



## HONG KONG TRANSPORT SERVICES TRANSPORT OPERATIONS



**99.9%**  
Passenger Journeys  
On-time

**1,616.3 million**  
Total Patronage

**4.75 million**  
Average Weekday  
Patronage

Composite photograph at Hung Hom Station

## AIM

MTR's mission is to connect communities with safe, reliable, caring and environmentally friendly rail services. We also strive to generate returns from our transport operations that allow us to invest in the upgrading, expansion and innovation of our world-class rail network, thus ensuring that we can achieve sustainable growth for the Company and the markets where it operates while continuing to meet the always-evolving needs of our customers.

## CHALLENGES

In 2021, we continued to deal with the impacts of COVID-19 on our operations. Key challenges were driving domestic patronage to boost fare revenue while emphasising health and safety for passengers and staff, and managing major asset works to enhance our network and the customer experience.

## OUTLOOK

We are sanguine about the future prospects of MTR's transport operations. Domestic patronage has recovered to almost pre-pandemic levels (before the onset of the fifth wave of infections). Cross-boundary travel will eventually return, re-establishing important business links between Hong Kong and Mainland China while providing a huge boost in Cross-boundary Service and High Speed Rail ("HSR") patronage. Also, international travel restrictions will gradually ease, bringing global tourism and commerce back to the city along with higher Airport Express patronage.

We are doing everything we can to prepare for the future. Our anti-pandemic measures – including cleaning and sanitising our trains and stations regularly with robots, carrying out public awareness campaigns, providing personal protection equipment for staff, promoting vaccination programmes and more – meet or exceed global standards, and we regularly review our efforts in these regards. In the meantime, we continue to achieve world-class safety and reliability performance in our rail operations.

Meanwhile, our Corporate Strategy is transforming the way we operate by structuring our business around an environmental, social and governance ("ESG") framework with three core objectives: Greenhouse Gas Emissions Reduction, Social Inclusion, and Advancement and Opportunities. For our Transport Operations, this means providing comfortable, convenient, low-carbon rail services that are accessible and affordable for all, fostering sustainable growth for MTR and the communities it serves, and continuing to employ the latest innovations to enhance the customer experience – all while continuing to adhere to world-class standards of corporate governance.

We are also excited about our "Go Smart Go Beyond" campaign, which articulates our efforts to build a more connected, inclusive, community-centric tomorrow through innovation, smart technologies, and environmentally friendly sustainability practices. Our shareholders and stakeholders can rest assured that as soon as full services are able to resume, MTR will be ready.

## STRATEGIES

MTR continued to strive for high customer service and performance standards by ensuring the safety, comfort and reliability of its rail services and employing smart technology to enhance its transport operations. The Company also leveraged attractive marketing promotions and the opening of the full Tuen Ma Line to drive patronage, and it regularly engaged with the community and staff to promote rail safety. Renewing and upgrading the Company's railway assets to better serve the community remained a key area of focus.

## SAFETY

As a leading provider of world-class rail transport services, we make safety our number one priority. In 2021, we recorded 821 reportable events throughout our heavy rail and light rail networks, a 12% increase compared to the previous year; a figure that reflects the higher number of trips run as a result of the easing of anti-pandemic measures and the return of workers and students to offices and schools, respectively. Further details about our safety performance can be found in the Ten-Year Statistics of this Annual Report.

Our Escalator Safety Task Force introduced several campaigns and initiatives designed to promote escalator safety awareness and prevent accidents. This included trialling new step-rises featuring safety messages; launching a “T Chai” safety campaign in publicity and video materials; introducing escalator safety promotional booths; hosting elderly centre visits; and organising joint

Escalator Safety Walks with station landlords and line representatives.

The Platform Gap Incident Special Task Force carried out site visits in 2021 to identify areas where platform gap safety could be improved. We also installed flashing LED lights at the platforms of Admiralty and Kwun Tong stations during the year. In Light Rail, we installed 55 full-length platform gap fillers between November 2020 and October 2021, and the installation of 55 new fillers will commence in mid-2022.

Also during the year, we installed smart flashing bollards with flashing yellow strips at the pedestrian crossings of seven Light Rail locations as well as a smart junction at Tin Tsz Stop to enhance light rail safety. We also launched a smart tunnel system along the Tsuen Wan Line to enhance the safety of trackside works.

## PATRONAGE AND REVENUE

	Patronage in millions		Revenue HK\$ million	
	2021	Inc./(Dec.) %	2021	Inc./(Dec.) %
Domestic Service	1,421.7	24.2	11,067	19.9
Cross-boundary Service	0.5	(93.6)	5	(99.0)
High Speed Rail (“HSR”)	–	n/m	1,363	6.7
Airport Express	2.2	(30.0)	89	(36.4)
Light Rail and Bus	191.9	24.6	583	21.2
Intercity	–	n/m	–	n/m
	1,616.3	23.3	13,107	12.4
Others			70	(70.0)
Total			13,177	10.8

In 2021, total patronage for all our rail and bus passenger services increased by 23.3% to 1,616.3 million passenger trips. This was primarily due to the easing of certain anti-pandemic measures which contributed to a rise in ridership for passenger services. Average weekday patronage increased by 22.4% to 4.75 million passenger trips.

Domestic Service recorded a total patronage of 1,421.7 million in 2021, an increase of 24.2% compared to the previous year. Average weekday patronage of our Domestic Service saw a 23.0% increase to 4.2 million.

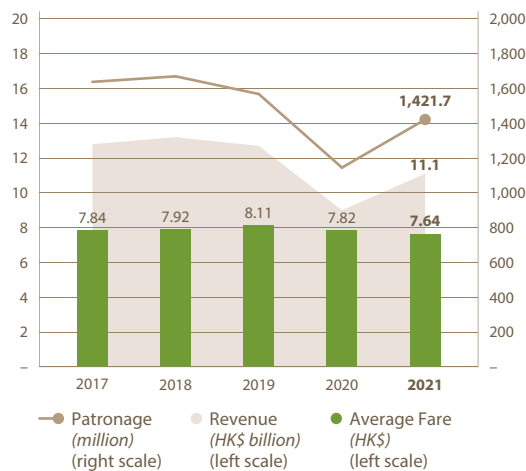
Boundary crossings between Hong Kong and Mainland China – including the crossings at Lo Wu, Lok Ma Chau and Hong Kong West Kowloon stations as well as the Intercity Through Train control point at Hung Hom Station – remained closed during the year, severely impacting the patronage of Cross-boundary Service, HSR and Intercity.

Airport Express recorded patronage of 2.2 million in 2021, a 30.0% decrease compared to 2020. This was mainly due to the continued impact on the number of air passengers by pandemic-related measures.

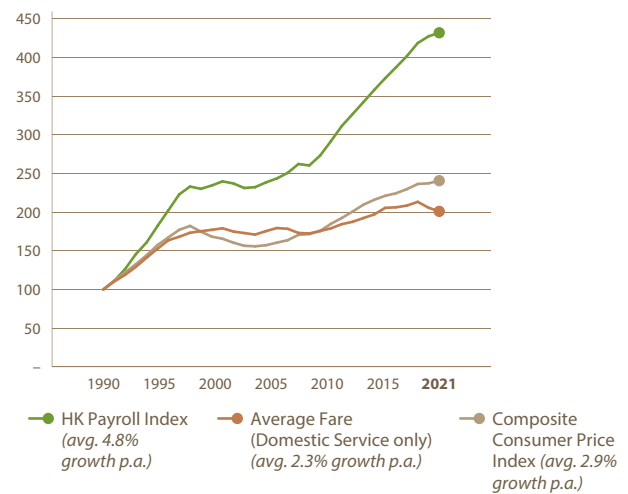
To promote the opening of the full Tuen Ma Line on 27 June 2021, MTR launched a series of marketing campaigns highlighting shorter journey times as well as the numerous leisure spots that can be accessed via the line. Coverage of the City Saver, Early Bird and Sheung Shui/Wu Kai Sha–East Tsim Sha Shui Monthly

Pass Extra was extended to the line's two new stations. The Company also offered 100,000 free domestic single-journey tickets for MTR Mobile registered users on a first-come-first-serve basis. During the year, we continued to promote these and other attractive offers through MTR Mobile. We also regularly reviewed passenger flows to optimise our train schedules for customer convenience.

## Domestic Service – Patronage and Average Fare



## Fare Trend



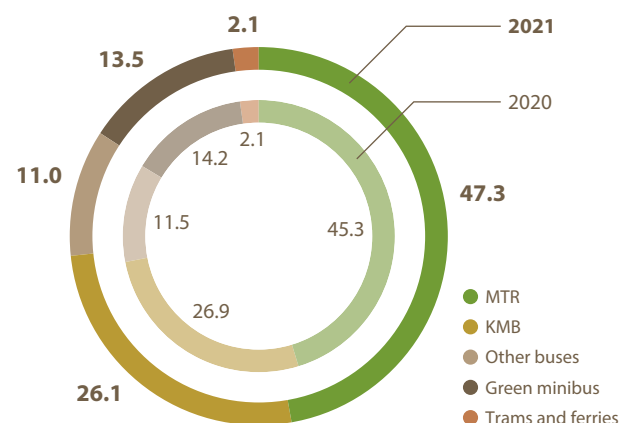
## MARKET SHARE

Our overall share of the franchised public transport market in Hong Kong in 2021 improved to 47.3% compared to 45.3% in 2020. This was due to recovery in domestic patronage, especially commuter trips, and the incremental contribution from the commissioning of the Tuen Ma Line. Our share of cross-harbour traffic was 67.6% against the 66.1% recorded in 2020.

Our Cross-boundary and HSR service registered 0% in market share of cross-boundary business due to the continued closures of boundary crossings in 2021. Our market share to and from the airport increased to 21.6% from 16.3% in 2020.

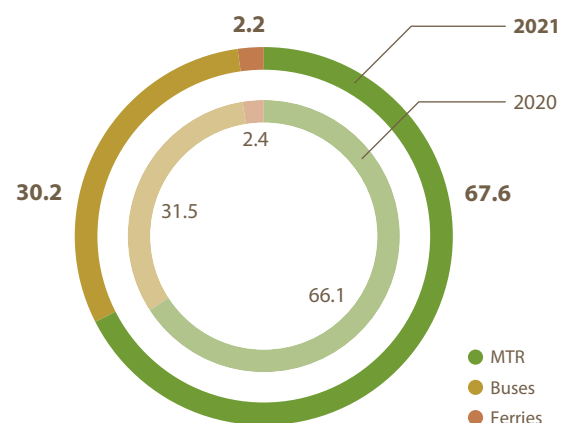
## Market Shares of Major Transport Operators in Hong Kong

(Percentage)



## Market Shares of Major Transport Operators Crossing the Harbour

(Percentage)



## FARE ADJUSTMENTS, PROMOTIONS AND CONCESSIONS

To help the community ride out the difficulties of the pandemic, we offered a 20% rebate to customers till March 2021 in conjunction with Government. On 29 March 2021, the Company announced there would be a 1.7% fare reduction under the Fare Adjustment Mechanism (“FAM”) with effect from 27 June 2021 based on the year-on-year change in the Nominal Wage Index (Transportation Section). The Company also announced additional measures to help alleviate the economic effects of the pandemic, including savings on actual fare expenses totalling around 5% for Octopus and QR code ticket users from 1 April 2021 till 1 January 2022. Together with other fare reductions and promotions, the total value of these measures was estimated at more than HK\$900 million.

On 27 June 2021, the overall adjustment rate of MTR fares for 2021/2022 according to the FAM was revised to -1.85% based on the revised year-on-year percentage change in the Composite Consumer Price Index. At the

same time, we introduced an additional rebate of 3.8%, implying that customers could continue to enjoy a saving of approximately 5% on actual fares till 1 January 2022. The Company later announced that the rebate of 3.8% had been further extended to late June 2022.

The Company offered a HK\$100 discount on “MTR City Saver” and “Monthly Pass Extra” until June 2021 as part of its COVID-19 economic relief package. On 27 June 2021, the Company announced it would continue to offer a HK\$50 flat reduction on Monthly Pass Extra from July to December 2021 and on MTR City Saver from 1 July 2021 to 1 January 2022. The 35%-off “Early Bird Discount Promotion” was extended until 31 May 2022.

As part of its objective to promote Social Inclusion under its ESG framework, the Corporation offered over HK\$2.2 billion in on-going fare concessions to the elderly, children, eligible students and persons with disabilities in 2021.



## SERVICE PERFORMANCE

Meeting its objective to deliver world-class reliability, MTR attained 99.9% train service delivery and passenger journeys on-time in 2021 despite the challenges of operating in a pandemic environment, exceeding the targets set in the Company's Operating Agreement and its own even more demanding Customer Service Pledges. Train service delivery is a measure of the actual train trips run against those scheduled to be run. Passenger journeys on-time is a measure of all passenger journeys completed within five minutes of their scheduled journey times.

In 2021, more than 4,600 train trips per day (and around 760,000 car-km per day) were made on our heavy rail network, and more than 2,600 trips per day (and around 28,000 car-km per day) were made on our light rail network. There were 16 delays on the heavy rail network and no delays on the light rail network; delays are defined as those lasting 31 minutes or more and attributable to factors within the Company's control. The light rail network continued its record dating back to 2019 of no delays lasting 31 minutes or more and attributable to factors within the Company's control. Regarding an incident in December at Causeway Bay Station when a set of train doors was dislodged after an advertising panel component became displaced, we took swift action to eliminate the risk by removing the concerned type of panels. The Company is also implementing the improvement measures recommended in the investigation report released in January 2022. As always, MTR places the highest priority on passenger safety.

MTR carries out regular surveys and research to assess customer satisfaction levels regarding its services and fares. The results of these are published in the Company's Service Quality Index and Fare Index, respectively.

Service Quality Index	2021	2020
Domestic and Cross-boundary services	66 <sup>^</sup>	64 <sup>^</sup>
Airport Express	N/A*	N/A*
Light Rail	63	62
Bus	74	75
HSR	N/A*	N/A*

Fare Index	2021	2020
Domestic and Cross-boundary services	62 <sup>^</sup>	59 <sup>^</sup>
Airport Express	N/A*	N/A*
Light Rail	61	61
Bus	72	74
HSR	N/A*	N/A*

<sup>^</sup> This only measured Domestic Service as the Cross-boundary services of Lo Wu and Lok Ma Chau have been closed since early February 2020.

\* The Voice of Customer surveys for Airport Express and HSR have been suspended since 2020 due to the COVID-19 pandemic.

MTR belongs to The Community of Metros ("COMET"), which establishes performance benchmarks from urban metro systems around the world with the aim of improving industry best practices. The 2020 COMET benchmarking exercise assessed data from 42 metro systems and results can be found in the "Performance Metrics" section of our sustainability website.

## ENHANCING THE CUSTOMER EXPERIENCE

Following the introduction of its Corporate Strategy in 2020, MTR has been more focused than ever on delivering a world-class customer experience in accordance with strong environmental, social and governance principles. In 2021, MTR launched its "Go Smart Go Beyond" campaign, which shares its vision for a future where innovation and sustainability combine to lift rail transport to even greater heights of comfort, inclusivity and environmental friendliness. The Company also remains firmly committed to enhancing its local network. In 2021, MTR invested a total of more than HK\$10.8 billion to maintain, upgrade or replace the Company's Hong Kong railway assets.

### Boosting Passenger Convenience

On 27 June 2021, we announced the opening of the longest railway line in Hong Kong. Approximately 56 km long and covering 27 stations, the full Tuen Ma Line comprises six interchange stations that link passengers to the East Rail, Kwun Tong, Tung Chung and Tsuen Wan lines for greater connectivity than ever. With new stations at Sung Wong Toi and To Kwa Wan, it also extends MTR's railway network to Kowloon City. To build awareness and encourage ridership, the Company launched a series of marketing campaigns highlighting the shorter journey times and access to leisure attractions made possible by

## Operations Performance in 2021

Service Performance Item	Performance Requirement	Customer Service Pledge Target	Actual Performance
<b>Train service delivery</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line and South Island Line <sup>(1)</sup>	98.5%	99.5%	<b>99.9%</b>
– Tung Chung Line, Disneyland Resort Line and Airport Express <sup>(1)</sup>	98.5%	99.5%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	98.5%	99.5%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.5%	99.5%	<b>99.9%</b>
– Tuen Ma Line <sup>(4)</sup>	N/A	N/A	<b>N/A</b>
– Light Rail	98.5%	99.5%	<b>99.9%</b>
<b>Passenger journeys on-time</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line and Disneyland Resort Line	98.5%	99.5%	<b>99.9%</b>
– Airport Express	98.5%	99.0%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	98.5%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.5%	99.0%	<b>99.9%</b>
– Tuen Ma Line <sup>(4)</sup>	N/A	N/A	<b>N/A</b>
<b>Train punctuality</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line and South Island Line <sup>(5)</sup>	98.0%	99.0%	<b>99.8%</b>
– Tung Chung Line, Disneyland Resort Line and Airport Express <sup>(6)</sup>	98.0%	99.0%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	98.0%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.0%	99.0%	<b>99.9%</b>
– Tuen Ma Line <sup>(4)</sup>	N/A	N/A	<b>N/A</b>
– Light Rail	98.0%	99.0%	<b>99.9%</b>
<b>Train reliability: train car-km per train failure causing delays ≥5 minutes</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	N/A	800,000	<b>4,509,944</b>
– East Rail Line, Tuen Ma Line Phase 1, West Rail Line and Tuen Ma Line <sup>(7)</sup>	N/A	800,000	<b>5,432,499</b>
<b>Ticket reliability: smart ticket transactions per ticket failure</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line, Airport Express, East Rail Line, Tuen Ma Line Phase 1, West Rail Line and Tuen Ma Line <sup>(7)</sup>	N/A	10,500	<b>34,511</b>
<b>Add value machine reliability</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	98.0%	99.0%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	98.0%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.0%	99.0%	<b>99.9%</b>
– Tuen Ma Line	98.0%	99.0%	<b>99.9%</b>
<b>Ticket machine reliability</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	97.0%	99.0%	<b>99.8%</b>
– East Rail Line <sup>(2)</sup>	97.0%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	97.0%	99.0%	<b>99.8%</b>
– Tuen Ma Line	97.0%	99.0%	<b>99.8%</b>
– Light Rail <sup>(8)</sup>	N/A	N/A	<b>N/A</b>
<b>Ticket gate reliability</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	97.0%	99.0%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	97.0%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	97.0%	99.0%	<b>99.9%</b>
– Tuen Ma Line	97.0%	99.0%	<b>99.9%</b>
<b>Light Rail platform Octopus processor reliability<sup>(9)</sup></b>	N/A	N/A	<b>N/A</b>
<b>Escalator reliability</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	98.0%	99.0%	<b>99.9%</b>
– East Rail Line <sup>(2)</sup>	98.0%	99.0%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.0%	99.0%	<b>99.9%</b>
– Tuen Ma Line	98.0%	99.0%	<b>99.9%</b>
<b>Passenger lift reliability</b>			
– Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express	98.5%	99.5%	<b>99.8%</b>
– East Rail Line <sup>(2)</sup>	98.5%	99.5%	<b>99.9%</b>
– West Rail Line <sup>(3)</sup>	98.5%	99.5%	<b>99.9%</b>
– Tuen Ma Line	98.5%	99.5%	<b>99.9%</b>
<b>Temperature and ventilation</b>			
– Trains, except Light Rail: to maintain a cool, pleasant and comfortable train environment generally at or below 26°C	N/A	97.5%	<b>99.9%</b>
– Light Rail: on-train air-conditioning failures per month	N/A	<3	<b>0</b>
– Stations: to maintain a cool, pleasant and comfortable environment generally at or below 27°C for platforms and 29°C for station concourses, except on very hot days	N/A	93.0%	<b>99.8%</b>
<b>Cleanliness</b>			
– Train compartment: cleaned daily	N/A	99.0%	<b>99.9%</b>
– Train exterior: washed every two days (on average)	N/A	99.0%	<b>100%</b>
<b>Northwest transit service area bus service</b>			
– Service Delivery	N/A	99.0%	<b>99.7%</b>
– Cleanliness: washed daily	N/A	99.0%	<b>100%</b>
<b>Passenger enquiry response time within six working days</b>	N/A	99.0%	<b>100%</b>

## Operations Performance in 2021 (continued)

### Notes:

- <sup>1</sup> The figure reflects the actual performance for the period between 27 June and 31 December 2021. The performance of Kwun Tong Line, Tsuen Wan Line, Island Line, Tseung Kwan O Line, South Island Line, Tung Chung Line, Disneyland Resort Line and Airport Express for the period between 1 January and 26 June 2021 was 99.9%.
- <sup>2</sup> The figure includes the performance of Tuen Ma Line Phase 1 for the period between 1 January and 26 June 2021.
- <sup>3</sup> The figure reflects the actual performance for the period between 1 January and 26 June 2021.
- <sup>4</sup> The performance requirement, customer service pledge target and actual performance result will be available upon completion of two-year revenue operations.
- <sup>5</sup> The figure includes the performance of Tung Chung Line and Disneyland Resort Line for the period between 1 January and 26 June 2021.
- <sup>6</sup> The figure reflects the actual performance for the period between 27 June and 31 December 2021. The performance of Airport Express for the period between 1 January and 26 June 2021 was 99.9%.
- <sup>7</sup> The figure includes the performance of Tuen Ma Line Phase 1 and West Rail Line for the period between 1 January and 26 June 2021, as well as the performance of Tuen Ma Line for the period between 27 June and 31 December 2021.
- <sup>8</sup> Repair works on damaged Light Rail Ticket Machines are underway. Performance data will be available after completion of repair and testing works.
- <sup>9</sup> Light Rail Platform Octopus Processor replacement works and testing are underway. Performance data will be available after completion of installation, testing and trial operations of the new processors.

the Tuen Ma Line. We also gave MTR Mobile registered users the chance to experience the line, offering 100,000 free single-journey tickets on a first-come-first-serve basis.

In 2021, COVID-19 prevention measures such as work-from-home arrangements, social distancing measures and travel restrictions continued to affect the frequency of our train services. To meet passenger demand and deliver the highest level of service convenience possible during this difficult period, we monitored the situation on a regular basis and adjusted our non-peak train service accordingly.

## Great Comfort for Passengers

### New Trains

MTR has ordered 93 new eight-car heavy rail trains to upgrade the fleet and replace older trains for an enhanced customer experience. As at 31 December 2021, 13 new eight-car heavy rail trains had been delivered to Hong Kong. The new fleet will be put into passenger service in stages over the next few years starting 2022.

### New Light Rail Vehicles

The Company has ordered 40 new light rail vehicles (“LRVs”) to replace older vehicles and expand its fleet. As at 31 December 2021, 20 new LRVs had been delivered to Hong Kong, of which 12 had been put into passenger service.

### Replacement of Air Conditioning Systems

Our programme to replace approximately half of our chillers with newer, more energy-efficient models continued throughout our stations and depots. As at 31 December 2021, 121 chillers in 26 stations and four depots were replaced with 105 newer, more efficient



units. All replacement work for 154 chillers is expected to be completed by 2023, enabling passengers to enjoy even more comfortable train and station environments and contributing to greener operations with savings of 15,000 tonnes of carbon emissions per year.

### Upgrading of Signalling System

In 2021, we continued with the project to replace the existing signalling system (“SACEM System”) on our four urban lines (Island, Tseung Kwan O, Kwun Tong and Tsuen Wan lines). A total of approximately HK\$2.4 billion has been incurred under such project as at 31 December 2021.

While the replacement of the signalling hardware along our tracks has been progressing well, the contractor is taking longer than expected to complete the software





safety assurance processes required by the Corporation, due to the technical complexities involved and the pandemic situation. This work is of critical importance to assure the safety of the new signalling system and we shall continue to work closely with the contractor to progress the project.

Taking into account the significant challenges encountered in the signalling replacement project in terms of programme and costs, we have:

- taken steps to ensure that the programme to bring in the new trains can proceed as planned (by equipping the trains in stages with the SACEM System) and the first of the 93 new trains is expected to come into service in 2022;
- embarked upon certain asset replacements in the SACEM System, so as to be able to continue to provide quality and reliable train services in the short term; and
- started to study options and their associated costs, including the possibility of upgrading the existing SACEM System for the long run as a possible alternative to the full implementation of the new signalling system.

### Enhancing Station Facilities

Making our trains and stations comfortable and accessible is an important part of our efforts to enhance the customer experience and promote social inclusivity. Anticipating high traffic along the newly opened full Tuen Ma Line, MTR has introduced passenger information display systems at Tuen Ma Line station platforms featuring real-time passenger loading information that allows passengers to locate less-crowded train cars. In 2021, we also extended waiting time information displays to six major interchange stations, including Prince Edward, Mong Kok, North Point, Yau Tong, Kowloon Tong and Tai Wai stations. By providing such information to passengers, we can help improve the comfort and convenience of their journeys while reducing crowding and long queues at platforms.

By the second quarter of 2022, we expect to complete the first batch of toilet installation works. Toilets and baby care rooms are available at the new To Kwa Wan and Sung Wong Toi stations along the Tuen Ma Line; it is our intention to have such facilities available at all stations of future new lines. The new public toilets and baby care room at Tsim Sha Tsui Station are slated to open in the second quarter of 2022. We have also begun trialling smart toilet facilities at Central Station.

In 2021, we refurbished 30 escalators throughout our heavy rail network to ensure safe operations and a comfortable riding experience for passengers. We also installed two new escalators at Tung Chung Station. The refurbishment of five more escalators is scheduled to be completed in the first quarter of 2022. Also during the year, we equipped 125 lifts in 58 stations with lift button sensors to provide a hygienic option for passengers when accessing stations.

In line with our efforts to reduce plastic waste and protect the environment, we continued our free drinking water dispenser installation programme in 2021 by focusing on interchange stations and those close to gathering points for hikers. 12 dispensers were put into service, and six more are scheduled to be added in 2022.

To promote age-friendly travel, enhance comfort and facilitate way-finding, we installed more platform seats at 17 heavy rail stations and added station names at all Customer Service Centres throughout the network in 2021. During the year, we also repainted platforms and replaced platform seats at 17 light rail stops. Works for the remaining 37 light rail stops are expected to be completed by 2025.

MTR supported the Hong Kong Fire Services Department's initiative to promote the use of automated external defibrillators to save lives by providing additional units at public areas of stations.

## Enhancing Passenger Journeys Through Technology

### Smart Mobility

Innovation is key to our delivery of world-class customer service and a core focus of our Corporate Strategy and "Go Smart Go Beyond" campaign. Earlier this year, we made a number of enhancements to our constantly evolving MTR Mobile app for greater passenger convenience. The introduction of QR code tickets enables passengers to pay fares via e-payment platforms by tapping entry and exit gates for contactless access. "Next Train" now includes estimated train arrival times for the full Tuen Ma Line, as well as the next two Light Rail trains. "Waiting Time Indicator" has been enhanced to cover six major interchange stations. "Book Taxi" lets customers hail taxis, while the new "Next Bus" function lets users see the estimated arrival times of public franchise buses

and green minibuses in addition to MTR buses. Together, these new features allow customers to complete their trip planning and access information on a single platform.

The Online Lost Property Platform launched in June 2021 provides a round-the-clock, self-service digital interface for customers to report lost items and enquire about the latest handling status. In September 2021, we also launched the fully digitalised Student Travel Scheme that allows applicants to submit applications via MTR Mobile and activate their student status via Octopus instead of having to visit a Customer Service Centre in person.

### Smart Operations and Maintenance

Technology plays a key role in helping MTR make regular enhancements to the Company's operations and maintenance for smoother, more reliable railway performance. Our award-winning Smart Train Planning artificial intelligence platform, which can optimise train deployment through big data analysis, will be extended to the Tuen Ma Line in 2022. Meanwhile, image recognition technology boosts our smart asset management efforts by allowing us to identify issues quickly and alert maintenance teams to prevent escalation of failure. We are continuing trials along the Tuen Ma Line for our Smart Train Roof and Pantograph Monitoring System, which uses such technology to identify potential anomalies on train pantographs and roofs.

MTR also continues to lead the way in the use of robotics and automation for more efficient operations. During the year, drone technology helped facilitate the inspection of high or hard-to-reach locations. We also continued to employ robots in a variety of areas; for example, making structural scans of tunnels for faster identification of defects, cleaning stations and depots, and performing customer service and safety awareness functions.

