Traffic Safety

Child Safe workshop
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eThekwini
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Traffic Safety

- Approx. 1.3 million people die in traffic, every year...
  - South Africa in the bottom of the worldwide list
  - The Netherlands in the top...
- The Netherlands used to be unsafe
  - Since 1970s, Traffic Safety Policy
  - → halved the number of casualties,
  - every 10-15 years again
- South Africa has a similar policy
  - But is not achieving their goals, yet
- What does NL do right ?
- What can SA learn ?
# Traffic Safety

Look at Traffic Safety, from an Engineering point of view.  
However, it is also Urban Planning, Transport, Education, Communication → Social Engineering.

<table>
<thead>
<tr>
<th>NL Traffic Safety Policy</th>
<th>Compare to SA situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road infrastructure</td>
<td></td>
</tr>
<tr>
<td>Vehicle</td>
<td></td>
</tr>
<tr>
<td>User</td>
<td></td>
</tr>
<tr>
<td>Governance support</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Some SA Examples</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools, scholar Transport</td>
<td></td>
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<tr>
<td>Crossing main corridors</td>
<td></td>
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</tbody>
</table>
Compare South Africa – the Netherlands
### Compare: South Africa – the Netherlands

<table>
<thead>
<tr>
<th></th>
<th>Netherlands 2017</th>
<th>South Africa 2017</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>17 mln</td>
<td>55 mln</td>
<td>x 3</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>9 mln</td>
<td>9 mln</td>
<td>=1</td>
</tr>
<tr>
<td>Traffic Fatalities</td>
<td>600</td>
<td>14,000</td>
<td>x 25</td>
</tr>
<tr>
<td>Children (0-14y)</td>
<td>15 (&lt;5 %)</td>
<td>1,000 (&lt;10%)</td>
<td>x 60</td>
</tr>
</tbody>
</table>

- NL = 10-20 times safer than SA...!
- What does NL do right?
- What can SA learn!
### NL was not always this safe
- What happened since 1970s?
  - Continuously...!
- Can SA get there?
  - Over time!

<table>
<thead>
<tr>
<th></th>
<th>Netherlands 1970s</th>
<th>South Africa 2017</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>13 mln</td>
<td>55 mln</td>
<td>x 4</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>3 mln</td>
<td>9 mln</td>
<td>x 3</td>
</tr>
<tr>
<td>Traffic Fatalities</td>
<td>3,200</td>
<td>14,000</td>
<td>x 4</td>
</tr>
<tr>
<td>Children</td>
<td>&gt;400 (&lt;15%)</td>
<td>1,000 (&lt;10%)</td>
<td>x 2½</td>
</tr>
</tbody>
</table>

Equally (un)safe
Traffic Safety in SA

Causes of unsafety:

- **Infra**
  - Design, alignment, road surface
  - Whether and external circumstances

- **Vehicle**
  - Faulty tyres, brakes, steering, lights
  - Fraud and corruption: Licensing

- **User**
  - Speeding, overtaking, ignoring robots and stop signs, drinking
  - Little enforcement, or corrupted
  - Pedestrians’ behaviour (jay-walking, crossing, drinking)
Traffic Safety Policy in NL

Traffic Safety Policy:
- Road
- Vehicle
- User
  - Majority of unsafety is caused by human factors
  - However: if you design the road / vehicle adequately → human behaviour will improve: manage road-users’ expectations

Governance support: policies, budgets, enforcement, etc.
Road infra = Engineering and Planning

NL

Design for Purpose:
- Road Classification
- Develop new infra conform
  - Side-walks, cycle paths, etc.
  - Geometry, speed, lanes, etc.
- And: Retrofit existing infra

Manage road-users’ expectations

SA

- Road Classification!
- Complete Streets!

Budget restrictions…?
Re-design Road infra

- Road Classification
- Complete Streets:
  - Design with people’s perspective first
  - NMT / Active Mobility
  - (‘Traditionally’: Car design)

- Piggy-Back with Maintenance Programme:
  - Each maintenance project should be preceded by a re-design
  - Use regular Maintenance budget, plus small additional Safety budget

- Retro-fitting can take 30 years… → but you have to start
Vehicle = Law and Enforcement

NL

Road Worthy Test:
- Vehicles >3 yrs old → every year

Rules on children in cars:
- Infant seat, not on front seat, use seat belts in rear seats, etc.
- No passengers in vans and bakkies

PT Licensing:
- Public Transport companies
  - Additional requirements

SA

- Only at selling/buying

- Similar rules → little enforcement

- PT = individual operators
  - Partly informal, unlicensed
    - Partly back-log licensing...
  - Competition → unsafe behavior
User = Education and Awareness

- Traffic Education at Primary school: Training, Exam and Diploma
- Drivers’ Education and License
  - Point system for beginners / all; additional tests for pensioners
  - 2 faults in 5 yr time → you lose your driver license…
- Experience:
  - Back-seat generation → unconscious experience
  - As youngster, you have walked / cycled to school → once you are a driver, you do realise how vulnerable others are
- Rigorous TV promotions: seat-belts, helmets, drinking & driving, hands-free / no cell-phone use, other behaviour, etc.
  - Plus enforcement!
    → Resulted in >95% compliance!
- Exposure: TV shows on bad behaviour in traffic
Governance support

NL
- Policy: continuous, disciplined
- Budgets
  - Levies = 65% of fuel price
  - → to pay for costs to society:
    - Health care
    - Enforcement (police)
    - Environment, PT, etc.
- Enforcement

SA
- Policy!
- Levies = 40% of fuel price:
  - General levies
    - Or general tax?
  - Road Accident Fund
- Enforcement → limited?

- Pro-Active – prevention
- Re-Active
Some Examples
Example: Schools

**NL**
- Dense Urban Planning
- Small schools in rural villages
  - Along class 4,5 roads
  - Prim. schools → walking
  - Sec. schools → + cycling
  - On safe roads

**SA**
- Big schools in urban areas
  - 1000 scholars
- Centralised schools in between villages
  - Low Rural densities
  - Very long walking distances
  - Sometimes along class 1,2,3 roads
    - Lack of parallel road infra
- More smaller schools?
More smaller schools

<table>
<thead>
<tr>
<th></th>
<th>NL Rural</th>
<th>SA Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary School</td>
<td>12 500 km radius</td>
<td></td>
</tr>
<tr>
<td>Primary School</td>
<td>7 000 km radius</td>
<td></td>
</tr>
</tbody>
</table>

5 km radius
Example: Scholar Transport

**NL**

- Very few school buses
  - Most scholars walk and cycle
  - Discounts on regular PT
  - Parents drop-off
    - Causes some unsafety...

**SA**

- Scholar transport is a requirement >3 km → but often lacking
  - Regular PT is expensive
  - Informal bakkie transport is unsafe
- Conflict...:
  - Take informal illegal transport off the road
  - Have the children walk for 5 or more km
  - → Provide proper alternative
Example: pedestrians crossing main infra

- Many pedestrians walk along and cross main infra
  - Freeways, arterials, rail lines, etc. $\rightarrow$ resulting in 1000s of casualties…!
- Because it is the shortest (or only) route to their destination
- $\rightarrow$ Provide more facilities: parallel paths, sidewalks, crossings, pedestrian bridges, etc.
- People tend to avoid these facilities $\rightarrow$ safety and security
- $\rightarrow$ Design with community:
  - Ideal location
  - Awareness
  - Sense of ownership $\rightarrow$ security
Lessons to learn

Traffic Safety = Urban Planning, Transport, Engineering, Education, Communication, etc. \[\rightarrow\] Social Engineering

Think outside your box = Policy, Solutions, Budgets, etc.
Acknowledgements

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Google Earth, Google Images (copy rights?)

Thank you,

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