**SPEECH BY MR KHAW BOON WAN, CO-ORDINATING MINISTER FOR
INFRASTRUCTURE AND MINISTER FOR TRANSPORT,
AT THE OFFICIAL LAUNCH OF THE
LAND TRANSPORT INDUSTRY TRANSFORMATION MAP
ON 12 FEBRUARY 2018, 10:00AM AT PSA BUILDING LEVEL 40**

Members of the Transport GPC,

NTWU and NTA Brothers and Sisters,

Industry Leaders,

Distinguished Guests,

Ladies and Gentlemen,

1.   We are here to launch the Land Transport Industry Transformation Map. Within the transport sector, we have already launched the Aviation and the Maritime Transformation Maps.

Land Transport's Importance

2.   The aviation and the maritime industries have a clear external dimension. They connect us to the world. Without Changi Airport and PSA, Singapore's external space will be severely diminished.

3.   The land transport industry's external dimension appears to be rather limited, to just the Causeway and the Second Link, and only to Peninsula Malaysia or Johor. But this will be an incorrect and unfair characterisation of land transport's contributions to the Singapore economy and Singaporeans' well-being.

4.   Indeed, an efficient and reliable land transport network is an important enabler for our economy. In many cities, traffic jams are a daily occurrence and

have become accepted as the norm. It inflicts a high cost on our quality of life, adds to business costs, and reduces our economic competitiveness. That is why we have placed equal priority on all the three transport industries. In fact, modern transport and logistics is increasingly leveraging on multiple modes of transport. With advances in data science and data analytics, logistics firms are competing to make sense of data to optimise the routing of goods, so as to achieve a faster, cheaper and more reliable delivery outcome. A weak link in a transport mode will weaken the others. All the transport modes must be in top form, to achieve an excellent transport ecosystem. Although we have launched the aviation and maritime transformation maps separately, we need to see the linkages between the different transport modes, and the importance of synergising them must be fully borne in mind.

5.   In Singapore, our road, bus and rail networks support the efficient movement of people and goods across the island. The public transport network is the backbone. Every day, 5 million commuter journeys are taken on our public buses and trains for work, school and leisure. Over 123,000 people work in the industry, with more than 21,000 employed in the public bus and rail sectors. The industry contributes to about 1.1% of GDP, and the wider economic and intangible benefits from enhanced connectivity are even higher.

Land Transport Industry for the Future

6.   In 2013, the Land Transport Masterplan visualised a people-centred land transport system by 2030, with more connections and better service for all. To achieve this, the public bus industry transitioned to the Bus Contracting Model in 2016, while most rail lines are now on the New Rail Financing Framework. This allowed more resources to be pumped into the public transport network. Since 2013, the Government has spent more than $28 billion on the public transport

system and over 5,000 people have joined the bus and rail sectors. Beyond this, the emergence of the Private Hire Car (PHC) industry has also brought in more than 40,000 people to be PHC drivers.

7.   While we expect the land transport industry to continue to grow, resources are finite. Our population is ageing rapidly, while land and fiscal resources will become more stretched. Globally, land transport is being disrupted by new technologies – artificial intelligence, automation, mobile connectivity and Big Data. Some of these technologies can be unsettling. However, we can also ride on them to enhance our land transport system and create even better jobs.

8.   This is at the heart of the Land Transport Industry Transformation Map, or ITM, which the LTA, transport unions and industry have come together to develop.

Land Transport ITM: Getting Ready

9.   Our Land Transport ITM seeks to transform the industry to ensure it stays relevant in supporting Singapore's future growth and meeting commuters' needs. To do so, it must be: Technology Ready, Workforce Ready and Ecosystem Ready.

Technology Ready

10.   First, the land transport industry will leverage emerging technologies to improve productivity and deliver a transport system that is safe, efficient, reliable and comfortable for commuters.

11.   One such technology is Autonomous Vehicles (AVs), which MOT and LTA have been working closely with the industry to develop in Singapore. AV trials first began in 2015, and we have made good progress since. The technology is developing rapidly, and we are preparing for a pilot deployment of on-demand AV buses from 2022 for commuters in Punggol, Tengah and the Jurong Innovation District. Autonomous vehicles have the potential to completely change the way we travel, and I am excited by the possibilities and benefits they will bring to commuters.

12.   The adoption of technologies in the workplace, such as smart sensors and robotic drones will also increase productivity and improve workers' lives. For instance, railway maintenance can be enhanced using condition monitoring instruments. These smart sensors monitor the performance of the rail network, and flag out anomalies so that they can be fixed before a fault can occur. Robotic drones will also take over dangerous or repetitive tasks. For example, rail and road tunnel inspections can be performed with greater ease and accuracy using aerial drones. Aerial drones are also deployed at selected Thomson East-Coast Line worksites to help our engineers monitor construction progress and identify defects through aerial footage.

Workforce Ready

13.   Second, with the expansion of our public bus and rail systems, we expect the current workforce of 21,000 to grow by 8,000 new jobs by 2030. Technology will also hasten the move towards higher value-added transport jobs for more Professionals, Managers, Executives and Technicians (PMETs).

14.   To ensure that our public transport workers keep pace with industry development, we will up-skill workers, and reskill them. This will be done

through our institutes of higher learning, as well as centralised academies such as the Singapore Bus Academy and Singapore Rail Academy. Over 2,200 participants have benefited from Bus and Rail Academy courses to date. Workforce development programmes will also be mapped to the Public Transport Skills Framework, which has been developed to provide a clear pathway for skills upgrading and mastery. We expect to launch the Skills Framework in May this year.

15. LTA will also work closely with union and industry partners to identify manpower gaps and develop targeted transition measures for public transport workers who are at-risk of technological disruption. To meet the industry's long term manpower needs, talent management and engagement efforts will also be enhanced to attract a pipeline of skilled workers and retain in-service staff. This includes structured internship opportunities for fresh hires, as well as job conversion and bridging schemes such as the Professional Conversion Programme for those considering mid-career change.

Ecosystem Ready

16. Lastly, to transform successfully, our local transport ecosystem must work together as one cohesive whole. We must deepen the existing tripartite partnership between the government, union and industry. LTA will help shape the public transport ecosystem. Beyond its traditional role as transport planner and regulator, LTA will partner with agencies such as IE Singapore, SPRING and EDB to take on an industry development role as part of the ITM. This will entail LTA having a greater hand in developing and anchoring local manpower and enterprise capabilities, particularly in mission-critical areas such as the domestic rail sector.

17.   As a start, LTA will set aside $25 million over five years for the Land Transport Innovation Fund to encourage mobility-related research and technology trials. This includes collaborative projects between LTA and local industry partners such as ST Kinetics, which is working on Autonomous Robot Movers for our train depots and augmented reality devices for railway training, maintenance and inspection.

Conclusion

18.   In closing, let me thank our union and industry partners for their strong support in drawing up this ITM. It is another manifestation of our excellent tripartite cooperation culture. By working together, we can transform our land transport industry and look to the future with confidence. Thank you.