



CONNECTING  
COMMUNITIES  
TO NEW JOURNEYS

SMRT TRAINS LTD. | OPERATIONS REVIEW 2020

## Our Vision

Moving People,  
Enhancing Lives



## Mission

To deliver a  
public transport  
service that is  
safe, reliable and  
commuter-centric

## Core Values



Integrity



Service & Safety



Excellence

SMRT Trains Ltd. (SMRT Trains) is the pioneer Mass Rapid Transit operator in Singapore. Since 1987, we have provided safe and convenient transport services to millions of commuters, and have contributed to the vibrancy of our urban landscape.

Today, we operate and maintain the North-South and East-West Lines, the Circle Line, the new Thomson-East Coast Line and the Bukit Panjang Light Rail Transit system. Our lines cover over 148km of rail tracks across 108 stations.

We are committed to enhancing our rail capability and deepening our engineering expertise to deliver a best-in-class transport service that is safe, reliable and customer-centric.

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# MILESTONES

1987

- ▶ Singapore Mass Rapid Transit (MRT) is incorporated.
- ▶ Singapore's first MRT system begins operations with inaugural service between Yio Chu Kang and Toa Payoh on the North-South Line (NSL).

1988

- ▶ Fifteen more stations open and the MRT system is officially launched by Singapore's first Prime Minister, the late Mr Lee Kuan Yew.

1990

- ▶ Boon Lay MRT station on the East-West Line (EWL) opens, marking the completion of the system.

1996

- ▶ The NSL is extended to Woodlands, completing the loop.

1999

- ▶ Singapore's first light rail system, the Bukit Panjang Light Rail Transit (LRT), opens for passenger service.

2000

- ▶ SMRT Corporation Ltd (SMRT Corp) is listed on Singapore Exchange (SGX).

2001

- ▶ SMRT Corp launches its Learning Journey Programme in collaboration with the Ministry of Education.

2002

- ▶ Changi Airport MRT Station opens.

2005

- ▶ Raffles Xchange, the first MRT station to be redeveloped for transit retail, is launched.

2008

- ▶ 'SMRT is Green' is launched organisation-wide as a commitment to environmental sustainability.
- ▶ Choa Chu Kang Xchange, SMRT's first transit retail development in the heartlands, opens.

2009

- ▶ SMRT Corp achieves ISO 14001 certification for its Environmental Management System.
- ▶ Singapore's fourth rail line, Circle Line (CCL), commences service from Bartley to Marymount.

2011

- ▶ Train Service from Caldecott to HarbourFront CCL stations commences, marking the completion of the line.

2012

- ▶ Train service from Bayfront to Marina Bay CCL stations commences.

2013

- ▶ SMRT Trains embarks on a multi-year Sleeper Replacement Project to improve journey times and provide commuters with a smoother ride.
- ▶ Woodlands MRT station is the first MRT station in Singapore to be awarded the Building and Construction Authority's Green Mark (Gold).
- ▶ SMRT Trains embarks on a holistic network-wide predictive maintenance regime on the North-South and East-West Lines (NSEWL), with introduction of new technologies.

2014

- ▶ SMRT Trains crosses the landmark of 10 billion passenger journeys carried.
- ▶ SMRT Trains introduces Adopt-A-Station, a community outreach programme with local schools.

2015

- ▶ SMRT celebrates SG50 with free travel on SMRT trains and buses.
- ▶ The SMRT Trains Engineering Programme is launched to develop a sustainable pipeline of engineering professionals.

2016

- ▶ The JurongHealth Mobility Park, sponsored by SMRT, is the first of its kind in Singapore where life-size public transportation models help with patients' rehabilitation.
- ▶ Seven SMRT Trains engineers are accredited as Singapore's first Chartered Engineers in Railway and Transportation Engineering.
- ▶ SMRT Trains transitions to the New Rail Financing Framework on 1 October, following shareholders' vote at the Extraordinary General Meeting on 29 September.
- ▶ SMRT Corp is delisted from SGX on 31 October.
- ▶ Sleeper replacement works on the NSL and EWL are completed.

2017

- ▶ Trial of the new signalling system on the NSL begins.
- ▶ The Tuas West Extension opens, adding four new stations on the EWL.
- ▶ SMRT Trains is awarded the Thomson-East Coast Line (TEL) contract to operate and maintain the line in stages from 2019 for an initial nine-year period. TEL will add 43km and 32 new stations to the existing train network.

- ▶ The power rail replacement works on the NSEWL are completed.

- ▶ SMRT Trains celebrates 30 years of MRT operations.

- ▶ Stations along the NSL and EWL experience early closure, late opening and full day closure to facilitate renewal and maintenance works.

2018

- ▶ SMRT and LTA commence works to renew and enhance the power supply system on the NSEWL.
- ▶ SMRT launches first C151 trains from Bishan Depot.
- ▶ Renewal works for the Bukit Panjang LRT system commence

2019

- ▶ SMRT, with the support of LTA, **RELOCATES THE NSEWL OCC** at Victoria Street to Kim Chuan Depot.
- ▶ SMRT achieves **MKBF OF 1,000,000 TRAIN-KM** on all three lines.
- ▶ The new **CANBERRA MRT STATION** on North-South Line (NSL) opens for service.

2020

- ▶ The **43KM THOMSON-EAST COAST LINE (TEL)** opens and will eventually have 32 new stations.
- ▶ SMRT Trains signed a contract with Bombardier Transportation (BT) for the provision of **LONG-TERM SERVICE SUPPORT FOR THE 106 BOMBARDIER MOVIA TRAINS** which will be used for the NSEWL.

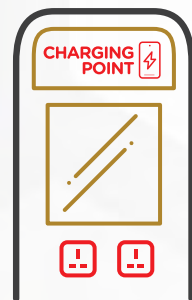
# AT A GLANCE

## IMPROVING COMMUTER EXPERIENCE

We aim to provide greater convenience and comfort to commuters throughout their journeys.

### CUSTOMER SERVICE INITIATIVES

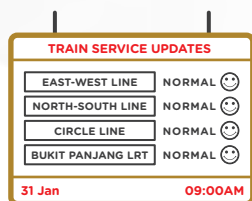
#### In Stations



**CHARGING POINTS**  
with digital screens



**PRIORITY QUEUES**  
for commuters with needs  
at elevators



**ELECTRONIC  
DISPLAYS**  
show train service  
updates



**DIAPER CHANGING  
STATIONS** in most  
handicapped toilets  
along the Circle Line

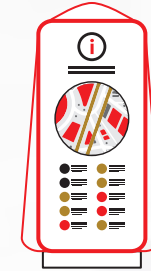


**MUSIC IN STATIONS**  
for better ambience and  
to delight commuters



**FESTIVE EVENTS**  
to celebrate occasions  
with our commuters

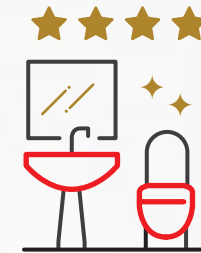
#### In Stations



**iSTANDS**  
for quick and  
easy access  
to vital  
information



**QR-EMBEDDED  
POSTERS** with  
information on  
alternative travel  
options



All the toilets in  
our stations have  
attained the  
**GOOD RESTROOM  
GRADING** of four  
stars, awarded by the  
Restroom Association  
(Singapore).



**SHARED-  
UMBRELLA  
SERVICES**  
are available at  
24 OF OUR  
STATIONS.



**DEMENTIA  
GO-TO POINTS**  
at selected stations  
where those with  
dementia, or anyone  
who sees a person  
with dementia, can  
seek help.

#### In Trains



**STARiSM™**  
(SMRT Active Route Map  
Information System)  
provides real-time travel  
information in trains



## CUSTOMER SERVICE INITIATIVES

### At Passenger Service Centres



**CARE STICKERS**  
for commuters who  
require special care

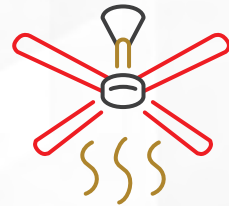


**DIGITAL DISPLAYS**  
to update commuters  
on train services and  
provide answers to  
common queries

### On Platforms



**CARE ZONES**  
for commuters who  
need assistance



**FANS** for improved  
ventilation

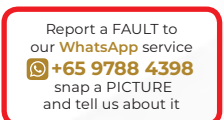
### On the Go



**SMRTCONNECT**  
is a multi-modal journey  
planner app that  
provides real-time train  
and bus arrival timings,  
as well as detailed station  
information within  
the SMRT network



**E-TRAVEL CHIT**  
for greater  
convenience in  
obtaining a  
proof-of-travel  
during a disruption



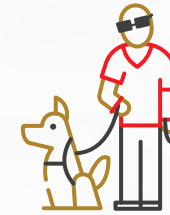
**SNAP-REP**  
(Snap and Report)  
lets commuters report  
technical defects in the  
network via WhatsApp



**SMRT'S TWITTER  
FEED** provides live  
travel advice and  
updates

## ACCESSIBILITY

### For Visually Impaired Commuters



**GUIDE DOGS**  
are allowed in stations  
and onboard trains

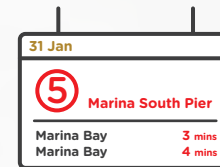


**TACTILE GROUND  
SURFACE INDICATORS**  
throughout the stations



Lift buttons with  
**BRaille PLATES**

### For Hearing Impaired Commuters



**PLASMA DISPLAYS**  
at platforms indicate  
train arrival times

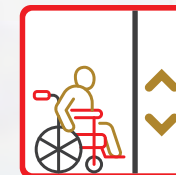


**FLASHING RED  
'DOOR CLOSING'**  
lights at train doors

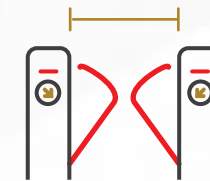


**FLUORESCENT  
DISPLAYS** in trains provide  
multi-language messages

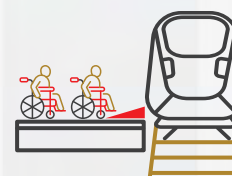
### For Commuters in Wheelchairs



**WHEELCHAIR-  
ACCESSIBLE  
ELEVATORS**

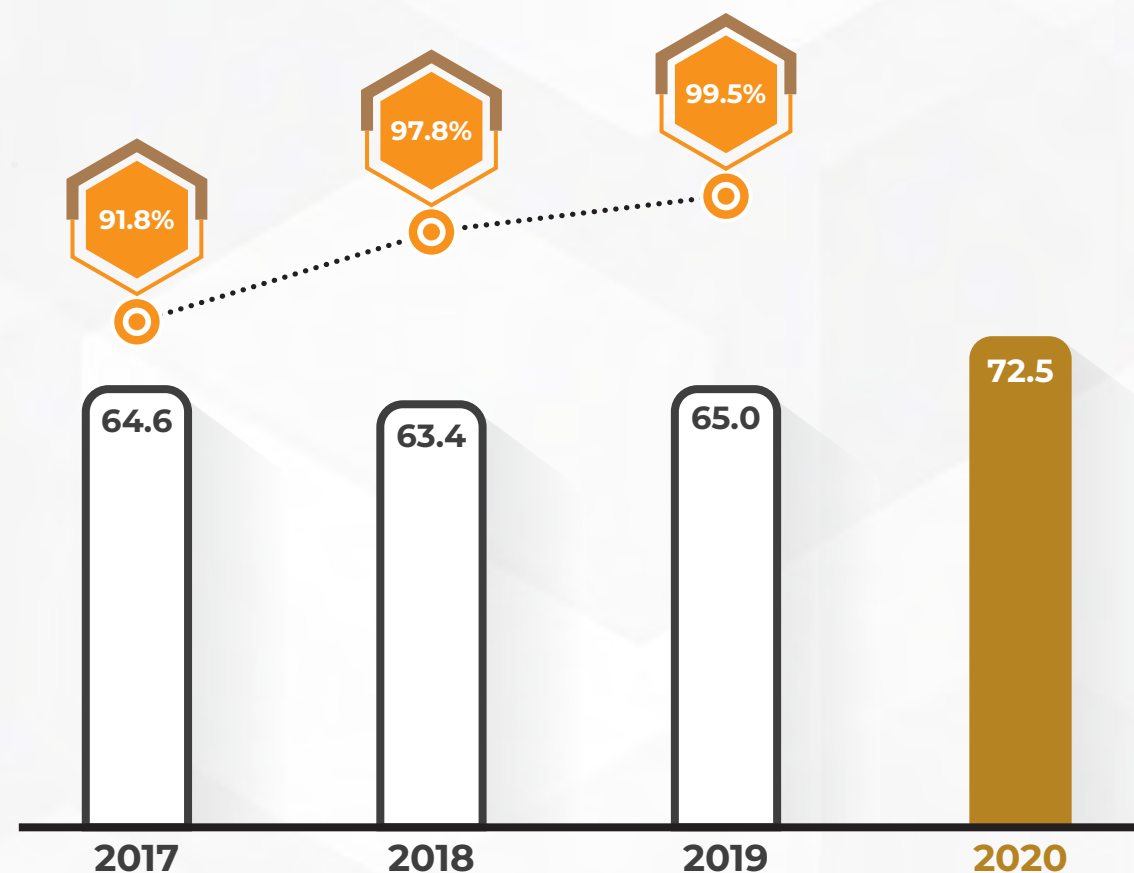


**BARRIER-FREE  
ENTRANCES AND  
WIDER FARE GATES**



**WHEELCHAIR-  
ACCESSIBLE TRAIN  
CARRIAGES** allow for  
two wheelchairs per train

## CUSTOMER SATISFACTION\*



\* Figures updated as at September 2020.



The Public Transport Customer Satisfaction Survey (PTCSS) by the Public Transport Council measures the percentage of commuters who are satisfied with our service and have indicated a score of 6 and above on a scale of 1 to 10



Customer Satisfaction Index of Singapore (Average score 0-100) by the Institute of Service Excellence, Singapore Management University

## DO YOU KNOW ?



Our Twitter feed is one of the most active in Singapore, with close to

**480,000** FOLLOWERS

## SMRTConnect 3.0 APP

was launched in 2018 with enhanced features such as train frequency indicator and better user interface.

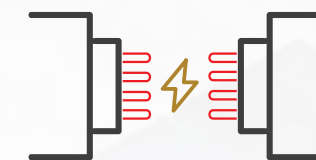


## IMPROVING RELIABILITY

Our renewal works on the North-South and East-West Lines (NSEWL) will reduce the incidences of delays and breakdowns, resulting in smoother rides.

## OUR RENEWAL WORKS

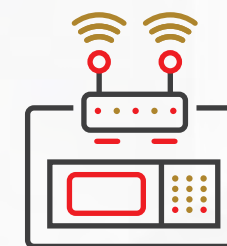
### Power Rail Replacement



Improves the reliability of the electrical system, **LEADING TO FEWER BREAKDOWNS**



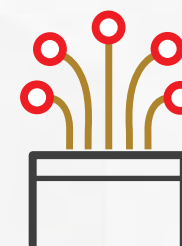
### Re-signalling



Communications-Based Train Control signalling system allows trains to run at shorter intervals, substantially **IMPROVING TRAIN CAPACITY**



### Power Supply System Renewal



Fibre optic cables help transmit monitoring information in real-time, **ALLOWING SYSTEM TO BETTER PREDICT FAULTS**



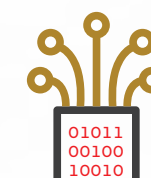
## DO YOU KNOW ?

The power supply cable renewal involves about



**1,300km** of power cables

AND



**250km** of fibre optic cables located along the NSEWL's tracks.



## OUR RENEWAL WORKS

### Adding New Trains

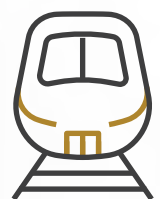


**ALL 57  
NEW TRAINS**  
have been delivered

Trains progressively put  
into service from  
**APRIL 2017**



### Replacement of Trains



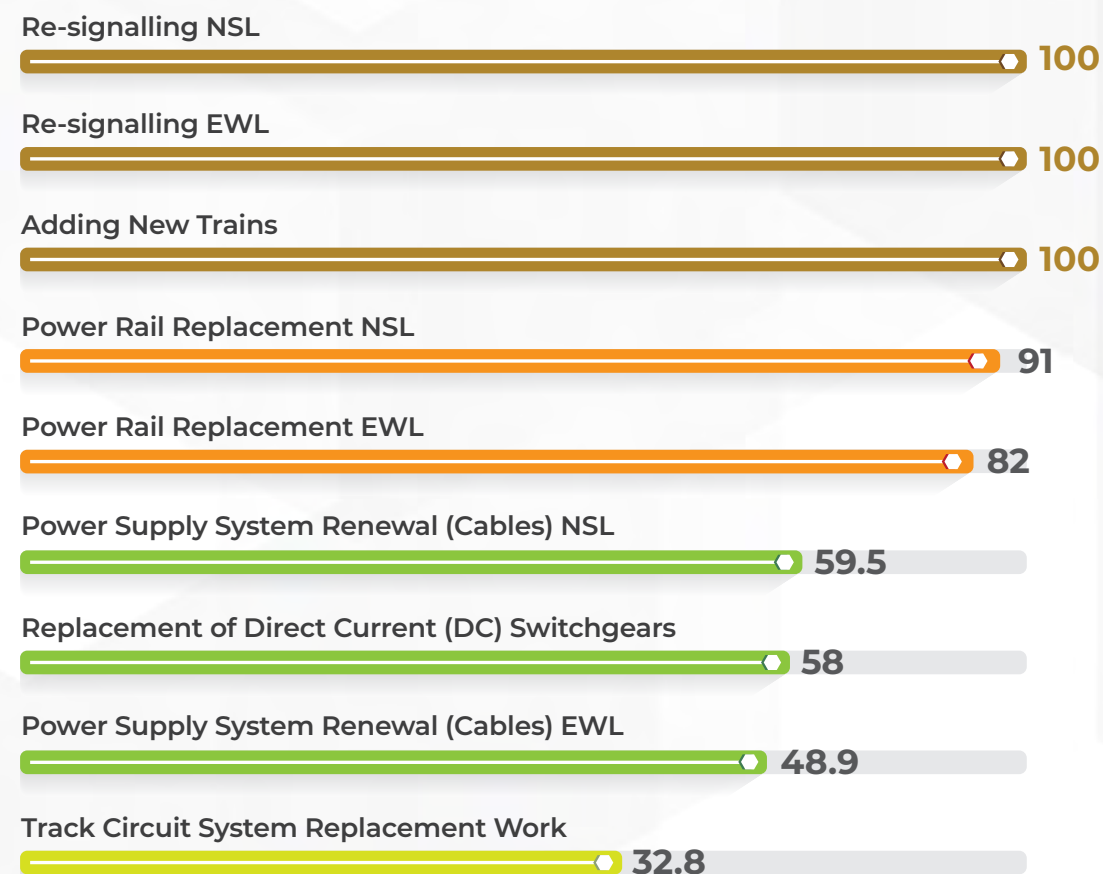
Train fleet to be replaced with

**106 NEW  
BOMBARDIER  
TRAINS**



Correct as of end March 2020

### Stage of Completion (%)



Correct as of end March 2020

## OUR PERFORMANCE

### How We Measure Reliability

We measure the number of kilometres clocked before incurring a single delay lasting more than 5 minutes. This is referred to as Mean Kilometres Between Failure (MKBF) or MKBF\* for short. Here is the 12-month moving average up to July 2020.



**28,955  
TIMES**

along the entire  
North-South Line



**35,190  
TIMES**

along the entire  
East-West Line



**66,457  
TIMES**

along the entire  
Circle line

# IMPROVING CONNECTIVITY

Our network will expand to include more lines and stations over the next five years.

## THOMSON-EAST COAST LINE



The line will be opening in stages:



**32** stations and  
**43km**  
when fully operational

Fully underground, driverless system

## CANBERRA STATION

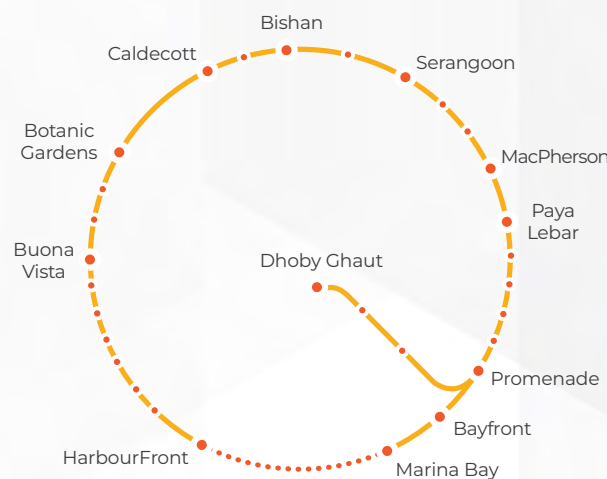


**OPENED IN NOVEMBER 2019**  
**SECOND MRT STATION**  
in Singapore to be built on an existing rail line

**5 ENTRANCES** linking to the new housing estates

Commuters can access the train platform directly through an **ELEVATED LINK BRIDGE**

## CIRCLE LINE LOOP



Circle Line completion date  
**2025**

**3 NEW STATIONS:**  
KEPPEL, CANTONMENT AND PRINCE EDWARD

for better access to the Central Business District, Marina Bay Area and HarbourFront

# NURTURING OUR PEOPLE

We are growing and upskilling our workforce to serve our commuters in the best possible way.

## SECURING TALENT



WE HAVE  
**>540**  
ENGINEERS



STAFF STRENGTH IS NOW  
**5,980**

AND  
**>3,300**  
MAINTENANCE  
WORKERS

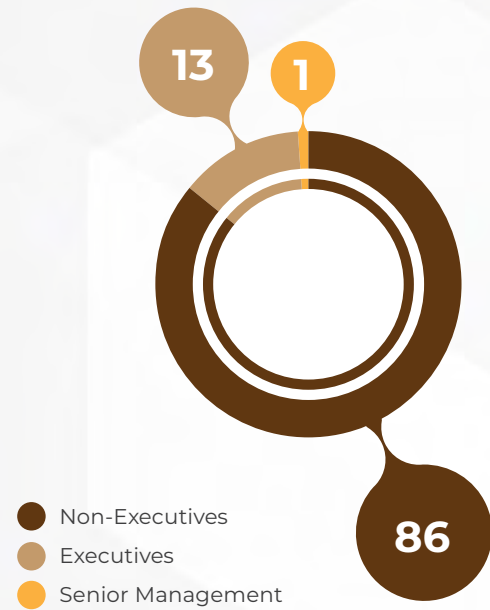


\*Correct as of end March 2020



## WORKFORCE PROFILE

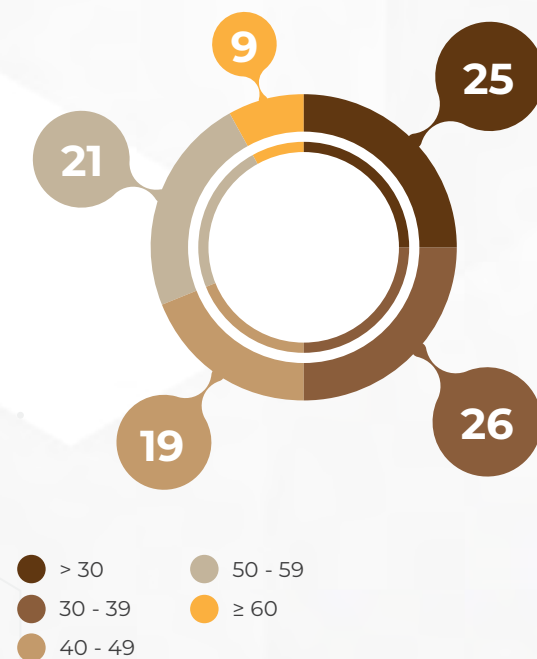
### Distribution by Employee Category (%)



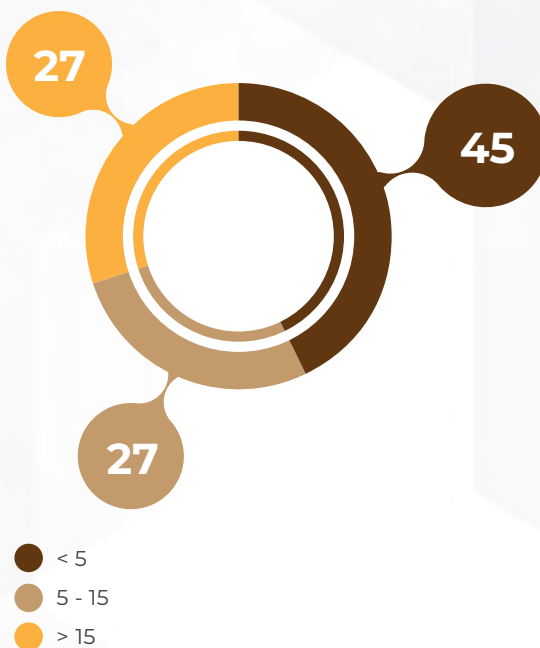
### Distribution by Gender (%)



### Staff Profile by Age (%)



### Staff Profile by Completed Years of Service (%)



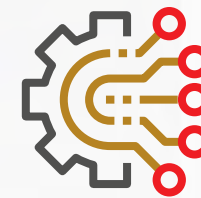
\*Correct as of end March 2020

## STAFF PROGRAMMES



### SMRT Rail Career Roadmap

Builds competencies through systematic training and experience



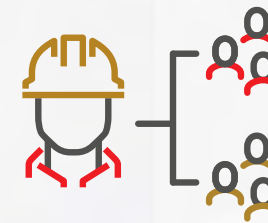
### SMRT Trains Career Scheme

Identifies skills, knowledge and experience that employees need to develop each stage of their career



### SMRT Train Engineer Professionalisation (STEP) Programme

Attracts, develops and professionalises rail engineers with Chartership awarded by the Institution of Engineers, Singapore



### Engineering Maintenance Manager Scheme

Attracts, develops and retains top engineering talent in frontline maintenance



### Partnership with University of Birmingham

Offers Post Graduate Certificate In Urban Railway Engineering (Singapore)

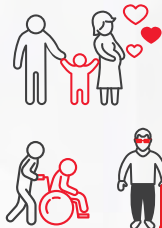
# SERVING OUR COMMUNITY

We are committed to conducting our business in a socially and environmentally responsible way, balancing the interests of our stakeholders, from commuters to employees to business partners.

## Social Responsibility



**ADDRESS RESIDENTS' CONCERNS AND FEEDBACK** through engagement with community leaders



**FAMILIARISATION TOURS** bring together groups of beneficiaries to discuss improvements to the **INCLUSIVITY FEATURES** at our stations.

## Empowering Through The Arts And Education



Art in Transit tours conducted for **ABOUT 10,000 PARTICIPANTS**



**1,000 joined LEARNING JOURNEY**

## Our People



In 2019, SMRT launched the **SMRT FACES** programme where selected senior level staff are appointed to **FOSTER RELATIONSHIPS** with key stakeholders in the community.



In partnership with the People's Association (PA) and LTA, the **STATION AUDIT INITIATIVE** engages community leaders as well as selected groups of commuters for feedback to improve our stations.

## Environmental Responsibility



**ENERGY CONSERVATION** through installation of **LED LIGHTING** and **DISTRICT COOLING**



Use of recycled water at five train washing plants, **SAVING APPROXIMATELY 160,000 LITRES PER MONTH**

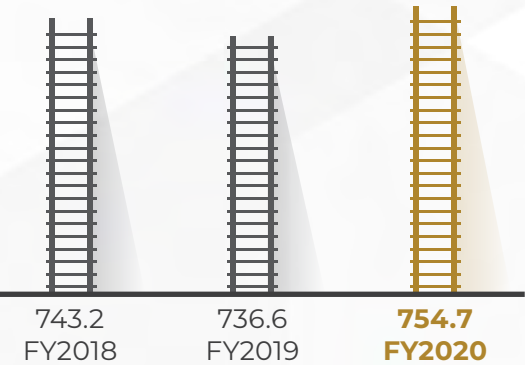


Eliminate, reuse and recycle waste. **CLOSE TO 1,600 TONNES** of scrap metal sent for recycling

# KEY FINANCIAL AND OPERATING DATA

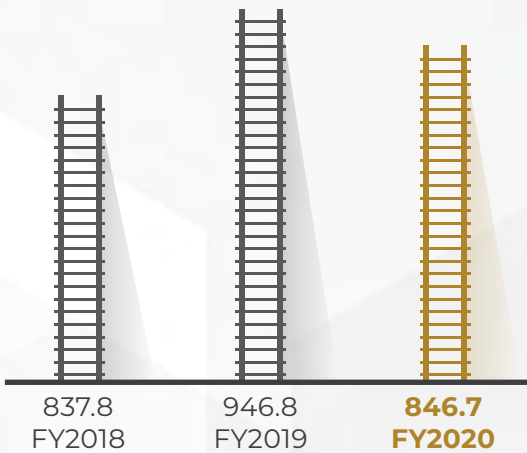
## Financial Data

### Revenue (\$m)



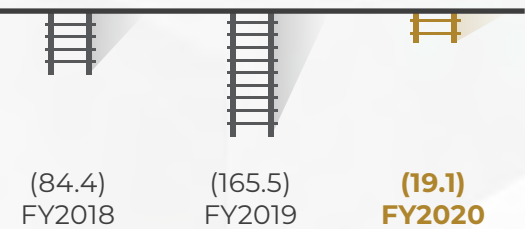
Revenue has increased mainly due to increase in rail fare and rail non-fare.

### Operating Expenses (\$m)

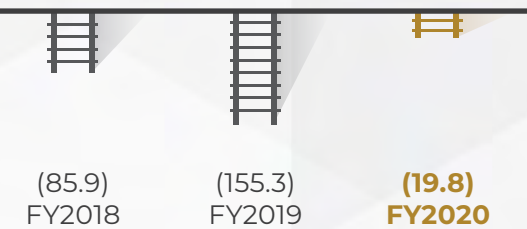


Operating Expenses have reduced due to reductions in staff costs, repairs & maintenance and other operating costs.

### Earning Before Interest and Tax (\$m)



### Profit After Tax (\$m)



## Operating Data

	FY2016	FY2017	FY2018	FY2019	FY2020
Total route length (NSEWL & CCL) (to nearest km)	130	130	137	137	137
Total car-kilometres operated (to nearest million)	131	135	142	143	143
Total ridership (to nearest million)	756	768	753	756	747
Average weekday ridership (to nearest thousand)	2,197	2,353	2,258	2,254	2,230
Total passenger-kilometres (to nearest million)	8,322	8,271	7,886	7,819	7,797
Average car occupancy (passenger per car)	63	61	55	55	54



# FROM OUR CHAIRMAN



2020 has been disrupted by the COVID-19 pandemic, trade wars and unprecedented climate changes. While the ways we live, work and play have changed tremendously and will continue to evolve, SMRT remains focussed on providing safe and reliable public transport services. I would like to thank commuters for your understanding and our staff for your dedication in these challenging times.

In a dynamic environment, we must continuously adapt, innovate and invest in People and Technology to strengthen our rail operations, maintenance and service. We are on track to deepen our engineering and operational capabilities through strategic partnerships. Through Kaizen, staff at every level are empowered to take stronger ownership of their work. Efforts are made at individual, system and company levels for continuous improvement in productivity, and to sustain the reliability and safety of our rail network. We will improve the efficacy and efficiency of our work processes, and do everything cost effectively.

As part of succession planning put in place by the Board to ensure business continuity and growth, Mr Lee Ling Wee was appointed Deputy Group CEO & President, SMRT International. Ling Wee helmed Trains for seven years and led the team to achieve significant improvement in rail reliability. In his new role, Ling Wee oversees the Singapore-Malaysia Rapid Transit System (RTS) project, which recently concluded its agreements. Mr Lam Sheau Kai has taken over from Ling Wee as President, Trains. The Board would like to express its appreciation to Ling Wee for his dedication, contribution and services, and welcome Sheau Kai to his new role. These appointments reinforce our leadership bench strength to augment our local public transport operator business, while we build capabilities to grow in both local and selected overseas markets.

We remain committed to working with MOT and LTA as part of the One Transport Family to serve commuters well and maintain our MRT as among the most reliable systems in the world.

**Seah Moon Ming**  
Chairman  
SMRT Corporation & SMRT Trains



# FROM OUR GROUP CEO



Working together with MOT and LTA, the SMRT team has put our hearts and souls into achieving the rail reliability we see today. Our continued focus on reliability has allowed us to achieve 1 million Mean Kilometres Between Failure (MKBF). This must not be taken for granted and we will continue to focus our efforts on sustaining this level of reliability. While we strive for high operational performance, safety remains our top priority and we are determined to create a Zero Safety Incident operating environment by strengthening our safety culture, systems and processes.

We will leverage digitalisation and technology to be cost efficient and effective, and will continually upskill our workforce through workplace learning. We are also looking forward to serving more commuters in Singapore, with the upcoming bids for Jurong Regional Line and Cross Island Line being our focus.

To strengthen our foundation, smooth leadership renewal is key. After seven years of leading SMRT Trains, Ling Wee has handed the helm of SMRT Trains over to Sheau Kai. I am confident that Sheau Kai, with his vast experience in public service, will continue to raise our standards in rail operations, maintenance, and service, while driving our efforts to transform SMRT Trains into a future-ready outfit. Ling Lee will now serve SMRT as Deputy Group CEO and President, SMRT International. One of the first projects under SMRT International will be the Johor Bahru-Singapore Rapid Transit System (RTS) Link Project, which recently reached a significant milestone with the official resumption of the project.

**Neo Kian Hong**  
Group CEO  
SMRT Corporation





# DEPUTY GROUP CEO'S MESSAGE

FY20 was a year of highs and lows for SMRT Trains. We have crossed 1 million MKBF (Mean Kilometres Between Failures) across all three MRT lines operated by us – the North-South Line (NSL), East-West Line (EWL) and Circle Line (CCL), a target that was not even in our sights a few years back. Former Transport Minister Khaw set us the ambitious target. As #OneTransportFamily, MOT, LTA and SMRT put our hearts and souls to achieve this.

We are happy to serve Woodlands residents with the launch of the first stage of the Thomson-East Coast Line (TEL) in January 2020. Another key milestone is the opening of Canberra MRT station in November 2019, an infill station built on the existing NSL, to better serve the community in northern Singapore. Last year, we also consolidated our Rail Operations Centre (ROC), the nerve centre of our operations, in Kim Chuan Depot (KCD). ROC@KCD now houses the Operation Control Centres of the NSL, EWL and CCL under one roof for integrated command and control, and enhanced situational awareness.

On the other hand, it greatly saddens me that we lost one of our colleagues in an industrial

accident at Bishan Depot in March 2020. One life lost is one life too many. We will learn from this incident and work even harder to ensure that our people come to work and go home safely to their families, each and every day. This is SMRT Trains' core responsibility to our people.

The COVID-19 pandemic, a black swan event, came into the picture towards the end of FY20. We had to react swiftly and decisively, increase cleaning and disinfecting frequencies, provide hand sanitisers, and do all within our means to keep our staff and commuters safe. I am very proud of what the team has done and achieved, in particular how we had kept the network running smoothly during the circuit breaker period, ensuring that all essential workers can get to work with minimum fuss.

Much has changed since I joined SMRT Trains in 2013, especially the ways we connect with our commuters and improve their travel experiences with us. The results have been heartening. For example, according to the annual Public Transport Customer Satisfaction Survey (PTCSS), the percentage of respondents who are satisfied with MRT service hit a record high of 99.5% in 2019. I would like to express my deepest appreciation to all SMRT staff who have contributed one way or another to achieve this excellent outcome. However, we must not rest on our laurels. We must continue to put in our best to sustain a high level of service to our commuters.

I am delighted to have Sheau Kai on board in his new capacity as President, SMRT Trains. Sheau Kai has demonstrated excellent leadership and strong commitment to set up the TEL's operations and maintenance from scratch. With valuable experience gained from setting up a new line, and support from a committed workforce that is continuously striving to raise standards, I am confident that SMRT Trains will go on to achieve greater heights in the years ahead.

**Lee Ling Wee**  
Deputy Group CEO  
SMRT Corporation

President  
SMRT International



# PRESIDENT'S MESSAGE

**创业难，守业更难** – it is tough to start a business, and tougher to sustain it. I am under no illusion that my ride ahead would be an easy one, despite taking over an SMRT Trains outfit that is in a good state with significant achievements in FY20. Having spent two years setting up the Thomson-East Coast Line (TEL), I know that running a public train network is a relentless journey of improvements to meet the evolving needs of our commuters, where a team of dedicated and hardworking staff is key to success.

The disruption to train services on 14 October 2020, which occurred on the North-South, East-West and Circle Lines, is a good reminder that things can go wrong and we should not take anything for granted. We are deeply sorry for the disruption and will work closely with LTA and Alstom to resolve the underlying issues that caused this disruption. The disruption also further strengthened SMRT Trains' resolve to focus our efforts in three key areas:

Firstly, reliability across all lines must be sustained, and this involves everyone in SMRT Trains to stay focused and play their parts well. We also need to continue working closely with MOT and LTA to renew core systems on the North-South and East-West Lines (NSEWL). The resignalling works, and the replacement of worn-out railway track sleepers and the third rail had been completed. The power supply and track circuit system replacements are underway and slated for completion by 2024. Our commuters can look forward to 106 new Bombardier MRT trains which will enter service from 2022; when fully introduced, 53% of the NSEWL trains will be brand new.

Next, to stay ahead of the curve, we will focus on transformation, especially the training and upgrading of our people. We want to help our people upskill and reskill, so that they can continue to contribute to the upgraded and expanding MRT network. Over the next 5 years, we will work closely with LTA, the Union, Workforce Singapore and SkillsFuture Singapore to ensure that our people are

trained in relevant technologies and skillsets for the future.

Thirdly, the safety of our commuters will continue to be core in everything we do. For instance, in close collaboration with LTA, stringent tests are underway to prepare for a smooth commencement of the second stage of the TEL in 2021, amid many challenges posed by the COVID-19 situation. We are committed to providing a safe and reliable journey for all our 'new commuters' working and residing along the six new TEL stations, from Springleaf to Caldecott.

Moving ahead, we remain focused on delivering Safe and Reliable train service to our commuters as we continue our journey of *moving people, enhancing lives*.

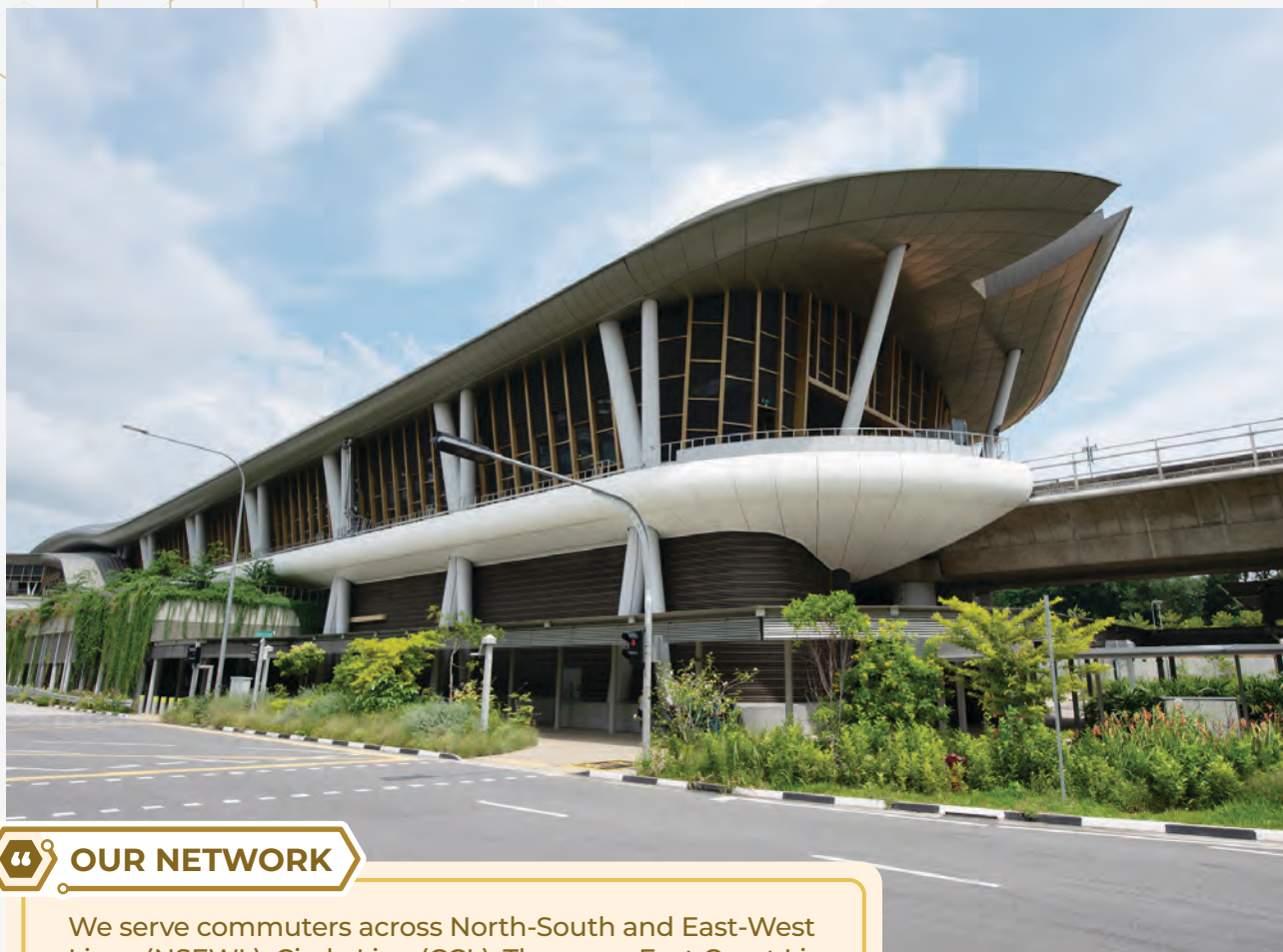
**Lam Sheau Kai**  
President  
SMRT Trains







# OUR OPERATIONS



## OUR NETWORK

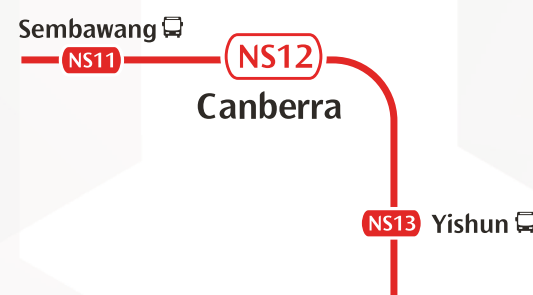
We serve commuters across North-South and East-West Lines (NSEWL), Circle Line (CCL), Thomson-East Coast Line (TEL) and Bukit Panjang Light Rail Transit (BPLRT).

In the past year, we continued to improve rail reliability through various renewal and maintenance efforts, even as we worked towards growing our network. The new Canberra MRT station on North-South Line (NSL) was opened for service on 2 November 2019. With the new Canberra station, the NSL now has 27 MRT stations connecting commuters from Jurong East to Marina South Pier. The first stage of TEL officially opened on 31 January 2020 with three stations: Woodlands North, Woodlands and Woodlands South.

## EXPANDING SMRT'S RAIL NETWORK

The new Canberra MRT station is located between Sembawang and Yishun MRT stations. It is the second\* infill station in Singapore constructed in the middle of a running line. The station will benefit over 17,000 households that are within 10-minute radius of the station. This is expected to save nearby commuters up to 10 minutes of travel time when they travel towards the city centre or Jurong East.

\* The first infill station is Dover station on East-West Line (EWL).



The 43km-long TEL is Singapore's sixth MRT line, adding 32 new stations to the existing rail network with eight interchange stations.

## THOMSON-EAST COAST LINE

6<sup>th</sup> MRT LINE  
IN SINGAPORE

32 NEW  
STATIONS

8 INTERCHANGE  
STATIONS

43km  
LONG

The second stage of TEL is scheduled to commence revenue service in 2021. About 100,000 commuters will benefit from the first and second stages of TEL. These nearby commuters will be able to reduce their travelling time by up to 50%.

When fully operational in 2024, TEL is expected to serve approximately 500,000 commuters daily in the initial years. This is expected to increase to one million commuters per year in the longer term.



The 43km-long TEL is Singapore's sixth MRT line, adding 32 new stations to the existing rail network with eight interchange stations.

## ENHANCING AND RENEWING THE NORTH-SOUTH AND EAST-WEST LINES (NSEWL)

We are working closely with the Land Transport Authority (LTA) to renew and improve NSEWL's power supply system. The laying of fibre optic cables along viaducts and tunnels helps transmit monitoring information in real-time to the Operations Control Centre (OCC). This allows the system to better predict faults and address them before they occur.



The laying of fibre optic cables along the viaducts and tunnels helps transmit monitoring information to the OCC.

The installation of Voltage Limiting Devices (VLDs) to replace the 64P touch voltage protection system has helped to localise and isolate power failures.

Our engineers optimise the scheduled early closures and late openings of stations to complete these complex projects within a limited given time. As of 31 March 2020, 91% and 82% of the fibre optic cables had been laid in NSL and EWL respectively. The VLD installation in NSEWL was completed in June 2019.

At the same time, as of 31 March 2020, about 58% of the Direct Current (DC) switchgears had been replaced, with the remaining DC switchgear replacement works expected to be completed by the second quarter of 2021 due to the COVID-19 disruption. The DC switchgears combine electrical switches, fuses or circuit breakers to control, protect and isolate electrical equipment in a power network. The high voltage system that comprises 22kV switchgears, transformers, rectifiers and inverters in 13 stations have also been replaced.



## NSEWL TRACK CIRCUIT REPLACEMENT – R152

The track circuit system replacement work was about 33% done as of 31 March 2020. It is expected to be completed by 2022. The work on the track circuits along the NSL between Bukit Batok and Khatib stations had been completed. The new track circuit system is able to automatically detect broken rails that require repairs, and speed up service recovery efforts.



Replacing track circuits on the NSEWL which will automatically detect broken rails.

## ADDITION OF NEW TRAINS

As part of the long-term fleet renewal programme for the NSEWL, another 40 new trains from Bombardier Transportation will arrive in batches starting from 2024 to replace the 2<sup>nd</sup> generation (Siemens) and 3<sup>rd</sup> generation (Kawasaki-Nippon Sharyo) trains currently in service on the NSEWL.

Bombardier was previously awarded a contract in July 2018 to supply LTA with 66 new trains to replace the 1<sup>st</sup> generation (Kawasaki) trains that have served the NSEWL since it first opened in 1987. The latest batch of 40 trains uses the same design, and brings the total number of NSEWL trains supplied by Bombardier to 106.

These new trains will be equipped with an integrated suite of condition monitoring features that can help SMRT pre-emptively detect potential faults to increase reliability.

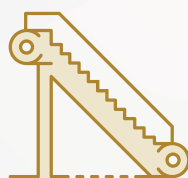
## MAINTAINING STATION ESCALATORS

Our escalators in service have an availability rate of more than 99.5%. To ensure they remain safe and in good working condition, we embarked on a five-year escalator refurbishment project across NSEWL in 2016. The project involves 233 escalators at 42 stations.

As of 31 March 2020, 137 escalators had been fully refurbished, which translates to around 60% of the project. Work on another 23 escalators is currently in progress. The escalator refurbishment project is expected to be completed by 2021. Upon completion, escalators will be installed with new commuter-friendly features, such as dual-speed and directional traffic lights, along with additional safety enhancement features such as handrail speed monitoring and skirt deflectors.

IN AUGUST 2016  
we embarked on

**5-YEAR**  
escalator refurbishment project



installed with new commuter-friendly features

- »» DUAL-SPEED
- ⬆️ ⬆️ DIRECTIONAL TRAFFIC LIGHTS
- 🚶 HANDRAIL SPEED MONITORING
- 🛡️ SKIRT DEFLECTORS

**233**  
ESCALATORS  
refurbished

IN

**42**  
STATIONS  
of the NSEWL

**137**  
ESCALATORS  
have been fully refurbished  
**AS OF 31 MARCH 2020**

## RENEWING THE BPLRT

Renewal works to enhance Bukit Panjang LRT's (BPLRT) reliability began in 2018 and will be completed by 2024.

Together with LTA and Bombardier (BPLRT's original equipment manufacturer), we have begun installing the new signalling system from March 2019. Software testing for the new Communications-Based Train Control (CBTC) signalling system has also started in Bombardier's overseas test laboratories.

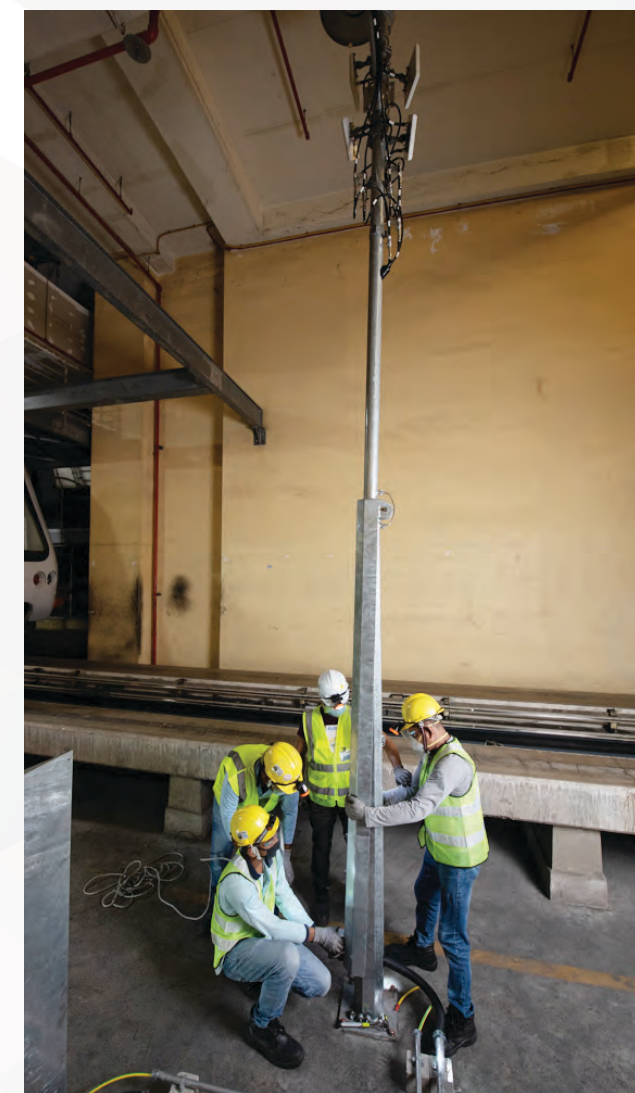
We have also intensified and accelerated maintenance and renewal works for BPLRT and this has resulted in higher reliability. This is made possible by the additional engineering hours gained through the adjustment of operating timings and route service.

## LOOKING AHEAD

We will continue to strengthen our rail maintenance capabilities by exchanging engineering knowledge and experiences with industry partners through regular joint meetings.

Together with LTA, we are building a Rail Discovery Centre (RDC) at Mandai Depot, designed with a Learning Journey to cater to school students and adults. It aims to showcase the story of Singapore's railway industry and our commitment to improve rail reliability, educate visitors, and instil a sense of pride in Singapore's MRT network.

With these developments, we envision a more inclusive and safer travelling experience for all our commuters in a better-connected transport network.



Installation of the new signalling system for BPLRT.





# SAFETY & SECURITY



## SAFETY FIRST

Safety is our key priority and strategic focus as we strive towards our vision of Zero Accident and Zero Security Breach. Every level of trains management and staff is actively involved in creating a safe environment for our staff, commuters and other stakeholders, as we continue to provide best-in-class public transport service.



The cyber threat landscape continues to evolve rapidly. It is of utmost importance for SMRT to protect its systems against these threats across all areas of business and operations, from enterprise IT systems to Critical Information Infrastructure systems.

SMRT is working closely with CSA, LTA and cyber security trusted partners on measures to address cyber risks and to build resiliency. Only with such a collaborative, concerted and continuous effort, along with vigilant monitoring and validation, can we enhance the cyber security of our systems.

**Lee Fook Sun**  
Deputy Chairman  
SMRT Trains Ltd. and SMRT TEL Pte. Ltd.



## OUR SAFETY & SECURITY PERFORMANCE

In the current security climate, we continue to strengthen our physical security through planned security enhancement projects.

Our FY20 Employee Accident Frequency Rate increased from 1.43 in FY19 and stood at 1.67 accidents per million man-hours, with 26 cases of reportable accidents\*.

As a result of a fatal industrial accident, our Employee Accident Severity Rate had increased significantly to 413.02 man-days lost per million man-hours, with 6441\*\* man-days loss.

On the other hand, our passenger safety performance had shown a 9% improvement at 0.3 accidents per million ridership, with 250 passenger accidents requiring beyond first aid treatment.

We will continue to strengthen safety and security mindfulness, with emphasis on compliance, thereby ensuring our staff can 'work safe, home safe'. Our focus on developing a strong safety culture resides in these areas: leadership and engagement, communication, performance management, discipline and rewards, workplace processes and resources, organisational safety system, and technological enablers.

With commuter safety a high priority for SMRT Trains, we will also continue our existing efforts and collaborations with Land Transport Authority (LTA) and grassroots to engage and educate the public on safe travelling in our network.

\* Reportable accident refers to work-related accident with medical leave of more than 3-day of hospitalisation or at least 24 hours (based on MOM's definition before 1 Sep 2020).

\*\* Ministry of Manpower (MOM) defines one fatality case as equivalent to a loss of 6,000-man days.



*Continued emphasis on compliance and inculcating a strong safety culture.*

## OUR SAFETY SYSTEM

Our Health, Safety and Environmental (HSE) Management System provides a structured management approach and systematic way to identify hazards, control HSE risks and achieve continual improvement.

It comprises various elements like Training, Competence & Communication, Regulatory & Authorised Documents, Management of HSE Risks & Opportunities, Contractor Management, Audits & Inspections, Incident Handling & Investigation, Security, Emergency Preparedness, and Reports & Data Analysis. These form the basis of our HSE work in Trains, as we operate with a 'Safety First' mindset.



*Operating with a 'Safety First' mindset.*



## INCULCATING SAFETY, SECURITY AND CYBER SECURITY MINDFULNESS

We have launched a comprehensive safety and security awareness campaign that dives into intensive but meaningful education, engagement and promotional efforts. For example, our annual Trains Safety & Security Forum provides a platform for all staff to share their Line and Centre of Excellence safety initiatives, promoting cross sharing amongst divisions.

In addition, Safety Moment messages are communicated daily to our staff, where we promulgate safety learnings through their toolbox briefings.

We also partnered DuPont Sustainable Solutions, a renowned world-class safety leader, to develop a safety culture transformation programme. The programme focuses on enhancing safety mindfulness, workforce discipline, compliance and accountability of our line leaders, who then become trained advocates ready to cascade safety knowledge to their teams.

To encourage an open reporting culture, we have established various reporting channels for staff to proactively feedback on safety and security concerns. To empower our staff to speak up and intervene, we have instituted 'Safety Time-Out and Stop Work Order' through a company-wide directive.

This is reinforced with our 'Safety and Security Activists' scheme where we recognise staff who proactively contribute to improving the safety and security culture in the company. In FY20, we had a total of 625 activists, a 53% increase from FY19.

In addition, we have the annual Safety Excellence Awards and Best Premises Safety & Security Awards to recognise divisions and departments for their outstanding safety and security achievements, and to motivate them towards better safety performances.

Cyber security awareness is also promulgated to our staff through education and promotion. This includes the Cyber Security Awareness Day 2020, bite-sized learning introduced as part of continuous reinforcement on specific topics, as well as e-learning curated for Trains Operational Technology (OT) cyber security.



Trains Safety & security Forum 2019



The annual Safety Excellence Award and Best Premises Safety Awards recognise divisions and departments for their safety and security achievements.



The 'Safety and Security Activists' scheme recognises staff who proactively contribute to improving the safety and security culture.



Bronze



Silver



Gold

## INVESTING IN TECHNOLOGY

We are committed to leveraging technology to further optimise and enhance work processes and systems to make our work and environment safer and more secure. Some of our staff's safety innovation projects have garnered the Workplace Safety and Health (WSH) Innovation Awards, and we have adopted technology to strengthen our physical security through planned security enhancement projects.



Electronic Key Press system to tighten accountability and security.

### Safety Innovation Projects

- **Speed Tester for Train Traction Control Unit Blower from Rolling Stock**  
- A safer alternative method to test for low- and high-speed functionality of the TCU blower to achieve reliable speed testing, and safer work environments without exposure to heating elements
- **Remote Third Eye from Power**  
- An equipment developed to replace physical inspection at heights, thereby reducing risk of injury

### Security Enhancement Projects

- **Acquisition of VA Detection / Intrusion System in BPLRT Depot**
- **Electronic Key Press** - Operationalisation of this system network-wide to reduce the need for permanently-issued keys, thereby tightening accountability
- **Radio-Frequency Identification (RFID) Locks** for non-public area doors in all NSEWL stations

## COMMUTER SAFETY

Our safety and security efforts extend beyond our staff to include our commuters, contractors working in SMRT premises, tenants and other relevant stakeholders.



### COMMUTERS:

We are engaging our commuters on safe travel through 'WeCare About Your Safety' roadshows, Learning Journeys and communication outreach.



### CONTRACTORS:

Our focus on Contractor Safety, Security and Cyber Security requirements governs how we engage our contractors to work safely in our premises. Prior to commencement of their work, our contractors have to be certified competent in safety by attending our Contractor Safety Course.



### TENANTS:

Safety requirements are in place for the fitting-out of their shops. Tenants are also engaged regularly to remind them on the importance of safety.



## SAFETY FIRST

SMRT Trains continues to strengthen our lines of action to better deliver safety and security performance, to build a safer workplace and commuting environment where risks are minimised. Safety remains first and foremost for SMRT Trains.

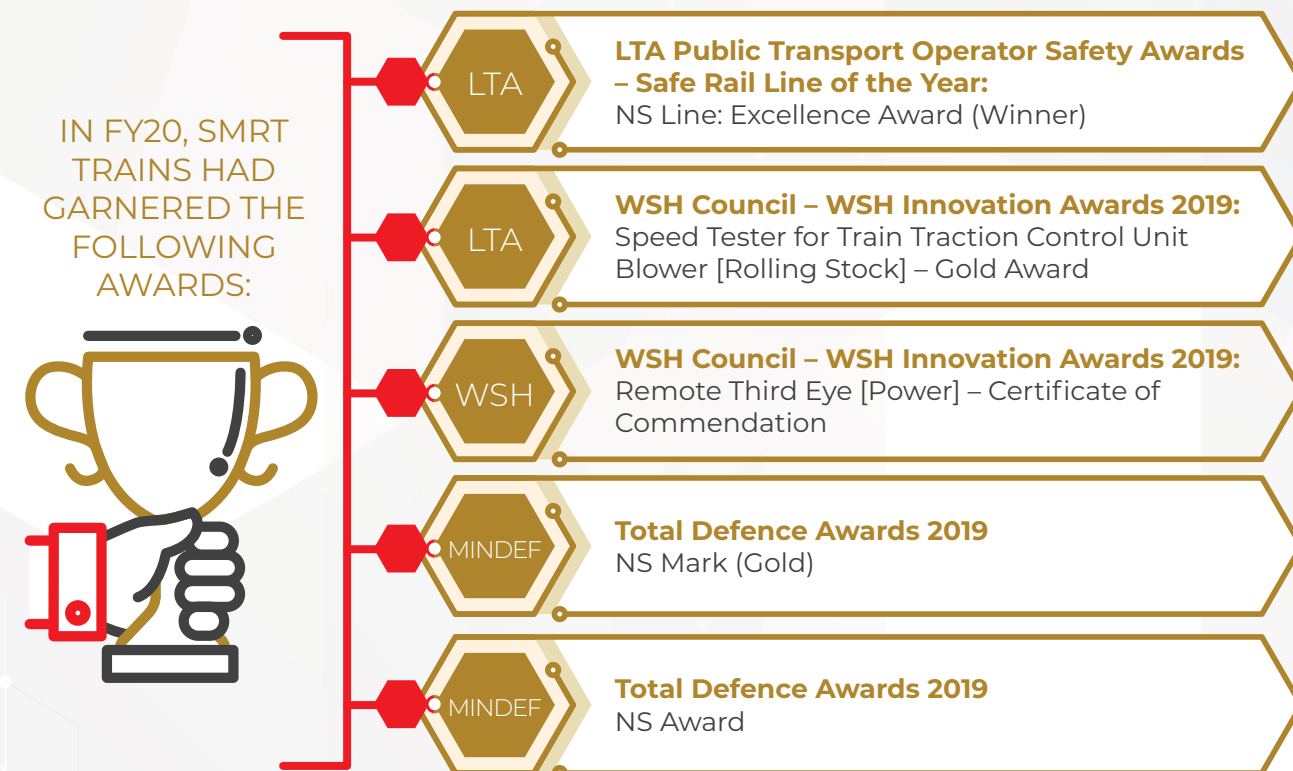
## CERTIFICATION, AWARDS AND ACCOLADES:

Our safety and security efforts are recognised at National & International Levels. SMRT is certified ISO 9001, ISO 14001 and ISO45001, underscoring our commitment to adopt international standards and best practices in quality, health, and safety and environmental management. We are also accredited the bizSAFE Level Star by WSH Council. In addition, we are also certified ISO 22301 in Business Continuity Management systems.

The achievements listed below are testaments to our continued efforts towards safety excellence. It will further spur us on to achieve greater heights as we commit to delivering safety to everyone who journeys with us.



North-South Line received an Excellence Award for Safe Rail Line of the Year at the annual LTA Public Transport Operator Safety Awards.



## SMRT COVID-19 EFFORTS

### BACKGROUND

COVID-19 hit Singapore hard and fast in early 2020. Singapore announced its first COVID-19 case on 23 January and within 15 days on 7 February, Singapore's 'Disease Outbreak Response System Condition (DORSCON)' level was raised to DORSCON Orange, the second time in history that we had done so. This meant that the 'disease is severe and spreads easily from person to person, but disease has not spread widely in Singapore and is being contained'. (Source: Ministry of Health)

A myriad of measures was mandated by various Government authorities within a short time to manage the situation. SMRT had to react swiftly and nimbly to the evolving pandemic situation.

### OUR FRAMEWORK AND RESPONSE

SMRT, as an essential service organisation providing public transportation to the population of Singapore through our trains, buses and taxis network, is at the forefront of preparing for such a national crisis.

Plans to contain COVID-19 took place even before the first case was detected in Singapore. In fact, preparations for a generic pandemic situation started years earlier through discussions with relevant authorities, development of contingency plans, and ensuring adequate supply of essential items such as personal protective equipment.

The COVID-19 pandemic was identified as a strategic risk as part of SMRT's holistic risk management programme. We work closely with the authorities to align control measures and ensure consistency across the entire network. It is our commitment and assurance to our commuters to safeguard their well-being when commuting on our public transport network.

SMRT's Emergency Planning Committee is chaired by our Group Chief Executive Officer Mr. Neo Kian Hong. This Committee meets weekly to provide strategic guidance and close monitoring of the COVID-19 situation within and beyond SMRT. COVID-19 responses are discussed through this Committee and will continue to do so as the situation improves and our ridership increases. The Board also reviews the adequacy of the planned actions by the Committee and monitors the ground situation closely.



Stepped up cleaning efforts in our stations and trains, for the safety of our commuters.



## KEEPING OUR NETWORK SAFE

To help maintain safe distancing, SMRT Trains has added more trains into the system during peak hours and increased peak hour frequency from five minutes to three minutes to minimise crowding.

SMRT adheres strictly to guidelines from the authorities to ensure safe journeys for our commuters through a rigorous cleaning regime and provision of free hand sanitisers for public use.

All public toilets in our train stations have obtained at least four stars out of the maximum of six, under the Happy Toilets Programme by Restroom Association (Singapore), supported by the National Environment Agency (NEA). All stations and bus interchanges have also received the SG CLEAN certification.

With support from Temasek Foundation, SMRT further prevents the spread of COVID-19 through the use of anti-microbial coating at high touchpoints in trains and stations.

To discourage talking in public transport, posters and signs encouraging commuters not to talk while travelling through our network are prominently displayed.

In line with this, we also introduced the non-verbal greeting by station staff called the 'Hello Wave'.

SMRT strongly supports other government initiatives, such as setting up temperature self-check kiosks in our stations and inculcating responsible individual behaviours like practicing good personal hygiene while travelling on public transport through digital posters and station announcements.

## OUR BACKBONE, OUR STAFF

None of all the above initiatives and measures could have been possible without the backbone of our organisation - our staff. Building upon responsible individual behaviours and workplace safe management measures, we protect and safeguard the health and well-being of our staff through the implementation of various infection control measures. SMRT conducts over a hundred inspections within our premises weekly to ensure compliance of these control measures.

To minimise physical contact at the workplace, applicable staff are placed on work-from-home arrangements. Others who are required to report to work are put on staggered work hours and mealtimes, with cross deployment of staff providing essential services ceased.

Safe distancing is also enforced at places such as meeting rooms, rest areas and canteens. All staff are issued reusable masks and required to wear one throughout the day.



*Maintaining safe distance and service excellence with the 'Hello Wave'.*



*Temperature self-check kiosks in our stations.*

To support Ministry of Health's (MOH) rapid contact tracing efforts, SMRT has mandated the use of SafeEntry and TraceTogether apps by all staff. Twice daily temperature taking is implemented using a customised travel and temperature declaration system, known as HealthBot3. These are just some of the many measures put in-place by SMRT to protect and ensure the health and well-being of our staff.

However, for a company of 11,000 staff, SMRT is not immune to the impacts of COVID-19. As of 1 December 2020, SMRT had reported a total of 18 positive cases. Most of these cases contracted COVID-19 outside of SMRT's premises; only four were possibly infected in connection with the Bukit Panjang Integrated Transport Hub cluster. Through our rigorous measures and close collaboration with the authorities, the spreading of COVID-19 is effectively contained.

Since the start of COVID-19 in Singapore, about 4,000 SMRT staff had undergone swab testing as part of the overall active screening strategy for public transport workers by the MOH. This was done with the intent to protect our staff through early detection, and our commuters who interact with them daily.

To prevent cross contamination at physical touchpoints, SMRT has been rolling out a series of touch-free innovations through the use of technology, such as the installation of contactless sensors at entrances and exits. We are also exploring the use of machines and automation to supplement labour-intensive work such as the increase in cleaning regime.

## MOVING FORWARD TOGETHER

Recognising that COVID-19 is here to stay for some time, we continue to innovate and evolve to prepare ourselves for the 'new normal' by incorporating more measures in our workplace and work routines.

COVID-19 has brought about a paradigm shift on how we interact with one another and the environment. It compels everyone to adapt and adopt new social behaviours and norms to stay safe. No amount of measures put in place by the authorities and SMRT can stop the spread of COVID-19 without the active participation and compliance of our commuters. We must move forward together as a team to keep our transport system safe for everyone.



*Distributing apples, masks and sanitizers to frontline staff.*



*Exit buttons have been replaced with contactless sensors, reducing the risk of transmission.*





# ENGINEERING



## ENGINEERING GROUP

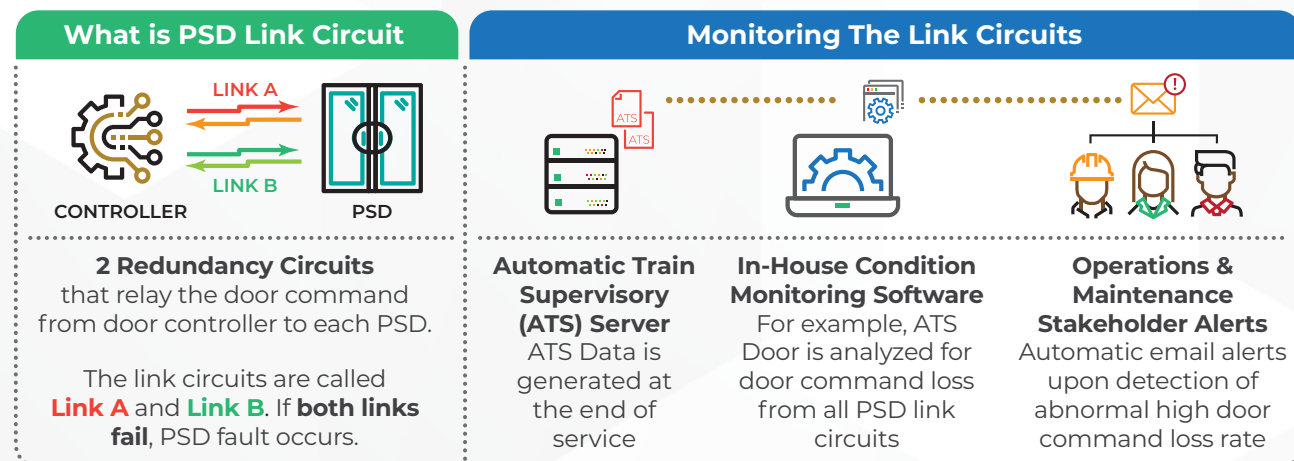
The Engineering Group focuses on improving the performance of SMRT Trains. Formed during the reorganisation exercise in 2019, the Group's key objectives are raising new capabilities, training a competent workforce, and achieving sustainable financial strength.

We utilise data analytics, condition monitoring and maintenance techniques to strengthen the capabilities of SMRT Trains. We also support digitalisation efforts within SMRT to transform work processes and enhance innovation, learning and agility.

## CONDITION MONITORING

We deploy decision-support solutions that span several Operations & Maintenance (O&M) fronts through Condition Monitoring and Maintenance Data Analytics capabilities. These include identifying assets with reliability issues, such as trains and Platform Screen Doors (PSDs), and assessing data from train-service timetable.

Rolling Stock Maintenance Analytics Platform (RS-MAP) is a train-focused application that provides complex analyses, such as trending/outlier identification across train fleets and their sub-systems. The one-stop Graphical User Interface (GUI) which provides access to historical maintenance data, facilitates statistical measures for benchmarking and in-depth analysis,



guides resource prioritisation and improves productivity. With a handful of clicks, users are able to trace maintenance history across different matrices (fleet, sub-systems or specific trains) and quickly identify areas with potential reliability concerns.

Another monitoring system is the PSD monitoring system that offers automated alerts to flag out potential PSD-related issues. The quantified risk perspective, derived daily from analyses of tens of thousands of door commands, helps us identify PSD locations of interest for early intervention. The known pre-indicators to failure defined are subsequently used to prevent associated PSD-related train service delays.

Lastly, the On-Demand Rail Reliability Incentive (RRI) computation assesses train service quality by taking onboard all actual train timetable data at platforms. Analyses that took hours in the past now take us mere minutes with the customised GUI, thereby improving productivity significantly. It also flags out events that are nearing regulatory limits and enables traceability to event origination. These allow us to better monitor, report and manage the situation.

## ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS

We have developed the Common Data Environment (CDE) platform on cloud, as the enabler for Artificial Intelligence (AI) and data-driven projects. In addition, self-service analytics projects such as the Voice Dashboard and Trains Operating Performance Standard Dashboard have been built to make data more accessible.



SMRT executives at a workshop on Artificial Intelligence (AI).

We are building up Smart Mobility, Situation Awareness and Predictive Maintenance AI capabilities in collaboration with the Artificial Intelligence Singapore (ASIG). For example, we have embarked on a few Proof of Value (PoVs) on crowd sensing. A recent automated machine learning Proof of Concept (PoC) on feedback classification achieved an accuracy of 96% and is expected to be operationalized in FY22.

To foster a data-driven culture, we had partnered with Ernst & Young to conduct two executive workshops on AI. We had also partnered with Microsoft and Clayops to conduct a Power BI workshop, so as to equip business units with the tools to create visualisations.

## TRACK ACCESS MANAGEMENT SYSTEM (TAMS)

The Track Access Management System (TAMS) is designed as a single integrated digital platform to replace the manual track access process and legacy standalone systems. Enabled by Artificial Intelligence (AI), TAMS optimises track access allocation planning, and effectively prevents human errors from planning to execution with interlocking safety features built-in. TAMS enables the provision of real-time updates on track application status and confirmation of track allocation.

TAMS enhances maintainability and reliability through a more efficient and optimised track access management. TAMS Phase 1 that covers the North-South and East-West Lines (NSEWL) is near completion. Phase 2 will extend the capability to the Circle Line (CCL), train depots and the Bukit Panjang Light Rail Transit (BPLRT).



The Track Access Management System (TAMS) is a single integrated digital platform.



## DIGITAL TWIN

Digital Twin (DT) is a virtual replica of the physical system that takes real-world data as inputs and produces output predictions or simulations on how the physical system can be affected by the inputs. These virtual systems allow modelling of future state and behaviour, and what-ifs scenarios, enabling real-time monitoring for proactive intervention and predictive capability.

We have invested in innovative technologies, such as Simulation and Modelling, Condition Monitoring and Data Analytics & Visualisation, to kickstart the development of DT. Together with cross-functional stakeholders, we are exploring concepts and identifying more potential applications of DT in the near future.



Leveraging DT to explore concepts and identify potential applications for the future.

There are four concepts currently being explored for the development of DT:

- ▶ **iStation** – Intelligent Stations and Interchanges
- ▶ **iControl** – Intelligent Rail Operations
- ▶ **iDepot** – Intelligent Depot Operations & Predictive Maintenance
- ▶ **iLifestyles** – Intelligent 5G Lifestyle & Digital Experience

## TRAINING

SMRT places emphasis on developing our people with skills not just to perform future jobs, but also to co-create the future alongside our organisation. We continuously upskill and reskill our staff to meet the challenges of an increasingly high-tech and digitalised rail network.

As the workforce upgrades their skills, they will be able to build a meaningful and rewarding career, while supporting the organisation to achieve improvements in service reliability, operational effectiveness and efficiency, as well as commuter experience.



Memorandum of Understanding (MOU) with SIT to encourage workplace learning.

This year, SMRT Institute (SMRTi) has begun its collaboration with SkillsFuture Singapore (SSG), Singapore Institute of Technology (SIT), and Nanyang Polytechnic Centre of Excellence for Workplace Learning (NACE) to adopt the national workplace learning framework. With the shift towards the workplace learning model, a bigger proportion of learning will take place at the workplace, supported by initiatives and tools to encourage self-directed and collaborative learning.

SkillsFuture for Digital Workplace was introduced to strengthen digital literacy. Leveraging a familiar interface, @Learn was rolled out by SMRTi on Workplace® by Facebook to enable direct access to digitised content, enabling learning to take place anytime, anywhere.



SMRT staff attending a hackathon session conducted in SMRTi.

As the training arm of SMRT, the Institute continues to deliver trainings for pre-deployment ab initio qualification, core values (kaizen, safety, service delivery) building alongside internal domain experts, as well as continual trade learning, refresher and mandatory courses.

In addition, Mindfulness, Basic First Aid, Psychological First Aid and Transactional Analysis training courses are offered as part of the Life Skills series. These courses empower our workforce with the competencies to manage oneself effectively, and be adaptive to the rapidly changing operating environment.

To build up rail engineering capabilities in Singapore, the Institute has partnered Singapore Rail Academy and SBS Transit to roll out Fundamental in Rail Engineering Systems, Fundamental in Rail Operations & Maintenance, and Rail Leadership Programme with the aim of strengthening professionalism in the rail industry and supporting the drive to increase the number and quality of rail engineers in Singapore.



Training courses to grow and enhance rail engineering capabilities.

## KEY STATISTICS :



FY20 Total Trains Training Hours:

568,580



FY20 Total Trains Training Places:

111,418



FY20 Total Trains Digital Training Places:

64,231

No. of Graduates with Diploma in Engineering (Electrical-Rapid Transit Technology) from Singapore Polytechnic through Earn and Learn Programme:



7 PEOPLE

Postgraduate Certificate (PGCert) graduates:



69 PEOPLE





# COMMUTER ENGAGEMENT AND SERVICE DELIVERY



## ENGAGING OUR COMMUNITY

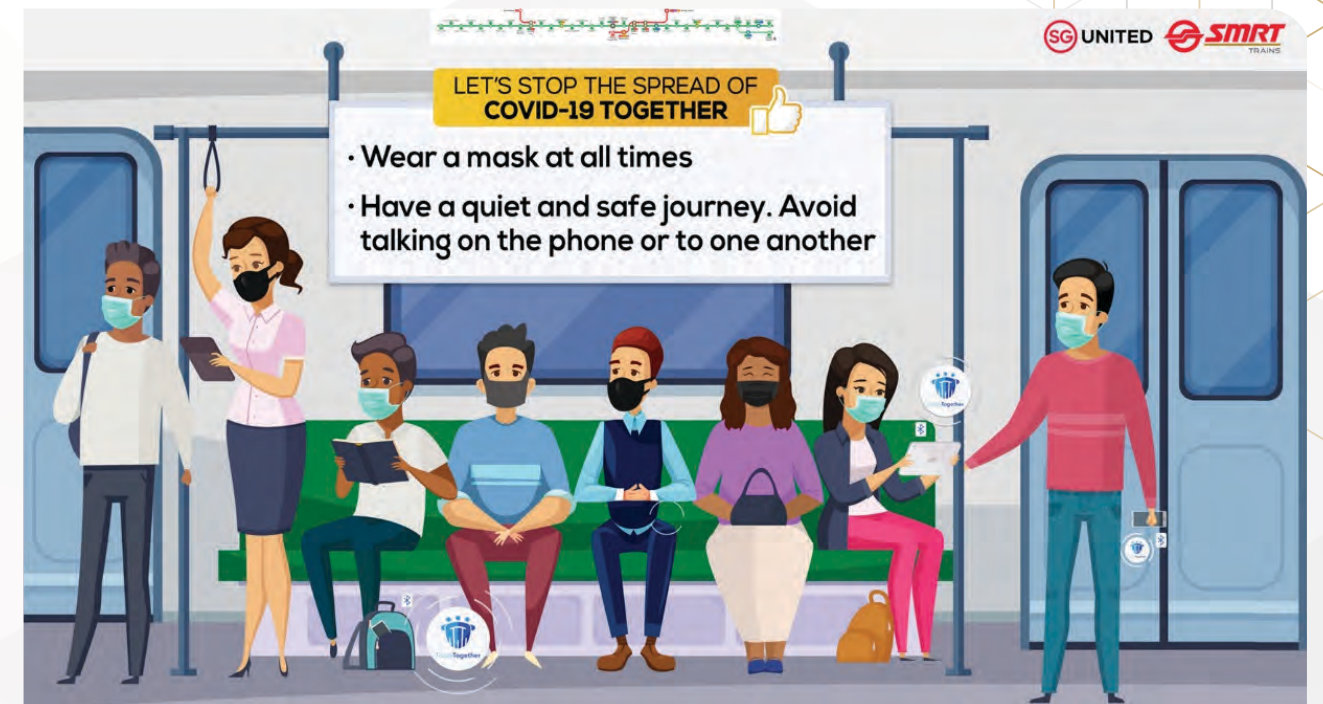
Besides the reliability of our train service, serving and connecting with our commuters are our priorities. These include engaging our commuters, ensuring good commuter experience, and improving commuter satisfaction.

### DEDICATED TO SERVE OUR COMMUTERS DURING COVID-19

The COVID-19 pandemic has affected many industries and businesses, including SMRT. Our ridership has declined and many of our commuter engagement programmes have to be put on hold due to safe-distancing measures.

Despite the restrictions, we continue to deliver our service promise and standards in areas of safety, reliability and comfort. Train services continue to be running at pre-COVID-19 frequencies, and cleaning and disinfecting regimes are stepped-up across our network to provide a safe environment for our commuters.

Partnering Land Transport Authority (LTA), a series of videos, infographics and public announcements are displayed at our stations and in trains to remind commuters to practise good personal hygiene, wear a mask, and refrain from talking in trains. All these were introduced to inculcate a considerate and safe commuting behaviour.



Infographic in trains and stations to remind commuters to wear a mask and refrain from talking in trains.

### ENHANCING SERVICE CULTURE AND MINDSET

Even as the challenges of COVID-19 loomed, we continue to build a strong service culture and mindset among our staff. An initiative called 'Hello Wave' was launched to encourage our staff to proactively step out, greet and wave to our commuters. We hope to nurture the spirit of service through this initiative, especially during this challenging time.

Our staff have embraced this initiative whole-heartedly and demonstrated their strong commitment towards our service motto: Serving and Delighting You Every Day.



Building a strong service culture and mindset amongst staff with the 'Hello Wave' initiative.



## PARTNERING SOCIAL SERVICE AGENCIES AND COMMUNITIES TO ENHANCE INCLUSIVE TRAVEL

To make travelling with us more inclusive, we have stepped up our collaboration with social service agencies and community groups around our stations.

### Guide Dogs Singapore (GDS)

To provide the right level of support and assistance to the visually impaired, we have worked with Guide Dogs Singapore (GDS) on a number of initiatives:

- Put in place a service forum for GDS to share knowledge with our frontline staff
- Developed a new operating procedure and service scripts for our frontline staff to serve the visually impaired
- Rolled out new, bite-sized training materials to increase our staff's knowledge and understanding of the needs of the visually impaired

### Working with Agency for Integrated Care (AIC)

Besides making travelling easier for the visually impaired, we have also made our facilities more conducive for the elderly, especially those with dementia. We have officially designated selected stations as Dementia Go-To Points, where those with dementia, or anyone who sees a person with dementia, can seek help. To achieve this, our staff underwent special training, and certain facilities in our stations were upgraded to make them dementia-friendly.

Redhill and Queenstown MRT stations were the first to be designated as Dementia Go-To Points, and we continue to work with AIC to certify more of our stations as Dementia Go-To Points.



Shared umbrella stands in the stations.

## IMPROVING COMMUTER TOUCHPOINTS

We recognise that small conveniences in our stations can make a difference to our commuters' travelling experiences.

Over the years, we have improved commuter touchpoints across our network by introducing initiatives such as mobile device charging points, priority queue system for the elderly, music in stations, and improved air circulation in stations. More recently, we have installed shared umbrella stands at our stations' exits and entrances, as well as improved the cleanliness of our toilets.

As of March 2020, the shared umbrella service is available at 24 of our stations along North-South and East-West Lines (NSEWL), Circle Line (CCL), and Bukit Panjang Light Rail Transit (BPLRT). We will progressively roll out this initiative at the other stations. At the same time, all the toilets in our stations have attained the Restroom Association's (Singapore) Happy Toilet Programme grading of four stars and above, as well as SG Clean certification.



**9,200**  
DEMENTIA FRIENDS



**232**  
PERSONS ASSISTED

*\* Dementia Friends are volunteers familiar with signs and symptoms of dementia. They are able to keep a look out for persons with dementia and extend a helping hand when needed.*

## ENGAGING THE YOUNG

To adapt to the new normal, we have moved our kindergarten children engagement to a virtual platform. We have collaborated with two centres, Mulberry Learning Centre and the Ministry of Education (MOE) Kindergarten at Fernvale, to create a virtual Kinder Learning Journey. The children had fun interacting with our assistant station managers, station managers and train captains over a virtual platform in the comfort of their classrooms.

Mulberry Learning Centre's preschoolers learned about SMRT Trains' operations and how we have been caring for our commuters every day. The young kids were thrilled to be able to chat with our staff and ask as many questions as they wished.



Artwork presented by the Ministry of Education (MOE) Kindergarten at Fernvale as gifts of appreciation.

We have also collaborated with the Ministry of Education (MOE) Kindergarten at Fernvale on the Start Small Dream Big initiative, which is part of the President's Challenge, to show our appreciation to our public transport workers. This is spearheaded by the Early Childhood Development Agency (ECDA) to encourage preschools to participate in community projects.

## LOOKING AHEAD

As we continue to sustain our current level of reliability, enhancing commuters' travelling experience remains one of our top priorities. For continued focus and emphasis on service excellence, new Commuter Engagement and Service Excellence teams have been formed to develop a slew of engagement and service-related initiatives moving forward. We also look forward to delighting and bringing brighter smiles to our commuters.



# OUR PEOPLE



## AN ENGAGED, ENABLED AND MOTIVATED WORKFORCE

To achieve organisational goals and provide the best services to our commuters, we must ensure our workforce is engaged, enabled and motivated.

As part of our continuous effort to foster engagement between employees and the management, initiatives such as Leaders-in-Conversation (LIC) and Workplace@ by Facebook were introduced in 2019. Not only do these initiatives complement regular engagement events such as management ground walkabouts and townhalls, they also enhance workplace collaborations and build a digital community that connects employees regardless of work location, role and seniority.



*Signing of the Collective Agreements with NTWU.*

We engage Union Leaders closely and continually, forging a harmonious Labour-Management Relationship (LMR) with the National Transport Workers' Union (NTWU). This has resulted in good developments in our LMR journey in 2020, one example being the conclusion of Collective Agreements ahead of schedule.

In SMRT Trains, we enable our employees through upskilling and upgrading. They are not only equipped with the necessary knowledge and skillsets to do their current jobs well, but also trained and updated with the latest technology and know-how to stay future-ready. For example, SMRT jointly developed the Rail Manpower Development Package (RMDP) with LTA and the NTWU in 2019, so that our employees can undergo upskilling programmes to gain higher levels of technical skills and competencies, in alignment with the SkillsFuture Framework for public transport.

The Union also has an important role to play in upskilling and upgrading of our employees. We collaborate with the Union on people development initiatives such as training transformation, with the objectives of building up core competencies and improving the employability of our employees. Through enabling our employees, we hope to build and sustain a workforce that is empowered and confident on the ground to take ownership in their areas of responsibilities.



*Announcement of the Rail Manpower Development Package (RMDP) at the Public Transport Workers' Appreciation Day 2019.*



## A CAREER, NOT JUST A JOB

We motivate our employees by instilling pride and professionalism in what they do. One way to achieve this is to provide them with multiple pathways for growth in professional expertise and skills. For example, our SMRT Trains Career Scheme and SMRT Rail Career Roadmap map out competency-based professional development pathways for employees of all levels. They are also offered attractive career propositions with structured development, progression and job rotation opportunities, anchored on skills mastery, value inculcation and productivity.

Integral to SMRT's effort for professional development is also our partnerships with Institutes of Higher Learning, professional institutions and industry partners. Initiatives such as the SMRT Train Engineer Professionalisation (STEP) programme and Chartered Engineer programme for railway and transportation professionals provide more professional growth opportunities for our employees. Through all these, we want our employees to see that they have 'a career, and not just a job' with us.



MoU with Institute of Technology (SIT) and SkillsFuture Singapore (SSG) to help upskill SMEs so that they can contribute to sustainable rail reliability.

Earlier in 2019, SMRT's professional development effort was expanded to include our partners. We have partnered Singapore Institute of Technology (SIT) and SkillsFuture Singapore (SSG) to develop a sector-specific training collaboration to support skills development and workplace learning for SMRT's large base of value-chain partners. The objective is to help upskill Small and Medium-sized Enterprises (SMEs) so that they can contribute to sustainable rail reliability, better innovation and higher productivity across the transport ecosystem.

## BUILDING A SUSTAINABLE WORKFORCE PROFILE

The health and well-being of our employees are our priorities and key to a sustainable workforce profile. It is therefore our responsibility to take good care of our staff, both physically and mentally. Our in-house medical clinic at Bishan Depot provides employees with free consultations and reliable healthcare services, while an Enhanced Flexible Benefit Scheme provides employees with hospitalisation and in-patient benefits.

We have also collaborated with the Health Promotion Board (HPB) to conduct health screenings to ensure that our employees get regular updates on their health situations. In addition, we have The SMRT CARE Fund to assist staff with financial exigencies and it has been a source of welcome relief to numerous staff and their families in times of need.

Looking ahead, we will continue to grow our workforce as we expand our Thomson-East Coast Line (TEL) operations. To assimilate our new employees more efficiently and effectively, HR has put in place a structured onboarding process. For example, we want every new employee to be familiar with our vision and core values as quickly as possible, so that they start their career with us on the right footing. Once assimilated, new employees can go on to contribute positively towards operation and service excellence.



Free on-site basic health screening at Bishan Depot.



Ensuring that new employees contribute towards operation and service excellence.





# OUR COMMUNITY



## MOVING PEOPLE, ENHANCING LIVES

SMRT's vision statement is 'Moving People, Enhancing Lives', and our engagement and corporate social responsibility (CSR) strategies focus on the latter. SMRT is committed to work in a socially and environmentally responsible way for the interests of our stakeholders – commuters, employees and business partners. SMRT also leverages our facilities and employees to create a positive impact on the communities.

## COMMUNITY ENGAGEMENT

Through our engagements with communities, we share updates on SMRT's maintenance, renewal, safety and security efforts, the transformation journey of our service culture, the development on the new Thomson-East Coast Line (TEL), as well as other community engagement initiatives.

### Station Familiarisation Tour

SMRT has been actively seeking out opportunities to engage and support the Community Development Councils (CDCs) and our adopted charities. One of the touchpoints is the station familiarisation tours. The tours bring together groups of beneficiaries to discuss improvements made to the inclusivity features at our stations. For instance, when Canberra MRT station was opened in October 2019, LTA and SMRT jointly organised a familiarisation tour for a few charities, grassroots members and residents to introduce them to the new station's facilities and services.

Prior to the opening of TEL1, which consists of Woodlands, Woodlands South and Woodlands North MRT stations, LTA and SMRT joined hands again to organise station previews for the zone Advisers, grassroots and beneficiaries of our adopted charities in the vicinity.



Team bonding session with LTA's Community Partnership (CPN).

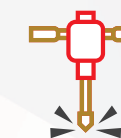
### SMRT Faces Programme

In 2019, SMRT launched the SMRT Faces programme where selected senior staff are appointed as the company's "faces" on the ground to foster relationships with key stakeholders in the community. They work closely with community leaders and the Land Transport Authority (LTA) Community Partnership (CPN) unit to look into residents' feedback in our network, while strengthening SMRT's presence on the ground.

### Noise Management

Working alongside LTA, SMRT monitors and manages noise generated by maintenance and renewal works. For example, the Permanent Way team conducts periodic track maintenance work to mitigate and improve the noise situation where possible.

SMRT also participates in the monthly noise management meetings jointly organised by LTA and keeps a close watch on track and maintenance noise-related feedback.





### Community Collaboration at Stations

SMRT collaborates with the People's Association (PA) and community volunteers to organise performances in stations to improve commuters' travelling experience. For instance, in December 2019, the North-South Line Woodlands MRT station was brought to life by Woodgrove PA's carollers during the Christmas period. Former Adviser to the Marsiling-Yew Tee GRC, Mr Ong Teng Koon, turned up to show his support and distributed Christmas snacks and engaged the commuters.



Carollers from Woodgrove PA at Woodlands MRT Station.

### Station Audit

In partnership with the PA and LTA, the Station Audit initiative engages community leaders and selected groups of commuters for feedback to improve our stations. The first Station Audit was conducted at Ang Mo Kio MRT station where former Ang Mo Kio GRC (Chengsan-Seletar) Adviser, Mr Ang Hin Kee, and several elderly residents with mobility challenges were invited to survey the station and share their views on how facilities and services within the station could be enhanced to better serve their travelling needs.

We had received practical feedback and have implemented some of these suggestions.

## ENGAGING THE YOUNG

### Learning Journey

The SMRT Learning Journey is an educational staple which has been well-received by local schools. Students are guided through what goes on behind the scenes in our train network and learn how they can play a part in ensuring a safe, reliable, and delightful journey for all. The programme is also extended to community leaders.

During the tours, participants are taken onboard our trains, into our maintenance workshop, and inside our fully automated Circle Line Operations Control Centre (OCC) at Kim Chuan Depot. They also learn more about SMRT's operations and commitment to reliability, safety and security. In 2019, more than 900 participants took part in our Learning Journeys.



Students learning about key features in our trains.

### Art in Transit

Art in Transit is Singapore's largest public art showcase which integrates artworks by the country's leading artists into our MRT network. Since it began in 1997, more than 82 artists and 300 artworks have been displayed in 80 stations.

In collaboration with Art Outreach, a non-profit organisation that promotes arts education in Singapore, SMRT has been facilitating public tours to share with participants (comprising students, grassroots and art enthusiasts) the various art installations in MRT Stations.

## OUR STAFF VOLUNTEERS

Employee volunteerism is one of the key pillars of SMRT's ongoing CSR and community efforts. Our employees have been contributing to the community over the years, with a focus on the elderly and the less fortunate. In 2019, our employees dedicated over 1,000 hours through the following initiatives:



### Community Chest Fu Dai (福袋) 2020

More than 250 Lunar New Year *Fu Dai*s filled with festive goodies were packed and sent by over 40 staff volunteers and our private hire buses to seniors living alone in housing estates. The SMRT team hoped to bring warmth to the less fortunate and smiles to their faces. This was the third time SMRT supported the Community Chest in this heart-warming programme during the festive season.



### Community Chest Getai-Xinyao Charity Concert

Supported by SMRT Corporation Sports and Recreation Club (SMRT's welfare committee), more than 30 staff volunteers helped with ushering and serving food and drinks to elderly participants at Community Chest's Getai-Xinyao Charity Concert in April 2019. This was the second consecutive year SMRT rendered support for the event.



### Mid-Autumn Festival Activities for Geylang East Home for the Aged and its Neighbourhood

Over 40 staff volunteers guided children in lantern making, facilitated games, managed gift booths, and distributed tasty mooncakes to the elderly from Geylang East Home for the Aged (GEHA) and residents from the neighbourhood in September 2019.

### AWWA House Painting

In 2019, Asian Women's Welfare Association's (AWWA) beneficiaries were given a partial makeover of their one-room flats by more than 100 SMRT employees who took part in the monthly house-painting project. Our employees helped to re-paint the walls and ceilings, clean the houses, and repair household items and appliances for the beneficiaries.

### Our Sponsorships

SMRT believes in supporting the communities we serve. Enabling mobility, empowering the community through arts and education, and encouraging environmental sustainability are the cornerstones of our CSR programme. In 2019, we contributed more than S\$1 million in cash and in-kind sponsorships. Key partners we have worked with include the President's Challenge, Community Chest and the Purple Parade.



# AWARDS AND ACCOLADES



## SERVICE EXCELLENCE

**Most Innovative Solution - SMRT Trains Ltd**  
Land Transport Excellence Awards 2019,  
Land Transport Authority

**Outstanding Service Individual (Public Transport): Mr Koh Hui Chong, William, Station Manager - SMRT Trains Ltd**  
Land Transport Excellence Awards 2019,  
Land Transport Authority

**Customer Service Excellence for Transport: Ms Gowri D/O Veren - SMRT Trains Ltd**  
Singapore Tourism Awards 2019,  
Singapore Tourism Board



## SAFETY & SECURITY

**Safe Rail Line of the Year - Certificate of Excellence: North-South Line - SMRT Trains Ltd**  
21st Annual Safety Award Convention,  
Land Transport Authority

**Gold Award: Speed Tester for Train Traction Control Unit Blower (Rolling Stock) - SMRT Trains Ltd**  
Workplace Safety and Health Innovation Awards 2019 for Logistics & Transport Sector,  
Singapore Logistics Association and Workplace Safety and Health Council

**Certificate of Commendation: Remote Third Eye (Power) - SMRT Trains Ltd**  
Workplace Safety and Health Innovation Awards 2019 for Logistics & Transport Sector,  
Singapore Logistics Association and Workplace Safety and Health Council



## OPERATIONAL EXCELLENCE

**Most Reliable Line 2019: East-West Line (EWL) - SMRT Trains Ltd**  
MOT Challenge Shield,  
Ministry of Transport

**Most Improved Line 2019: EWL - SMRT Trains Ltd**  
MOT Challenge Shield,  
Ministry of Transport

**Risk Champion: Category 2 Runner-Up - SMRT Trains Ltd**  
ASEAN Risk Awards 2019,  
Enterprise Risk Academy

**Best Service Partner (Team): Integrated Maintenance Office System Safety Branch - SMRT Trains Ltd**  
Annual LTA Service Award 2018/2019,  
Land Transport Authority

**Best Land Transport Operations & Maintenance Initiatives: Merit Winner - SMRT Trains Ltd**  
Land Transport Excellence Awards 2019,  
Land Transport Authority

**Organisation Category: Private Sector Recipient - SMRT Trains Ltd**  
LOO (Let's Observe Ourselves) Awards 2019,  
Restroom Association Singapore

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SMRT takes corporate citizenship seriously and we endeavour to do our part to protect the environment.