Travel Demand Management
Are we serious?

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Background and Purpose

- **Travel Demand Management (TDM)** is one of the key strategies forming part of cities’ Green and Sustainable Transport programs.

- From our involvement in transport planning for various cities in RSA, it seems that cities are not serious in the implementation of TDM measures.

- TDM Strategies are included in each ITP as **required by the National Land Transport Act (2009)**.

- TDM Projects are defined and form part of the ITP Programs, but there is often a lack of implementation.

- TDM provides **a paradigm shift in transportation planning** - became popular when cities world-wide realised that they cannot build their way out of traffic congestion.

- Cities changed their policies and strategies to prioritise public transport and non-motorised transport (NMT) over private transport, as well as pursuing TDM.
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What is TDM?

TDM refers to various strategies and policies whose main aim is to **increase the transportation system’s efficiency**

Usually done by encouraging a **shift from Single Occupancy Vehicles (SOV) to High Occupancy Vehicles (HOV) modes, or shifting private vehicle trips out of the peak periods**

TDM seeks to **reduce trips by reducing vehicle kilometres travelled**, while at the same time **increasing travel options**.

TDM also seek to **change travel behaviour patterns**, by **reducing the need to travel** through transportation efficient land uses i.e. **Transit Oriented Developments**
Why TDM?

The Vicious Circle

Sustainable Transport
Why TDM?

- It is affordable
- Promote more efficient modes of transport - increasing utilisation of existing road space
- Spread peak travel over more hours of the day - allows for more equitable use of existing road space and capacity
- Addresses many concerns that are not only traffic related:
  - Environmental impacts of traffic congestion
  - Rising costs of upgrading and expanding roadways
  - Increased urbanisation
  - Lack of Equity – important to cater for all road users, even non-drivers
Check List of TDM Measures

The checklist gives a short description of each measure, its travel impacts and benefits / costs.


Provides a check list of measures with typical costs and impacts which is valuable in identifying possible measures for local application.
Categories of TDM Measures & Examples

**TDM Measures**

- **VOLUNTARY**
  - Flexi-time
  - Car-pooling
  - Park & Ride

- **REGULATORY**
  - Traffic Calming
  - Vehicle Use Restrictions
  - Parking Management

- **PRICING**
  - Parking Pricing
  - Road Pricing
  - Cordon Pricing

- **PHYSICAL**
  - Transit Priority
  - TODs
  - Universal Design
STEPS IN TDM IMPLEMENTATION (VTI, 2015)

- **Policy and Planning Reforms**
  (more funding for alternative modes, increased support for TDM programs, changes in land use planning practices, etc.)
  
  - **Changes Travel Options and Incentives**
    (improved walking and cycling conditions, improved ridesharing and public transit services, more compact and mixed land use development, increased road and parking fees, reduced transit fares, etc.)
    
    - **Travel Changes**
      (shifts in travel time, route, mode, destination and frequency)
      
      - **Outcomes**
        (reduced traffic congestion, road and parking facility cost savings, accident reductions, energy conservation, pollution emission reductions, improved mobility for non-drivers, etc.)
Lessons Learned from International Best Practice

TDM emerged in the 1970s due to the energy crisis and air quality concerns.

Started at large employer sites - subsidized rideshare marketing services and employer tax benefits.

Examples of early programs: carpool matching services employer-sponsored van-pools.

These voluntary programs by single employers then became the model for TDM and were propagated in congested cities.

Over the last few decades the world-wide drive for a sustainable and environmentally friendly transportation has affected the direction in which policies are formulated.
Wide Range of Benefits

- Road and parking cost savings
- Improved fitness and health
- Consumer cost savings
- Congestion reduction
- Improved traffic safety
- Improved transport diversity
- Efficient land use
- Pollution reductions
- Energy conservation
Unintended Impacts

- Effective implementation of TDM should result in a decrease in the number of private car, single occupancy vehicles on a road network.
- This decrease in vehicles will lead to a decrease in the generalized cost of travel on that network.
- Similar to road capacity increases, an actual increase in the demand of travel would be experienced.
- TDM measures therefore become ineffective in the long run.
- Unintended impacts can be avoided by increasing the generalized cost of private car travel by means of road pricing and at the same time improving the public transport system.
Lessons Learned (VTI, 2015)

- Integrated TDM programs should be well coordinated and have adequate enforcement.
- TDM strategies require time before full impacts can be realised.
- TDM effectiveness is dependant on contextual setting, complimentary strategies, nature of travel market, levels of education and outreach.
- Co-ordination among many large employers reap greater benefits – especially in more densely populated areas.

Ensure that strategies do complement each other, integrate well together, and not have negative impacts.

TDM most effective when implemented with other complimentary strategies.

Implementing a range of strategies is crucial for effectiveness.
South African Experience -1

Gauteng 5-Year Integrated Transport Master Plan (GITMP25, 2013):

- Creation of capacity to manage TDM and TSM
- Set new standards for public transport and rationalise services along corridors
- Implementation of HOV lanes; ITS for congestion and incident management
- Support municipalities into capacity, analysis, and funding;
- Parking policies to reduce car use; Feasibility studies into spreading of working hours;
- Integration with land use development to facilitate densification and mixed use
South African Experience -2

The City of Cape Town made progress in promoting lift clubs:

- Developed web-site to facilitate matching of their own staff to form lift-club
  - Proving successful.
- Drafted Guidelines to form lift clubs as part of an overall guideline document to promote sustainable transport in the city.

Ekurhuleni Metropolitan Municipality (CITP, 2015):

- Ride share matching and lift clubs;
- Workplace Travel Plans and measures to promote their use such as municipal rates reductions to companies with approved travel plans;
- Secure Park-and-Ride (P & R) services at rail stations and bus stops;
- Implemented and enforced HOV lanes leading into major employment centres;
- Parking pricing to promote public transport in favour of private transport; and
- NMT with Universal Access.
The Urban Design Framework for the Jhb Metro Centre:

- Good example of how TDM measures are integrated with a ToD (The Johannesburg Property Company, 2016):
  - The Metro Precinct development is integrated with the full range of transport modes: Walking & cycle lanes and routes, BRT, Gautrain feeder buses, Metro Bus, and mini-bus taxi.
  - The mixed use high density development and linkages with public transport and NMT are mutually supportive. Also links with the city’s cycle network.
  - Other TDM measures proposed are traffic management, travel information, congestion charging, smart metering management of parking that is demand responsive.
eThekwini Experience

Durban Traffic Congestion – morning peak

PT LANES (RED LANES) – N3 Freeway

ITS boards – N2 Freeway
eThekwini Experience

Implemented TDM measures – limited success:

- Northern Corridor Pilot Project during A1 GP World Cup of Motor Sport
  - Low key media campaign; encouraging motorists to car pool, use public transport or change their work start / finish times
  - Specific schools requested to change their start times – several schools complied
  - Major CBD employers requested to change work times – some complied

- Southern and Western Corridors: Widened freeways for 2010 Soccer World Cup and provided dedicated PT lanes:
  - Public transport lanes (Red Lanes) implemented with CCTV cameras – lack of law enforcement resulted in general traffic using these Lanes

- Current CITP: Future strategies to integrate with the IPTN: Enforce PT lanes on Southern and Western freeways, coupled with Park & Ride
New Trend - Mobility as a Service

- The wide availability of the internet, mobile phones, GPS, and Intelligent Transport Systems, brought another paradigm shift and a revolution in mobility (Goodall, Fishman, et al, 2017).
- Various cities are promoting “Mobility as a Service”, or “MaaS”, that employs existing local transport assets and private sector participants.
- MaaS relies on a digital platform, booking of trips, electronic ticketing, and payment services across all modes of transport.
- MaaS allows users to plan and book door-to-door services on a single “App”. **Owning a car is not a priority anymore.**
- Users can experience the benefits of car travel at a much cheaper price than owning it.
- Car and bike sharing schemes, e-hailing taxi services and journey planning “Apps” are experiencing rapid growth world-wide.
Possible Reasons For Inadequate TDM Implementation In RSA:

 Authorities do not have the resources and capacity to implement TDM that requires intensive management and law enforcement.

 Road users' lack of respect for "Rules of the Road".

 Lack of institutional structure and capacity to deal with TDM - no dedicated official or Unit in the Transport Department.

 There is lack of monitoring to determine the effectiveness of TDM measures and to make adaptations.

 Low priority given to TDM due to its incremental and longer term benefits. Authorities are more geared to build infrastructure.

 Ad-hoc and isolated implementation resulting in no or limited success.

 Lack of effective marketing and communication to obtain buy-in and co-operation from the public and stakeholders.
Conclusions & Recommendations: How do we move from Planning to Implementation?

- **International best practice** indicated that **TDM measures can be effective** in reducing vehicle kilometres travelled, change travel behaviour patterns, increase travel options.

- In RSA there is **limited implementation despite** Projects formulated and contained in the ITP’s of Authorities.

- **If authorities want to be serious about TDM, it is crucial that they:**
  - Build dedicated institutional capacity
  - Sign Service Level Agreement with Traffic and Metropolitan Police - & Marketing and Communications departments to get their support.
  - Implement package of complementary measures
  - Start with Pilot Projects
  - Implement TDM in support of, and integrated with, their Integrated PT Networks for which major funding is available
  - Change parking policies and by-laws to promote PT and NMT
  - Support Spatial Development Frameworks: Built Environment Performance Plans (BEPP)
  - Continuously monitor, learn and adapt
If these folks would take the bus, I’d be home by now!