World Bank
Urban Transport Strategy Review
Yokohama 11-13 December 2000

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Asian Context

- Dismal state of public transport
  (supply, operations, management, priority)
- Rich array of NMVs
  (bicycle, rickshaw, trishaw, becak)
- Geometric increase of 2W-3W MVs
  (auto rickshaw, scooter, motorcycle, moped)
- Animal powered vehicles
  (bullock carts, horse carriages, camel carts)
- Pedestrians
Travel Modes in Asia

- NMT (walk and bicycle) dominant
- Public transport – major mode
- Emerging dominance of 2W-MVs
- MVs (major portion of vehicle mix) (minor portion of person trips)
Mode Split in Low Income Countries of Asia
Small Cities: 1-5 million People

- **Walk**
- **NMV**
- **Public Transport**
- **Private Motorised Transport**
Mode Split in Low Income Countries of Asia
Medium Size Cities: 5-8 million People

- **Bangalore**
- **Surabaya**
- **Shenyang**
- **Madras**
- **Tianjin**

Legend:
- **Walk**
- **NMV**
- **Public Transport**
- **Private Motorised Transport**
Mode Split in Low Income Countries of Asia
Large Cities: 8+ million People

- Beijing
- Bombay
- Delhi
- Dhaka
- Jakarta
- Shanghai

Walk | NMV | Public Transport | Private Motorised Transport
Mode Split in Selected Asian Cities
Middle and High Income Countries

Source: Midgley, 1994
The Income Effect

When average income rise by 25%

Minimum Income to buy a car or Motorcycle

...People who can afford a car or motorcycle may increase 250%
Access to Motorised Transport, China
1995-2020

Households with Access to Motor Vehicles
- 2020: 92.60%
- 2010: 85.30%
- 1995: 78.00%

Households with Access to Motorcycles
- 2020: 11.90%
- 2010: 5.00%
- 1995: 2.80%

Households with No Access to Private Motorised Transport
- 2020: 0.0%
- 2010: 0.0%
- 1995: 2.40%
Transportation Planning Now

Vehicles First
All Else Next
Urban Transport Policy Spectrum

Ecologically Sustainable

Investment Policy

Sustainable Urban Transport

Economically Efficient

Socially Equitable

Regulatory Policy
Household Expenditure Patterns

Urban Transport & Urban Poor

Urban Poor and Urban Transport Modes

- Car (X)
- Motorcycle (X)
- Bicycle
- Public Transport (Bus/MRT/LRT)
Sustainable Transportation Policy

Feet First
Pedal Next
Motor Maybe
Strategy

• “the science and art of employing political, economic and social forces to afford the maximum support of adopted policies”
• “an adaptation of behaviour and structure to serve as a function to achieve evolutionary success”
• “a careful plan or method to achieve the designated goal”
Strategy: Scope and Purpose

Text book: all inclusive

Professional “do it” treatise

For all countries
For Asia
For bank staff
All of the above
None of the above
Strategies to Support

What policies?

What priorities?
Strategy

Is it possible to have one set of strategies for all countries? All cities? All occasions?

What are the priorities?
Do strategies vary with…?

- Stage of development – GDP (PPP)
- Size of city (15+ million, 10-15M, 5-10M, 2-5M, <2M)
- Degree of motorisation, cost of motorisation
- Governance systems (private/public, profit/non-profit)
- Participatory approach and transparency
- Legal systems, education and enforcement
Strategies

Best policies
Best practices
Operational directives
Operations manual

What priorities?
### Planning Framework for Cities of 1-2 Million People

<table>
<thead>
<tr>
<th>Planning horizon</th>
<th>Major modes</th>
<th>TSM strategies</th>
<th>Investment and regulatory policies</th>
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</table>
| 1-10 years       | Dominant: **Bicycle & walk**  
Other: Buses & negligible motorised modes | • Increase intersection capacity  
• Traffic separation (NMV/MV)  
• Increase bus efficiency  
• Staggered work hours  
• Land use & transport coordination | • Increase the number of buses & routes  
• Do not restrict NMV modes  
• Rationalise NMV/MV conflicts  
• Establish traffic codes for motorcycles  
• Grade separated bikeways & some exclusive lanes |
Planning Framework for Cities of 1-2 Million People

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<tr>
<td>10 years</td>
<td>Dominant: <strong>Bicycle &amp; walk</strong>&lt;br&gt;Frequent: Bus&lt;br&gt;Other: Negligible motorised modes</td>
<td>• ATC systems&lt;br&gt;• Bikeways&lt;br&gt;• Some busways&lt;br&gt;• Coordination with transport of location of local enterprises</td>
<td>• Extensive exclusive busways&lt;br&gt;• Increase numbers of buses, trolleys &amp; routes&lt;br&gt;• Examine need for LRT/MRT</td>
</tr>
<tr>
<td>12 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 years</td>
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Planning Framework for Cities of 2-5 Million People

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| 1-5 years        | Dominant: **Bicycle, walk & buses** Other: Buses & negligible motorised modes | • Increase intersection capacity  
• Traffic separation (NMV/MV)  
• Increase bus efficiency  
• Signal timings with preference for buses & bicycles | • Increase number of buses & routes  
• Do not restrict NMV modes  
• Rationalise NMV/MV conflicts  
• Establish traffic codes for motorcycles  
• Grade separated bikeways  
• Some exclusive busways |
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<tr>
<td>5 years</td>
<td>Dominant: <strong>Bicycle &amp; walk</strong></td>
<td>•Intersection grade separation</td>
<td>•Exclusive busways &amp; bikeways</td>
</tr>
<tr>
<td>7 years</td>
<td>Frequent: Bus</td>
<td>•Large ATC systems</td>
<td>•More buses &amp; routes</td>
</tr>
<tr>
<td></td>
<td>Other: Negligible motorised</td>
<td>•Strict land use coordination</td>
<td>•Feasibility studies of LRT/MRT</td>
</tr>
<tr>
<td></td>
<td>modes</td>
<td>•Strict set back controls</td>
<td>•Protection of rights-of-way for LRT/MRT</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>•Reduce trips &amp; trip lengths by land use coordination</td>
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<td>•Coordination with transport of location of new enterprises</td>
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| 7 years          | Dominant: **Bicycle & walk**  
Frequent: Bus  
Other: Negligible motorised modes |  | • New technology & HOV acquisition  
• Increase numbers of buses, trolleys & routes  
• Examine need for LRT/MRT  
• Negotiate financing of LRT/MRT |
| 12 years         |             |                |                                   |
| 20 years         |             |                |                                   |
# Planning Framework for Cities of over 5 Million People

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<td>1-5 years</td>
<td>Dominant: <strong>Bicycle, walk &amp; bus</strong>&lt;br&gt;Other: Negligible motorised modes</td>
<td>• ATC systems&lt;br&gt;• Grade separated bikeways&lt;br&gt;• Rationalise signal timings&lt;br&gt;• Staggered work hours&lt;br&gt;• Control locations of new enterprises&lt;br&gt;• Rationalise NMV/MV conflicts</td>
<td>• Feasibility of MRT&lt;br&gt;• Rights-of-way for MRT&lt;br&gt;• No restrictions on NMV&lt;br&gt;• Traffic codes for motorcycles&lt;br&gt;• Grade separated bikeways &amp; busways&lt;br&gt;• Exclusive bus lanes</td>
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| 5 years          | Dominant: *Bicycle & walk*  
                     Frequent: Bus  
                     Other: Negligible motorised modes | • Increase bus efficiency  
                                           • Land use setback controls  
                                           • Feasibility studies of MRT | • Reduce trips & trip lengths by land use coordination  
                                           • Coordination with transport of location of new enterprises  
                                           • Feasibility studies of MRT  
                                           • Protect rights-of-way for MRT  
                                           • Review financing feasibility of LRT/MRT |
| 8 years          |             |                |                                   |
## Planning Framework for Cities of over 5 Million People

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<td>Dominant: <strong>Bicycle &amp; walk</strong></td>
<td>•Larger ATC systems</td>
<td>•New technology acquisition: LRT/MRT, HOV, ATC systems</td>
</tr>
<tr>
<td></td>
<td>Frequent: Bus</td>
<td></td>
<td>•MRT construction</td>
</tr>
<tr>
<td></td>
<td>Other: Negligible motorised modes</td>
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