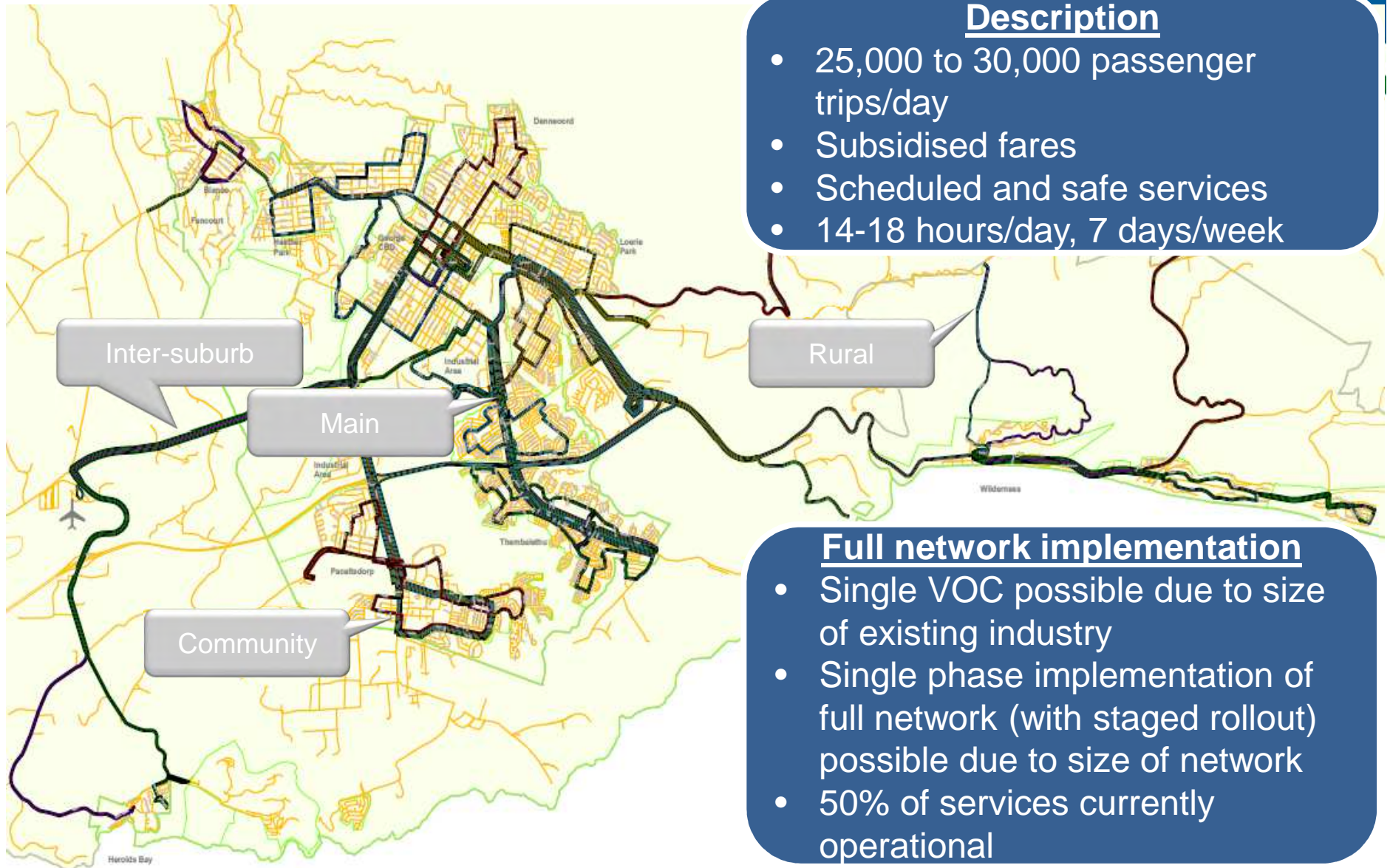
GIPTN role players



GIPTN Overview

Description

- 25,000 to 30,000 passenger trips/day
- Subsidised fares
- Scheduled and safe services
- 14-18 hours/day, 7 days/week



Full network implementation

- Single VOC possible due to size of existing industry
- Single phase implementation of full network (with staged rollout) possible due to size of network
- 50% of services currently operational

GIPTN – Phases 1- 6



Current Status

- Phase 1 was launched on 08 December 2014.
- Phase 2 was launched on 28 February 2015.
- Phase 3 was launched on 2 May 2015.
- Phase 4, 5 and 6 will be rolled out in the 16/17 calendar year,



Planning and Route Design Guidelines



Planning and Route Design Guidelines

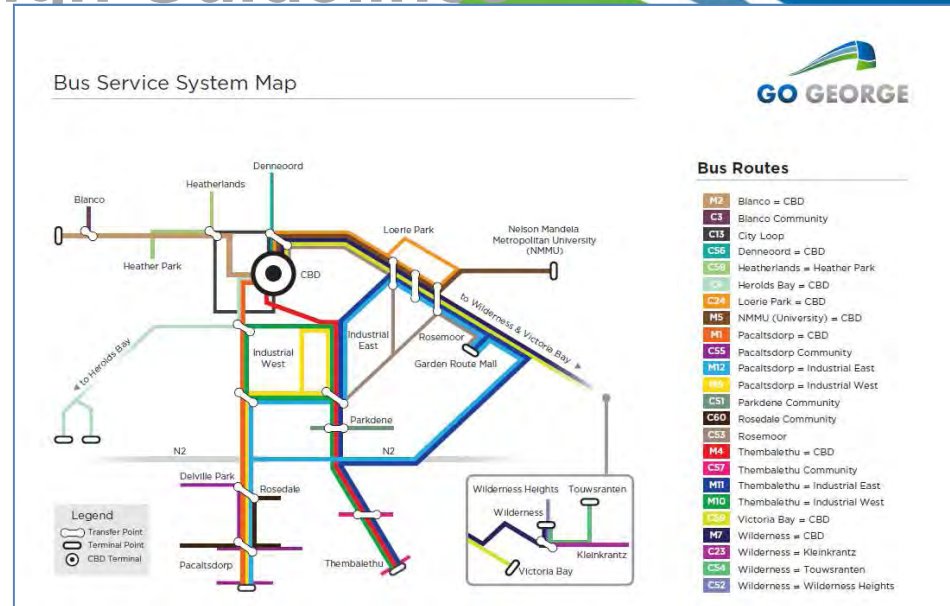
- **The GIPTN design is based on a very few basic principles:**
 - **Spatial coverage** – a target of 400m to 600m walking distance or less for 80% or more of the urban population
 - **Temporal coverage** – 14 - 18 hours per day, but with services tailored to demand levels
 - **Flexibility** – the ability to modify routes and timetables to accommodate changing needs
 - **Certainty** – published route & timetables, and service adherence
 - **Fare Levels**
- **Cost minimisation** – the use of an appropriate fleet mix to minimise overall system costs given the balance of peak and off-peak services required over a one (1) week period with a minimum policy level of service
- **Social contract between Government and the community**
- **Kerbside operations on existing road infrastructure (infrastructure light)– conventional bus system**



Planning and Route Design Guidelines

- **Bus services types**

- Urban main or primary services
- Urban community services
- Inter-urban or inter-town
- Demand response services
- Long inter-city services

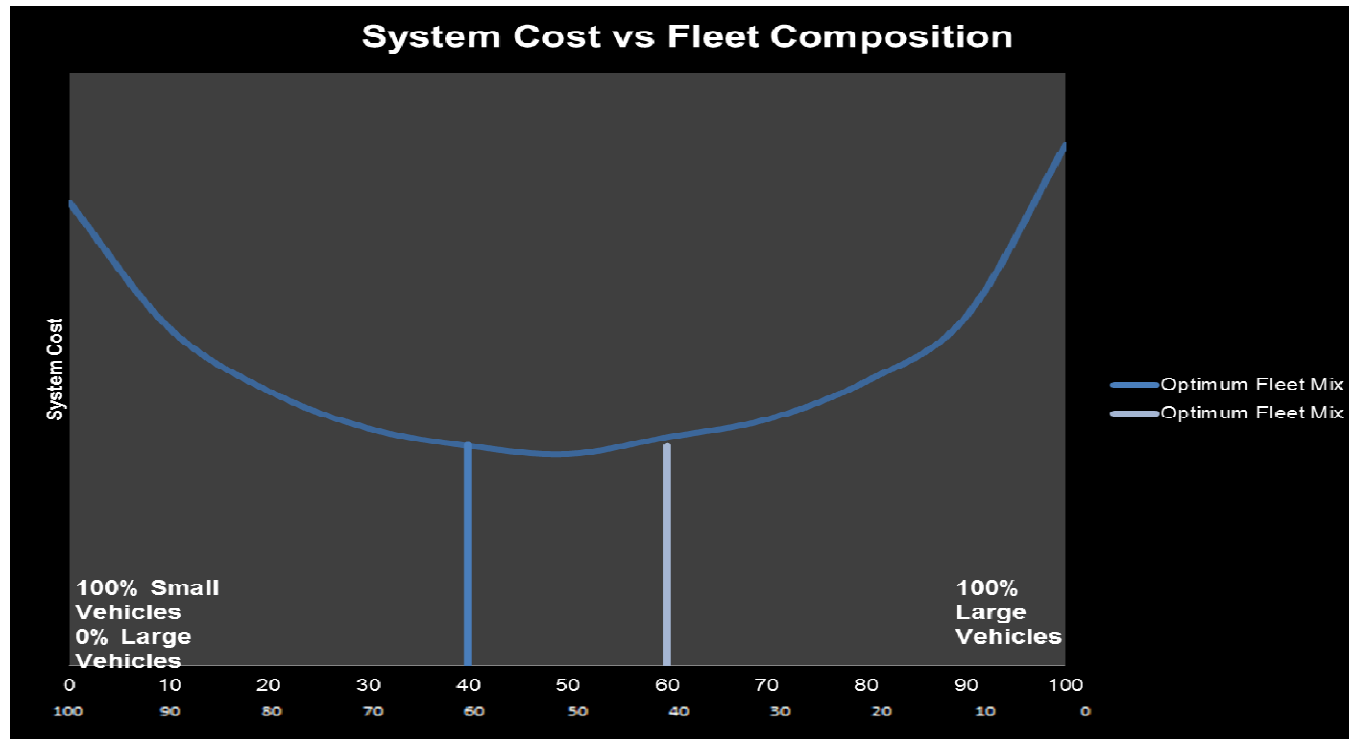


- **Route Design is similarly based on a limited number of principles**

- A reflection of the primary desire lines of the user population
- The connection of points of interest at community (e.g. library, clinic, police, schools) and municipal level (employment, hospitals, government services, larger schools and tertiary education facilities)
- A focus on the use of appropriate classes of road for particular types of service

Planning and Route Design Guidelines

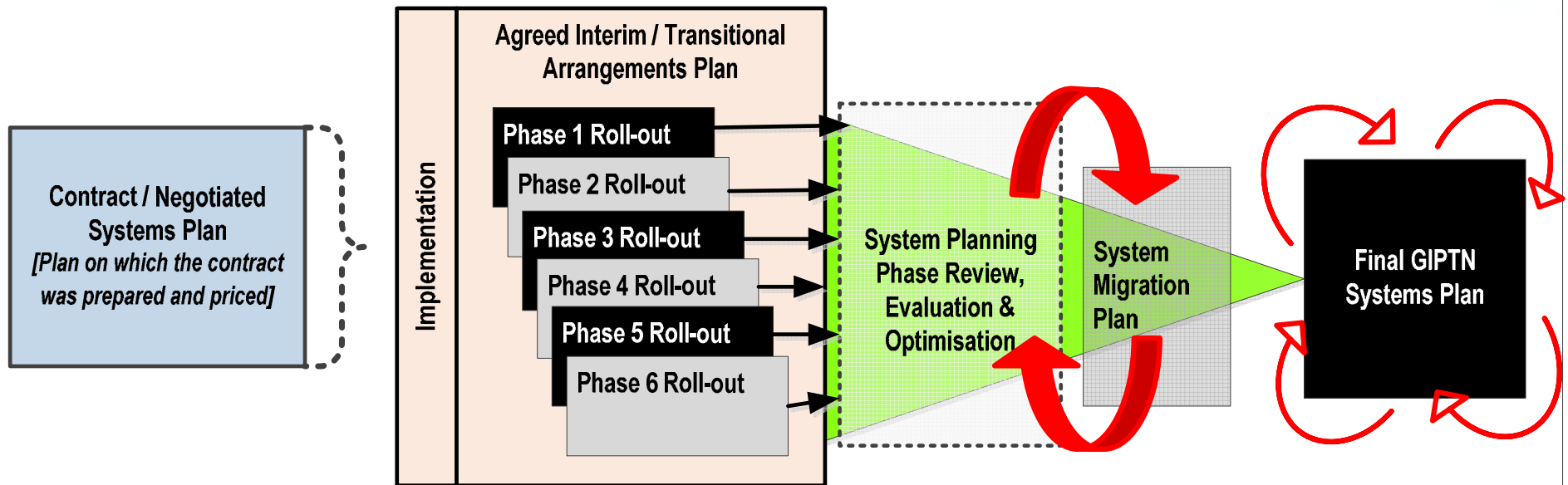
- **Mixed Fleet**
 - Selection of appropriate vehicle for the respective demand level, mix of urban and rural environment, mixed topography



System Planning - GIPTN

System Implementation, Evaluation, Optimisation & Growth

GIPTN System Implementation Process



GIPTN optimisation / refinement & growing the system is an on-going process, that must occur at four distinct levels;

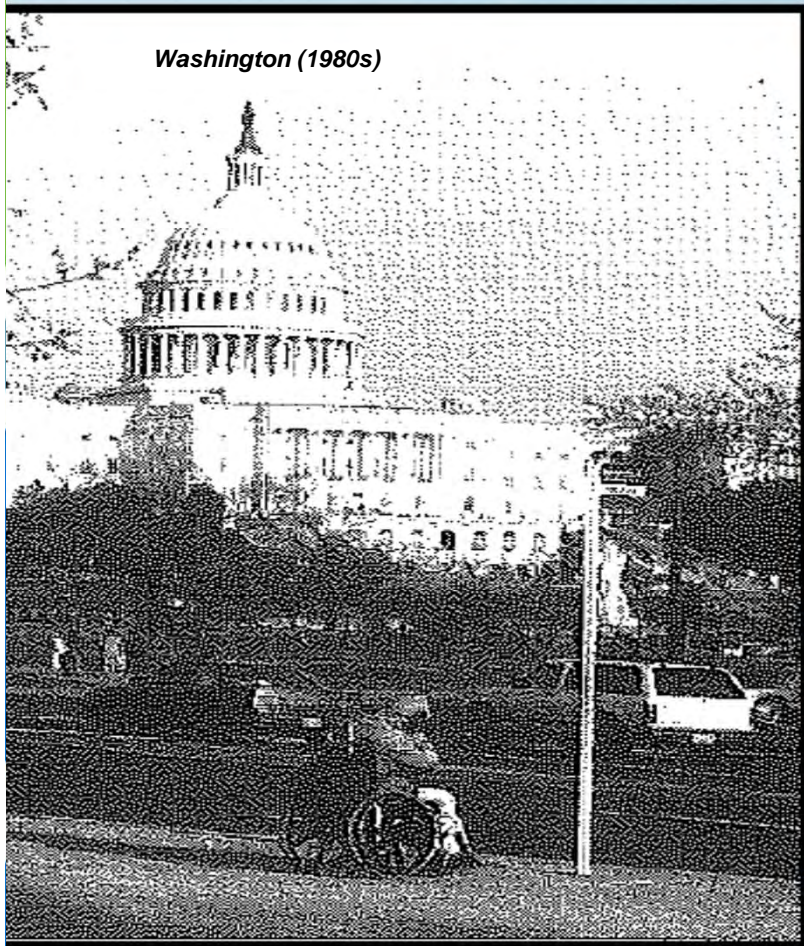
- GIPTN operational level
- Road network operational level
- Communications, education / training & marketing level
- External 'corridor' development level

Universal Access



Universal Access An Overview

Moving towards a society for all



Source Lionel Daniels

Disability Rights

UN Convention on the Rights of Persons with Disabilities (CRPD) and its Optional Protocol Ratified by the South Africa in November 2007

The primary purpose of the Convention is to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote their inherent dignity

South African Constitution (Act 106 of 1996)

*“The state may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, **disability**, religion, conscience, belief, culture, language and birth”*

and

“Everyone has inherent dignity and the right to have their dignity respected and protected”

White Paper on an Integrated National Disability Strategy 1997

“a society for all, (where) there must be an integration of disability issues in all government development strategies, planning and programmes. There must be an integrated and co-ordinated management system for planning, implementation and monitoring at all spheres of government”.

Key policy response areas

prevention, healthcare, rehabilitation, public education, barrier free access, transport, communications, data collection and research, education, employment, human resources development, social welfare and community development, social security, housing and sport and recreation



Universal Access

Policy Imperatives

- **Integrated National Disability Strategy (1993)**
- **Constitution (1996)**
- **Public Transport Strategy and Action Plan (2007)**
- **Accessible Public Transport Strategy (2011)**
- **Draft National Disability Rights Policy (2015)**

Legislation Context

Promotion of Equality and Prevention of Unfair Discrimination Act (Act 4 of 2000)

- s5 : **Application of the Act:** The Act binds the State and all persons;
- s6 : **Prevention and general prohibition of discrimination:** Neither the State nor any person may unfairly discriminate against any person, and
- s 9 : **Prohibition on the grounds of disability :** Subject to s6, no person may unfairly discriminate against another person on the ground of disability, including:
 - ❖ denying or removing from any person who has a disability, **any supporting or enabling facility necessary** for their functioning in society;
 - ❖ Contravening **the code of practice or regulations** of the South Africa Bureau of Standards that **govern environmental accessibility**, and
 - ❖ **Failing to eliminate obstacles that unfairly limit or restrict** persons with disabilities from enjoying equal opportunities or failing to **take steps to reasonably accommodate** the needs of such people.

The Employment Equity Act (Act 55 of 1998)

“reasonable accommodation” in the workplace.

“any modification or adjustment to a job or working environment that will enable a person from a designated group to have access to or participate or advance in employment”

Supported by the publication of a **Code of Good Practice on the Employment of Persons with Disabilities** to set standards for the employment of persons with disabilities in the workplace

National Land Transport Act (Act 5 of 2009)

The Minister to make regulations (s8(1)(y)) regarding

“the requirements and time-frames for vehicles and facilities to be made accessible to persons with disabilities, including principles for accommodating such persons in the public transport system”

Places a specific responsibility on the municipal sphere of government in s11(1)(c)(xiv) for

“ensuring there is provision for the needs of special categories of passengers in planning and providing public transport infrastructure, facilities and services to meet their needs, in so far as possible by the system provided for mainstream public transport”

Regulations published in 2011, relating to the minimum requirements for the preparation of **Integrated Transport Plans**, s3(1)(d) specifically requires that the

“transport of special categories of passengers must receive special attention”.

Public Transport System

In the context of universal access and universal design

Universal Access

Equal opportunity to access publically provided facilities, services & information

Universal Design

“The design of products, services and environments to be usable by all people, to the greatest extent possible, without the need for personal adaptation or special provision. Universal design shall not exclude assistive devices for particular groups of persons with disabilities where this is needed”

Principles of Universal Design Summary

1

Equitable Use

The design is useful & marketable to people with diverse abilities

2

Flexibility in Use

The design accommodates a wide range of individual preferences & abilities

3

Simple & Intuitive

The use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level

4

Perceptible Information

The design communicates necessary information effectively to the user regardless of ambient conditions or the user's sensory ability

5

Tolerance for Error

The design minimizes hazards & the adverse consequences of accidental or unintended actions

6

Low Physical Effort

The design can be used efficiently & comfortably & with the minimum of fatigue

7

Size & Space For Approach And Use

Appropriate size & space is provided for approach, reach, manipulation & use regardless of the user's body size, posture or mobility

Special Categories of Passengers

The National Land Transport Act, (2009) defines passengers with 'special categories of need.' These are:

1. **People with disabilities:** defined in the Act as '*people whose mobility is restricted by temporary or permanent physical or mental disability, the blind or partially-sighted and the deaf or hard of hearing*'.
2. **The aged or elderly people.** People over the age of 55 usually fall in this category.
3. **Pregnant women:** usually taken as women in their last three months of pregnancy.
4. **Young children:** this is usually defined as children between the ages of 0-14.
5. **Those who are limited in their movements by children:** men and women accompanying young children.

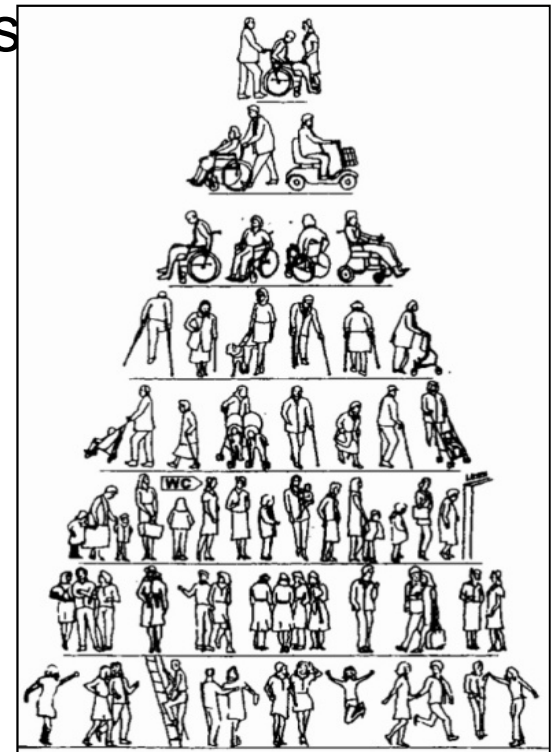
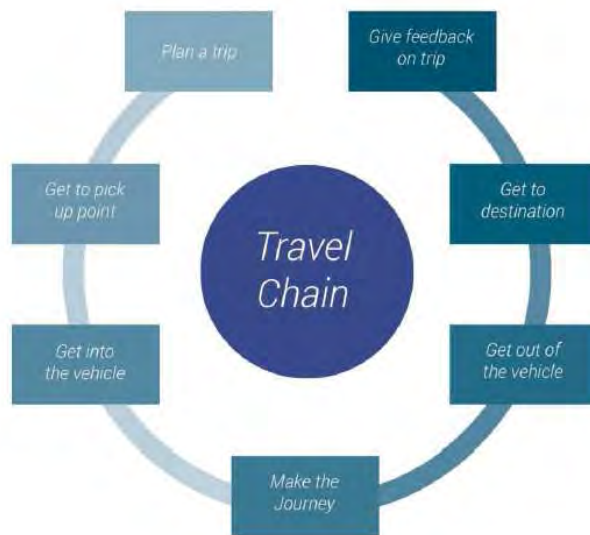
The NDoT has also identified the following as important groups using public transport:

6. **Signage passengers:** people who are unable to read or who are unable to understand the language used on the signage. Tourists are also included as signage passengers.
7. **Female passengers:** vulnerable to crime and abuse
8. **Load carrying passengers:** people carrying bags, luggage, or goods

Source : Amanda Gibberd, Director of Universal Design in Public Transport Projects, DOT, September 2014

Universal Access

- Universal Design Pyramid
- Principles
 - Accommodate diverse class of individuals
 - Applied for every trip maker from door to door



GIPTN Fleet



GIPTN - Accessible Mixed Fleet

- **Mixed fleet based on determination of optimum fleet mix given weekly demand patterns (about 77% of operating time is off-peak) - Mini, Midi and Standard buses.**
 - In the George case, the desired Midi buses were more expensive than a larger bus option. What amounts to a shortened standard bus has been purchased.
 - Universally accessible minibuses developed and built for the project (post-tender)
- **Tendered process**
- **Universally accessible low entry Standard / Midi buses**
- **Accessible mini-bus (Sprinter)**

Accessible Mixed Fleet

- Four vehicle configurations
 - Standard bus
 - Midibus
 - Minibus
 - Inter-town bus



Bus Specifications Extract

GIPTN Bus Fleet	Standard	Midi-Bus	Mini-Bus	Inter-Town
Configuration	Low entry preference	Low entry preference	Low entry preference	Low entry preference
Entry door floor height above 250mm bus stop platform	Max 55mm Actual = 100mm	Max 55mm Actual = 100mm	N/A	N/A
Door widths	≥1100mm	≥1100mm	Front entrance ≥650mm (680mm) Side door ≥1200mm	≥1100mm
Entrance door heights	≥1800mm	≥1800mm	Front ≥ 1450mm Actual = 1620mm Side ≥1200mm Actual =	≥1800mm
Ramps / Lifts	Driver controlled deployable ramp	Driver controlled deployable ramp	Driver controlled side-door hydraulic lift	Driver controlled deployable ramp
Boarding ramp slope	1:12	1:12	N/A	1:12
Boarding ramp length	Not specified Provided = 625mm	Not specified Provided = 625mm	Safety compliant Hydraulic lift	Not specified
Passenger accommodation	Min = 90	Min = 45	Min = 14	Min = 32
Priority seats - red	5 (6 provided)	5 (6 provided)	Actual = 2	

Standard Bus UA Compliance Checklist

Low Entry Vehicle Front Doorway					
Vehicle entry height above the road in non-kneeling position	Not specified	<input checked="" type="checkbox"/>	Actual = 400mm		
Vehicle entry height above the road in kneeling position (Implied height in Tender Specification)	285mm	<input checked="" type="checkbox"/>	Actual = 350mm.		T3.3.2.2, Table 9 Implied 285mm
Vehicle entry height to 250mm high kerbside platform		<input checked="" type="checkbox"/>	Vertical gap = 100mm		
Effective doorway Width at floor entry level	≥850mm (SANS) ≥ 1100mm (Tender)	<input checked="" type="checkbox"/>	1050mm	4.3.1(e)	T3.3.2.2, Table 9 1100mm
Effective doorway Widthbetween door attached grabrails	≥850mm (SANS) ≥ 1100mm (Tender)	<input checked="" type="checkbox"/>	940mm - complies with SANS	4.3.1(e)	T3.3.2.2, Table 9 1100mm
Effective Head Clearance	≥1450mm (SANS) ≥ 1800mm (Tender)	<input checked="" type="checkbox"/>	Actual = 2090mm	4.3.1(d)	T3.3.2.2, Table 9 2000mm
Contrasted strip on step	yellow	<input checked="" type="checkbox"/>			
Light level	min 150 lux	'	Not able to be measured		T4.1.1
Colour contrasted grab rails on doors	Yellow	<input checked="" type="checkbox"/>	rightangled grab-rail provided		
Diameter of rail	25mm - 35mm	<input checked="" type="checkbox"/>	Actual = 35mm		
Automatic, driver controlled door opener/ closer		<input checked="" type="checkbox"/>			T4.1.1
Audible buzzer located in the middle of the doorway floor level		<input checked="" type="checkbox"/>	Available but not located at floor level		T4.1.1
Boarding Ramp / Bridge					
Effective Ramp / Bridge Width	≥850mm	<input checked="" type="checkbox"/>	Actual between grab-rails = 975mm		
Effective ramp / bridge lengthto bridge 100mm vertical gap	1200mm	<input checked="" type="checkbox"/>	Comment: Actual provided ramp length = 605mm Vertical gap = 100mm Actual slope / gradient that can be achieved = 1 : 6.05		
Effective vertical height difference accommodation with provided 605mm ramp	50mm	<input checked="" type="checkbox"/>	Comment: Provided ramp length = 605mm. Can accommodate a vertical height difference of 50mm		
Ramp / bridge edge barriers			Not required due to retraction mechanism		
Bevelled front edge to ramp	≤ 10mm	<input checked="" type="checkbox"/>			
Slip resistant surface		<input checked="" type="checkbox"/>			
Contrasted (highlighted) strips along ramp / bridge edge		<input checked="" type="checkbox"/>			
Boarding Ramp/ Bridge slope / gradient requirement	1:12 8.33%	<input checked="" type="checkbox"/>	Actual gradient 1:6.05 for 100mm vertical height difference & ramp length = 605mm		1:12
Remotely controlled from the Driver's Cab		<input checked="" type="checkbox"/>			
Manual operation capability		'	Not able to be checked		
Deployment of ramp only when bus is stationery and doors are open		<input checked="" type="checkbox"/>			
Door closure only when ramp fully retracted and locked		<input checked="" type="checkbox"/>			

Level Boarding Access

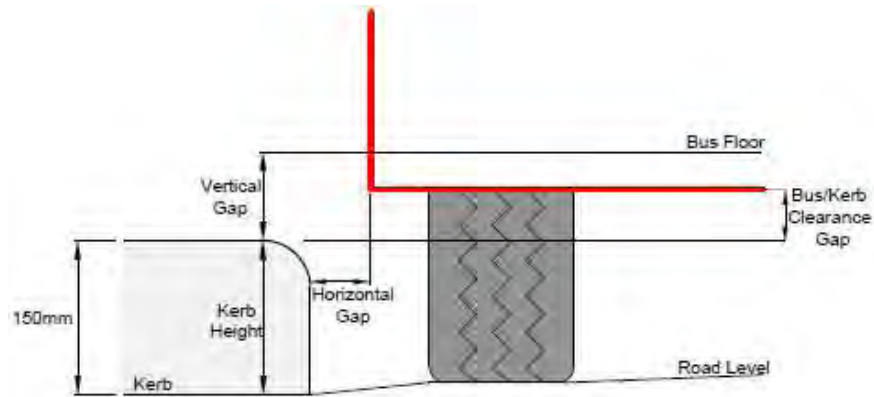


Figure (a) : Critical Dimensions

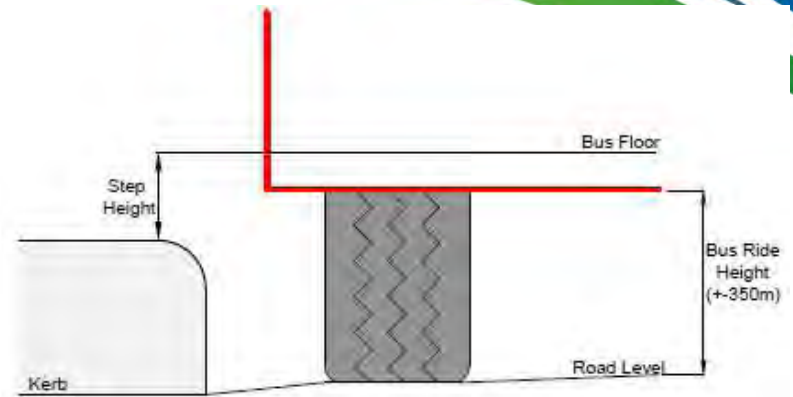


Figure (b) : Normal Step Height

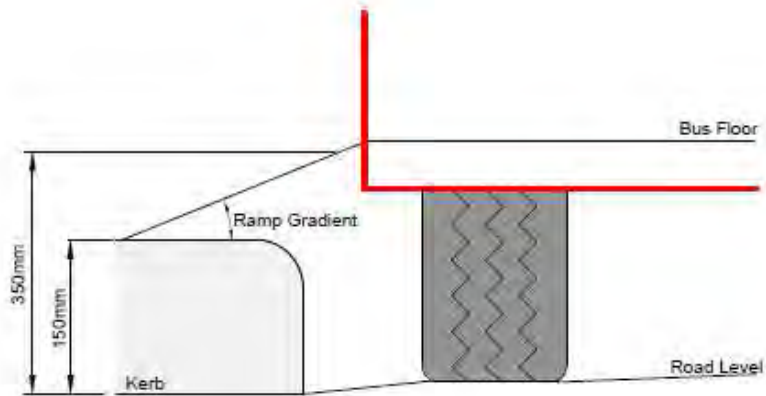


Figure (c) : Normal Step Height

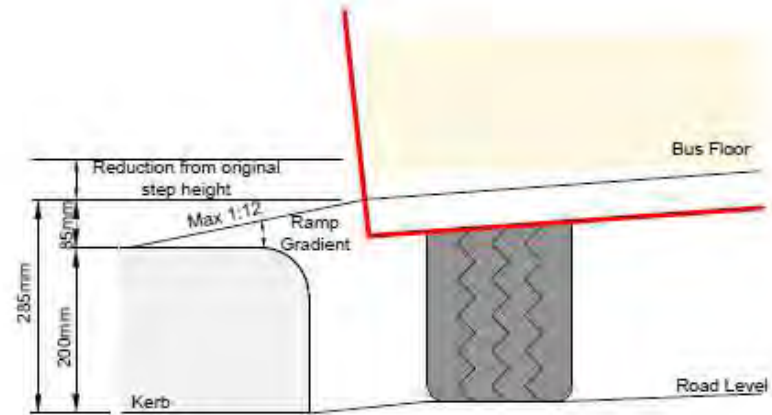


Figure (d) : Ramp gradient for kneeling with selected kerb height, with 600mm ramp

Minibus - Vehicle Availability and Selection



- Mercedes Benz South Africa – Vehicle Supplier Mercedes-Benz
- No low entry/low floor minibus available locally in South Africa
- In order to meet grant conditions from National Department of Transport, to provide a fleet that is universally accessible, GM, Aurecon, MBSA and their vehicle body builders TFM Solutions developed a solution to meet the requirements
- Solution is both affordable and sustainable
- Mercedes Benz Sprinter 515CDI

Development of an Accessible Minibus



Development of an Accessible Minibus

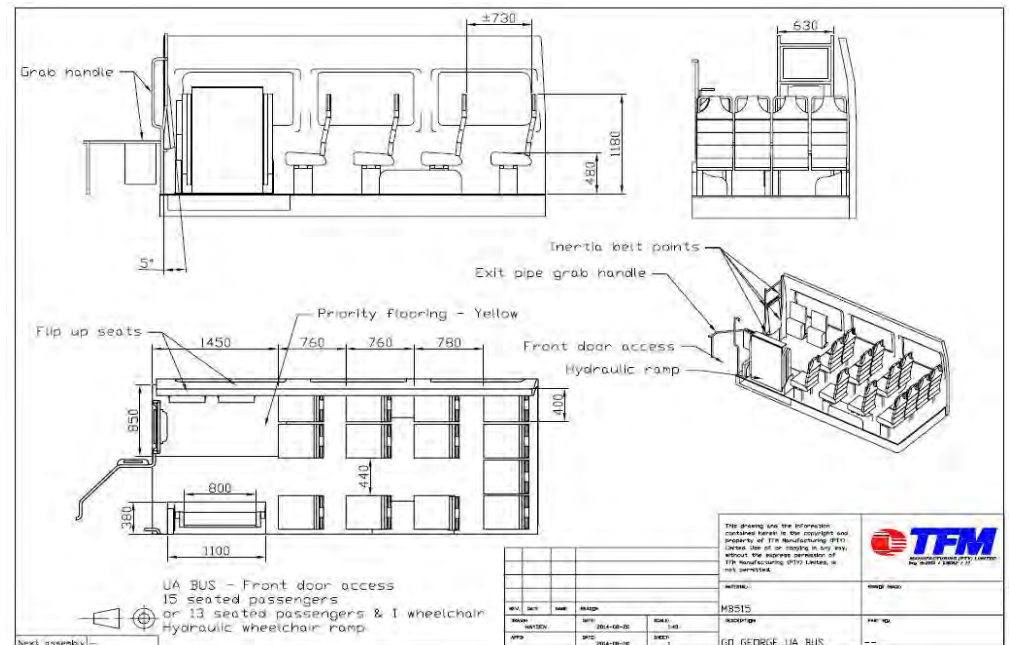
- Process followed over a 6 month period July 2014 to Dec 2014:
 - Prototype
 - Public engagement to test users input
 - Sign off by DoT Universal Access Director for Public Transport




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Key Features

- door and entry widths to allow for wheelchair access,
- installation of a deployable ramp or lift to allow for wheelchair access,
- boarding ramp gradient compliance to best practice
- priority seating
- wheelchair bay – rear facing
- manoeuvring space for wheelchair
- seat belt restraint system
- grab rails
- stop buttons
- required signage
- flip down seats for additional seating
- contrasting floor colours



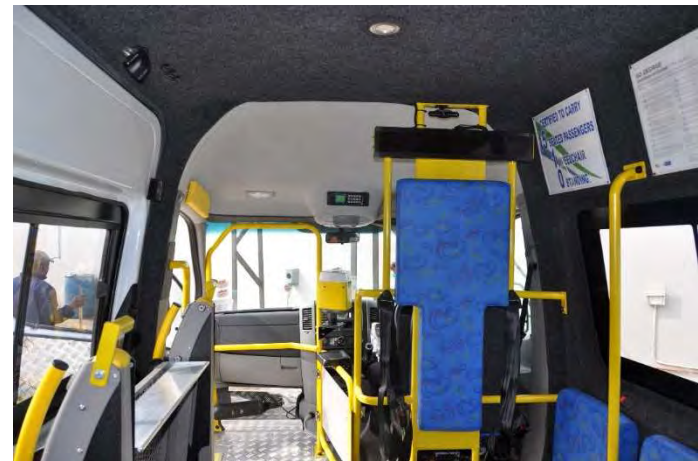
Vehicle Features

- 15 passenger seats when wheelchair bay not in use
- 14 passenger seats when wheelchair bay in use
- Primary entry through front door
- Remotely controlled by the driver
- Sliding door dedicated to use of an installed automatic hoist
- Driver does not leave his/her seat to assist passenger
- Audible alarm and flashing lights when hoist is deployed



Vehicle Features

- Red priority seats for passengers with special categories of need
- Contrasted grab rails at the vehicle entry
- Internal and External Variable Message Board
- Floor colour contrast to guide visually impaired passengers
- Fare management equipment in easy reach of front and sliding door



MBSA/TFM/GM



Jacques Quinot (1973-2015), Princess
Ndlhovu, Hayden McClaren



Accessible minibus went into operation on 30 August 2015



Conclusion

- Only fleet in South Africa that is completely accessible
- Enable dignified accessibility and mobility communities
- George Municipality will continue to strive for a system that ensures all members of community can use



Public Transport

Way forward

- Bus industry needs to make available a wider selection of mini/midi vehicles that comply with universal access requirements
- Level access boarding is becoming a standard requirement of universal access - vehicle suppliers need to develop their vehicles to meet this requirement

Questions



GO GEORGE

Laat die wiele rol! Let's get moving! Masihambe!



Western Cape
Government