Policies to Increase Numodality Post-Pandemic

ITF Roundtable on Shaping Post-Covid Mobility in Cities 9th Jun 2022

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"Never Waste a Good Crisis"

- Winston Churchill

"危<u>机</u> (wei ji)"



Covid-19 – An Opportunity to Re-imagine Singapore's Land Transport

- Observed trends since lockdown or "Circuit Breaker" in early April 2020:
 - Work from home (WFH)/telecommuting has "flattened" PT demand across the day
 - Travel preference has slightly shifted towards active mobility modes
 - Activities have shifted from city centre to neighbourhoods
- Change in travel patterns and observed trends offer valuable insights and opportunities to reimagine Singapore's Land Transport and accelerate/advance transport strategies

Seizing Opportunities to Transform Land Transport

- Providing an efficient, reliable and inclusive multi-modal transport network to enable options and alternative use of modes and routes
- Determining shifts and new travel patterns, actively shaping them towards LTA's strategy of Walk Cycle Ride (WCR)
- Building a resilient transport system that is future-proofed through various dimensions

Land Transport Master Plan (LTMP) 2040

Validated to be

directionally

relevant

20-Minute Towns and a **45-Minute City** The Land Transport Master Plan (LTMP) 2040 envisions

a land transport system that is convenient, well-connected and fast using Walk, Cycle, or Ride transport options. Learn more about flow we're connecting.

homes, communities and verifications. or were its ooy as / mo2040

By walking, cycling or riding, you can:

Priority

for buses







The Land Transport Master Plan (LTMP) 2040 envisions a land transport system that is more inclusive and supported by a gracious and caring commuting culture.

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More oriority oueues and cabins 10 100 Helping commuters

with differing needs ELDER-FRIENDLT SEATS. More resting points





Cleaner

energy

fleets

Better walking and

cycling

Healthy Lives, Safer Journeys

The Land Transport Master Plan (LTMP) 2040 envisions a land transport system that creates a safer, healthier and more liveable environment, filled with vibrant community spaces.

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> O MARIE O New technology for safety

More streets reserved for vibrant community spaces



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Normalising New Travel Patterns

- During the Circuit Breaker, the government mandated for all, except essential businesses, to work from home
- Entrench WFH/telecommuting, staggered/flexible working hours (FWAs) to "flatten" the peak curve to help optimise the transport network
- FWAs continue to be encouraged as a permanent feature of the workplace despite the further easing of Covid-19 restrictions from 26 Apr

Public Transport Ridership



More Optimal Daily Travel Pattern Observed During Pandemic Public transport ridership over a weekday

• Flatter public transport travel demand curve across the day as compared to pre-Covid period

Month of May, Year-on-Year



Accelerating the LTMP 2040's WCR efforts

- Actively shape walking and cycling as the preferred mode for easy and safe intra-town journeys
- Implementing a series of road repurposing efforts
 - Conversion of road lanes to Transit Priority Corridors (TPC) to give buses priority and increase bus speeds
 - Accelerate our cycling plan Cycling Network of 800km by 2023, 1000km by 2026, and more than 1300km by 2030
 - Implement pedestrianisation of streets/widening of footpaths



Accelerating the LTMP 2040's WCR efforts

- Connect commuters from homes to public transport nodes and major amenities for more seamless and convenient transfers
 - Build-up comprehensive cycling network within residential towns
 - Provide cycling friendly features like bicycle parking, crossings and wheeling ramps; and increase the number of end-of-trip facilities
 - ~27,000 bicycle parking lots at public transport nodes and will provide 3,000 more at MRT stations by 2025
- Upgrade the comfort and convenience of connections
 - Walk2Ride programme has added ~200km of sheltered linkways since 2018.
 - Sheltered walk within 400m from all MRT stations and 200m from all LRT stations, bus interchanges and major bus stops





Integrated Transport Hubs (ITHs) for Seamless Bus-Rail Transfers





- Today, 10 ITHs across Singapore seamlessly link bus interchanges and train stations to commercial developments
- Under study: 17 new ITHs

Going Car-lite: Deprioritising Car Ownership

We rely heavily on the COE quota system which controls the vehicle population at the macro level with the vehicle growth rate.

- Cars are not a necessity
- Slowing down road growth, accord priority to new areas and buses



Going Car-lite: Deprioritising Car Ownership

 There has been a decrease in the proportion of resident households owning cars over the last 10 years (2012-2021)



Going Car-lite: Disincentivising Car Use

Electronic Road Pricing (ERP) & Next-Gen ERP

Today, roads already take up 12% of Singapore's land space. Road pricing a means of mitigating road congestion, in tandem with private vehicle ownership policies (COE)

Electronic Road Pricing (ERP) (1998-present)

- Latest in series of road use pricing measures (city area and expressways)
 - Area Licensing Scheme (1975) manual pricing scheme at gantries for entry into city
 - Road Pricing Scheme (1995) manual pricing scheme at gantries extended beyond city area to expressways
 - Electronic Road Pricing (1998-present) ALS and RPS automated with ERP system (city area and expressways)



Next-Generation Electronic Road Pricing (ERP)

- Evolution of road use pricing for increased adaptability
- Replacement of physical gantries with satellites
- Island-wide coverage
- To be rolled out progressively





Accelerating Electrification of our Public Transport

We are making a concerted push for the electrification of our public transport fleet

- 100% cleaner energy public bus fleet by
 2040, comprising alternatives like
 electric or hybrid vehicles
- By 2030, 50% of our public bus fleet will be electric



Train Energy Consumption is Reduced by 67%



Environmental Resilience – Enhancing Renewable Sources of Energy

Deploy up to 20 MWp of solar panels on other land transport infrastructure, eg train facilities (depot, test centers), pedestrian overhead bridges and covered linkways

- Equivalent to the power needed to charge up to 285 single deck e-buses for an entire year
- Raise solar energy deployment up to a total of about 45 MWp by 2030

We will continue to incorporate solar panels on new land transport infrastructure





Land Use Resilience – Intensify De-centralisation/Polycentricity

- Land use resilience/flexibility required as land constraints continue to remain the biggest inhibitor
- Reduce mobility needs to relieve public transport infrastructure strains
- Entrench more localised travel in the longer term by encouraging more jobs to be located in residential areas
 - Upcoming development of 4 new core employment centres



Network Resilience – Expanding the Rail Network



- Today: ~230km of rail network, and 7-in-10 households within a 10-min walk from MRT station
- By 2030s: ~360km of rail network, and 8-in-10 households within 10-min walk from MRT station

Operational Resilience – Ensuring Rail Reliability



Mean Kilometres Before Failure (MKBF), an indicator of rail reliability, has remained steady, above our target of 1,000,000 train-km

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System Resilience – Improving Accessibility



Stephen Dziedzic 🤣 @stephendziedzic

At some Singapore intersections you can swipe your Senior's Card and the crossing light will stay green for a little longer, giving you extra time to reach the other side of the road. I find this very touching.

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4:18 PM · Sep 6, 2019 · Twitter for iPhone

3.8K Retweets 7.8K Likes

Green Man +

- Extends green time of pedestrian crossing for elderly
- About 1000 Green Man + pedestrian crossings across Singapore



Next-Generation Passenger Information Display System

- Information displays to aid navigation for those with hearing impairments
- Audio announcements of next stop



Hands-free Ticketing

 Radio frequency identification (RFID) or Bluetooth technology, to allow commuters, especially those with disabilities and the elderly, to pass through fare gates or board buses without tapping fare cards

System Resilience – Assistive Technology for Commuters



Mobility Assistance for the Visually Impaired and Special Users (Mavis)

- Provide commuters with personalised journey guidance (e.g. notifications to board bus)
- Alert bus captains that commuters with special needs will be boarding/alighting
- Allowing visually impaired passengers to activate audio announcements at boarding bus stop.

Thank You

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