Ecomobility and Tshwane's Sustainability Plans

Tshwane Roads & Transport Department
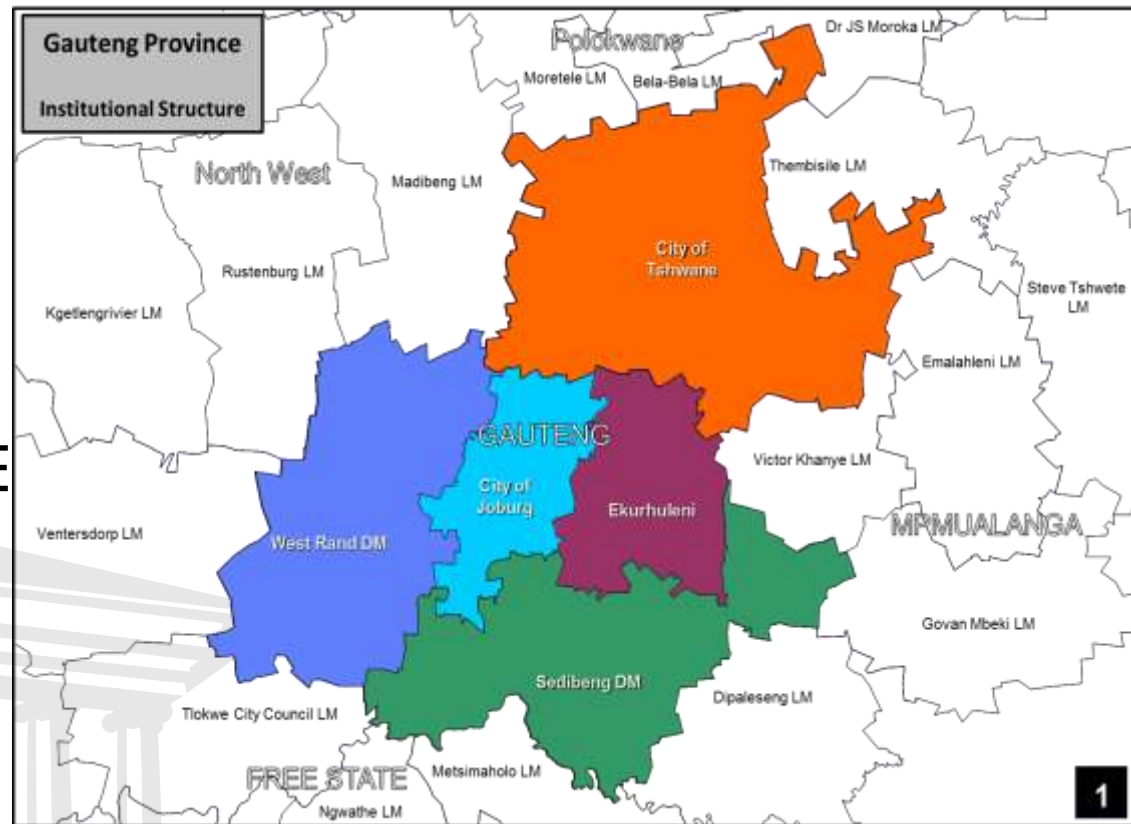
Presenter: Mike Krynauw   28 November 2018
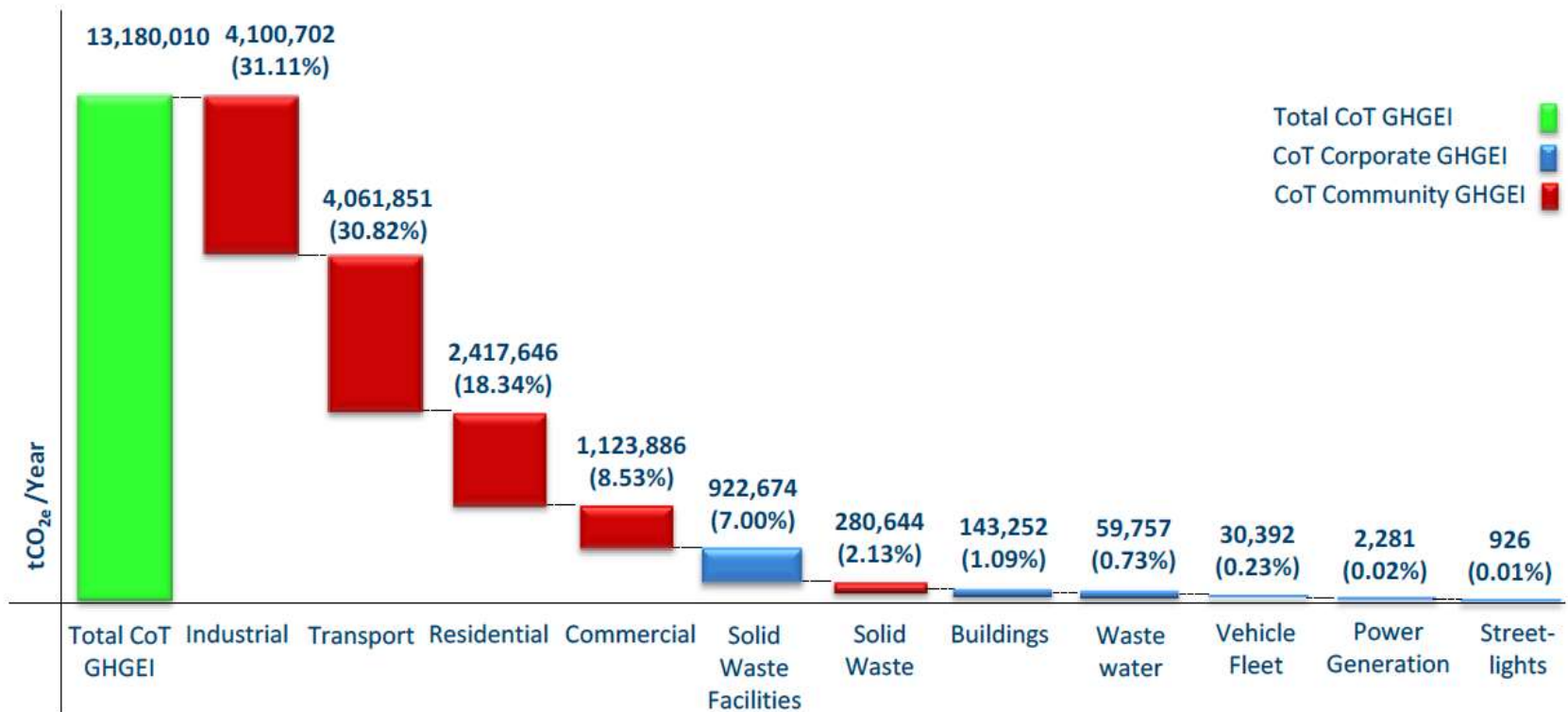
Ecomobility and Tshwane's Sustainability Plans

CONTENT:

I. BACKGROUND

II. TSHWANE NOW

III. FUTURE TSHWANE
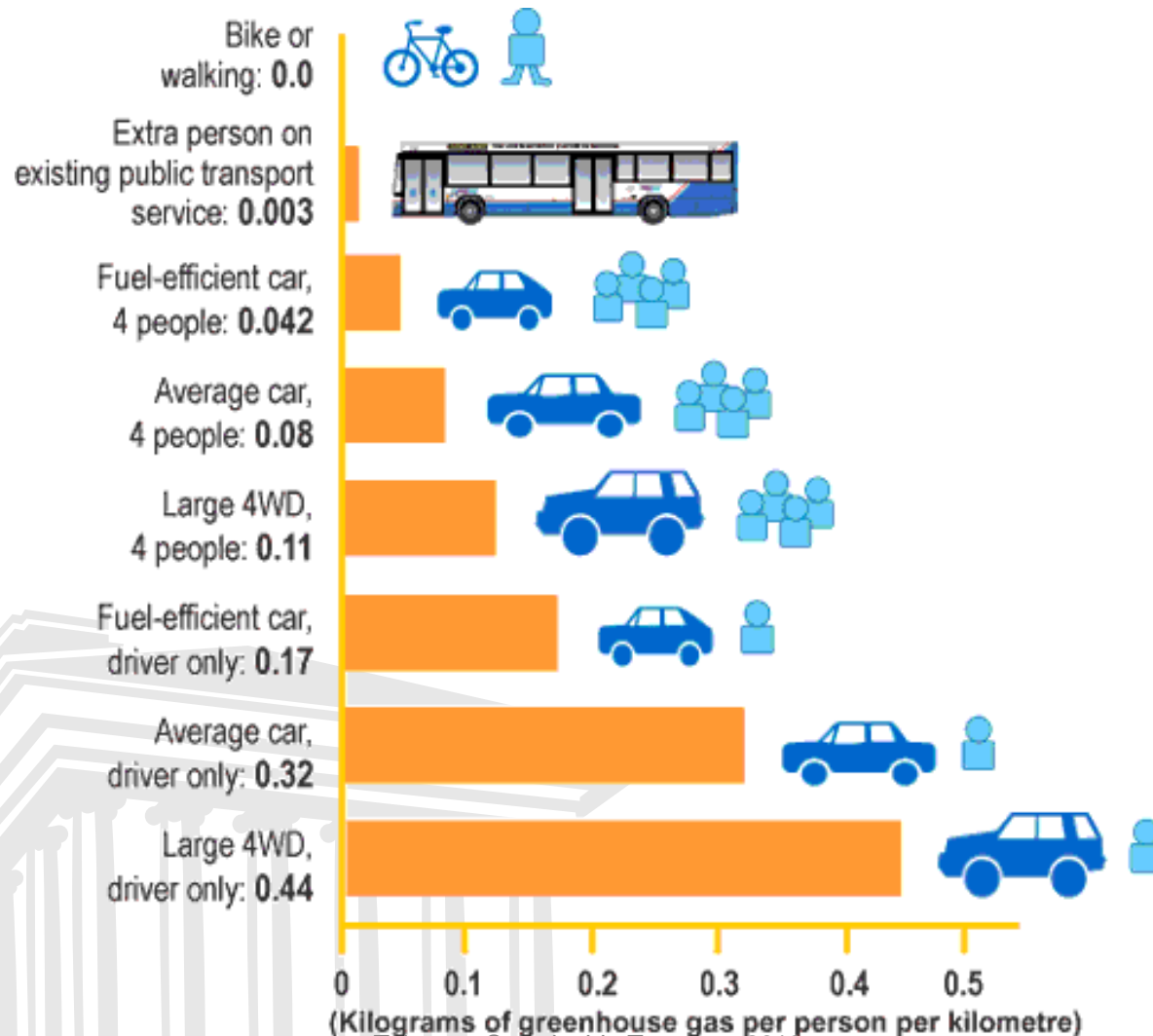
IV. CONCLUSION

Tshwane Greenhouse Gas Emissions Inventory (GHGEI)

Fact is that the transport sector is the second largest contributor to the CoT GHGEI (30.82%)

(CoT, 2014)

Relative emissions intensity of passenger transport

Greenhouse gas emissions from different forms of transport

Bike or walking: **0.0**

Extra person on existing public transport service: **0.003**

Fuel-efficient car, 4 people: **0.042**

Average car, 4 people: **0.08**

Large 4WD, 4 people: **0.11**

Fuel-efficient car, driver only: **0.17**

Average car, driver only: **0.32**

Large 4WD, driver only: **0.44**

(Kilograms of greenhouse gas per person per kilometre)

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(IPCC, 1999).

Un-Sustainable Transport

- Diminishing non-renewable energy reserves
- Global atmospheric impacts – air pollution
- Local air quality impacts
- Motor vehicle related fatalities and injuries
- Adverse biological impacts
- Lack of equity and social welfare
- Low mobility (and accessibility)
- Congestion and Noise
- **Long distance one directional commuting**

Source: WR Black

What is Sustainable Transport?

Sustainable Transport simply described:

*"**A Sustainable Transport System** is one that provides transport and mobility with **renewable resources** while **minimizing emissions** detrimental to the local and global environment and **preventing** needless **fatalities, injuries and congestion**."*

WR Black

Business as Usual (BAU)	Sustainable Transport (ST)
High mobility & quantity	Accessibility & quality
Emphasizes one mode	Multi-modal
Lack of good connections between modes	Inter-modality
Accommodates & accepts trends	Interrupt & reverse harmful trends
Forecasted demand (predict & provide)	Work backward from preferred vision to planning & provision
Expands roads responding to travel demand	Manages transport or mobility demand
Ignores social & environmental costs	Incorporates "full" costs
"Silo" planning	Integrated planning

Source: Preston L. Schiller

International Sustainable Transport Declarations

- ## Bangkok Declaration 2010
  - Sustainable Transport (ST) Strategies by Asian Countries
  - **A**void – **S**hift – **I**mprove & Cross cutting Strategies

- ## Bogota Declaration 2011
  - Sustainable Transport (ST) Objectives by Latin American and Caribbean Region
  - **A**void – **S**hift – **I**mprove Strategies
  - 21 Objectives under A-S-I Strategies

- ## World Bank 2015
  - Create **E**nabling environment / governance

EASI conceptual framework

ENABLE	**AVOID**	**SHIFT**	**IMPROVE**
Establish an effective and responsible governance system with adequate : • institutions, • human resources, • financing.	Minimize the need for individual motorized travel through adequate land-use and transport planning and management.	Increase or maintain shares of more socially & environmentally sustainable modes (public transport, walking, cycling).	Improve the efficiency and safety of transport modes & services while minimizing their environmental footprint.
↓	↓	↓	↓
Governance efficiency	Land use efficiency	Multimodal transport system efficiency	Road space use & vehicle efficiency

II: Tshwane's Response:
CoT Comprehensive Integrated Transport Plan (CITP) 2015

| CHAPTER NO.	TITLE/HEADING
Chapter 1	Introduction
Chapter 2	Land Transport Vision, Mission, Goals & Objectives
Chapter 3	Sustainable Transport
Chapter 4	Transport Information Register (TIR)
Chapter 5	Spatial Development Framework
Chapter 6	Transport Needs Assessment
Chapter 7	Public Transport Operational Strategy
Chapter 8	Transport Infrastructure Strategy
Chapter 9	Travel Demand Management (TDM)
Chapter 10	Freight & Logistics
Chapter 11	Non-Motorised Transport (NMT)
Chapter 12	Parking
Chapter 13	Intelligent Transport Systems (ITS)
Chapter 14	Road Safety
Chapter 15	Public Transport Safety & Security
Chapter 16	Aviation
Chapter 17	Institutional
Chapter 18	Legal
Chapter 19	Funding Strategy
Chapter 20	Stakeholder Consultation
Chapter 21	Implementation, Monitoring & Evaluation

INTEGRATED PUBLIC TRANSPORT (IPTN) AND NON MOTORISED TRANSPORT (NMT) NETWORK
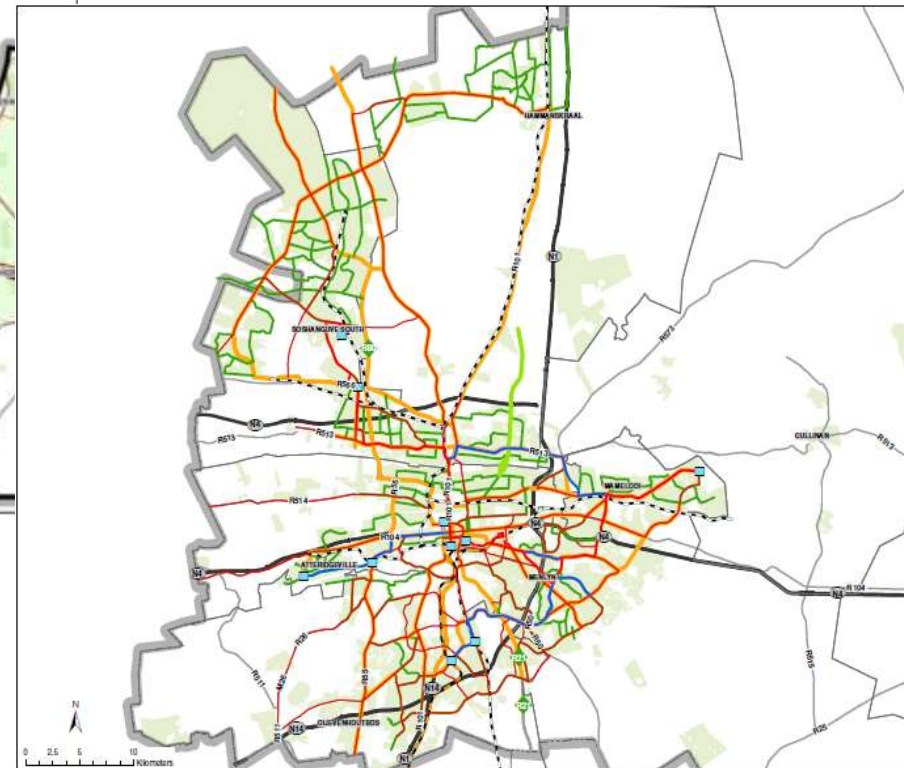
Future Tshwane:

First & Last "Mile": Mellow Cabs & Vans (Electric)

From Fossil Fuels to "Clean Energy"

Mass Public Transport

On the International Front …

The Frontier Group (USA)

Envisioning a Transportation System without Carbon Pollution

Rethinking U.S. Transportation Policy to Fight Global Warming
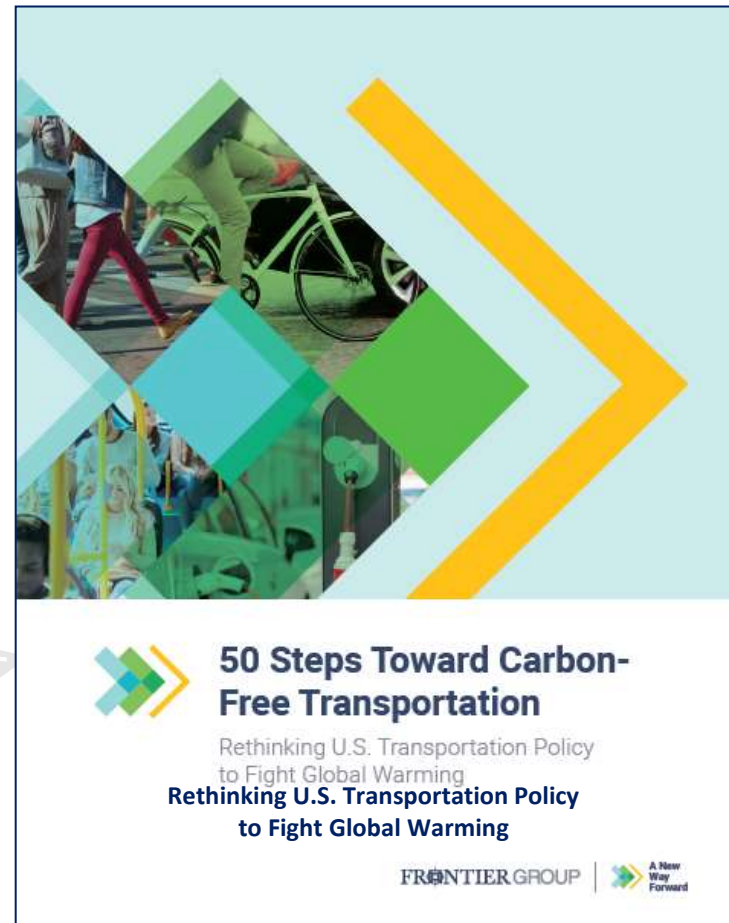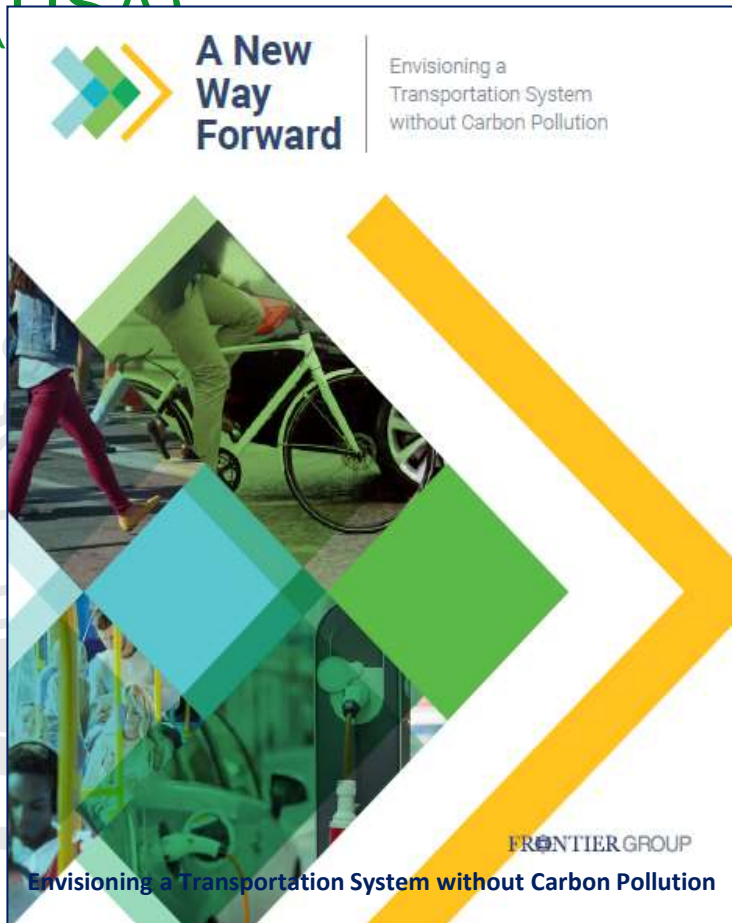
Way Forward: City of Tshwane (1)

- **Public Transport System Integration:**
  - Electronic ticketing across services,
  - Information sharing to customers through Smart Phone Apps,
  - Electronic user demand surveys through cell phone technology
  - Get commuters to Rail & BRT stations in safe way and back!
  - Open data
- **Mini Bus Taxi (MBT) Mode:**
  - Main stream MBT mode a.s.a.p. with electronic ticketing
  - Start running them on feeder / distribution routes with quick turn over
  - Schedule their services over an 18 hour period / 7 days per week
  - Have a GPS in all the MBTs that will feed PT planning data into a central data bank
  - Only give out Operating Licenses to complying MBT vehicles
- **Tshwane Bus Services:**
  - Total review of services to integrate and align with and to support Areyeng / TRT, Gautrain and PRASA / MetroRail (IRPTN)
  - Use smart phone data to establish demand
- **Bike Sharing incl. E-bike**
  - Expand Hatfield – UP demonstration project
  - More docking stations, more bikes

Way Forward: City of Tshwane (2)

- **Gautrain:**
  - Better integration of feeder / distribution services with other PT services
  - Use of smaller more functional vehicles according to demand
  - Extension: Formalise Tshwane East – Menlyn – Hatfield link
  - Plan TOD opportunities at proposed new station sites properly
  - First & Last "Mile" services
- **Tshwane Light Rail (LRT)**
  - Do proper feasibility / bankability study
  - CBD and Zone of Choice / North of Magalies Berg ???
- **CNG vs Electric Buses:**
  - Much faster move towards an electric / green fleet for Areyeng & TBS
  - Power to be generated by CoT through EV capture – not supplied from "dirty" Eskom grid
  - Start with feeder / distribution services in congested areas like Inner City
- **Support for "Clean" Electric Vehicle Power Supply:**
  - Start process towards electric corporate vehicles incl. delivery and trucks
  - Provision of electric charging stations at CoT offices
  - Public places
  - Large corporates
  - Private offices in general
  - Shopping centres

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Way Forward: City of Tshwane (3)

- **Park & Ride Facilities**
  - Start developing a network of Park & Ride facilities at shopping centres and rail stations served by main PT services like BRT and Rail
  - Follow it with set of P&R facilities around CBD linked to commercial activities – multi functional usage!
  - Provide a green distribution service to service the inner P&R facilities

- **Public Transport Holding Areas:**
  - Urgently develop a PT holding area plan for each CoT Region
  - Acquire the associated land a.s.a.p.

- **Dedicated NMT Facilities:**
  - Review / confirm / update city wide NMT Master Plan
  - Establish a dedicated Directorate for NMT
  - Get a minimum "fixed" amount on the annual departmental budget to work down the backlog. Current funding only linked to BRT roll out.
  - Provide proper NMT facilities like sheds at all PT services and facilities
  - Develop a series of car-free areas / zones aligned with spatial development local / nodal frameworks

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Way Forward: City of Tshwane (4)

- **Transport Law Enforcement:**
  - Start doing proper law enforcement on all types of vehicles, especially public transport
  - Focus on skipping of red lights, vehicles stopping across stop lines
  - Deal harshly with vehicles jumping lanes to cross in front of other traffic
  - Prosecute vehicles parking across pedestrian walk way and cycle tracks
  - Make use of CCTV cameras to do law enforcement
  - Use properly trained Metro Police officers at key intersections in congested areas to direct traffic (not only during peak hours)

- **Wonderboom Airport City:**
  - Start developing area around Wonderboom Airport (WBA) in line with international best practice for "Airport City" developments
  - Take decision urgently on future management of WBA and length of extension required
  - Link WBA properly with Rainbow Junction development with reliable public transport service
  - Utilise opportunities created through the development of **the Pyramid South Freight Hub just to the North**

Conclusion

- **Possible to move towards more sustainable transport system – it is within our reach**
- **Transport System is made up of a number of modes. Utilise every one optimally (especially MBTs)**
- **Were are not dealing with "rocket science"! In many cases its about changing our daily mind set and behaviour by providing reliable, affordable and healthier alternatives**
- **Be SMART - Utilise rapidly developing technology and cleaner energy sources but do the "BASICS" right in first instance!**
- **Better Transport and Land-use Integration – less need for travel – EASI framework strategies**
- **Utilise and explore NMT – building healthier communities**
- **Train politicians, officials and communities (and private sector) to do things differently – strong leadership required**

QUESTIONS?

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i Thank You